

0.15

DEGREES OF FREEDOM

A STUDY OF
COLLABORATIVE LEARNING
IN
HIGHER EDUCATION

FRANKIE TODD

SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF YORK

DEPARTMENT OF EDUCATION

SEPTEMBER 1989

CONTENTS

	Page
INTRODUCTION	
The concerns of the thesis	1
Definition of collaborative learning	3
Relation to existing work	4
Personal experience of collaborative learning	6
Perspectives on collaborative learning	9
Collaboration versus competition	12
Summary of chapters	13
CHAPTER ONE: FRAMEWORKS ON COLLABORATIVE LEARNING	
Introduction	16
"Learning to communicate is at the heart of education"	17
"The lecture is open to serious criticism"	28
"Even teachers with the best intentions"	34
"The principle of mutuality"	45
"The skills of freedom"	50
"Competent self teachers for life"	57
Conclusion	63
CHAPTER TWO: STRUCTURING COLLABORATIVE WORK	
Introduction	65
Dyads	65
Buzz Groups	70
Student-directed learning groups	73
Syndicate methods	98
Group projects and case studies	106
Conclusion	115

CHAPTER THREE: THE CASE STUDY: RESEARCH DESIGN AND METHODOLOGY

Introduction	120
Grounded theory	121
Case study methods	131
An N of one	134
Locating respondents	135
Departmental coverage	137
Forms of data collected and research design decisions	138
Concluding comments	145

CHAPTER FOUR: COLLABORATIVE LEARNING IN INSTITUTIONAL LIFE

Introduction	147
Who uses collaborative learning?	147
When collaborative learning is used	150
Variations in task structures	154
Collaborative learning repertoires	157
Assessment	176
Conclusions	188

CHAPTER FIVE: THE PEDAGOGY OF COLLABORATIVE LEARNING

Introduction	192
The initial impetus	192
Tutors' goals for collaborative learning	211
Tutors' views about the aims of higher education	237
The influence of the context for collaborative learning	252
Conclusions	263

CHAPTER SIX: THE COLLABORATIVE LEARNER	
Introduction	265
Social and spatial organisation in the collaborative classroom	270
Students' perceptions of the tutors' purposes for collaborative learning	293
Students' own views of collaborative learning	307
Students' views of higher education	316
Working methods: managing the tasks	337
Conclusions	354
CHAPTER SEVEN: KNOWLEDGE, POWER AND COLLABORATION IN LEARNING	
Introduction	356
Collaboration and conversation	358
Dialogue and the speaking voice	362
Exercising the learners' powers	371
The tutors' powers in collaborative learning	376
Degrees of freedom	383
CONCLUSIONS	396
APPENDICES	
Appendix 1: Letter to all staff at the University of X	404
Appendix 2: Timetable of data collection	406
Appendix 3: Tutor interview schedule	409
Appendix 4: Student interview schedule	416
Appendix 5: Student questionnaire	424
Appendix 6: Sample notes from field observation	432
Appendix 7: Example of documentation of a task provided by a tutor	437
Appendix 8: Synopsis of collaborative tasks in the data set	438
REFERENCES	473

LIST OF FIGURES

		Page
Figure 1	Revised "LTD" Stages	82
Figure 2	Further Adaptation of "LTD" Stages	83
Figure 3	Example of Group Work Sequencing	85
Figure 4	Example of a French Literature Task	85-6
Figure 5	Collaborative Work on an EFL/ESL Course	88
Figure 6	"Snowball" Groups	89
Figure 7	Example of a Syndicate Assignment	102-3
Figure 8	Working Model for Asian Studies Exercise - before the exercise took place	110
Figure 9	Course Areas of the Collaborative Task Structures Discussed	115
Figure 10	Collaborative Task Structures	116
Figure 11	Social, Procedural, Task and Cognitive Demands of Collaborative Task Structures	117-8
Figure 12	Schematic List of the Stages in the Development of Grounded Theory	125
Figure 13	Dialogic Aspects of the Study	129
Figure 14	Departmental Location of Tutors interviewed for the Thesis	137
Figure 15	Departmental Location of Students included in the Data Collection	138
Figure 16	Tutors Using Collaborative Learning (and interviewed for the Data Collection)	148
Figure 17	Tutors' Use of Collaborative Learning by Numbers of Courses and Tasks	151
Figure 18	Single Course, Single Task Tutors: Timing of Collaborative Learning	151
Figure 19	Single Course, Multiple Task Tutors: Timing of Collaborative Learning	152
Figure 20	Multiple Tasks, Multiple Courses Tutors: Timing of Collaborative Learning	152
Figure 21	Single Task, Multiple Course Tutors: Timing of Collaborative Learning	153

(continued)

Figure 22	Types of Task Structures Called Upon	156
Figure 23	Single Task, Single Course Tutors: Types of Task Used and Time Allotted to the Task	158
Figure 24	Single Course, Multiple Task Tutors: Types of Task Used and Time Allotted to the Task	162
Figure 25	Multiple Task, Multiple Course Tutors: Types of Task Used and Time Allotted to the Task	164-7
Figure 26	Multiple Task, Multiple Course Tutors: Number of Tasks Recorded	169
Figure 27	Single Task, Multiple Course Tutors: Types of Task Used and Time Allotted to the Task	172-3
Figure 28	Tutor Choices on Assess/Non-Assess and Individual or Group Product	178
Figure 29	Individual Product/Assessed Only Tutors: Individual Product	180
Figure 30	Individual Product - Assessed/Group Product - Non-Assessed Tutors: Individual Products	181
Figure 31	Individual Product - Assessed/Group Product - Non-Assessed Tutors: Group Products	183-4
Figure 32	Group Product/Non-Assessed Tutors: Group Product	185
Figure 33	Origins for Tutors' Decisions to Use Collaborative Learning	194
Figure 34	Staff Development Programme as Trigger	195
Figure 35	Articles and Books as Trigger	196-7
Figure 36	Location of "Influential Colleagues"	199
Figure 37	Internal "Influential Colleagues"	200
Figure 38	All References to School Teaching as an Impetus for the Use of Collaborative Learning	205
Figure 39	Original Impetus: Numbers of Impeti Identified by Tutors	210
Figure 40	Similarity of Goals for Collaborative Learning with Goals for Other Teaching Methods	211

(continued)

Figure 41	Tutors' Overall Rationale for Using Collaborative Methods	213
Figure 42	Tutors' Aims: To Enable Students to Work in Groups	215-6
Figure 43	Tutors' Aims: To Orient Students towards the Production of Knowledge rather than its Consumption	217-20
Figure 44	Tutors' Aims: To Promote Student Autonomy	220-21
Figure 45	Tutors' Aims: To Give Students a Voice	222-3
Figure 46	Tutors' Aims: To Provide Students with Direct Experience of a Problem or Case	223-5
Figure 47	Tutors' Aims: To Encourage Critical Reflexivity towards the Self, Others and the Subject Matter	226-8
Figure 48	Tutors' Aims: Preparation for Personal and Professional Life, Work and Industry	228-30
Figure 49	Tutors' Aims: Morale, Variety, Enjoyment	230-31
Figure 50	Tutors' Assessment of the Success of Collaborative Tasks in Meeting their own Stated Aims and Objectives for them	233
Figure 51	Examples of Success in Meeting Tutors' Prior Aims and Objectives for Collaborative Tasks	234-6
Figure 52	Categorisation of Tutors' Views about the Aims of Higher Education	237-9
Figure 53	Tutors' Views of the Higher Education Tutors' Role	243
Figure 54	Tutors' Views of the Students' Role	248-9
Figure 55	Amount and Type of Data on Students (shown by Tutor)	267-8
Figure 56	Examples of Conversational Sequences	273-7
Figure 57	Quantitative Analysis of Observations	281
Figure 58	Students' Perceptions of Tutors' Rationales for the Use of Collaborative Learning	298
Figure 59	Students' Perceptions of Tutors' Aims and Objectives	300-1
Figure 60	Students' Own Rationales for the Use of Collaborative Learning	308
Figure 61	Collaborative Learning: Useful, Hard, Enjoyable, Interesting?	309

ACKNOWLEDGEMENTS

I am grateful to two mentors, the late Professor Patrick Meredith and the late Jane Abercrombie for firing and helping to sustain my interest in collaborative learning.

Especial thanks go to the higher education tutors and students whose uses of collaborative learning are documented here. Their co-operation, their time, and the ready access they gave to their collaborative learning sessions made the study possible. I hope they will be happy with the outcome.

Many friends and colleagues have given encouragement during the preparation of the thesis and I thank them all. I am particularly grateful to Roy, Zazie and Stefanie Todd whose warm interest and support - together with their tolerance of the study's demands on my time - have been more important than they would acknowledge. To Robert Irvine Smith I owe immeasurable thanks for encouragement, wise supervision and patient advice. Peggy Smith made a wonderful job of processing messy manuscript into clean text and coped with production problems with unflappable good cheer.

Finally, I must thank the people who helped me into higher education in the first place: my sisters and brother and above all my parents, Irena Bacon and the late Stanley Bacon.

I am indebted in some way to all these people for whatever good points the study may have. Needless to say, its failings are my own.

ABSTRACT

The thesis, a study of collaborative learning in higher education, takes for its starting point ideas about how the allocation of power in educational settings affects how learners participate in the formulation of knowledge.

The study commences by examining collaborative learning from the standpoints of studies of communication and learning in school classrooms; studies of lecturing and tutor-led small group teaching in higher education; with reference to the concept of the learner that teaching methods express; in relation to discussions of power and autonomy in education; and with reference to the ideal of life-long learning.

The thesis then turns to practical aspects of implementing collaborative learning in higher education through a review of published accounts of its use. Five broad ways of structuring collaborative learning are set out (dyads, buzz groups, student-directed learning groups, syndicate methods and group projects and case studies).

Having established what collaborative learning is and why one might want to use it, the thesis reports on a case study of the uses of collaborative learning in a single institution of higher education, drawing on interviews with twenty six tutors, questionnaires and group interviews with students and observations of collaborative learning in action. There is a detailed account of the collaborative pedagogy: tutors' reasons for turning to collaborative learning, what they hoped to gain from it, their repertoires of task structures and institutional features, such as assessment, that impinge upon its use. Students' reactions and the powers they exercise are then set out.

The thesis concludes with reflections on the links between knowledge, power and collaboration with particular reference to the idea of the 'speaking voice' and the dialogic nature of understanding, suggesting that collaborative learning's greater degrees of freedom support co-production, rather than consumption, of knowledge and new meanings.

INTRODUCTION

"It has become clear to us in the course of this study that the allocation of power affects how people take part in the formulation of knowledge... Thus what is learnt by discussion in a group of peers will be different in kind as well as content from what is learnt from teachers."

(Barnes and Todd, 1977)

THE CONCERNS OF THE THESIS

This quotation, from the conclusions of an earlier study co-authored by the present writer, serves as a useful starting point for the work that is presented in this thesis. The thesis focusses upon collaborative learning: that is, upon learning situations in which higher education students join with small groups of peers to create their own understandings in the course of co-operative discussions.

Collaborative learning situations use the simple (but to some, dramatic) solution of temporarily withdrawing the tutor from direct participation in the learning task. The tutor may physically leave the room or may remain in the teaching room occupied by some work of his or her own whilst students work independently in small groups; or the learning task may require student groups to work outside the classroom for a while to reconvene later.

Collaborative learning situations may to a greater or lesser degree have a prior structure supplied by the tutor, or they may be wholly structured and paced by the learners themselves. What they have in common, and where they differ from non-collaborative learning situations, is that co-operative student talk and action replace the instructional monologue from the tutor and talk or action that is orchestrated by the tutor.

The framework within which such groups operate is therefore intriguingly different from that of the tutor-led small groups whose use in higher education is already well documented. A major difference has to do with the allocation of power, with the

potentially greater degree of freedom to shape their own knowledge that is available to students working in this way. The prefatory quote signals that the discussion of collaborative learning in the thesis takes on board issues that collaborative methods necessarily raise about power and autonomy in higher education.

The thesis draws on a study of collaborative learning methods as used by twenty six tutors - and their students - in a single institution of higher education. Using data from this study it has been possible to explore what leads tutors to call on such innovative methods and the difficulties they encounter in their implementation. The students' experience is also documented and their reactions to the use of collaborative learning discussed. The study provides a rich source of evidence, not only about the perceived effects of the use of collaborative learning but also about the factors - institutional context and assessment for instance - which predispose towards its successful use.

The evidence provided by the study is used as a springboard for reflection upon the inter-relationship between knowledge, power and collaboration in higher education. The use of collaborative learning would appear to provide students with a greater degree of freedom to shape their own learning than is offered by more familiar teaching methods but equally some apparent freedoms can carry hidden constraints. Acknowledging that there can be no simple equation between forms of communication and resulting understanding, the thesis tries to tease out some of the complex ways in which 'educational conversations' (Inglis, 1985) express aspects of power in the higher education setting.

The initial concerns of the thesis are summarised in the following questions:

1. What do collaborative learning methods consist of, in practice, in higher education?
2. When teachers and students use such methods, what are the consequences in terms both of everyday classroom events and at the level of the institution?
3. What conditions pre-dispose to the success of collaborative methods?

4. How do collaborative methods compare with other teaching methods in terms of qualities of the learning experience?
5. What are the reactions of teachers and students to collaborative learning methods? What do they hope to achieve and how far do the perceptions of teachers and students correspond?

As chapters One, Two and Three set out, these starting questions were elaborated in the course of the study. However, the exploration of these questions requires some initial definition of what collaborative learning is. In one sense the thesis as a whole provides an extended gloss upon this question. The next section provides a working definition which will, it is hoped, provide the basis for this extended development.

DEFINITION OF COLLABORATIVE LEARNING

Previous publications concerned with learning methods similar to those with which the thesis is concerned have used a variety of terms, including 'self-directed groups' (Beach, 1974), 'leaderless groups' (Powell, 1973), 'mutual tuition groups' (Meredith, 1976), 'autonomous groups' (Bligh et al., 1975) and 'student-directed learning groups' (Todd and Todd, 1979). I use the term 'collaborative learning groups' as a summary term to include all of these and others, suggesting as it does the active role played by students in such learning without implying that they necessarily organise such group work themselves without any help from the tutor.

I take the essential features of collaborative learning groups to be as follows:

1. The tutor will leave small groups of students to talk and work alone for some period of time
2. Students themselves therefore take over much of the responsibility for talking and learning in the course of such group work
3. The tutor may nevertheless provide a structure for the learning task within which groups can work alone fruitfully. (The

extent of prior structuring is variable and some groups of students may work entirely independently)

4. Within the framework of the task structure the tutor plays a facilitative and non-didactic role.

It is with such forms of group work that the thesis is concerned, although reference will be made, where appropriate, to tutor-led small group work.

The four features above serve as criteria which must be satisfied for a particular teaching approach to 'count' as collaborative learning within the framework of this thesis. The multiplicity of terms (referred to above) used to identify specific instances of this general approach provides a strong hint about the deeper nature of the task which this thesis has undertaken. This has been to shift from a relatively simple to a more complex definition of what collaborative learning is and what it implies.

RELATION TO EXISTING WORK

When the work for the thesis was commenced there was no pre-existing corpus of work that defined itself as being concerned with collaborative learning in higher education. Neither was there a corpus of work on collaborative learning per se (although the term had been used by one or two authors working on school-teaching (Mason, 1970), albeit not quite in the same way as it is used here).

Instead, there was a cluster of accounts of the use of some innovative teaching methods by higher education tutors; and there was a corpus of work on the importance of pupil language and talk in secondary school teaching. There was also a researcher with a long-standing interest in both of these fields. To such interested eyes there was a shadowy, scarcely discernible but potentially unified entity (collaborative learning) which was struggling to take shape out of these disconnected elements. The thesis is the product of these connections.

It is important to note from the outset, therefore, that the concept of collaborative learning in higher education is a construct

of the thesis, rather than the thesis having simply extended a pre-existing, well-defined area of knowledge.

The accounts by tutors (mentioned above) of their own use of collaborative learning pertain to a wide variety of types of institutions and academic subject areas. These self-reports tend to concern relatively unconnected and isolated developments and are thus limited in range and perspective. Relating directly to an author's own teaching they are often 'how-to-do-it' reports, largely a-theoretical, with a practical rather than an analytical bias. Sometimes clearly written out of the flush of enthusiasm for an exciting teaching method, a surprisingly high proportion of this literature describes short-term, even one off instances of the use of collaborative learning, and may be related to only a small section of the potentially relevant literature. By contrast, more generalist discussions of teaching methods in higher education often consider collaborative teaching methods only as a sub-set of (or as an interesting variation upon) tutor-led small group methods, on which there is an extensive and well-integrated literature. Finally, the 'unit' of analysis is commonly the teacher. Students' perspectives are under-represented; and it is hard to identify the influence of institutional factors from these accounts.

The statements above about the limitations of existing published work from a researcher's perspective should in no way be interpreted as detracting from their overall worth and contribution to the practicalities of improving teaching and learning in higher education. These accounts are often admirably successful in setting out a practical model that can be followed by a fellow tutor. If they are less successful, taken as a group, in providing grounds for generalisations about collaborative learning as a whole, or in providing an analytical framework of understanding, it is because that forms no part of their purposes.

It was clear, therefore, that a useful contribution could be made by a study of collaborative learning in higher education which emphasised the analytical rather than the practical, which moved away from self-report, which adopted a larger unit of analysis than a single teacher, which held an institutional context constant while

exploring different subject disciplines within that institution, and which incorporated students' perspectives. Additionally, having noted a bias towards relatively unconnected and isolated developments, a useful contribution could be made by a study which took a non-localised, non-discipline specific standpoint so as to offer an inclusive framework providing a synthesis of what otherwise remains fragmented and un-integrated. The thesis therefore firmly places collaborative learning methods under the spotlight in their own right, exploring those special qualities which warrant detaching them analytically from tutor-led groups.

In order to achieve more than a description of collaborative learning methods and to develop an analytical framework the net of literature examined has been cast far wider than discussions of collaborative learning in action in higher education. Before going on to consider the range of perspectives that have been brought to bear upon collaborative learning it may be illuminative to include within this general introduction an introduction of a more personal kind. For my research interest in collaborative learning in higher education is rooted in the twin experiences of having participated in such methods as a student and having used them in my own teaching as a practitioner.

PERSONAL EXPERIENCE OF COLLABORATIVE LEARNING

One would hope that the chosen topic of a research thesis would always represent an area of personal interest - if only for the sake of the candidates' sanity. But on occasion the motivation has its origin in some significant experience through which an individual finds an enthusiasm that will ultimately fill a substantial section of his or her curriculum vitae.

In my case, thanks to an eminent and somewhat unorthodox professor of psychology, I was lucky enough to participate in collaborative learning groups as an undergraduate student. I have documented Professor G. P. Meredith's use of what he called 'Mutual Tuition Groups' elsewhere (Todd and Todd, 1979), and here I draw

substantially on the notes used for that account.

In the middle 1950s, Professor G. P. Meredith (author of Instruments of Communication, 1966) instituted the use of what he called 'Mutual Tuition Groups' in the undergraduate teaching of the Psychology Department at Leeds University. The idea developed gradually, and changed through time, but in its initial form, this involved pairs of students, each pair consisting of one second and one third year student.

Professor Meredith listed twenty topics pertinent to the psychology course, and each student pair collaborated to produce a paper on one of these topics. Subsequently, all time-tabled lectures were cancelled for one week, in which the student pairs each presented their papers to the whole of the second and third year students and staff.

Discussing this venture at a later date, Professor Meredith (personal communication, 1976) recollected substantial opposition to this scheme from staff, a recollection that was supported by 'grapevine' information transmitted from one generation of students to another, (including the author). Students, however, seemed to approve of the scheme, and Professor Meredith judged the papers delivered to be of high quality and the week as a whole to be a great success. He noted that in the finals examinations that year there were two first class honours degrees - the first 'firsts' in the department's history.

During the period between the middle 1950s up to about 1962, the use of mutual tuition groups was institutionalised in the department as a regular practice. Third year students explained their purpose to first years during the early weeks of the autumn term, and the mutual tuition groups that were then set up worked through topics chosen by the students themselves. (1)

However by 1966, the author's first year as an undergraduate

(1) This account is based on informal conversations with people who were students at the time, with the department's then secretary, and with Professor Meredith himself. There may be some small inaccuracies of detail in these recollections, but the broad picture is, I think, the true one.

in the Leeds Psychology Department, the use of mutual tuition groups was no longer a regularly instituted or formally organised phenomenon but instead had become part of a departmental underground movement - and of folklore. Professor Meredith himself spoke of mutual tuition groups and tried to encourage them but the longstanding opposition from staff had finally prevailed at a departmental level. Only one other staff member explained their use and suggested that students of the year of '66 try them out. The main source of information and guidance about mutual tuition groups for this year was second and third year students.

Nevertheless, year of '66 students set up mutual tuition groups some of which met regularly throughout the degree course, working on the groups' own choices of topics. Membership of the groups was fairly fluid; group size was between five and six members; and membership consisted of people in the same year. Some of these groups fizzled out almost immediately, others met on a sporadic basis for a little while, others had a longer life.

In the group in which I participated, members took it in turn to read papers to the rest of the group, this being followed by discussion for which all prepared. The group occasionally invited in post-graduate students to give papers on their research. It is worth emphasising that the mutual tuition groups were run in addition to time-tabled tutorials and seminars, and were not integrated with these in any way.

It can be seen, then, that a technique which Professor Meredith introduced in the 1950s ran successfully for about fifteen years, continuing even after the withdrawal of official departmental backing, and, indeed, after Professor Meredith himself retired.

Students tend to take whatever curious experiences their tutors provide as part of the normal run in the new world of higher education. At that time I only partially appreciated how innovative this approach was, and the extent to which it went against the grain of other university teachers. When after graduating I began teaching an FE class twice a week, on each occasion for a three hour class, it was already second nature to use my own variations on 'Mutual Tuition Groups'. This collaborative group work was successful, and I have

used the method in my teaching ever since.

An additional perspective on learning in small groups came from working on a research project on communication and learning in small groups of secondary school children. This research drew on a different theoretical and empirical tradition, that of language and learning (to be discussed later) and in effect provided a new set of principles to support the use of collaborative methods.

From personal conviction it is a short step to putting effort into the conversion of others. The publication of the book from which the prefatory quote is taken led to many opportunities for in-service work with both primary and secondary school teachers who were keen to incorporate collaborative group work in their teaching (Todd, 1978).

Later I carried out action research on collaborative groups in my own teaching in higher education and used this work to develop workshops and courses for colleagues (Todd, 1978; Todd and Todd, 1979; Todd and Todd 1981; Todd, 1981).

Finally, in yet another 'Knight's Move', I have been able to introduce the use of collaborative techniques into continuing education programmes for professionals (Todd, 1983), bringing another strand, the lifelong learning perspective, into the pattern. Thus academic research carried out for this thesis is informed by more than twenty years of experience of collaborative learning, both as a student and as a teacher, and at several different educational levels.

PERSPECTIVES ON COLLABORATIVE LEARNING

It has been argued that reflective practice supports the maturation of critical and systematic judgements. It makes possible the examination of an accumulation of cases and their critical interpretation in relation to relationships within a wider population (Stenhouse, 1985, pp 265-6). Such a process, Stenhouse claims, leads to a more multivariate and complex view of a phenomenon than if a field of study is approached 'cold'. In other words, praxis raises

its own brand of complicated questions and leads to the exploration of diverse areas of inquiry - if it seems that they may throw light upon the reflections that practice has prompted.

The later chapter on the research design of the thesis discusses in more detail the way the research questions of the thesis were informed by the concerns of the author as a practitioner as well as by previous research and became further refined in the course of an iterative dialogue between theoretical perspectives and data. This 'slow-maturing process', this development of 'rich and intimate familiarity with the kind of conduct being studied' aids 'in employing whatever relevant imagination observers may fortunately possess' (Blumer, 1940, cited Glaser and Strauss, 1968, p 14). Such imagination, if it exists at all, is provided greater play by encounters with the conduct being studied in a variety of settings. In this case to the contrasting roles of student-as-collaborative-learner and tutor-as-supporter-of-collaborative learning have been added insights drawn from the conduct of collaborative learning in secondary schools, in higher education and in continuing education. Each of these different areas of experience has led to the seeking out of theoretical and empirical work from areas of study that might seem disparate at first sight but whose common feature is that they can be used to contribute towards a unified framework of understanding of collaborative learning.

The important feature about this developing framework is that it is inter-disciplinary, situating individual growth and development within a social context and exploring the implications for the development of understandings of social features of that context. Collaboration cannot be achieved without dialogue and therefore the study of collaborative learning begins to raise questions about what it means at the individual level to have a voice in such a dialogue and what it means at the institutional level to make a space in which these voices can speak. In the thesis these questions are approached from a starting point which admits the possibility of 'a relationship between psychological phenomena and social-institutional processes' (Wertsch, 1985).

If the question is asked: "Why should one use collaborative

learning?" the answer that is given is likely to depend very much upon the type of institution and the level of education that is used as a reference point. Additionally, what we may think of as the disciplinary location of the answerer will play its part, as will his or her orientation towards the politics of education. Context is all important. Accordingly, the thesis has sought out a range of perspectives upon collaborative learning - perspectives which otherwise remain largely separate.

I have noted six groups of potential answers to the question above each fronting towards its own audience and drawing on a separate set of theoretical and empirical work.

These frameworks are as follows:

1. The communication and learning strand, primarily located in the secondary education world with, for a baseline, theories on the relationship between language and learning
2. The 'what's the use of lectures?' strand which draws on psychological work on learning and memory to suggest that the teacher monologue is an inefficient way to transmit information and ideas
3. The university small group teaching strand, with its commentary on the intrusive role of the tutor in tutor-led small groups
4. The psycho-emotional approach with its emphasis upon the learner's self-concept and the concept of the learner that is expressed in teaching methods
5. Political and philosophical discussions of autonomy and dependency in education, drawing on the concept of power
6. The life-long learning approach which suggests that higher education should not be seen as the end of learning but as preparing for further learning, and therefore that the learning process is as important as the mastery of curriculum content.

If a metaphor may be used to express the purposes of the thesis it may be seen as the two conjoined halves of a bi-valve. One 'shell' consists of synthesis and analysis of existing literatures such as those above to construct a new theoretical framework. The other 'shell' consists of new empirical work, informed by this

framework, and designed to address questions raised by examination of these literatures. Inhabiting these structures are the insights that come from inter-actions between these two endeavours.

An important aspect of this thesis, therefore, is that it takes an integrative approach rather than a cellular one. In exploring questions about collaborative learning it sets out to identify, analyse, evaluate and inter-relate perspectives that remain unconnected in existing literature. This inclusive and synthetic approach provides greater clarificatory and explanatory power than could otherwise be sustained.

COLLABORATION VERSUS COMPETITION

In subsequent chapters the thesis will examine in detail the wide variety of ways of organising and structuring collaborative learning and will attempt to clarify the paradigms that underly work in this area. However it is important to establish at the outset that the use of collaborative learning methods implies some major shifts in role for both students and teachers: in particular, an opposition to competition in learning. By contrast, students will call on the resources of their peers to aid their learning. We can summarise some of these implications for role changes as follows:

For Students

Shift from individual to group work

Shift from emphasis on competitive performance to a co-operative role, sharing work

Shift from being passive recipients to being active participants

For Teachers

Development of new skills in encouraging collaboration and co-operation among students

Shift from being primary decision maker about mode, content and pacing of learning towards sharing (at least

some of) these decisions with students

Shift in the timing of the teacher's participation: s/he may not be present during group work, but will be involved with prior planning and structuring of the learning task and will carry out post-evaluation (even if of an informal nature).

Shift in kind of participation: willingness to take on a more egalitarian role, e.g. role of consultant with specialist knowledge.

These are idealisations, of course, as set out above, and the degree to which such new roles are fully enacted varies. Nevertheless, the flavour of collaborative learning situations is a unique and exciting one, the atmosphere in the classroom strikingly different from what is seen and heard in non-collaborative settings.

If we apply a typology offered by Freire (and without prejudging the rationales offered by tutors themselves for their use of collaborative methods) the use of collaborative learning methods and the role changes that accompany their use seems to this observer to be much closer to "education as the practice of freedom" than to "education as the practice of domination" (Freire, 1972, p 54). The material offered subsequently will enable the reader to judge this independently.

SUMMARY OF CHAPTERS

Chapter One outlines a series of justifications for the use of collaborative learning ranging through work in the area of communication and learning, on the efficiency of lecture techniques, on tutor-led small group teaching methods in higher education, on the learner's sense of self and the promotion of competence, on autonomy and power in learning situations, and on the ideal of life-long learning. These perspectives are inter-related and synthesised in the chapter's conclusions.

Chapter Two focusses on ways of structuring collaborative learning via a survey of published accounts of collaborative

learning. Sections consider the learning cell and other dyads, buzz groups, student-directed learning groups, syndicate methods and group projects and case studies.

These sections reflect differences in the size of the learning group, in the scale of the task and in the length of time allotted to the task. There is a progression through the chapter from smaller to larger scale tasks and from learning situations which are easier to those which place more demands upon staff and students.

Taken together these two chapters provide a framework of understanding of what collaborative learning is and why one might want to use it. However, they also raise a number of additional questions about the life that collaborative learning might have in an ordinary institution of higher education. Does it exist at all, and if so in what form? Who utilises it and in what subjects? Why is it used? What factors seem to be linked with the success or failure of collaborative learning? And what do students think of it?

Chapter Three describes the parameters of the case study on collaborative learning which was carried out to illuminate these developing questions. The case study was carried out in a single institution of higher education. This chapter sets out the research design and methodological decisions under-pinning the study. Sections of the chapter discuss grounded theory, case study methods, the justification for an 'N' of one, the location of respondents, departmental coverage within the institution, forms of data collected and research design decisions.

Chapter Four reports the findings of the case study concerning the ways in which collaborative learning is drawn on in everyday institutional life. It discusses who uses collaborative learning, when it is used and in what form, considers variations in task structures and analyses the repertoires of types of collaborative learning tasks which are called on.

Chapter Five reports on the views of the tutors who use collaborative learning methods. Sections cover the initial impetus which led to its use, the goals which tutors have for collaborative learning, tutors' views about the aims of higher education, and the influence of institutional and contextual features on collaborative

learning. The influence of assessment practices is also discussed in this chapter.

Chapter Six reports on the response of the students in the case study to their tutors' use with them of collaborative learning methods. As well as covering the students' reactions to their experiences of learning in this way, the chapter also explores the extent to which the students' experiences were consonant with the tutors' purposes. Sections cover social and spatial organisation in the collaborative classroom; students' perceptions of the tutors' goals and purposes for collaborative learning; students' own views of collaborative learning and of the purposes of higher education; and the students' working methods and the strategies they use for managing their tasks.

Chapter Seven considers issues raised in the body of the thesis relating to the relationships between knowledge, power and collaboration, issues which are foreshadowed in the prefatory quotation. It reflects upon ways in which the thesis contributes to a deeper understanding of this theme, with sections on the link between collaboration and conversation; the extension of this thinking to the idea of the speaking voice and the dialogic nature of understanding; an analysis of the ways in which learners exercise powers in collaborative learning; an evaluation of the tutors' powers in collaborative learning; and a discussion of the way in which collaborative learning, despite being subject to curtailments on its use, both requires certain degrees of freedom for tutors and students, if it is to occur, and creates the opportunity for the exercise of new freedoms by learners. It concludes that collaborative learning provides a context for the co-production, rather than the consumption of knowledge.

Finally, the concluding comments reiterate what the thesis set out to do and how it has done it, high-light major themes and note areas for further research. References and appendices follow.

Having introduced the concerns of the thesis and mapped out the themes that will appear subsequently in more elaborated form, I now turn to Chapter One which considers a series of frameworks that may be drawn on to illuminate the use of collaborative learning.

CHAPTER ONE

FRAMEWORKS ON COLLABORATIVE LEARNING

"A student's colleagues often represent the least recognised, least used, and possibly the most important of all the resources available to him."

(Mackenzie, Eraut and Jones, 1970, p 125)

INTRODUCTION

In the introductory chapter reference was made to the different sets of answers likely to be given to the question "why should one use collaborative learning?"

In this chapter, I propose to explore the justifications for the use of collaborative learning methods that arise from six different theoretical frameworks. These frameworks are considered in separate sections.

The first section "Learning to communicate is at the heart of education" considers work in the area that has been known popularly as "Language across the Curriculum". The section sets out an approach that has sought to apply to children's learning in schools insights from psychological studies of the relationship between language and learning, and has linked this with socio-linguistic studies of interaction in the classroom.

The second section "The lecture is open to serious criticism" discusses studies of that classic of higher education teaching methods, the lecture. Work in this area has drawn support from studies of human memory and learning, and within this framework there have been a number of empirical studies of the extent to which lecture material is remembered or forgotten by listeners.

The third section "Even teachers with the best intentions" examines small group (tutor led) teaching methods in higher education. The work of Jane Abercrombie has been a seminal influence in this area, and her approach grew out of her knowledge of classic

studies in the psychology of perception (particularly of perceptual illusions) and of group analytic psychotherapy.

The fourth section "The principle of mutuality" considers work that focusses on the learner's experience of self in a learning situation, and particularly examines the promotion of mutuality between learners, and the learner's sense of competence.

The discussion of competence is closely linked to the notion of autonomy. The fifth section "The skills of freedom" discusses approaches to learning that examine the exercise of power in the classroom in relation to the development of autonomy among learners.

Finally, the sixth section "Competent self-teachers for life" discusses the implications of work in the area of lifelong learning which suggests that higher education should not be the culmination of a learning career but rather should be the springboard for a lifetime of learning, whether in personal or vocational areas.

"LEARNING TO COMMUNICATE IS AT THE HEART OF EDUCATION"

"Teachers have become so habituated to thinking of language in terms of communication, that many have ceased to consider that it also performs important subjective functions, since it is the major means by which we organise material and reflect upon it. If in the classroom we limit spoken language to the teacher talking and the pupil replying to cross examination, and limit written language to getting information from a book and writing it down to show the teacher that the work is done, we ignore and reject the function of speech and writing as an instrument for re-shaping experience, that is, as a means for learning."

(Barnes, 1976, p 84)

One of the striking features of school teacher education in the 1970s was the incorporation into the trainee and in-service curriculum of

ideas about the importance of language in the classroom.

Growing out of concerns initially raised within the London Association for the Teaching of English (the LATE) a substantial body of work on language in the school classroom has gradually been incorporated into both education policy and into training for pedagogic practice at initial and in-service levels.

The Bullock Report (DES, 1975) listed a series of uses of language which were deemed to be essential in any child's language development (p 67), and suggested that the ability to use English in these complex ways lay at the heart of the educational process. The report's authors noted that they would like to see all teachers having a far greater understanding of the role of language in learning and went on to recommend that "a substantial course of language in education (including reading) should be part of every primary and secondary school teacher's initial training" (DES, 1975 *ibid*, p 515).

Subsequent government policy documents have reinforced this thinking. In a paragraph which echoes the quotation at the head of this section, Her Majesty's Inspectors suggested:

" A teacher of science or geography ... whose concern is simply to impart facts to his pupils, who checks their absorption of these only by questions demanding short factual answers, who dictates quantities of notes without considering whether the vocabulary and structures he uses are intelligible to his pupils, who devises worksheets that take no account of his pupils' language competence ... is using limited and ineffective methods of teaching science or geography. Good teachers of these and other subjects know that pupils learn and understand better if they are able to ask questions, explore and discuss the methods presented to them, to sift and to relate evidence, to speculate, to work towards conclusions, to bring ideas into full understanding by expressing them in their own words, while learning progressively how to express them in ways appropriate to the discipline of the subject"

(DES, 1982, cited DES, 1985)

The issue is still a live one, as evidenced by the section devoted to language across the curriculum in the Swann Report (DES, 1985,

pp 385-429).

Alexander (1984, p 114) notes that work on language across the curriculum was incorporated into the professional studies element of the new initial training degrees in the latter half of the 1970s. In-service provision for teachers has included large numbers of short courses in this area, some organised by the DES, others at local level by educational advisors, or by colleges or departments of education. (The author has provided inputs to a number of such courses.)

The Bullock report also recommended the development of policies for language across the curriculum in all schools, with responsibility for policy embodied in the organisational structure of the school (DES, 1975, *ibid*). Two examples of this in practice can be found in documents produced in London and in Cornwall (ILEA, 1979; Cornwall Education Committee, 1980) - although the 1979 Secondary survey found "few moves of any significance towards language policies" (DES, 1979).

The three 'bibles' of the language across the curriculum movement, Language the Learner and the School (Barnes, Britton, Rosen and the LATE, 1969), Language and Learning (Britton, 1970) and From Communication to Curriculum (Barnes, 1976) have appeared on the reading lists of students on initial training and in-service courses all over the country. Numerous practising teachers have based work for post-graduate awards upon empirical studies in this area.

Behind this activity at policy making and training level lay a crop of studies in the area. To highlight just some of these: the (then) SSRC supported a study of children learning in small groups, in the early 1970s (Barnes and Todd, 1977, *ibid*) whose results were fed into initial training and in-service education in a variety of ways. The (then) Schools Council also supported work on enhancing pupil communication in learning via teachers' action research (Eggins et al, 1979) (the author was co-consultant to this project) as well as supporting curriculum based projects (Barnes, Brown and Dixon, 1978a; Barnes, Brown and Dixon, 1978b). The theme has continued, as for instance in a study of primary school children working in small groups for computer-assisted mathematics learning (Hoyles, 1985) and

studies of the collaborative classroom (Salmon and Claire, 1984).

All this means that few school teachers have not been touched in some way by ideas about incorporating into their teaching situations in which learners get the chance to talk, although those with experience of today's schools (DES, 1982, *ibid*) may sometimes feel there is still a great deal to be achieved. There are no signs that the role of talk in aiding learning has been sufficiently appreciated in higher education for similar staff development policies to have been laid down there.

Behind this movement lies a linking of psychological studies of the relationship between language and learning, with socio-linguistic studies of interaction in the classroom.

The consideration of the role of language and communication in learning draws heavily upon the work of four major figures in developmental psychology, namely Piaget, Vygotsky and Luria, and Bruner.

The production of one synthetic account of the relationship between language and learning from the work of these four writers required the selective interpretation of one of them. Piaget's long career as a 'genetic epistemologist' included a prolonged period in which he held that language expressed rather than aiding thought. It was the developing child's own actions upon the world which he felt helped him or her to develop new structures. Thus, in The Language and Thought of the Child (Piaget, 1926) the child's language is studied for what it reveals about thought itself, rather than regarded as a means towards more adequate formulations about the world. There have, of course, been several critiques of Piaget's 'stage' model, and of the central role ascribed to motor actions by his constructivist theory (Donaldson, 1978; Cox, 1980; Bryant, 1974).

Upon a closer reading of Piaget's work it becomes apparent that within his complex opus there is indeed support for the idea that talking aids the development of understandings - provided the talking is amongst peers. Whilst he viewed verbal formulations offered by an adult as unhelpful and likely to lead to the development of 'pseudo-concepts' (Ripple and Rockcastle 1964) he assigned to peer

interaction in adolescence a crucial role in the development of the jewel in the crown of his cognitive stages: reflexivity.

In his account of the development of intelligence from birth to adolescence (Piaget, 1932) he suggests that a major breakthrough in the individual's thinking comes with the realisation (round about adolescence) of the validity of alternative viewpoints, and the capacity to reflect upon the grounds for one's own formulations.

The development of intelligence is seen by Piaget as a succession of stages which gradually become less and less centred upon the ego's own perspective. Whilst motor actions provide a source of some cognitive conflict and the resolution of these conflicts (leading to enhanced understanding) it is social relations with others that provide the richest source of different viewpoints and therefore of cognitive conflicts. "It is precisely by a constant interchange of thought with others that we are able to decentralise ourselves ... to co-ordinate internal relations deriving from differing viewpoints" (Piaget, 1963, p 64).

His work suggests that in discussion with peers, two important things happen. One is that learners come to acknowledge the existence and validity of alternative viewpoints. This allows learners to move from a simple account of a problem to a more complex one in which they inter-relate and evaluate different conditions impinging upon the problem area. The second, consequent upon this, is an awareness by learners of their own habitual thought processes and values, derived from seeing themselves reflected back in the course of interaction with others. It is this awareness of others in relation to the self, the final shift away from the remnants of ego-centrism, that Piaget calls reflexivity. It is a characteristic of mature thought.

Bearison (1982) argues that early studies in the constructivist tradition have used 'experimental paradigms that fail to capture the dialectics of subject to subject interaction' (p 201) and goes on to cite a number of studies within a Piagetian framework demonstrating the 'efficacy of social interaction on cognitive change' (p 206) in children presented with conservation problems. He quotes the explanation given by Perret-Clermont:

"The cause of the cognitive development observed is to be found in the conflict of centrations which the subject experiences during the interaction. The interaction obliges the subject to co-ordinate their [sic] actions with those of others, and this brings about a centration in the encounter with other points of view which can only be assimilated if cognitive restructuring takes place"

(Perret-Clermont, 1980, p 148)

Douglas Barnes has pointed out that "there is an important difference between arguing that the development of cognition depends on the development of language - an assertion which Piaget has firmly rejected - and arguing that speech enables us to control thought" (1976, *ibid*, p 101). The first of these statements has been the subject of much debate in psychology, leading to seminal studies of the cognitive development of profoundly hard of hearing children (Furth, 1966). Crucial points in the argument depend upon whether the definition of 'language' used is deemed to include any of the forms of sign language in current use. The outcomes of such research seem to suggest that Piaget may have overestimated (in his early work) the extent to which cognition can develop independently of language (see, for example, Richards and Light, 1986; Serafica, 1982).

However, the role of communication and social interaction with others in supporting thought is demonstrated in the development of deaf children of deaf parents, growing up in a rich communicative context based on the use of sign language. This debate is a continuing one, but since it is not central to the concerns of the thesis, it may rest here.

The second of the statements above - that speech enables us to control thought - was described by Barnes as being at the heart of From Communication to Curriculum, and it is also at the heart of the work of what is sometimes called the 'Russian' school of psychologists, Vygotsky and Luria, and of the work of the American psychologist, Jerome Bruner.

Drawing on the work of the Russian school, Bruner (1964) notes a general function of language that is important for learning. He

points out that when we are thinking privately to ourselves, we do not have to make our meanings particularly explicit. We can manage with hazy, fairly imprecise formulations, saturated with the personal connotations and fleeting individualised imagery that was called by Vygotsky (1962) 'inner speech'.

But the demands of expressing something for another person are quite different. The speaker must clarify and make explicit hazy images; must explain and put into sentence form reference to events or experiences not shared by the listener; must take account of the viewpoint(s) of the listener, that is, make the account appropriate to what is known of the listener; and in order to do all these must make delicate choices about alternative ways of ordering and expressing his meaning. Bruner, in his account of reciprocal learning, suggests that the uttered account brings the learner face-to-face with the state of his own understanding and thus aids reflection upon the adequacy of this account. Contradictions, inconsistencies, points of misunderstanding become more obvious - and so the act of uttering what he knows impels the learner to work on and improve his understanding.

The types of speech role open to a speaker are also claimed to play an important part in the development of understanding. Aside from the linguistic decisions considered above which force the learner to weigh the world more carefully, the speech roles involved in explication and enquiry facilitate a range of behaviours directed towards the achievement of understanding, behaviours that are barred to the passive listener.

Over and above these specific claims for language and for the act of speaking, we may add the more general one that intelligence and understanding are quintessentially social phenomena. Freire argues that "only through communication can human life hold meaning" (Freire, 1972, p 50). This stance, obviously influenced by Marxist theory, is exemplified in the work of Russian psychologists such as Vygotsky (1962, *ibid*; 1978) and Luria (1961; 1976). Their work, clinical and experimental, demonstrates the role of speech in the control of behaviour: in motor behaviours as well as in more complex perceptual judgements; in childhood and beyond; for the normal

individual as well as for those whose development has been impaired in some way.

Beyond these regulative functions of speech, it is argued that the process of 'coming to know' the world is primarily social (Salmon, ed. 1980). This can be demonstrated in babyhood in pre-verbal interactions, and continues throughout life in verbal interactions with parents, teachers, peers and others. It is significant that work in the last decade on early childhood interactions, utilising the technology of video-recording that was unavailable to Vygotsky and Luria, has tended to confirm their social formulation. Schaffer's work (1979) shows the pre-verbal child attending to the universe around him in a selective way, where the process of differential attendance to stimuli is clearly a social one, rooted in a sociable exchange with the parent.

"Through language we receive a meaningful world from others, and at the same time make meanings by re-interpreting that world to our own ends" (Barnes, 1976, *ibid*, p 101). Or, as G. H. Mead put it:

"I know of no way in which intelligence or mind could arise or could have arisen other than through the internalisation by the individual of social processes of experience and behaviour ... as made possible by the individual's taking the attitude of others towards himself and towards what is being thought about. And if mind or thought has arisen in this way, then there neither can be nor could have been a mind or thought without language; and the early stage of the development of language must have been prior to the development of mind or thought"

(Mead, 1934, pp 191-2)

Thus the growth of cognition unfolds with the vital support of the social world in which the individual lives. Wańkowski (Raaheim and Wańkowski, 1981, p 151) commenting on Oléron (1978) writes that "it is impossible to separate intellectual competence from psychological or social competence, which (Oléron) defines as relations concerning other individuals."

There are strong implications from the foregoing for the utilisation of teaching and learning methods which incorporate discussion by learners. However, at this point the other link in the argument, socio-linguistic studies of classroom interaction, come in

to show that instead it is teacher talk that predominates in the classroom. Comments such as "... in our culture, teaching is talking" (Stubbs, 1983, p 17) or "whatever else he does the teacher will be talking for most of his working day" (Edwards and Furlong, 1978) neatly sum up the findings of many research projects whose general message has been summarised as 'the two thirds rule' (Flanders, 1967) meaning that the teacher talks for at least two thirds of the time, and at least two thirds of each lesson is made up of talk.

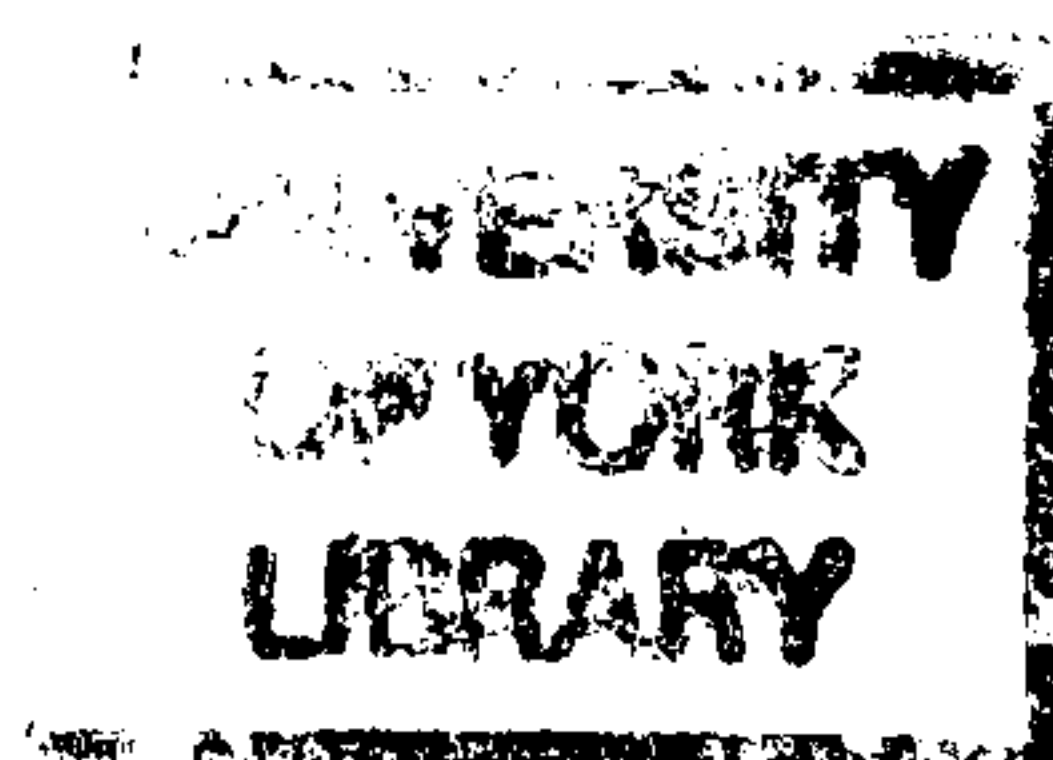
As important as the amount of teacher talk are the qualitative characteristics of that talk, in that it is the teacher who structures and paces classroom talk. Barnes (in Barnes, Britton, Rosen and the LATE, 1969, *ibid*) commented extensively on the characteristics of teachers' questioning styles, with their implicit requirement that pupils guess the teacher's desired answer to a series of closed questions. Edwards (1976,) noted that "the teacher is normally 'entitled' to speak first, most and last, and to make most of the initiating moves" (p 157); a number of studies confirm and expand on this orchestration of classroom talk by the teacher (summarised in Delamont, 1983 and Edwards and Westgate, 1987).)

"Work on interaction in the classroom indicates that in class discussion it is the teacher who manages and controls the discourse. Not only do teachers do most of the talking, but they also take responsibility for the content, pacing and style of pupil contributions. Teachers decide the topic for discussion, nominate some pupils to speak, hush other pupils, and judge the relevance of pupil contributions"

(Barnes and Todd, 1977, *ibid*, p ix)

The points being made here are that traditional, teacher-led classroom discussion provides little opportunity for learners to talk at all; that such opportunities as they have confine them to an essentially passive role responding to the teacher's frame of reference; and that therefore the potential power of talk to aid understanding is not called upon (Wells, 1985; Wells and Nicholls, 1985).

The extent of the loss that this represents is demonstrated in research which has sought to explore the ways in which school



students can use talk to develop understanding, via the study of small collaborative learning groups (Barnes, 1976, *ibid*; Barnes and Todd, 1977, *ibid*; Eggins (ed.) et al., *ibid* 1979; Hoyles, 1985; Salmon and Claire, 1984). Such studies have not only focussed on the level of social and cognitive skills displayed by school children in the group discussions, but have also noted the exploratory characteristics of learning talk that is not organised by the teacher. The offering of a set of meanings by the teacher is inextricably bound up with the process of social control. In small group work, where school students are asked to collaborate with each other to construct shared meanings they must negotiate their own criteria for what is meaningful, truthful or relevant, and this in turn can lead to the construction of a different kind of knowledge, more closely related to the learner's own starting point.

The quotation used at the beginning of the introduction to this thesis continues:

"... When the criteria of relevance are negotiated and not imposed, the Content Frames which participants develop in the course of the negotiation are likely to bear more directly upon the learner's actions since they will be idiomatically related to the frames through which he is currently interpreting the world about him. ... the very indeterminacy of the frames negotiated in our groups was a condition of their developing new understandings; the members of the groups were able to explore alternative meanings rather than to rehearse an established Content Frame taken over from a teacher."

Rosen (Barnes, Britton, Rosen and the LATE, *ibid*, p 81) made a similar point in a much more informal way: "We are saying that it is as talkers, questioners, arguers, gossips, chatterboxes that our pupils do much of their most important learning."

Key ideas which emerge from those studies are:

- the 'Transmission'/'Interpretation' dimension in teaching (where Transmission equates to a view of teaching as supporting the acquisition or recording of information, whilst Interpretation equates to a view of teaching as supporting cognitive and personal development, a concern with pupils'

- attitudes, an awareness of the context in which a learning task is carried out, and a willingness to allow pupils' work to influence the direction of further teaching
- an emphasis on speech as a means towards reflection and exploration as well as a means of communication
 - the demonstration of the high level of communicative skills which children bring to discussion in the classroom, skills which can be mobilised to aid learning but which go under-utilised in much of classroom life
 - a view of learning as being made up of a process of interpretation of the new via the articulation of existing understandings and reflection upon their adequacy with regard to new information or ideas. This could equally be expressed as an emphasis upon the power of the everyday knowledge of learners - what students bring to the classroom - as a resource for the achievement of new learning
 - the suggestion that the modes of communication utilised within the classroom are an expression of the way power is exercised in the classroom, and that this affects not only who takes part in learning but also the nature of that knowledge.

"Our point is that to place responsibility in the learners' hands changes the nature of that learning by requiring them to negotiate their own criteria of relevance and truth. If schooling is to prepare young people for responsible adult life, such learning has an important place in the repertoire of social relationships which teachers have at their disposal."

(Barnes and Todd, *ibid*, p 127)

It was noted at the beginning of this section that there were two strands supporting the school of thought on 'Language in Education' that has been discussed here. One strand draws on psychological theories about the role of talking in learning. It happens to be the case that this work has been seized upon by people

concerned with school teaching but the application is general, not specific, and applies to students at any educational level not to school children per se. Thus, the general case, that talking through material that is to be learnt aids the development of understanding, holds for students in higher education as much as for the school students who have been the subject of the work cited in this section.

The second strand consisted of socio-linguistic studies of language in the classroom, which demonstrated that it is the teacher who does most of the talking and that learners in traditional classrooms rarely get the chance to harness the power of co-operative peer discussions - although when they do the gains have been shown to be high. Is this also the case in higher education, that is, do university teachers also talk most, and structure and pace the material to be learnt? As a way of casting light on this, the next two sections look at two important teaching methods in higher education, namely, the lecture, and the tutor-led small group.

"THE LECTURE IS OPEN TO SERIOUS CRITICISM"

"One important justification advanced for the central position given to the lecture is the immaturity of students who are thought to learn more rapidly by listening than by reading No-one doubts that university students are not sufficiently mature to dispense with oral teaching"
(UGC Hale Committee, 1964, pp 52-53)

The traditional lecture method, entailing a fifty or sixty minute unbroken monologue from the lecturer to a class whose size might go up to three figures, has maintained a long-running predominance in university life. Fresh from the examination in the previous section of the evidence concerning the role of dialogue in developing understanding, what is striking in the quotation above is that the alternatives are deemed to be 'listening' or 'reading'. 'Listening' is here given primacy on the grounds that students are too immature to cover the ground rapidly enough by private study. The unstated implication is that lecturers perform a pelican-like

function of pre-digesting difficult material and presenting it to students in more readily assimilable form. Apart from an implicit model of 'the student' as immature and inefficient this quotation also conveys an implicit model of the nature of learning in higher education - a model to which I return later in this section.

The quintessential feature of the lecture is that it is a monologue (Brown and Bakhtar, 1988). The Hale Committee described the lecture as "a teaching period occupied wholly or mainly with continuous exposition by the lecturer. Students attending it may be given some opportunity for questions or a little discussion, but in the main they have nothing to do except listen and take notes" (p170).

Despite the results of surveys of student opinion which showed "a strong student demand for more teaching by tutorial and seminar" (p 115) the Hale Committee also noted that

"...the overwhelming weight of university opinion is that lectures have an essential function, particularly for opening up a subject for students who are not in a position to do it for themselves by unassisted reading, and also for giving more detailed information where suitable text-books are lacking. Lectures have certain advantages over discussion periods in that a continuous exposition, free from interruptions, can be better prepared and more profound than teaching in a discussion period, can cover more ground, and can enable an inspiring teacher to influence more students"

(p 115)

Although the Hale Committee recommended the use of more discussion periods in university teaching, they clearly had reservations about spontaneous speaking by lecturers ("a lecture should be better prepared, more profound and better thought out than what is said in discussion, where the teacher is often replying to a student's question so that what he says is necessarily extempore" p.54) and also about the source of students' preferences for discussion methods ("We sometimes fear that the enthusiasm of many students for more teaching by discussion is derived from the expectation that it will save them trouble and make things easy. Such expectations should be disappointed" p 76).

In fact the lecture showed no signs of being swamped by discussion methods and it has maintained a key position in higher education teaching methods (Brown and Atkins, 1986). Its very centrality has meant that those who have sought to review its effectiveness have felt the need to justify an evaluative exercise that goes so much against taken for granted beliefs.

"The lecture has had a long history as the central method of university instruction. Its usefulness for this purpose has been so much taken for granted that it may seem to many to be almost blasphemous to doubt its value."

(Thouless, introducing McLeish, 1968, p vii)

Nevertheless, in the publication cited above one blasphemer was close at hand. In the conclusions of his study McLeish noted:

"It is clear from the discussion of the previous work and from the experiments reported above that the lecture is open to serious criticism if used as an all-purpose teaching method. It has to be noted that it continues to be used in this way in a great number of institutions of higher learning."

(McLeish, *ibid*, p 47)

This criticism of the lecture as an all-purpose teaching method is based on a series of studies which show the lecture's inefficiency as a means of transferring knowledge from one talking head to the many listening ones. (It is worth emphasising that there is no necessary criticism here of what in Barnes' framework would be called 'Transmission' teaching. The lecture is criticised precisely as an ineffectual mode of transmission.) McLeish showed in a subsequent study that "students who listen to an uninterrupted discourse carry away something of the order of 40% of the information, the theoretical principles and general applications referred to by the lecturer; after one week approximately half of the above material is forgotten." (McLeish, 1976)

The failure for students to "carry away" as much information and new understanding as is hoped from the lecture may mean that "[it] is rarely the case ... that what the lecture covers in an hour is as well understood by the students as by the teacher ... It is easy for a lecturer to over-estimate grossly the amount of

information that students understand and retain from the lecture which he worked so hard at, organised so clearly and delivered with such precision, punch and charm" (Abercrombie, 1970, p 7). This failure arises in the main from lapses of attention or failures of retention or some combination of the two.

In another classic study Bligh noted that lapses in attention are a consequence of an overall decline in physical alertness whilst listening to an unbroken monologue, a decline which is commonly manifested in the form of day-dreaming and "micro-sleeps" (Bligh, 1972, pp 74-75).

Clearly what has not been attended to cannot be retained, so lapses in attention account for some of the loss. However, failures in retention then step in to reduce still further the gain from the lecture. These failures, Bligh suggested, are a consequence of factors such as information overload, due to an over-rapid delivery with too few pauses; to retro-active or pro-active interference from similar material being presented too close together; or, indeed, to an overly slow delivery with too many pauses, leading to boredom.

The limitations of human short term memory ("the magical number seven plus or minus two" Miller, 1956) mean in any case that successful retention over a period of time depends upon the extent to which material has been transferred to the long term memory. This is a process that is aided by the meaningfulness of the material.

The classic studies of Bligh and McLeish and their thorough evaluation of the research evidence provide little support for the central position of the unbroken teacher monologue, and in each case the researchers advocate the addition of varieties of small group discussion as a way of improving students' retention and understanding of material presented in a lecture.

The reasoning behind this is clearly based upon the application of psychological principles pertaining to the attention towards and retention of new materials, and to the rate of work performance of an audience through time.

Bligh suggests that the use of spells of 'buzz group' working (see Chapter Two for how buzz groups are structured and organised) increases attention and maintains it over longer periods because, as

an activity, buzz groups are physically arresting in a way that passive listening is not. "The group as a whole were probably as alert during buzz groups after 65 minutes as they had been for most of the previous hour" (Bligh, 1972, p 184, drawing on heart rates as a measure of alertness).

Buzz groups provide a variation in auditory stimulation, which increases arousal, but they also provide a form of cognitive stimulation because they pose a question or questions to the students, and therefore promote thought. Bligh points out (pp 165-166, *ibid*) that even rhetorical questions promote mental activity: "it is in the nature of our language that they stimulate it, particularly if followed by a brief silence. We are conditioned to try to answer questions that have been asked, even if we have been trained not to shout out the answer." Buzz groups, he notes, not only pose a question, but require students to attempt to answer it, and provide both the time and the opportunity for them to do this. Perhaps most importantly, buzz groups provide the opportunity for students to work on material in a way that is likely to make it personally meaningful, and thus enhance the likelihood that it will be remembered. It is also suggested that by providing variety, they can reduce retro-active and pro-active inhibition.

In a sense all of this is tinkering at the edges if the lecture remains the prime teaching method. Given the strong criticisms of the undiluted lecture method to be found in studies such as those cited earlier, it is intriguing to note that it remains a teaching method dear to the heart of higher education ... lecturers. Beard (1976,) notes that university teachers are on the whole favourable to lectures as a method, and that they consider that lectures enable them to open up topics that students could not tackle unaided. Perhaps the charm of the lecture is that it provides a chance for higher education teachers to enact their role as they define it for themselves, as a chance to display scholarly skills and argument as a model for students to follow? A study at a large American university found that lectures were ranked as the most popular teaching method by tutors (Evans and Leppmann, 1968), the authors commenting that this result indicates "a preference by professors for those methods

which cast the university teacher in his traditional role: standing before the class, giving a lecture, using the blackboard, assigning some outside homework and occasionally giving a classroom demonstration" (pp 56-57). There is conflicting evidence about the extent to which the lecture method is viewed favourably by students. In the Evans and Leppmann study quoted above, students at the same institution ranked the class lecture as their second most popular teaching method. Beard (1976, *ibid*) claims that students praise well-ordered and -presented lectures ... but also 'fairly often comment on poor lecturing technique' (p 100), and that studies of medical and dental students report at best a disinclination to have more lectures, at worst, the suggestion that there should be fewer lectures (Stavert and Wingate, 1966, cited Beard, 1976, *ibid*). Bligh is quite uncompromising in his suggestion, based on an examination of several studies in England, that the lecture is far less popular with students than other more active approaches. Knapper and Cropley (1985) note support for this view from a series of surveys carried out by Lindquist which found that many students "believed their teaching to be 'too uniformly didactic', their learning 'too passive' and their teachers often 'too soporific'" (Lindquist, 1978a and 1978b, cited Knapper and Cropley, p 69).

The criticisms of the lecture cited in this section have led to a number of efforts to help lecturers improve their technique (Brown, 1978). The University of London Teaching Methods Research Unit was a pioneer of the use of audio-visual playback facilities to help lecturers evaluate their own lecturing performance, and this is a method that has been used by staff development units in higher education institutions throughout the country. Ruth Beard (1976, *ibid*) sets out a number of advantages for the lecture method, and devotes a whole chapter to comments designed to coach readers into better lecturing performance. There have also been suggestions that notes accompanying and summarising the lecture content should be prepared by the lecturer and given out to students (Abercrombie, 1970, p 9; Beard, 1976, *ibid*, p 105). The fact that the spatial design of many lecture rooms concentrates attention on the speaker and inhibits interaction among the audience has been commented on

(Abercrombie, 1970, *ibid*, p.8) and practical suggestions have been made for alternatives to fixed straight rows of seating (Smith, 1979 and Smith, 1974). Some of these alternatives now form part of the building fabric of our newer universities and colleges.

Nevertheless the central position noted for the lecture by the Hale Committee seems to continue. Kozma, Belle and Williams (1978) reviewing instructional techniques in higher education claim that "For good or ill, the lecture hall remains the chief and usual meeting place for teachers and students" (p 145).

Chief or usual it may be in some institutions but it has not gone unchallenged. The rise of tutor-led small group teaching methods in higher education was in large part a response to precisely the kinds of criticisms of the lecture that have been considered here. These methods are considered in the next section.

"EVEN TEACHERS WITH THE BEST INTENTIONS"

Ruth Beard (1976, *ibid*, p 121) linked the recommendations of the Hale Report (University Grants Committee, *ibid*) with the findings of a study by Marris (1964) - Marris had found that students would welcome more tutorials or discussion groups - as key influences upon the increasing use of tutor-led small group discussion in higher education from the mid-60s onwards. Whether such studies alone were responsible, or whether the expansion in higher education was a factor (producing large lecture classes so that lecturers needed to add on smaller groups if they wanted to see their students other than as rows of blurred faces) or whether, indeed, the well-nourished and politicised post-war generation of students simply found it easy to express a direct demand for contact with tutors that previous cohorts had suppressed, are all matters for debate. What is certain is that the mid-1960s mark the beginning of a flurry of activity on this front, with two new organisations as key centres for the instigation of research and innovation in teaching practice. These were the Society for Research into Higher Education, founded in 1964, and the

University Teaching Methods Research Unit, set up at the University of London Institute of Education in 1965. But if pressed to name the single most important influence upon the growth of small group teaching methods (1) (and development of understanding of their use) it would have to be the work of one person that was cited. Jane Abercrombie was undoubtedly the seminal influence in this area.

In her book The Anatomy of Judgement (Abercrombie, 1960) she reported on a ten year project concerned to find ways of helping pre-clinical medical students to develop scientific ways of thinking: for instance, to make accurate and comprehensive observations; and to make good and reasonable judgements on the basis of these observations. Some of the difficulties the students had are exemplified in the following quotation:

"students ... did not necessarily use scientific ways of thinking to solve problems presented in a slightly new way. They might be able, for instance, to recite all the lines of evidence for the theory of evolution but yet be unable to use this material to defend the theory in argument with an anti-evolutionist. They might know what the function of a certain organ is believed to be, but did not always know why, nor did they clearly understand on what kind of evidence a belief of that sort was based. When asked to describe what they saw in dissecting an animal, or in looking through a microscope, they often did not distinguish sufficiently sharply between what was there and what they had been taught 'ought' to be there."

(Abercrombie, 1960, *ibid*, p 15)

Two or three years of traditional science teaching at University had little effect on these problems, she noted.

Jane Abercrombie's starting hypothesis was that "we learn to make better judgements if we can become aware of some of the factors that influence their formation" (1960, *ibid*, p 17) and this suggested therefore some kind of experience that would help participants become

(1) The phrases 'small group teaching methods' or 'small group discussion methods' are always used in this thesis to indicate tutor-led small group methods.

aware of the factors that had affected their judgements. The quarry she was hunting was not irrational behaviour but non-rational behaviour (Abercrombie, 1981), namely, the unquestioning and unaware application of taken-for-granted assumptions. This is remarkably close to Piaget's concept of 'reflexivity', but in tracking this quarry, she drew on help from two other quarters. From group-analytic psycho-therapy she took a model concerned with allowing people to talk as a means of providing reality-adjusted rather than autistic thinking. It also gave her a model - and the skills - for her own role as teacher during such talking, namely, the abilities to listen and to cope with the expression of inappropriate hostility. From work in the area of visual perception she took the important concept of a perceptual 'set' and a number of examples (e.g. perceptual illusions) to use as demonstrations of 'the projective power of perception' (p 16). She drew heavily on Bartlett's classic work (1932) whose model of human remembering based on pre-existing schemata bears a family relationship to Piaget's idea of schemata in the developing child's understandings.

She thus had a method - associative group discussion - and a series of materials - e.g. perceptual illusions, a radiograph, a published article on a piece of research - for the groups to discuss. In the last three years her course was run, an objective evaluation was made, indicating that students who had taken the course were able more often to distinguish between inferential and descriptive statements, to make fewer false inferences, to consider alternative inferences rather than a single one, and to be less 'set' by prior experience in dealing with a problem (James, et al, 1965, cited by Abercrombie, 1981).

Jane Abercrombie also worked with architecture students (Abercrombie, 1974b) and used similar methods to those outlined above for medical students as a means of changing students' attitudes (Abercrombie, Forrest and Terry, 1970; Abercrombie and Terry, 1973).

The Anatomy of Judgement has been an extremely influential book and is commonly cited in other work on small group teaching. In passing, we may note that it provided part of the impetus for the 'mutual tuition group' innovation started at Leeds University by

Professor G. P. Meredith (who was also interested in epistemology, and enthusiastic about Bartlett's work) in which the author participated, as described in the introduction. Much more work on small group teaching was to come, some of it linked with the SRHE and the University of London Teaching Methods Unit.

The previous section on the lecture introduced the idea of using small discussion groups (e.g. Donald Bligh's buzz groups) as a means of enhancing the efficiency of the lecture. However, it is important to note that much of the work on small group teaching methods was led by concerns to achieve learning gains quite other than the transmission and assimilation of information. Jane Abercrombie (1970, *ibid*) in discussing the lecture in contrast to small group teaching methods remarked critically that the advocacy of discussion in the Hale Committee report seemed "to be concerned mostly with facilitating the learning of a body of factual knowledge and generalisations" (p 3). By contrast, the case she set out for small group discussion methods rested upon three inter-twined features: (a) the fact that "the group system of teaching focusses attention on the interaction between all participants, students and teachers, not on the polarised interaction of a student with a teacher" (p 4); (b) the potential offered by group discussion "to help participants to discover their own basic assumptions, hitherto unrecognised, but affecting their behaviour in academic, professional or other fields" (p 3) and (c) the possibilities offered by learning from peers (as opposed to dependency upon an authority figure) for developing maturity and preparing for the flexible learning that would be necessitated by the changing circumstances of adult life. (As an aside, it is fascinating to track the influence of Jane Abercrombie's biological training on her educational work: "in organising group work, we take note of two biological facts - that man is essentially a social animal and that he has to undergo an exceptionally long period of development".) Within this general framework, she offered a variety of examples of types of group work: to understand a body of knowledge - but also to learn to assess one's own work, to help students prepare for a future professional role, to provide training in human relations, to promote the experience of and

skills for team work, and to develop creativity.

Jane Abercrombie (1970, *ibid*) located these varied purposes for group discussion within the framework of Bloom's taxonomy of educational objectives (Bloom, 1954) which considers objectives under cognitive and affective domains. Among the recall and recognition of knowledge, evaluating information, making judgements (cognitive domain) and self awareness, attitudinal changes and the development of a personal philosophy (affective domain) are some objectives which the lecturer can meet only to a limited extent. Developing this theme, Bligh (1972, *ibid*) suggested three commonly met aims for learning experiences, namely, (a) knowledge transmission (b) the promotion of thought for problem solution and (c) attitude change. If the aim is knowledge transmission then a lecture-type presentation is one possibility to look to (others might be private study or watching an audio-visual presentation) but as we have seen the lecture's efficiency as a means of transmission can be improved by adding in periods of group activity. If the promotion of thought for problem solution is what is looked for then, in Donald Bligh's words, "the best way to learn to solve problems is to be given problems that have to be solved" (*ibid*, p 33) - and this implies using varieties of small group discussion techniques, or projects and exercises which pose a problem and provide the time and facilities to solve it. If attitude change is desired then one also has to look to sociable educational methods: discussion, role plays and simulations. Our attitudes are formed in social settings, and it is in such settings that they are likely to be changed.

We are, of course, talking about tutor-led small groups in this section. The psycho-therapeutic model at the heart of Jane Abercrombie's associative group discussion necessarily incorporates a tutor into the group - the conductor, in associative group discussions, taking the place of the therapist in group analytic psycho-therapy.

Jane Abercrombie (1970, *ibid*, pp 41-43) summarised the conductor's role under the activities of structuring, supporting, providing an example and encouraging change (and noted that the conductor must not dominate the conversation, p 33). In the psycho-

therapeutic model the therapist is crucial; there is no suggestion that patients can achieve the same good effects simply by talking to themselves; and indeed much of the literature refers to the dependency that may be established upon the therapist, and means to reduce this when the therapy is complete. My personal judgement is that Jane Abercrombie remained committed to this model to the end of her life - and certainly her own enactment of the small group conductor's role was a display of virtuosity within this framework worthy of the greatest respect. It is interesting, therefore, that even in 1970 (ibid) she was quoting with approval examples of the collaborative (i.e. non-tutor-led) mode of group working which is the subject of this thesis, (p 23) and made other similarly approving references in later work (Abercrombie, 1979).

In this later work Jane Abercrombie clearly articulated the purposes of small group discussion as aiming to help students shift from depending upon tutors as authority figures towards taking independent responsibility for themselves and their own learning:

"The group system aims to emancipate the student from the authority-dependency relationship, and to help him to develop intellectual independence and maturity through interaction with peers."

(Abercrombie, 1979, p 5)

Beard and Hartley(1984, p 176) comment that this view is not often mentioned by other higher education teachers (as for instance in Beard's own inquiry into group discussion methods in 1967) and note that

"many teachers see themselves as always in authority ... The possibility that students need to work through their confusions, and will not outgrow them if someone always supplies 'right answers', seems not to be universally appreciated.. ..whereas it is fairly easy for any teacher to maintain the role of an authority, it presents some difficulties to play a facilitating role which allows students to learn from each other."

Despite the effort Jane Abercrombie put into helping tutors overcome these difficulties and other helpful guidance on encouraging students to talk (Beard, 1976 and 1984; Cockburn and Ross, 1977a, b, c and d; Ogborn and Black, 1973; Bligh et al, 1975; Ruddock, 1978a and b) research evidence suggests that higher education tutors play a

similar role in small discussion groups to that played by teachers in school classrooms. Despite its explicitly defined role as a venue for discussion by all participants, tutor and students alike, a predominance of tutor talk, a small proportion of contributions from students and the reduction of students to a passive and responding role often prevail in tutor-led small groups.

As Powell commented in his study of university tutorials:

"It is well known to students, but not to many tutors, that most of the talking in tutorials is done by the tutor. It is clear (from our results) that groups where no tutor is present have available to them almost double the amount of time for verbal interaction available to students in tutor-led groups..."

(Powell, 1973, p 165)

Powell's study, which compared tutor-led and student-led small discussion groups, calculated that each student had two minutes available in a tutorial in which to make a contribution to the discussion. Over a thirty week academic year, with one tutorial hour each week, this gave a total of one hour in the year in which students had the chance to practise verbal skills, to express ideas and arguments, to question and to challenge. More recent research based on a three year study of first and second year psychology tutorials (Beattie, 1982, cited Beard, 1984) also found that in tutorials tutors spoke much of the time.

Analysis of these videotaped tutorials showed that tutors held the floor significantly more often than students did and also that the average length of time for which the tutors held the floor was 'many times longer' (p 147) than the average time for which students did so.

Of equal significance in this study was the tutor's role in the transition of turns of speaking from one tutorial participant to another. The tutor held a pivotal role being involved in 82 per cent of all exchanges, with students being 'considerably more likely to be followed in discussion by the tutor than by another student' (p 148). These data led Beattie to comment that:

"These data suggest that whatever these tutorials were, they were not in any sense free discussions between equal participants. The talk was being

continually channelled through the tutor." (p 148)

It is clear from such studies that if there are silences in a tutorial it is the tutor who feels responsible for saying something to fill them - and that tutors cannot hold out for very long before giving way to this impulse. Powell (ibid) noted that few tutors in his study could hold out for longer than half a minute's silence without intervening to try to fill it: usually by speaking at length themselves, and in effect giving a mini-lecture. Beattie (ibid) also noted that tutors 'tend to respond to students quickly, indeed with minimal or no delay' (p 149) and also that they interrupted students to gain control of the floor, usually by 'overlapping', that is, starting to speak simultaneously with a student as the student seems to be reaching a potential completion point. Tutors thus 'deny the possibility of a reply by a student by inserting their own contribution just before the possible end of a turn is reached' (p 149).

It seems that students are well aware of this tendency. The tutorials video-recorded by Abercrombie and Terry (1978) show students avoiding eye contact with the tutor and each other during such silences so as to avoid being nominated to speak. If students remained silent for long enough, the tutor would do the work. Even in Jane Abercrombie's own associative group discussions, which are documented examples of a quite outstanding group conductor in action, she records that it would take many meetings for her contributions to reduce, and for students to take over aspects of the group conductor's role (Abercrombie, 1970, p 44). She gives an account of a group discussion lasting one and a half hours, in which she contributed regularly through the first two thirds of the session, 'but during the last third there are two periods of about nine minutes each during which she was silent' (p 43). She made the greatest number of statements, albeit short ones, during this meeting. A count of the number of words spoken showed her moving from second place with 22.3% of the words spoken in the first meeting to fourth place with 9% of the words spoken in the seventh session. Powell's figure of half a minute's silence as the most that is bearable receives some confirmation: "This was followed by a silence

of 30 seconds (which is comparatively long for these discussions) and A broke it by jokingly expressing her own anxiety, 'I don't know what I've done to shut you all up.'" (p 35)

Lecturers and tutors, then, do most of the talking: not only in lectures where we would expect them to, but also in tutor-led small groups where the avowed aim is to get students talking. Nor are attempts by the tutor to change his or her role necessarily effective in modifying the qualities or quantity of student participation. Whilst staff in Startup's study at the University College of Swansea (Startup, 1977) agreed, for instance, that "there is too little input from students" (into tutorials and lectures) and that "many (students) are disinclined to talk at all", it was also the case that staff were, in Startup's judgement, "slow to innovate when difficulties were encountered.". Lecturers in this study sought to restrict verbal exchanges with students to a number of prepared topics, and few made any attempt at all to initiate discussion during lecture periods. Some lecturers were indeed aware that they lacked the practical strategies to initiate the kind of discussion they would have liked with students. Startup comments that although many lecturers in the study were grateful to receive feedback from students, they felt they often did not respond to it in a positive and encouraging way. As one lecturer put it "My manner discourages it although my words encourage it" (p 193). Part of this discouraging manner is made up, straightforwardly, of tutor interruptions before students have finished what they were saying, a strategy which successfully regains tutors the floor (Beattie, 1982, *ibid*). In Beattie's study, this strategy was accompanied by lowered rates of student to student contributions, i.e. where tutors interrupted most, students channelled more of their own utterances through the tutor rather than directly to each other.

In this way, quantitative features of the tutor's enactment of his or her role (e.g. how much the tutor speaks) combine with qualitative features (e.g. what the teacher uses an utterance for) to produce small group discussions in which the tutor is dominant, and in which interaction is channelled vertically from students to tutors and vice versa, rather than horizontally, between students. An

important characteristic of the tutor's role is that it is the tutor who structures, directs and paces the discussion, as well as consistently applying social rewards or disapproval to what the students say (Abercrombie and Terry, 1978, *ibid*). Tutors open the discussion, nominate some people to speak, decide when to shift the topic, decide if a contribution is relevant to the point at issue, bring the discussion to a close and dismiss the group. These functions are all ones that are exercised in one direction only, from the tutor to the students (Collier, 1980). The effect is that many students become nervous about speaking in front of the tutor, unless they are sure beforehand that what they are going to say will be approved by the tutor. Quotations from students interviewed in the course of a study of university small group teaching illustrate this:

"Well, one minute they'll be saying the idea of the seminar is to help you understand the basics, and then you make a basic statement and they'll say, 'You ought to know that by now'. And of course if you don't know it they tend to sort of jump on you."

(Ruddock, 1978b, pp 17-18)

"And then you get someone who comes in and sort of spouts away ... and they say, 'Any questions?' or, 'Throw things back at me.' I mean, I'm not going to stand up and say anything. You're so afraid of feeling inferior and looking a twit."

(Ruddock, 1978a, p 40)

Donald Bligh (Bligh, Ebrahim, Jaques and Warren-Piper, 1975, p152) summed up this phenomenon rather more formally:

It is frequently not appreciated by teachers in post secondary education that their authority derived from their status, their superior knowledge and their role as examiner, inhibits students. Thus even teachers with the best intentions are frequently obstacles to learning."

(emphasis added)

There is a great deal in the literature of small group teaching that aims to provide guidance for tutors on ways of reducing their dominance. Similarly, courses or workshops on small group teaching have focussed on this theme, with those run at the University of London Teaching Methods Unit serving as exemplars. Many new institutions have explored this area in their own staff development

programmes. The implicit premiss in such literature or such programmes is that tutor dominance is open to change via the assumption by the tutor of new interactional strategies and attention to social psychological factors such as eye contact and proximity (e.g. Abercrombie, 1970, *ibid*, pp 25-26; and Beard and Hartley, 1984, *ibid*, pp 177-183). However, it is clear from the documentation by Jane Abercrombie of discussions she conducted, that even she (a skilled practitioner, working reflexively within a model which uses associative group discussion precisely as a means to reduce student dependency upon authority) was able to improve upon the habitual parameters of tutor-led discussions, rather than change them altogether. We can only expect much more modest improvements, therefore, from the great number of tutors in higher education who have not followed any training in psycho-therapeutic conversations, and who lack her years of work on small group discussion methods. It becomes clear that the problem of student passivity and tutor domination in tutor-led discussion groups is primarily a structural one, with relatively small potential for change being afforded by the tutor's mode of interaction, seating, and so on.

In fact, in their section on 'Encouraging Students to Talk', Beard and Hartley (*ibid*, 1984, pp 177-183) cite examples of the use of student-led discussion groups (i.e. collaborative learning groups within the terminology of this thesis) as a solution to the kind of problem we have been discussing here, but also claim additional advantages:

"In student-led discussion, achievement of a wider range of objectives becomes possible than in most teacher-led groups. Students not only acquire information in an active way which enables them to assimilate it more readily into their store of knowledge; they are also able to develop skills in explanation and questioning, in commenting on and criticising differing views expressed by their peers and in summarising contributions to discussion. Generally, such methods foster co-operation rather than competition. These methods, therefore, assist students in developing the skills of communication and co-operation required in the modern world."

(p 182)

Powell (ibid, p 165) sums up this line of thought succinctly: "If we want to encourage our students to discuss then we (the tutors) should keep out of the room." This echoes a suggestion once made by Piaget that for every class of pupils there should be two classrooms: one where the teacher is and one where the teacher isn't (Ripple and Rockcastle, 1964).

The heart of this thesis is an examination of what happens when the force behind these suggestions is acknowledged and the tutor provides for collaborative learning situations - whether this is achieved literally by the tutor's leaving the room, or metaphorically by the tutor occupying herself with other affairs, whilst students work co-operatively. The learner's experience of such situations is likely to be very different from the experience of learning that is tutor-orchestrated. The next section considers the implications of these differences.

"THE PRINCIPLE OF MUTUALITY"

The previous three sections have in a sense focussed upon teachers' and tutors' actions, and upon the effects of these actions on features of the "educational conversation" (Inglis, 1985). Objective features of the learners' participation in these conversations have been set out, but their subjective experiences have only been touched on. In this section I want to consider work that focusses on the learner's experience of self in a learning situation. In particular, I want to examine the inter-relationship between mutuality in learning situations and the learner's sense of competence and self-worth.

The inter-dependency of cognition and affect has its roots in the developmental psychology of the young child. Theorists have posited a reciprocal relationship between the emotional attachment to a care giver which provides the necessary security for the child to initiate (at her own pace) a process of detachment, in which the child moves away to explore the surrounding world (Bowlby 1981 and

1982). The force behind this exploration is deemed to be the urge to achieve mastery and competence. Thus, while the young child will protest if the care giver to whom he is attached moves too far away (in a strange environment) or out of the room (in a familiar one), the same emotionally secure child will voluntarily and without distress put distance between himself and the care giver in order to act upon some feature of the environment: pick it up, bang it, taste it, drop it.

The strength of the reciprocity between attachment and exploration (attachment precedes and enables exploration) is demonstrated most strikingly and most sadly in cases of young children (and young monkeys) who have not been able to form secure attachments, where the urge to act upon, to explore and to achieve mastery over the world is submerged in fear (Bowlby, 1965). That it is necessary in later life to feel secure about one's self in order to learn successfully is demonstrated in the large number of studies of the learner's self concept. Such studies indicate that the learner's self esteem is a more powerful indicator of school success than I.Q. scores and social class, with high self esteem being strongly associated with academic success. (Fontana, 1981; Burns, 1982).

Emler and Heather (1980) have emphasised both the social character of learning and the idea that 'intelligence' derives from the social context in which the individual is situated: "we would propose that it is groups, not individuals, that adapt to their environments and that this is the basis for the peculiar genius of the human species. We are a successful species because we cheat; we tell each other the answer" (p 145). They cite Humphrey's work (1976) on the social psychology of intellect, which suggests that the high level of intelligence of primates can be explained by our creation of a social environment which poses problems of an order that need the exercise of a high level of intelligence for their solution. "It is other people who routinely pose for us the most complex problems that we encounter in our daily lives" (Emler and Heather, *ibid*, p 146).

This 'social' formulation of intelligence has already been

touched on in the first section of this chapter. It owes a great deal to the work of Vygotsky - who made a similar point to Humphrey's, above, about the role of the social environment in explaining the evolutionary shift in intellectual capacity for the primates and above all for humans. He also argued strongly for the importance of social institutions and forms of social relations as shapers of our thinking. The point here is not to recapitulate that theme, but to extend it to a consideration of the implications of the social nature of learning - for the learner's self. Phillida Salmon has commented that "knowing ... more than most concepts in psychology, blurs the edges between cognition and affect" (Salmon, 1980, p 6). She also bemoans the current dichotomy between clinical psychology (which focusses entirely upon feelings without acknowledging the role of thought in forming those feelings) and the educational psychology of learning (which considers remembering, skills, and thinking, for example, but leaves out feelings altogether).

One could well add that knowing, more than most concepts, blurs the edges between psychology and sociology. For knowing, as was discussed in section one of this chapter, is achieved within a social context which affects the knower and what is known. Even beyond the physical presence of others (of course much formal learning does go on in the physical presence of others) we internalise the 'significant other' (Mead, 1934, *ibid*) such that we make inner reference to the other even when learning alone.

Franz Fanon (1968) argued that the self is dependent upon other and this in turn means that "personal identity is dependent upon the confirmation of others; one cannot feel an identity unless one is acknowledged by someone else" (Salmon, 1980, *ibid*, p 12). Wańkowski (Raaheim and Wańkowski, *ibid*, 1981) similarly argues that "the basis of a healthy personal existence is not individual but that of persons in relation to one another (p 70). This framework is supported by Erikson's model in which the development of maturity is based upon the need 'to get' (i.e. to receive confirmation from others) but also 'to be a giver' (i.e. to give confirmation to others) (Erikson, 1963, p 70). Mutuality is therefore not a threat to the full development

of the individual (as practitioners who predicate their teaching around competition apparently believe) but instead is the basis of individuality. Mutuality serves in later life to provide the secure basis for exploration in learning that is provided in childhood by attachment to the care giver. This point is emphasised by Sandven (1979) who notes the related needs for protection and exploration in the achievement of self-realisation.

Wańkowski's (Raaheim and Wańkowski, 1981, *ibid*) experience as a student counsellor at a large civic university afforded him many instances to observe the inter-relatedness of cognition and affect. In particular, he noted that teaching relationships which did not allow the development of mutuality between learners were likely to lead to "reactive depression and the loss of coping power." (p 110) or to "feelings of disenchantment, boredom, futility, helplessness and unexpressed anger turned into depression" (p 150).

Since learning inevitably involves some experience of not coping rather than coping, some instances of failure rather than success, the question is how to insulate the individual from the effects of such negative experience and ensure that a vicious circle of failure - leading to feelings of incompetence and low self esteem in their turn leading to lowered targets or learning evasion - does not become established? For Wańkowski, the answer is clear: "how can training to endure the hardship of bouts of incompetence be best arranged if not in experiencing those stresses in company of others who can, such is the nature of sociability, help to shock-absorb doubts, loss of hope and helplessness" (p 154); and also "the ways of helping the student to cope with his studies are clearly based on the principle of mutuality and as such depend entirely on the provision of social interaction in learning/teaching transactions which creates a climate of security and challenge ... the mainsprings of building up coping skills in study are those of mutuality of social transactions" (p 155); and again "the social context of active learning seems to be beneficial in combatting apathy and despair" (p 130).

The experience of sociable interaction and mutuality is afforded by learning experiences which require students to talk to

each other and to work co-operatively, not in passive learning situations in which learners listen to and write down the tutor's formulations. The case set out by Wankowski traces a connection between the satisfactory and supportive experience of self in co-operative learning situations and the facilitation of mastery. The experience of the self as competent (and therefore of worth) thus grows out of the mutuality provided for in collaborative learning situations. Referring back to Donald Bligh's point cited in the third section we may also note that this relationship between mutuality, self worth and competence can be reciprocal and can provide the basis for a virtuous circle. Not only is being faced with problems the best way to learn to solve problems, but successful problem solution feeds back its own positive messages supporting a sense of competence and self worth - and the ability to cope with future problems. The model set out here is essentially based within a clinical framework, but experimental studies (Johnson and Johnson, 1980; De Vries and Slavin, 1978; and Yeomans, 1983) have also supported claims about the relationship between co-operative goals and feelings of self worth.

The message about self carried by the kinds of 'educational conversations' discussed in the first three sections of this chapter at best focusses upon the learner in isolation from her peers rather than in co-operation with her peers; at worst sets this individual learner in competition with her peers. Additionally, since the tutor is the decision-maker, the pacer, the structurer of what is to be learnt, as well as the voice that expresses it, the experience of competence and authority resides in the tutor, not in the learners. Fleming (1978) has argued that unfortunately "teaching rather than learning is seen as the fundamental activity of education" and that such a focus tells us little "about how learners can manipulate their environment to achieve their own learning purposes" (p 362). He goes on to claim that

"this emphasis on teaching has distorted our image of the learner. While within the constraints of the system, teachers are seen to be planners and decision-makers, learners are seen as recipients and reactors whose responses are determined completely by the teaching

system. What we claim is 'helping learners to learn' in practice becomes 'ensuring learners cannot but learn'. They are seen as characteristically incompetent."

(p 362, ibid, emphasis added)

The competent learner, by contrast, is one who is a planner and a decision maker with her own set of learning purposes and who manipulates the learning environment to achieve these purposes. The competent learner is supported through learning difficulties by a network of mutuality. Collaborative learning situations provide the conditions for such mutuality, and for the exercise of such decisions.

This discussion of mutuality and competence has brought us to a point where considerations of power and authority in the classroom must be confronted. For it seems that the hidden rubric of the promotion of mutuality and competence is not only that such a strategy gives the learner messages of self worth, but also that its true realisation requires that learners become decision makers. Teachers, it seems, cling to their role as decision makers with good reason for as Inglis (ibid) has commented, in a discussion of Bernstein's work, "once you as a student are able to interrogate the pacing, sequence and significance of what is taught, the authority bases of the classroom are dissolved" (p 85). This theme is taken up in more detail in the next section.

"THE SKILLS OF FREEDOM"

"There are indeed battalions of teachers, in the deep complacencies of universities as well as the dismal mediocrities of many primary school classrooms, whose effective preferences for cowed submission and leaden, truculent concessiveness are actualised in curricular practices best vivified in Michel Foucault's analysis of the ideal modern prison, in which the warder's surveillance of the prisoners would be made total and therefore totalitarian."
(Inglis, ibid, p 123. The reference is to Foucault, 1977)

This vivid accusation (of guilt by association!) serves to point up sharply the importance of the issue of power for a discussion of collaborative learning. For if students can use their own talk to develop their understandings (as set out in the first section) and if, because of the tutor's habitual lack of recessiveness, they need space and time to do this independently of the tutor (as set out in the second and third sections) and if they are to create the horizontal inter-connections between peers that are the essence of mutuality (as set out in the fourth section) then all of this has implications for the nature of the power relations between tutor and students, and thus in turn for the power of students over the making of their own knowledge.

It is instructive to reflect back upon the material presented in the first four sections of this chapter from the standpoint of those educational commentators who have inter-related discussions of power in education with commentaries on educational discourse. Despite different political and theoretical starting points, the writers to be considered in this section have all homed in on the educational conversation as a marker of the distribution of power and - most importantly - as a profound influence upon the nature of what is learnt.

The most famous account of the inter-relationship between social relations, modes of social interaction and forms of knowledge is that set out by Bernstein (Bernstein, 1982). His account draws our attention to 'visible and invisible pedagogies' (Bernstein, 1977) and to the idea that control over knowledge making may be exerted, even 'invisibly', in the way in which that knowledge is coded. Bernstein's concepts of Classification and Framing suggest that the strength with which knowledge is categorised (Classification) and segmented in time (Framing) expresses the degree of autonomy that is available with strong Classification and strong Framing precluding the exercise of choice even for the teacher.

Bernstein's main concern has been to explore the way in which 'educational knowledge codes' aid the reproduction of certain social structures and forms of social relations - and ultimately, of certain modes of personal identity. Bernstein has suggested that his work

"offers one interpretation of how the category class is constituted in our consciousness and inasmuch as it is successful in its endeavour, we can see a little how things can be different and also our relationship to things ... The thesis ... asserts categorically ... that there is a causal relationship between the structure of social relationships and the structure of communication. ... family and education shape mental structures and so forms of feeling and thinking which may militate for or against changes in cultural reproduction" (Bernstein, 1977, pp 29-30).

Whilst this structured inter-relationship between social class, family and education has been a major focus, Bernstein has also been concerned to examine some of the minutiae of the everyday exertion of control in schools (and in families). Meanings, he argues, are generated by particular forms of social relationships: "behind any given classification and framing are the power relationships and the fundamental principle of social control" (1977, *ibid*, p 11). Bernstein has used these ideas to explore the differential access of pupils from different social classes to the means to reflect upon and change meaning structures, and has also applied them to an analysis of pedagogies, for instance, the 'invisible' pedagogy of progressivism. On a few occasions the notion of mutually equitable social relations is incorporated into the thesis:

"... where the classification, and in particular the framing, is relatively weak, then the time-dimension of the pedagogy is likely to shift towards the present. With such a coding of educational knowledge, one would expect that the transmission would be more oral, and the learning a co-operative rather than a privatised activity" (1977, *ibid*, p 9)

Again, in a discussion of the role of ritual in education (a discussion that was much influenced by Mary Douglas's (1970) work on purity and danger) he argued that:

"As structures change from stratified to differentiated so does the emphasis shift from the significance of adult-imposed rituals to pupil-generated rituals, from rituals celebrating dominance to rituals celebrating participation. Thus ... a shift from stratified to differentiated [transmission] changes the power relationships of pupils and the peer group becomes an

important source of identity, relation and order. It follows that the contents of learning are increasingly drawn from the contents of the peer group..."

(1977, *ibid*, p 5)

One of the themes of Bernstein's later work is a concern with the way symbolic arrangements are shaped by the 'distribution of power and the principles of control' (1977, *ibid*, p 171) and the way in which such symbolic arrangements become part of our interpretive procedures. This line of thought reinforces the Marxist suggestion that to be aware of the principles upon which our condition is based enables us to take action to change that condition.

This is consonant with the view of another writer who has considered the nature of power in the learning exchange, namely Paulo Freire. Freire (1972) contrasts the ideas of 'banking' education, defined as transferrals of information, with 'problem-posing' or 'liberating' education, which 'consists in acts of cognition' (p 51). 'Banking' education, in which ignorant students receive and file away information deposited in them by an all-knowing teacher is predicated upon the narrative: "education is suffering from narration sickness" (p 44). Yet it is communication, he argues, which gives life its meaning, and in which authentic thought is to be found.

Problem-posing or liberating education, he suggests, must be realised in a dialogue, in the course of which, by reflective naming of the world, participants create for themselves the means to change it, i.e. create conditions for their own praxis. Whilst this process carries with it the dangers on the one hand of 'verbalism' - chatter without action - and on the other of 'activism' - unreflective action for action's sake - the middle course where a true dialogue is set up both requires and generates critical thinking. This is a process which cannot be achieved alone.

For he argues that "To speak a true word is to transform the world ... To exist humanly is to name the world, to change it" (pp 60-61). He goes on to add that "no one can say a true word alone - nor can he say it for another ... If it is in speaking their word that men transform the world by naming it, dialogue imposes itself as the way in which men achieve significance as men. Dialogue is thus

an existential necessity" (p 61). "Without dialogue there is no communication, and without communication there can be no true education" (p 65).

Co-operation (rather than domination or subjection) is an integral part of Freire's 'dialogical theory of action'. He uses Buber's (1958) notion of 'I - thou' relations and 'I - it' relations to contrast the relations which characterise dominance and those upon which dialogic co-operation is based. In dominance, one person acts as subject with others as the objects of his or her acts: an example of an 'I - it' relation. In co-operation, the parties involved recognise each other as co-subjects: an 'I - thou' relation, where each 'I' meets the other as a 'thou' (not as an 'it'). Such co-operation among co-subjects "can only be achieved through communication" (p 136). The result of this enterprise, to re-cap, is the "critical analysis of problematic reality" (p 136) which is a pre-requisite for praxis, i.e. for reflective action upon the world in order to change it.

Action upon the world in order to change it is the exertion of a form of power contrasted with the powerlessness which is expressed in a relation in which students are the objects of another's teaching. David Nyberg (1981) has argued that we have ambivalent feelings about power (which we commonly view as the exercise of coercion, and therefore bad) and an over-romantic view of freedom (usually deemed to be good, without stringent analysis). Nyberg offers an ethical analysis of power and relates it to "the skills of freedom", namely the skills of autonomous, moral action, suggesting that because power cannot be avoided in social relations ("one can only avoid thinking about it and understanding it" p 172) knowledge about power can and should be taught, and integrated into educational ethics.

His analysis views power as an intrinsic part of all social relations involving two or more people and some plan for action; thus power (and freedom) 'have to do with what has not yet happened' (p 173). He identifies four forms of power: force, fiction, finance and fealty. Each form of power depends upon consent in one form or another, on a continuum ranging from acquiescence under

threat of sanction at one end to commitment through informed judgement at the other - the latter being seen as an educational ideal.

Fealty, defined as 'faithfulness or loyalty that is based on trust and mutuality' (p 80) and as 'reciprocal, co-operative commitment' (p 81) is deemed to be the most stable form of social relation and the highest form of power. At the heart of this form of power he puts both a psychological aspect, namely the capacity to form a plan or intention (which in turn is rooted in a sense of the self as capable of accomplishing a planned change) and a social aspect, in that plans for action must be realised in relation to other people. This conception "emphasises the thinking person's ability to imagine circumstances that do not yet exist, to plan the realisation of what has been imagined, and through co-operation to achieve that planned set of circumstances" (p 59). However, he suggests that the nexus of power for teachers in educational institutions is commonly the financial one, where students 'pay' attention and hand over choice to the teacher in return not only for the obvious rewards of diplomas, grades, degrees, but also for the more subtle social rewards for conformity and passivity that make up the hidden curriculum. Students learn 'to accept and adopt the teacher's plan for action even when it means surrendering their own.' (p 77) ... "In the reward system of the hidden curriculum, the student bears the cost of conforming to classroom custom in return for the prized benefit of teacher's praise" (p 78).

The skills of freedom, however, must be those of autonomy, in which goals are self-chosen and therefore rewards intrinsic to their accomplishment.

"The skills of freedom, then, if freedom is considered to be more like autonomy than anomie, would be the skills of directing, controlling, regulating, influencing, restraining and administering. Speaking generally all of these actions depend on imagination, foresight, planning, respect for evidence, control of information, and some understanding of organisation. An autonomous person would be one who is able and disposed to conceive of circumstances that do not yet exist but are plausible, to make judgements based on evidence

that is likely to bring about the desired change in circumstances; to alter a course of action as new evidence warrants; and to organise available resources to help accomplish the plan. ...Skills in posing questions (imagining, hypothesising), gathering and assessing information relevant to the question, and then posing a plan for action - these skills are at the core of modern education for freedom and for power." (pp 175-176)

These skills are also at the core of successful collaborative learning - and the action component within them precludes their exercise within the confines of a passive, recipient role for learners.

The significance of an examination of power relationships in education is that it helps us to clarify some of the consequences of truly collaborative learning. We begin to appreciate that the power base of collaborative learning is markedly different from the power base of tutor-directed learning. Placing students in situations which require (or permit) them to plan a future course of action, to seek out evidence and set up a co-operative organisation for evaluating and using that evidence, and for achieving the course of action hands over to students direct power over their own learning. (It is possible, of course, that some tutors who use collaborative methods may not realise this, in which case one would expect conflicts to arise and the collaborative learning experience to be less successful.) To plan and to take action is a very different experience from participating in or hearing about another's plans and another's actions. What is learned about the self is obviously different in these two situations; what is learned about the subject of study must also be different, analogous to the different things one can learn about music from listening, from performing, composing and improvising.

It is clear that different forms of communication in education carry with them hidden messages about power, that is, about the social relations between students and students and students and tutors, and about whose plans for action are the ones that are significant. Regardless of what liberal good-hearted tutors may believe about themselves, so long as it is their narrative that

predominates students are excluded from the shaping of their own knowledge, because they are precluded from creating and following through their own plans for action. Particularly, the vertical structure of the tutor narrative, from the tutor to several listening heads, creates a situation of anomic powerlessness for individual students, in which the tutor's plan of action is applied to them. For students to become active shapers of their own learning (and few tutors in higher education would not pay service to this ideal) requires a cessation of the tutor narrative in order that students may collaboratively construct, in dialogue, their own plan of action. But "whatever we do, the doing does something to us" (Wańkowski in Raaheim and Wańkowski, *ibid*, p 151). The message for higher education tutors of this brief consideration of power in education is that giving up ownership of the educational narrative is also to give up to students a significant degree of power over the shaping of learning. Perhaps an intuitive realisation of this explains the reluctance of some tutors to try small group methods and the lack of success of some of those who do, as discussed in section three of this chapter.

"COMPETENT SELF-TEACHERS FOR LIFE"

The last ten years have seen a significant re-definition of the contribution of education to an individual's life. Phrases such as 'recurrent education', 'life-long learning' and 'continuing education' make a qualitative shift in thinking as compared with the approach that has been thought of as 'adult education'. For whilst 'adult education' can be argued to have provided elements of second chance for some adults, and a kind of cultural sweetener for others, the model upon which it was based was (as has been pointed out by many commentators) essentially a 'front-end' one, with an assumption that in the main initial participation in full time schooling and higher education would prepare people for living the rest of their

lives.

This assumption has been swept away in modern industrialised countries.

"Increasingly we have come to realise that education and training cannot adequately be provided by school and post-school ('front-end') provision; for a variety of personal, social and vocational reasons, adults need to be able to return to education and training throughout life, to explore new avenues or pursue existing interests further ... Post-school education and training is increasingly seen as a continuum permitting many different combinations of modes of attendance, subject areas and levels of study intended to meet the almost infinite variety of students' needs and motivation."

(Lloyd Jones, 1977)

An American commentator has noted that "almost everyone is in favour of lifelong learning" and that the implications of this are a decision about whom the learning society should serve: "if the answer is everyone, then the learning society will have to bend its efforts towards helping everyone experience satisfactions and success in lifelong learning." (Cross, 1978, cited McIntosh, 1979).

In order to do this, it is necessary to set up a supportive structure and easy access to learning beyond school. But there is also another important factor, namely the extent to which the experience of initial education prepares and encourages the individual to keep on learning throughout life.

Several commentators have noted that schooling and initial education may turn some learners away from continuing learning. Powell (1981, p 209) in a discussion of independent learning suggested that:

"much of our teaching, however well-intentioned, is not designed to promote independence of mind. Some of our best students are so 'turned off' that they decide to discontinue. Others find the system sufficiently congenial to be able to persevere to graduation but are then ill-prepared to operate beyond the familiar confines of text books and laboratory manuals."

Wankowski (1981, *ibid*) spoke of higher education students showing only a "thin skin of tacit compliance with the tediousness of

book-learning" (p 23); whilst Cross (1978, *ibid*) noted:

"The same things that led to relatively early school leaving undoubtedly contribute to lack of interest in returning. It appears that those things are significantly related to how education makes people feel about themselves."

In an analysis of continuing vocational education the present author (Todd, 1983) has argued that the learning process in earlier stages of education needs to be designed with the principle of lifelong learning in mind so as to foster the willingness and the competences to continue learning throughout life. Wankowski places this lifelong orientation at the heart of the teacher's role: "I define skilled teaching as a facility for organising people's learning in such ways that they become competent self-teachers for life" (1981, *ibid*, p 160).

Perhaps the most thorough working through of this theme is that by Cropley, and by Cropley and Knapper. Cropley (1981, p 58) makes a valuable distinction between lifelong learning and lifelong schooling:

"For lifelong education to avoid becoming lifelong schooling, lifelong learning would have to be carried on by individual people in response to their own perceived needs, at their own speed, and so on. This means that self-directed learning would assume particular significance"

These ideas about lifelong learning convey a view of an 'ideal' lifelong learner. In Cropley and Knapper's (1983) version the ideal lifelong learner is aware of the limit between learning and real life, is also aware of the need for lifelong learning and is highly motivated to carry it out, possesses a self-concept favourable to lifelong learning, and has the necessary skills to accomplish it. These skills, they suggest, include being able to set realistic personal objectives, apply existing knowledge effectively, evaluate one's own learning, locate relevant information, use different learning strategies as they are appropriate (e.g. alone, in groups, with a teacher), and use different media for learning as appropriate (books, audio-visual aids, etc). Cropley and Knapper have such

strong doubts that formal educational institutions can help students to develop these skills that they suggest 'it might be argued that to achieve these goals it would be better if students avoided traditional educational institutions such as schools and colleges, since the latter are so wedded to formal notions of instruction' (1983, *ibid*, p 17).

If these skills are to be achieved, they are quite clear that teaching methods in higher education will have to change: 'away from didactic and teacher based approaches towards more active, student centred methods' (*ibid*, p 18). This point is developed more fully by Knapper and Cropley (1985). In a chapter devoted to a discussion of the types of instructional (and their use of this term seems at odds with the ideals they are expressing) methods in higher education that are likely to promote lifelong learning they devote a section to learning from peers. The theme that students have a great deal to learn from discussions with each other in fact surfaces as a recurrent theme through other sections of the chapter on instructional methods, and indeed, throughout the book. The use of peer-learning techniques (collaborative learning in the terminology of this thesis) has even been designed in as an intrinsic part of the (small) number of higher education courses which have included the promotion of lifelong learning skills in their specific aims. This was the case for a medical school programme at McMaster University in Hamilton (Ferrier, Marrin and Seidman, 1981, cited Knapper and Cropley, 1985, *ibid*, pp 112-113) and also for the curricula of five teacher training colleges in Australia, Hungary, India and Singapore. These colleges all participated in an extensive development programme (monitored by Cropley, 1981, *ibid*) attempting to incorporate lifelong learning as a guiding principle in their teacher training courses. Students on these courses showed "a high level of acceptance of activities such as group learning, group evaluation and independent learning ... while in their behaviour as teachers they attempted to make significantly more use of these kinds of activities with pupils" (Cropley, 1981, *ibid*, p 67). A significant outcome of this programme was the development in the students of positive attitudes towards themselves as lifelong learners. (Interestingly, this was

paralleled by increased professional and self-development activities amongst staff involved in the project.)

The argument underlying Cropley's (and Knapper and Cropley's) insistence upon the importance of non-didactic teaching methods essentially states that:

- lifelong learning requires students to take responsibility for their own learning
- many tutors in higher education currently use didactic instructional modes which do not require students, or give them the chance to develop appropriate skills, to take responsibility for their own learning
- without the chance to practise these skills in early educational stages, students are unlikely to be able to draw on them in later life
- therefore current educational methods in higher education (with honourable exceptions) do not prepare for lifelong learning. They can only be said to prepare for lifelong schooling - if anyone could face that prospect.

Other commentators have discussed features of the kinds of tasks that face adults in their personal and working lives and which generate a requirement to learn. At the global level, Botkin, Elmandjra and Malitza (1979) have argued that the problems facing mankind can only be solved by a form of 'innovative learning' which emphasises group participation to create societal learning for societal problems. At the micro-level, innumerable writers in the field of continuing education - and on teaching methods in higher education - have noted the curious irony that whilst higher education emphasises individual performance, it is in groups of one kind or another - family, friends, work, educational settings, recreation - that we must learn and work successfully as we live our lives. How can one prepare students to function competently in future learning and working groups, without giving them the chance to practise

functioning in learning and working groups? This is the question that underlies this justification for the use of collaborative learning in higher education.

Winding their way through these considerations of the needs of the whole world and the needs of the individual, each of the sections of this chapter implicitly presents a reasoned case for the importance of collaborative learning methods for the promotion of lifelong learning. They have been set out from the standpoint of an interest in collaborative learning per se. However, from a vantage point that looks forward to what happens after higher education the arguments set out here in support of collaborative learning take on an added significance. The themes of : active rather than passive involvement in learning; of the autonomous structuring, pacing and directing of their own learning by learners; of the positive experience of self provided by co-operative learning situations; of learners planning their own courses of future action, and seeking out and evaluating evidence; of the integration of intellect with emotional, affective and social concerns; and of learners as self-empowered and autonomous beings: all these have forward relevance for the individual's learning beyond graduation. This relevance has not gone unacknowledged by the writers whose work has been cited in this chapter: many of the quotations included in previous sections have contained references to the preparation for the learning tasks of life afforded by non-didactic methods. It is fitting to conclude this section with a repetition of one of these quotations, altered to fit the terminology of higher education. (The original is quoted on p 27).

"Our point is that to place responsibility in the learner's hands changes the nature of that learning by requiring them to negotiate their own criteria of relevance and truth. If [higher education] is to prepare ... for responsible adult life, such learning has an important place in the repertoire of social relationships which [higher education tutors] have at their disposal."

CONCLUSION

This chapter has set out a series of theoretical and practical justifications for the use of collaborative learning methods in higher education. It has brought together themes which are commonly left separate, each inhabiting its own niche in educational discourse. Nevertheless, if these themes are set out in relation to each other, as here, an underlying and consistent logic is apparent.

Any one of the areas of work set out in the sections of this chapter forms a substantial case for the inclusion of collaborative techniques in the repertoire of higher education methods. Taken together, they produce a formidable argument. Although the elements of that argument have been addressed to different audiences, even to different levels of education, they are marked by a high degree of agreement about the aims of education and about where didactic educational methods are inadequate. For instance, despite drawing on different theoretical models, the first section on language in the school classroom is in substantial agreement with what is said in the second and third sections about the structure of learning discourse in higher educational settings, and about the penalties imposed by this structure.

There is also a high degree of overlap between the arguments set out in these sections, to the extent that the main 'theme' of one section surfaces as a 'sub-theme' in another - and vice versa. All of these commentators are agreed on an ideal view of the learner as active and self-directing, on the necessity to acknowledge the importance of affect and self-concept upon cognition, on the intrinsically social nature of the learning tasks we must solve, on the need to use initial learning experiences as preparation for learning throughout life, and on the indissoluble link between forms of educational conversations and forms of educational power relations.

They each also give us, whether explicitly set out or glimpsed through a glass darkly, an ideal view of the learner as autonomous, of the learner exercising some degree of freedom over the objects of his or her own learning.

In the rest of the thesis, I want to move on from these visions of what could or should be happening in education and why, to an examination of what the ideal of collaborative learning looks like when practised in higher education. In the first instance, I examine the ways in which collaborative learning tasks may be structured via a discussion of existing literature. This is the subject of the next chapter.

CHAPTER TWO

STRUCTURING COLLABORATIVE WORK

INTRODUCTION

The introduction to the thesis set out five questions which summarise its concerns. This chapter addresses the first of these, namely the question of what collaborative learning methods in higher education consist of in practice. Essentially it looks at what teachers ask students to do when they utilise collaborative learning situations. In particular, this chapter focusses on ways of structuring collaborative learning tasks.

The materials used for this analysis consist of published accounts of uses of collaborative learning. The survey of collaborative methods that follows uses five main groupings, looking first at the learning cell and other dyads, secondly at buzz groups, thirdly at the variety of methods that can be grouped under the title of student-directed learning groups, fourthly at syndicate techniques, and finally at project work.

These classifications reflect differences in the size of the learning group, in the scale of the task and in the length of time allotted to the task, with a not quite steady progression apparent throughout the chapter from dyads and smaller scale tasks to bigger groups and tasks of a larger scale. There are also differences in the amount of prior structuring offered by the tutor. The implications of such differences will be taken up again in the concluding chapter.

DYADS

The smallest possible number of members in any learning group is necessarily two. The dyad is claimed to provide a particularly fruitful setting for learning, in that it minimises problems that may

arise in larger learning groups simply because they contain a larger number of members.

The logistics of finding a convenient time and place to meet are simpler to solve for two persons than for five or eight. The responsibility for contributing to the learning task is even-handed and therefore less easy to evade, whilst turn-taking, sequencing and the inter-relationship of all participants' viewpoints are each structurally less complex operations for a dyad than for larger groups. The dyad is, of course, the primary setting for learning from a developmental standpoint, and the features that support "coming to know" for the infant and young child continue to contribute to learning at a later stage.

One of the simplest uses of the dyad is for the lecturer to ask students to turn to the person next to or behind them for a brief period of discussion which is sandwiched in between periods of presentation of material by the lecturer. Bligh (1972, *ibid*, p 187) recommends this technique as a means of enhancing the retention of lecture material and of making it more meaningful to the students, in that it incorporates periods of activity into what otherwise would be passive listening. The number of students talking together in such 'buzz' groups (see next section for a discussion of 'buzz' group techniques using more than two students) may be larger than two: the charm of the dyad in this particular instance derives from the physical constraints of teaching a large class in a lecture theatre set out traditionally with fixed furniture.

Turning to the student next to them or to the one behind is the most practicable means of facilitating peer interaction in such circumstances, whether students are sitting at tables or in fixed rows. Graphical representations of such group methods are given in Bligh, et al, 1975. As Bligh points out, three is the largest number of people who can interact in a fixed row without the persons at either end of the grouping having difficulty in hearing or seeing each other, and he recommends that "if seating position is uncomfortable the length of a 'buzz' period should be short - even as short as two minutes of class time".

Precisely because of the flexible and informal nature of this

simple use of the dyad there is little documentation of tasks and structures used, and discussion of 'buzz' groups that are formed out of dyads tends not to be separate from discussions of 'buzz' groups formed from larger numbers. They are therefore considered in the section on buzz groups.

The Learning Cell

By contrast, the next use of the dyad to be examined is highly structured and well documented. Group membership of two, and only two, is an intrinsic part of the way the learning cell is structured - to the extent that the technique is rather awkward to operate with a triad, as may occasionally be necessary where a class consists of an odd number of students.

The learning cell technique was pioneered by Marcel Goldschmid (Goldschmid, 1971) of the Swiss Federal Institute of Technology. Goldschmid and Goldschmid (1976) describe it as "a co-operative form of learning in pairs, in which students alternate asking and answering questions on commonly read materials (p 20) and they add that "the learning cell must be highly structured for success".

Essentially the mechanics of the learning cell are as follows:

- Prior to a class meeting all the students in the class first read an assignment and then write a list of questions relating to the major points raised in this assignment.
- At the beginning of the class, students are randomly assigned to pairs made up of student A and student B. A asks B the first question from his/her list.
- B answers the question to the best of his/her ability; the answer may be accepted as adequate, or B may be corrected or be given additional information. When A's question has been dealt with satisfactorily, it is B's turn to ask A the first question off B's list - and the pair continue like this in turns.
- Meanwhile the teacher roves from dyad to dyad, providing feedback and asking and answering questions.

(It will be apparent immediately from this account that the reciprocal question asking and answering which is a simple and easy to manage structure for a dyad does not readily lend itself to a triad.)

The interesting features of the learning cell are: that it is a means of helping students understand written material; that it provides a tight structure, with the commencement, sequencing and closing of the learning task clearly set out; and that it requires learners to ask their own questions about written material as well as to answer those of a peer. Framing questions may often require as much thought as answering them and certainly question asking is a powerful means of advancing understanding (Barnes and Todd, 1977) - albeit one that is more commonly the preserve of the teacher (Barnes, et al, 1969 and 1986).

Finally the technique calls on prior preparation by students as a necessary pre-requisite for the learning cell to function.

One-to-One Learning

Potts (1981) describes the use of dyads in a series of workshops in a history-sociology course at La Trobe University, Melbourne. The workshops lasted for three hours, and incorporated varied learning activities, including periods of 'one-to-one' learning. This one-to-one discussion technique was derived and adapted from Potts' experience as participant in 'self-enlightenment' seminars, and of co-counselling techniques with their emphasis on the "advantage of uninterrupted talking-through" (ibid, p 95).

As might be expected from this ancestry, the tasks in the one-to-one sessions were directed only partially to the academic concerns of the course; a strong emphasis also lay on one-to-one discussion for the achievement of personal awareness and insights into the self for the learners.

In effect, the development of learners' self-awareness at an emotional level was a twin goal along with the development of learners' awareness of the pre-conceptions that are brought to the

study of history. Thus personal and academic concerns were combined in what some students found to be a heavy mixture.

The one-to-one partnerships were given a starter question for discussion; each partner took two turns to talk about this question or topic uninterrupted for two or three minutes. At the outset of the first workshop the trigger question was 'Tell me something about yourself'. The pattern of A talks for two minutes, B talks for two minutes, A has another two minutes, B has another two minutes, was repeated with changed partners, and followed by a full group session in which participants took turns to say something about themselves and about each of the two people who partnered them.

Other questions had longer spots of uninterrupted talk, e.g. 'What is fact?' used two periods of three minutes each for each partner. As the course went on, new questions were added (smaller sub-tasks included, for instance, work on documents and photographs relevant to the Mexican Revolution directed towards judgements about what is fact and what is interpretation) but two questions seen as key to the whole venture, 'Tell me about yourself' and 'What is the Mexican Revolution?' were intended to be tackled and re-tackled anew each week - a repetition which aroused opposition from students by the fourth week!

New 'personality' questions were devised ('What are your main hopes and expectations?' 'How is life best fulfilled?') alongside related 'academic' questions such as 'What were the main hopes and expectations of the Zapatistas?' The activities in the workshops were supplemented by open journals which the students wrote for the teacher about their reactions to the workshop sessions, and by individual essays. Partnerships would also discuss their essays and the teacher's written comments on them, and at some workshops, short lectures were interspersed with the one-to-one periods.

This use of one-to-one learning to develop students' autonomy was, paradoxically, realised by a structure that strongly expressed the stamp of the teacher's authority. The workshop sessions were planned to the minute, the emphasis on the uninterrupted monologue-in-turns is scarcely collaborative, and the teacher laid down strict rules for the conduct of the partnerships, rules that covered even

the students' posture.

Potts notes that the intensely personal nature of one-to-one learning as here construed can be difficult or even painful, but defines this pain as a benefit.

The teacher-centredness and personal invasiveness, the authoritarian structure, the use of monologue rather than mutuality all in their way contribute to make this example the 'near beer' of collaborative learning. However these features are in no way essential to the use of spells of one-to-one working, and a subsequent section in this chapter on student-directed working groups includes an example of one-to-one learning used by Northedge (1975) in a far less rigid way to promote mutual exchange and mutual support.

BUZZ GROUPS

"Buzz groups are groups of two to six members who discuss issues or problems for a short period, or periods, within a lesson."

(Bligh, 1972, p 187)

Whilst the learning cell had written material as its focus and Potts' use of one-to-one learning centred as much on the person as on course content, the buzz group, as defined above by Bligh, takes a lecture or lecture-type presentation as its focus, and is seen as a means of improving the efficiency of that lecture.

In his earlier work (Bligh, 1972, *ibid*) Bligh recommended combinations of teaching methods such as lecture followed by buzz group, buzz group followed by lecture (p 204), or lecture followed by buzz groups followed by practical followed by buzz groups (p 205). Subsequent work suggested variations on these basic patterns, including in the combinations spells of individual work, plenary sessions and circulation to other groups (Bligh, et al, 1975).

Todd and Todd (1979) report the consistent use over a four year period of buzz groups within the lecture either at the beginning, as an 'Anticipation' task, or at the end, for 'Checking and

consolidating understanding'.

'Anticipation' groups were suggested as a means of helping students come to terms with subsequent lecture material that might be conceptually difficult and relatively unfamiliar to students.

"Essentially in this use of the student-directed group, one is providing an opportunity for listeners to play the same kind of active role in the construing of orally presented material that skilled readers use in their approach to written texts: namely, anticipation, exploitation of redundancy, linking new material to existing ways of organising knowledge, and so on." (p 56)

The use of buzz groups for checking and consolidating understanding, by contrast, takes place after the lecture and primarily provides students with an opportunity to retrieve and articulate material covered so far, and to evaluate their own understanding of it.

"It allows for both tutor and students to pinpoint areas of confusion and incomprehension, some of which may be resolved by explanations from other group members... If nothing else, tutors discover how lectures which were crystal clear to the lecturer may be opaque to students. Students have an opportunity to revise material covered so far, aiding their retention and understanding. The duration of such group work can be relatively short, of the order of 20 minutes to half an hour. Both these kinds of group work can take place in the normal classroom or lecture room." (p 57)

Bligh (1972, pp 188-189) lists ten possible objectives for buzz groups:

- for students to achieve clarification of a point
- for the lecturer to obtain feedback on the effectiveness of his/her teaching (by visiting buzz groups)
- to achieve consolidation of learning and understanding
- to teach new concepts and terminology
- to give practice in problem-solving, including information application, analytical thinking, evaluative thinking, critical thinking and an appreciation of research
- to give practice in judging the relevance of material for the

- solution of a set problem
- to release tensions by allowing an opportunity for tensions to be expressed
 - to give breathing space to the flustered teacher
 - to encourage the reticent student to express him/herself
 - to foster a cohesive class spirit by getting many students on speaking terms with each other and by fostering a network of social relations and friendships.

The chosen objectives clearly have implications for the wording of the buzz group task: "The wording of the questions given to the buzz group ... are worked out in terms of their psychological effects (such as the thought required, the objectives achieved and the probable class reaction) ..." (p 127).

Bligh concludes the list of objectives by noting that:

"it is important to see teaching methods in their social and emotional roles, as well as their academic context. Buzz groups can satisfy the need for social interaction ... They may not be possible in all circumstances, but they are in a great many. Most teachers will have some of the above objectives at some time, and buzz groups are an appropriate method of achieving them." (p 191)

Buzz groups were introduced in this section from the standpoint of their relationship to the lecture. It is therefore interesting to note how the list of objectives above branches out into other areas. After the first four, we see objectives that diverge from enhancing the efficiency of the lecture and instead tackle skills and processes that the lecture itself is not so well fitted for.

These skills include problem solving and its component elements and the processes include social and emotional factors that are a far cry from the neutral atmosphere assumed to prevail in the lecture theatre.

Buzz groups therefore provide a buttressing for the lecture, but also allow us to see in an elliptical form, some of the complexity and variety that burgeons in the classroom with the introduction of peer interaction. Because the lecture remains the focus, that interaction is truncated and limited, intentionally, by

the lecturer's constraints.

The use of methods of independent small group work that are sustained over a longer period of time necessitates stepping outside these constraints and provides a central place for educational aims other than those of efficient knowledge transmission. We turn to this more fluid setting for learning in the next section, on varieties of student-directed learning groups.

STUDENT-DIRECTED LEARNING GROUPS

Buzz groups, as discussed in the previous section, were seen as a means of enhancing the efficiency of the lecture method.

This section examines some varieties of collaborative working which are used to replace the lecture, not wholly but in part, and to accomplish purposes other than those which characterise the lecture.

It is clear from the literature, that some teachers incorporate into their range of methods varieties of student-directed group discussion which are of longer duration than buzz groups, but which do not wholly replace the lecture or other content of the course in the way that syndicates commonly do. Because such group work complements, rather than replaces, taught content, and because it may consist of discrete tasks rather than the lengthy serially-linked programme which syndicates often face, it seems useful to consider it in its own right.

A discussion of syndicate working follows in a separate section.

A variety of terms are used in the literature to refer to group work of a similar kind to that discussed here, including 'leaderless groups' (Powell, 1973), 'self-directed student groups' (Beach, 1974), 'mutual tuition groups' (Meredith, 1976), 'discussion groups' (Fineman and Hamblin, 1978), 'student-led groups' (Evans, 1980), 'peer teaching groups' (Gregory and White, 1977), and 'collaborative peer learning' (Magin, 1982), but having used the term 'student-directed learning groups' in previous publications (Todd and Todd,

1979) that term is also adopted here for reasons of consistency. It is abbreviated in the text to 's-d-l' groups.

The tasks tackled by s-d-l groups are generally wider in scope than those that can be managed in the shorter space of time allotted to buzz groups. The degree of structuring offered by the tutor varies, so that groups may work on tightly structured tasks which entail their following a pre-fixed sequence towards an outcome which is desired by the tutor, or the task may be open to interpretation by different groups, with no one outcome or set of conclusions valued more highly. In practice there is often a large gap between the predicted outcomes of group work, based on the teacher's beliefs about the way the groups will understand the task, and the interpretation of the task constructed by the students in the course of the discussion.

S-d-l groups generally consist of between three to eight members - although there are instances in the literature (Powell, 1973, for instance) of groups larger than this.

Since tutors who use s-d-l groups are doing so as a matter of decision and planning, this method of working is used in classrooms whose size and furniture permits movement - of persons and furniture alike. This in its turn means that the tutor can and must take decisions about group composition, decisions which entail consideration of more complicated factors than those which are involved in the planning of the collaborative methods considered so far.

For instance, in the learning cell and other dyads it is the dynamics between pairs that need to be considered: from a sociometric perspective, this is a simple two-way process. Similarly, where buzz groups are used in a lecture in a lecture theatre the immovability of the seating which limits the type and duration of the group work that is possible, also limits choices about group composition. These physical constraints pre-empt the need to make certain kinds of decisions. The review which follows makes it clear that these decisions may be all important for the success of larger and longer running groups.

It is instructive to commence this review with a discussion of

two articles that have become classics in the field. They are the ones most commonly referred to by other authors, part of a central core of references reported as the stimulus points for experimentation with collaborative methods.

Leslie Beach in 1974 (Beach 1974) summarised a series of studies of self-directed student learning groups, by himself and by other workers. Beach's work on this topic arose from an investigation (Beach, 1960) which found that it was the more sociable students who gained most from the experience of working in small independent study groups (using examination achievement as a measure). This led on to subsequent studies of the 'other desirable outcomes', in addition to examination achievement, of such a learning experience; to an examination of the principles of human learning which support this multi-dimensional approach (Beach, 1968a); and to an analysis of the quantity and quality of interaction within self-directed groups (Beach, 1968b).

As a result of his own and the other studies cited (Patton, 1955; Dearing, 1965; Dubin and Taveggia, 1968; Hovey, et al, 1963; Gruber and Wightman, 1962; Webb and Grib, 1967 and Leuba, 1964) Beach was able to put forward a strong case that

"a number of measurable benefits ... such as interest in reading material related to the course and its assignments, quantity and quality of study invested in the courses, increased communicative and interpersonal skills, sense of responsibility for one's own growth and learning, greater enthusiasm for the small group experience, improvement in critical thinking, greater awareness of applications of study material, and lasting curiosity aroused by the learning."

(ibid, p 187)

were the outcomes of working in self-directed study groups. Despite the fact that these benefits were listed as secondary to the main and more cautious claim of the article that 'self-directed small group study does not result in any decrement in subject matter mastery' (ibid, p 197), Beach's work with its positive claims, has encouraged many teachers to try out student directed learning groups in their teaching.

The structure offered to the psychology students who participated in these studies was remarkably open.

"The experimental group was randomly divided further into small groups of five who attended no scheduled class meeting throughout the semester but met at least once a week in their small groups to study and discuss course materials. They met with the instructor of the course on a voluntary basis once every two weeks to discuss course materials or any problems related to the course."

(Beach, 1974, p 190)

Or again:

"The general picture presented by this form of study is that of a small group of college students, usually about half a dozen, meeting together periodically and quite informally to explore and discuss subject matter in a course which has been designed and structured for self-directed study. Contact with the instructor during the course is limited. Typically, the general course of study or the body of material to which the group is to be exposed is outlined in some sort of course syllabus and includes a textbook or specified reading material."

(ibid p 188)

In such an open situation, it is left to the groups to construct their own learning tasks as they go along - albeit with advice from the instructor. Beach's observations on the factors which prevent the occurrence of learning, or which facilitate it suggest that the lack of a clear shared agenda was one of the characteristics of the groups that were the least successful. This lack of a shared programme is evidenced in the following extract from Beach's observations of groups:

"Not all the group read the same material so there are long periods of silence after a question is raised while everyone reads the book or tries to get the point from the text to help in clarification."

Other factors observed preventing the occurrence of learning included aspects such as lack of interchange or synthesis of individual views, lack of interaction ("members are quite oriented to the book before them and this focus on the book makes interaction

minimal", p 194), "quitting" on an issue before real clarification or genuine understanding had been reached and "escape behaviour" - digression, wise-cracking and horseplay.

Groups varied in the extent to which they showed these behaviours, and one obvious explanation is that the causes lie in the groups and their composition. However, all of the factors cited above are ones that can also be minimised via the careful structuring of the task and in the studies cited later in this section we shall see examples of such structuring devised by teachers. However, students are by no means incapable of generating a structure for themselves, as is clear from Beach's observations of factors facilitating learning. These include factors defined by Beach as part of the group's interaction, as for instance:

"Various members of this group cite terms with which they have trouble and then ask others for illustrations of them or enquire what the meaning or implications of the term might be."

"Once in a while someone in this group raises the question as to the relevance today of some of the older studies cited in the text material. This is fruitfully discussed - often with the result that the relevancy becomes apparent. This could likely never be accomplished in class by the instructor." (p 195)

The generation of discrete, shared sub-tasks is most strikingly apparent in the sample observations which Beach classifies as 'factors in the group's modus operandi facilitating learning':

"There is a leader in this group and he starts right in by inquiring what the group members have 'written down on sections of the chapter'. This makes it obvious that this group has each member bring in writing, his comments, questions and insights for the group discussion.

This group meeting begins by member number five presenting an outline of the chapter for the benefit of the others and for discussion.

This group opens their meeting with some initial evaluation of themselves and their

own functioning as a group. A number of ideas are brought up as to how they may become more effective in their group discussions and overcome some of the problems they have had.

This group had an evaluation at the end of their meeting aimed at finding things they could do better next time.

This group does spend time focussing on the text but they seem to do it for purposes of determining finer discriminations and sharpening their thinking and learnings on difficult concepts."

(Beach, 1974, p 196)

(A moment's thought is sufficient to see how each one of these could be re-written from the teacher's standpoint as a discrete task, i.e. a set of directions or steps for discussion for the group to follow.)

Beach adds that such observations of group working as those above "suggest what kinds of instruction and guides might be given to help small groups avoid common difficulties and become better vehicles of college learning." (p 197)

The other article that has become a classic and an impetus to innovation in teaching practice is one by Powell (Powell, 1973) which reported a study of 13 undergraduate tutorial groups in a variety of disciplines. Each group met weekly for 45-55 minutes and was tape-recorded, providing between seven to ten recorded sessions with each group. Some groups also held 'leaderless' meetings but their number was small because few members of staff were willing to give up their teaching role entirely (p 164).

Powell analysed both the participation rates for each group member and the cognitive content of what was said in the group meetings, using a category system devised to represent activities of educational significance. The most striking findings of this study concern comparative aspects of both the quantity and quality of talk in the groups. As we have seen in Chapter One, by far the greater quantity of talk in the tutor-led groups was done by the tutor.

On the qualitative side, Powell noted that the tutors in the tutor-led groups "appear to spend more of their time in providing

information than in encouraging students to advance and develop arguments" (p 168) - despite the fact that tutors also reported argument amongst students as a desirable feature of tutorials. Another qualitative difference between the tutor-led and leaderless groups was in the interaction categorised as 'giving an opinion' - with more utterances in this category for the leaderless groups.

These findings on the quantity and qualities of tutor talk provided more justifications for the use of 'leaderless' groups, and ones that in some senses complemented those put forward by Beach. On the one hand, Beach summarised the demonstrable beneficial outcomes of student-led groups; on the other Powell showed that there are beneficial processes within them - but that the process characteristics are quite different when the tutor is present. As with Beach's work, this paper of Powell's is much quoted, and has been a seminal influence for some teachers.

What of the task structure offered by these 'leaderless' groups? The information given in the paper on this is scanty, but the tasks do seem to have had more in the way of prior structuring from the tutor than in the examples reported by Beach.

"Tutors and students were not given any instructions [by the investigators that is] as to how the meetings were to be conducted although it was suggested to the leaderless groups that they could appoint a chairman if they wished ... Most of the leaderless meetings had a definite topic to discuss which was prescribed by the tutor, they were also usually provided with a handout containing some questions or other stimulus to discussion." (p 164)

There is more information about task structure in the other studies to be cited. It is as if the need to justify the use of student-directed groups has become less pressing in the wake of previous publications, whilst by contrast, the provision of detail about working practices becomes both more necessary, and is also the way in which authors can add to the field.

Fineman and Hamblin (1978) describe a highly structured method that is, like the learning cell method discussed in the section on dyads, directed towards enhancing the students' understanding of

written material. They have adapted the "Learning Thru' Discussion" (LTD) method (developed by Fawcett Hill in 1962), which, in its original form, consists of an eight stage discussion technique for small groups that are led by an instructor. The prior preparation by all group members and the agreed eight stage procedure are a means of making a tutor-led group more participative for all members. The 'pure' LTD method is therefore outside the scope of this thesis.

However, Fineman and Hamblin so adapted the technique that it could be used where only two instructors (the authors) were available for a whole class, and therefore small groups of students worked independently for much of the time, occasionally 'visited' by one of the instructors.

Fawcett Hill (ibid) emphasises the necessity of prior preparation by the students, and outlines a series of steps for them to follow during this preparation:

"OUTLINE FOR PREPARATION

- Step 1 - Definition of terms and concepts
List all the words of which you are unsure. Look them up and write down the definitions of them.
- Step 2 - Statement of author's message
Write down your version of a general statement of the author's message.
- Step 3 - Identification of major themes
Identify the subtopics in the article.
- Step 4 - Allocation of time
Note the subtopics which you had trouble comprehending or which you think would provide a profitable discussion.
- Step 5 - Discussion of major themes and subtopics
Write out a brief statement of the subject matter of each subtopic. Design a question that you would ask for each.
- Step 6 - Integration of material with other knowledge
Write down the meaning or usefulness the material has for understanding other concepts. Indicate what other ideas the material substantiates, contradicts, or amplifies.
- Step 7 - Application of the material
Write down how the material can apply to your own life situation - past, present or future, or what

implications the article has for your own intellectual interests or pursuits.

Step 8 - Evaluation of author's presentation
Write down your reactions and evaluation of the assignment."

(Fawcett Hill, ibid, pp 49-50)

The second phase of work is the discussion group meeting, in which, armed with the preparation outlined above, groups follow the 'Group Cognitive Map' which Fawcett Hill defines as "a procedural tool which outlines an orderly sequence that groups should follow in order to learn from discussion. It is the instructor's job to present this map to the group and to explain its significance and operation." (p 22). (The importance of the instructor's role in the pure LTD method is emphasised when Fawcett Hill adds that there may be both "overt and covert resistance to accepting the Group Cognitive Map. The instructor must assert his prerogative to conduct the discussion group along the lines he thinks best." (p 23))

A summary of the Group Cognitive Map is given below:

"GROUP COGNITIVE MAP

- Step One - Definition of terms and concepts
 - Step Two - General statement of author's message
 - Step Three - Identification of major themes or subtopics
 - Step Four - Allocation of time
 - Step Five - Discussion of major themes and subtopics
 - Step Six - Integration of material with other knowledge
 - Step Seven - Application of the material
 - Step Eight - Evaluation of author's presentation
 - Step Nine - Evaluation of group and individual performance"
- (Fawcett Hill, ibid, p 23)

In 1975, Fineman and Hamblin decided to adapt this technique for use with undergraduates who were following a course in Organisational Behaviour as part of the four year undergraduate programme in Business Administration at the University of Bath. Classes of - on average - 45 students, from both the first and second years of the course, were divided into groups of around seven students. Groups were composed by the authors using an alphabetical listing of their names, and met weekly for two hours. The authors prepared a set of 24 study packs of readings to cover the whole year, one to be discussed at each meeting, covering topics such as 'personality', 'perception', 'technology', 'bureaucracy', and so on.

Students were given as their first reading part of Fawcett Hill's Learning Thru' Discussion, and the authors also prepared a 12 page booklet which described the Fawcett Hill method, the note taking procedures and the steps in the group discussions.

Groups were asked to nominate both a chairman and a secretary for each group session, the former to lead the group through all the discussion steps, the latter to make notes at each of the steps and to act as spokesperson at a subsequent feedback session. These positions were allocated afresh at each meeting.

The authors were initially unsure of the role they themselves should play, and in the event circulated the groups, attempting not to be drawn into a dominating role. The authors built in an additional tenth step into the Fawcett Hill procedure, a step called 'preparation for feedback', where groups highlighted specific points for clarification. These were subsequently presented to the whole class at feedback sessions.

The figure below summarises the full procedure:

Figure 1

Revised "LTD" Stages		
Individual	Groups	Class
Reading, Note taking following Steps 1-8 'Outline for Preparation' (Fawcett Hill, ibid)	Group Cognitive Map Steps 1-9 (Fawcett Hill, ibid). Plus Step 10 'Preparation for Feedback' Chairman ensures points 1-10 are followed. Secretary notes points for feedback session. Instructors sit in with different groups in turn (so at any one time most groups have no access to the instructors.)	Feedback session from all groups drawing on spokespersons

After an initial period of running this method, further adaptations were made in response to student feedback and the teacher's observations.

The main alterations were: the collapsing of Fawcett Hill's stages 5-8 into one step; the development of a simplified and shortened note taking procedure; the incorporation into each session of 'lecturettes' of 15-20 minutes duration; the assignment of a question or short case study to each week's topic to provide a stimulus for further discussion and take the students beyond the reading material; and the replacement of the class feedback session by more individualised attention for groups and for group members, with constant access to the instructors if individuals or groups needed to consult them (Fineman and Hamblin, *ibid*, p 54).

Figure 2

Further Adaptation of "LTD" Stages

Individual	Class	Groups
<p>Reading and note taking following revised Steps 1-6 Note taking Procedure</p> <p><u>Step 1</u>- List terms not sure of and write definitions where possible.</p> <p><u>Step 2</u>- Summary of author's 'overall message'.</p> <p><u>Step 3</u>- Summarise sub-topics and note points not understood. These will be brought up in discussion groups</p> <p><u>Step 4</u>- Note relevance/ usefulness of material for concepts in other parts of the course/ other courses.</p> <p><u>Step 5</u>- Apply the material to your own life situations and note implications for your intellectual interests.</p> <p><u>Step 6</u>- Write down reaction to and evaluation of the assignment</p>	<p>15-20 min 'lecturette' from instructors.</p>	<p>Revised Group Cognitive Map Steps 1-6</p> <p><u>Step 1</u>- Definition of terms and concepts.</p> <p><u>Step 2</u>- General statement of author's message.</p> <p><u>Step 3</u>- Rough allocation of time.</p> <p><u>Step 4</u>- Discussion and evaluation of material: for each subtopic clarification, integration, relevance and evaluation. Notes to be kept of unresolved problems so as to put these to lecturer, either via direct approach or when he joins the group.</p> <p><u>Step 5</u>- Discussion of the assigned question or case study to supplement Steps 1-4.</p> <p><u>Step 6</u>- Evaluation of group performance. Constant access to tutors throughout the group discussions. Groups and individuals approach tutors if help urgently needed. Tutors still also circulate groups.</p>

For this revised version of the procedure, groups were composed afresh. For the first year students new groups were formed (unless the group wished to remain intact) "to provide an even distribution in each group of styles of contribution and attitudes towards the teaching methods" (p 54). For the second year students, groups were composed following a 'mixing principle' developed by Rackham et al (1971) which involved separating the class into groups consisting entirely of 'high', 'mid' or 'low' contributors (p 56), a change which the authors felt increased the groups' effectiveness.

Evans (1980) describes a form of student-led working in French literature courses that shows a similar pattern of individual preparation, short lecture, group work and report-back sessions - without the strong fore-ordained, step-by-step procedure characteristic of the LTD method. Classes of about 40 students are divided into groups of about seven ("although some of the best groups I have observed have been smaller" p 188) which are constituted by Evans beforehand using his knowledge of the students. (Evans notes that grouping by affinity is probably the best method, but he is a little nervous about leaving things to chance; grouping on alphabetical listings, he notes, always puts Abercrombie with Bourdieu and never with Rogers and Ruddock, i.e. students get divided in the same way throughout their careers, so this is to be avoided.)

Evans nominates a chairman and a secretary/reporter for each group meeting, and these roles are rotated throughout the course. For the first two group meetings, two observers are also nominated. "Experience has shown me that organisation is crucial. Students need a very clear structure: rooms, times, dates, names and tasks must all be worked out precisely and published in advance" (p 188).

Of the task Evans notes that "the group must have a very precise task or set of tasks ('listen', 'discover', 'compare'). General topics ('Discuss...') are unsatisfactory (p 189). He also requires the group to produce a report ("in the absence of this goal they will go round in circles...").

Evans thus uses his knowledge of the subject to ask basic questions, directs students to relevant resource materials for answering these questions, and provides pointers for and organises

report-back sessions. The course programme as a whole falls into a sequence summarised in the figure below.

Figure 3 Example of Group Work Sequencing

Class	Individual	Groups	Class	Groups	Class	Individual	Class
Lecture 1	Preparation	Session 1	Report back 1	Session 2	Report back 2	Preparation	Lecture 2

(based on account p 189)

Evans chairs the report-back meetings and helps achieve clarification, synthesis, and negotiation of meanings. During the group discussions the teacher, he suggests, should keep out, or sometimes observe silently, or give occasional brief feedback on the group process only.

Training in the art of small group discussion is provided in schematic form, via a listing of the functions of group chairmen, secretaries and participants, and via suggested procedures for organising meetings. Evans also provides 'de-briefing': a written report on meetings he has observed, and informal oral feedback on 'how it went' immediately after group meetings he has observed.

The flavour of these group tasks is perhaps best conveyed by the example below, taken from the Appendix to Evans' paper:

Figure 4 Example of a French Literature Task

"Extract from course programme (Sartre and biography)

P. Produce four pieces of writing as indicated below. Each piece should be written on a separate sheet of A4 paper, one side only, and headed very clearly A,B,C or D. Put your name on the sheets if you wish, though this is not essential, as they will not be collected for marking but will constitute material for the next seminar discussion.

A A page of the biography of a well known person (this piece could be copied or photocopied from a reference book or a published biography. It could be a 'potted' biography or a page from a larger work.)

(Figure 4 continues on next page)

-
- B A page describing a fictional character (invented by you).
C A page of your autobiography (not necessarily the first.)
D A page of your private diary.

G.1 (NB The group should start by checking that everyone knows everyone else's name.)

Each group is asked to examine examples of A,B,C or D. The task is to ascertain from this examination and from individuals' experience of writing this particular piece, what the characteristics of this form are. The following questions are given as guidelines for discussion but the group may wish to add further questions.

Attitude to reader?
Purpose in writing?
(Entertain? Instruct?)

How revealing of writer's
feelings? Confessional?

Principle of coherence.
What orders the text?
Chronology?

Verifiability?
Objective, factual truth?

'Well written'?
Literary?

Explanation or under-
standing offered or sought?

Principles of selection.
What determines inclusion
of detail or incident?

?

?

R.1 Each group reports its findings. The whole group will attempt to assess what features are common to all four forms and what are the distinguishing features."

(Evans, *ibid*, pp 196-197)

A much simpler but essentially similar approach in literature (the "creative dialogue") was developed by Tighe (1971), who would write questions on the blackboard to act as a framework for group discussion, and then leave the classroom to give the students a period of discussion uninhibited by the teacher's presence. The class would form into smaller groups which elected spokespersons, and discussed the assigned questions. Towards the end of the timetabled hour, the teacher would return and the class and teacher would listen to groups' reports, presented by the spokespersons.

Another example of student-directed work with a not dissimilar pattern to those devised by Evans (ibid) and by Fineman and Hamblin (ibid) is reported by Kennedy (1982) in an account of a Masters course in Applied Linguistics at Birmingham University, which had 'process' objectives as an overt aim alongside content objectives.

Students on this course (EFL/ESL teachers) signed up to work in small independent groups on one of a series of topics. The lecturer prepared a question related to the topic for the groups to work on, and supplied a nominated student chairman for each group with a folder containing photocopies of required readings for the chairman to distribute. All participants read the articles prior to groups meeting without the tutor to discuss the readings, and to plan how they would present their topic to the full class. This phase incorporated a meeting with the lecturer to discuss any problems. The groups met again without the tutor to refine and complete their preparation prior to presentation of their 'findings' to the whole class. Thus a different topic was presented to the whole class each week by a different group. The mode of presentation to the class was sometimes via one group member giving a summary to the class, followed by discussion in the whole class; but sometimes the summary, accompanied by a handout, was followed by dividing the class up into four or five groups to work on a problem related to the topic (which was written up on the handout). Spokespersons for each of these groups would then summarise their groups' discussion, and this would be followed by full class discussion; these two versions are shown in the figure below:

Figure 5

Collaborative Work on an EFL/ESL Course

Preliminaries	Groups	Class
<p>Tutor: Topic, topic-related question and topic-related readings</p> <p>Individuals: Sign up for a topic of their choice</p> <p>Groups: formation</p> <p>Individuals: read assigned materials</p>	<p>Groups hold student-directed meetings, meet with tutor to check progress and continue preparation in student-directed group. (Group size was planned to be 3-4, but some students signed up for more than one topic increasing size to 6-7 individuals.)</p>	<p>EITHER Group spokesperson presents topic, followed by full class discussion</p> <p>OR Group spokesperson presents topic followed by short spell of independent work in student-directed groups followed by report-back from groups followed by class discussion</p>

Northedge (1975) describes an approach which also entails the sequencing of individual work, group work and report-backs, used with Open University students. The structure adopted here, in so-called 'snowball' groups and including a one-to-one phase, is designed to help students who may be shy and unused to sustaining their own viewpoint in academic discussion, nevertheless to find a point of entry into discussion (see Figure 6, on p 89).

Todd and Todd (1979) reported uses of student-directed group work which took account of the differing demands made upon the groups according to whether the task included preparing a presentation for the rest of the class or whether the outcomes of the groups' working remained between themselves and the tutor.

This account was based on the monitoring of some 30 student-directed learning groups per year, over a period of four years, making 120 groups in all. The monitoring was carried out via tape recordings of groups in action, or by collection of written notes produced by the groups, or by the tutors observing groups in action.

Figure 6

"Snowball" Groups

		Approximate Time
Stage One	Individual work (students write notes of two or three points they want to raise.	Five minutes
Stage Two	One-to-one. Students work in pairs (even shyest students must speak, so less vocal students gain confidence in trying out and articulating ideas. Different partner each session. Also allows straightforward misunderstandings of course materials to be sorted out privately.	Ten to fifteen minutes
Stage Three	Small groups of four to six members, (made up of 2 x original pairs plus any late-comers. The bulk of productive discussion takes place here. This stage is enhanced by increased confidence gained from stage two, and by the fact that partners give mutual support.	Thirty to forty-five minutes
Stage Four	Reporting back to the whole class. (Closer to traditional tutorial. Tutor-counsellor tries to synthesise various contributions and summarise them in blackboard notes.) This session gives a purpose to the earlier stages, makes groups aware of aspects covered by other groups but omitted by themselves, and gives students a chance to direct questions to the tutor-counsellor. Also fosters whole-group cohesiveness.	Thirty to forty-five minutes

Groups were set up to meet regularly throughout undergraduate courses in sociology and in applied psychology. The groups generally met in one half of a timetabled two hour period, the other hour being given over to a lecture (which might itself incorporate short spells of 'buzz' group working). Each group's task was to work through topics from the course outline at a rate agreed between the group and the tutor - usually one topic every two to three weeks. These same topics were also covered in lectures, but groups worked through them in a different order so as to spread out demand on library materials. The tutor would visit groups and discuss with them at the outset of the group work essential issues that needed to be confronted for each topic; and visited the group again when they had completed the work on this topic, to check that essential references had been read and discussed, to clear up any misunderstandings, and to check that the topic had been dealt with thoroughly, before the process began again for a new topic.

The groups' task included seeking and borrowing the sources listed by the tutor, and sharing out reading and note-taking on this material between members. The tutors provided guidance and help on this process, sometimes accompanying groups or individuals to the library, or loaning out personal copies of scarce books or articles, and giving advice to groups as to how to tackle the material to be read. In this way a study skills and information seeking element was built in to the groups' task. Groups moved between the classroom and the library, and also met in non-timetabled time in the common room, their own accommodation or the coffee bar.

The tutors monitored the group work by dropping in on groups briefly, by asking group members to keep their own individual record of work done in the group, and occasionally by tape-recording groups. The supervision necessary from the tutor decreased as the students gained familiarity with this mode of working and students began to organise group work at their own pace and in their own way.

"As students build up experience, they become more and more expert in the social and cognitive skills necessary to use such groups successfully. We have found that by their third year of working in groups, students may run their own programme of

group work almost independently of the tutor. They use the course outline, references and lectures given by the tutor as a basic framework around which they organise group work at their own pace and in their own way."

(Todd and Todd, *ibid*, p 59)

It was an intrinsic feature of this mode of group work that the written materials produced were seen as notes kept for the group members' own purposes, and did not need to be kept in a 'public' style.

However, there were occasions where the tutors felt students were ready to cope with, and would gain from, the additional demands of producing an account:

"for someone else (with all the decisions about order and style that this implies)... The emphasis is on producing a finished, well-presented written product which takes account in its structure and style of the needs of a group of people to whom this material may be largely unfamiliar." (p 60)

This meant that in addition to sharing and assigning responsibility for reading and note-taking, and identifying and talking through the issues raised by this work, group members had to make co-operative decisions about the selection and presentation of material for a group report. This was followed by jointly writing up and then sharing the presentation of the finished report to the whole class.

"Since the group is taking on a pedagogic role vis à vis the rest of the class, the demands of this kind of group work are substantially greater than in any of the others [outlined in the same article]." (p 60)

and for this reason the authors limited this kind of group work to one or two occasions during each academic year.

By contrast to these examples where tasks focus upon reading and synthesising course materials, student-directed group work may also be directed towards the performance of certain operations or activities. Discussion supports these activities but they are only partially realised through the discussion, since the activities themselves are also part of the group's collaborative task. Thus

'doing' is added to 'discussion'.

It is interesting to consider two examples of this approach, from contrasting disciplines. It is often assumed that the conceptual operations required by arts and science students are quite different. However, in these examples we see that there is more overlap between Engineering and Sociology than one might at first expect (other than via a contribution from the social engineers of this world).

Magin (1982) describes the use of collaborative peer learning in a laboratory programme for engineering students who were following a third year course in Mechanical and Industrial Engineering at the University of New South Wales. The aim of the programme was to "provide experience in all aspects of the process of experimentation in the service of developing the intellectual skills of problem-solving through experimentation." (p 106)

The use of groups in science subjects' laboratory programmes is a familiar practice in both schools (Barnes, *ibid*, 1976; Barnes and Todd, *ibid*, 1977) and in higher education (Ogborn, 1977; Ogborn and Black, 1973), and it arises, as Magin notes, from such practical considerations as the need to share facilities and equipment rather than from pedagogic considerations. Individual facilities for work in the laboratory often remain a cherished ideal.

Group work in the laboratory therefore goes on with little attention to the 'group' element, i.e. to group composition, task design, group collaborative processes, and so on.

Indeed, such features of collaborative working emerged as a concern during the study (Magin, *et al*, 1976; Reizes and Magin, 1978a; Magin and Reizes, 1979, cited Magin, 1982) of a re-designed laboratory programme which took for granted the tradition of group working without assigning any salience to this method. However during the investigation and evaluation of the re-designed course, it became clear that

"the collaborative activities demanded by the new approach to experimentation was providing a new dimension to the context of learning... these collaborative activities appeared to incorporate the greater part of students'

intellectual engagement with the task at hand."

(Magin, 1982, *ibid*, p 107)

In the absence of any definitive studies of the connection between collaborative learning methods and the development of individual skills in experimentation a further study was therefore set up in 1979 "to investigate aspects of student collaboration in laboratory experimentation settings" (*ibid*, p 105) using a working definition of collaborative peer learning that was noted to be consistent with other contemporary approaches, such as Todd (1981) and Collier (1980).

The tasks assigned to these groups essentially consisted of a series of problems, a different one set each week, which required solution via experimentation and which each contained problematic aspects in skill areas such as the following: problem formulation; determination of appropriate theory; consideration of what equipment to use; designing appropriate measurement procedures and validation checks (p 106).

"For example, one experiment contained as its most problematic element the determination of appropriate theory and the identification and application of relevant sets of equations. ...Another experiment had as its most problematic element the reconciliation and explanation of discrepancies between the empirically derived results and predicted values produced by theoretical analysis; yet another required reaching agreement on what measurements were relevant to the problem posed." (p 110)

The experiments were set up on topic areas such as the 'strain gauge', 'factor experiment', 'tool wear', 'asymmetric heating', 'dynamic balancing', 'black box' and 'drop experiment'.

Students also had to submit individual written reports, which required them to justify and appraise the procedures adopted to assess the validity of resulting findings, and to suggest alternative procedures.

Such a task, which overtly requires students to collaborate in the performance of certain practical procedures using apparatus, covertly demands of the groups that they reach agreement about what

they are going to do next, who will do it, and how, and so on. There is a strong similarity between Magin's account of these groups of third year undergraduate engineering students finding that their task includes decisions which "must necessarily be made at the time of, or before, most manipulations of apparatus" (ibid, p 109) and the effort addressed to this self-same process by thirteen year old school children working collaboratively on science learning tasks (Barnes and Todd, 1977). Such demands varied from one experiment to another - and were thought to be the major source of variability between groups: "the nature and extent of students' collaborative learning activities are very sensitive to differences in the specific requirements of different experiments" (Magin, ibid, p 115).

An introductory 'Methods of Social Research' course for first year undergraduate sociology students might at first thought be expected to be a far cry indeed from a course on laboratory experimentation for third year undergraduate engineers. Yet a case study of collaborative learning in a 'Methods of Social Research' course (Todd and Todd, 1981) shows first year sociology students tackling problems that are similar in several essential features to those discussed above.

Collaborative group work was integrated in this course with lectures and tutor-led work in small groups, during weekly meetings of two hours duration with a group of 22 students. Course content included the design and conduct of social research; ethical issues and responsibilities in social research; sampling methods; methods of social science data collection, such as interviews, questionnaires, and observation; field studies; problems of measurement; and the critical assessment of social research.

"Courses such as this lend themselves to exercises which require the development at a practical level of skills referred to in the literature and in lectures. Thus the framing of group work assignments was often guided by the objective of requiring students to put into practice the themes and principles discussed in lectures.

The assignments were also designed with reference to a developmental framework. Issues which could readily be discussed using

students' existing knowledge and awareness of themselves, their social positions and potential professional responsibilities were employed to define group tasks at the beginning of the course, whereas those at the end required the use and application of abstract methodological concepts.

Problems which could yield a quick solution (that is after only a short time of discussion), were put before those which needed several lengthy meetings. Tasks which involved the use of components of the research process were used prior to those which necessitated the putting together of several of these components. Those which required solving a problem were put ahead of those which demanded the ability to define research problems and present a solution through a research design."

(ibid, pp 8-9)

An example of a group task at the beginning of the course was one in which student groups chose a well known phrase (such as 'look before you leap' or 'too many cooks spoil the broth') and then mapped out how they would set about designing research to test the reliability and validity of the chosen 'old wive's tale'. This set the students to think about procedures such as operationalisation (one group that chose 'look before you leap', for instance, applied it to sharing a house with previously unknown people) and to think about problems of measurement, indicators, the relationship between theory and method, and so on.

Later on, group tasks focussed on exercises related to the substantive content of sociology and instead of the groups' task being to map out how they would do something, they were actually required to perform some element of a total research endeavour. Thus, one task was to construct a questionnaire that could be used to discover respondents' perceptions of the social class to which they belonged. Another group task was to draw up an ethical code for social researchers. Yet another task was to look at statistics on suicide and to descry patterns and underlying trends.

The final group task was to critically evaluate a published piece of research: the students were able to apply to this exercise insights gained from their own earlier novitiate attempts at research

design.

This final exercise had to be written up individually, and although this assignment was the culmination of the first year course, it too was planned by the tutor as part of a developmental sequence - since the first task for students in the next year of the course would be to design and conduct an individual research project on a topic area of their choice, over a twelve week period.

Students' reactions to this group work were collected as part of the pilot work for this thesis, and show the variability of response that a tutor may expect to group work, a variability that relates to both characteristics of the groups and to task requirements.

An earlier account of student-led small group work in an introductory course on research methods that formed part of the social science contribution to a degree in Nursing (Smith and Todd, 1978) required students to carry out small scale studies of a problem related to health care, using either questionnaires, interviews, participant observation or experimentation as a method of data collection. The problems, questions and solutions generated by the students in the course of this toe-dipping into research design anticipated the themes of the rest of the course, and enabled students to relate what would otherwise have been abstractions to their own practice. However there was no attempt in the design of this group work to provide an incremental or developmental sequencing as described in the previous example.

Finally, some teachers have linked the use of student-directed learning groups with the use of media resources or computer hardware: the latter are used to provide structure or information in the absence of the teacher.

Berman, (1974 and 1975), cited in Goldschmid and Goldschmid (ibid, 1976), developed audio-visual materials to structure the work of "Media-Activated Learning Groups", made up of three or more students on a computer systems course at the Technical University of Denmark.

The groups' work was structured into the following six phases:

- "1 An orientation phase (outline, objectives, reading assignments and oral introduction).
- 2 A stimulus phase (mini-lecture, and presentation of a problem requiring a group response).
- 3 A response phase (evaluation of solutions, alone or in groups).
- 4 A confirmation phase (audio-visual presentation of the teacher's solution).
- 5 A validation phase (program deficiencies are referred to the teacher for revisions).
- 6 A review phase with the teacher present (analysis of the groups' comprehension and interpretation)."

(Goldschmid and Goldschmid, 1976, p 19)

An evaluation of this course revealed similar content mastery via the MALG method to that from the lecture format, with a large majority of the MALG students reading relevant materials as preparation for the group sessions.

In some computer programming courses group learning has been introduced on the rationale that since professional programmers work in teams it would be helpful for the novice students also to work in this way; and also on the suggestion that programming can be learnt more efficiently where students work in groups (Du Boulay and O'Shea, 1981). Examples cited by Du Boulay and O'Shea include the debugging of COBOL assignments as a group task (Lemos, 1978) and groups working on the comprehension of COBOL (Lemos, 1979a).

There is a suggestion that the widening use of interactive terminals will foster group work as a method in the teaching of programming. (Outside the teaching of computing itself, and outside higher education, interactive terminals are already becoming a common focus for the work of small groups of learners - the Papert classroom, for instance. A recent study (Hoyle, 1985) has evaluated interactive computer facilities combined with collaborative learning modes for the teaching of mathematics in primary school).

This completes the survey of structures used in the framing of

learning assignments for student-directed groups. The tasks and structures examined have been quite disparate in their style and in the requirements they place upon the learners.

The next section, on syndicate methods, is concerned with a method of structuring collaborative learning that manifests a more unified approach.

SYNDICATE METHODS

It was noted in the introductory section of this chapter that the five broad headings used here to categorise modes of collaborative working are not mutually exclusive; and also that there was a degree of inconsistency in the terms used to denote such work in the literature.

Both the overlap and the fluidity of terminology are instanced in the title of a paper by Evans, considered in the section on student directed learning groups, namely "The use of student-led groups or syndicates in French literature courses" (my emphasis). Evans himself comments on this 'problem of nomenclature' that "'Syndicate' has the disadvantage (for him) of being associated with crime, football pools and French trade unions" (ibid, p 187); he therefore prefers the term 'student-led groups', adding that "the essential feature is, of course, that small groups of students work without a tutor."

This 'essential feature' may be a sufficient distinguishing mark in a universe where the prevailing model is that of tutor-led groups. However, in this thesis that essential feature is satisfied by all the work considered: we therefore have to turn to other features to provide the markers that will help us to classify the 'sub-species' of collaborative working. One such marker noted already is the scale of the task; another is the size of the group, whilst yet another is the extent to which collaborative methods are seen as an 'add-on' feature or as a replacement for the traditional taught course.

The independent group work in the previous section was structured as discrete tasks, used to replace some taught elements. But why not replace the taught elements altogether, some teachers have wondered, and give over conduct of the course (or of a section of it) to independent groups working without the tutor? Such a programme of inter-connected group work, where the group work programme is the course, is commonly referred to as syndicate work. The demands of a serially linked programme without traditionally taught elements are substantially greater than those of the discrete tasks considered so far. It therefore seems useful to look at syndicate methods in a section of their own.

"In a syndicate-based course a class of (say) thirty students is divided into 'syndicates' of four to eight students, and the bulk of the work consists of a series of assignments carried out on a co-operative basis by the syndicates acting as teams, for much of the time in the absence of the teacher. In some cases the syndicate-based work constitutes the whole of a course designed to follow a systematic academic syllabus. In others it constitutes a component of a course designed to develop particular higher order cognitive skills in the students. Either way the distinctive features are three: the small group work is central to the academic study; the assignments are designed to draw on a variety of selected sources as well as on the students' first-hand experiences; and there is some alternation between the work in the student-led syndicates and the tutor-led plenary sessions of the whole class. The heart of the technique is the intensive debate within the syndicates ..."

(Collier, 1983a, pp 3-4)

"The pattern of work has been the following. The class has been divided into six 'syndicates' of 5-6 students and the syndicates have been provided with assignments consisting of 3-4 questions with appropriate, quite specific, references. The members of a syndicate distribute the reading between them and use the lecture periods for discussing the views that emerge and building these into a written report on the assignment. Dissenting opinions may well be included. The lecturer summarises the reports

in a formal lecture, extending and amending where necessary, and following with a plenary discussion. Assignments of special importance in the course are worked by all syndicates; others are worked by two or three syndicates on behalf of the class as a whole. During the syndicate discussions the lecturer circulates among the syndicates. In a course of 26 sessions of one hour 20 minutes most syndicates have completed six assignments. (This is not the only way of organising syndicate work but it is the form the present author has found most effective in bringing about the desired academic motivation)."

(Collier, 1969, pp 431-432)

At first sight, the definition offered on page 100 seems already to have been qualified (taught elements of the course may or may not be replaced altogether, vide the second quote from Collier).

However, if so, it has been qualified by turning the usual relationship between lecture and small group work on its head: in that the content of the 'lecture' in the second quote constitutes a summary and extension (and correction if necessary) of the reports from the syndicates. The 'lecturer' here is not 'lecturing' in the traditional way, but rather is playing the role of informed chairman of the plenary session, providing a synthesis and summary, and highlighting important points. In fact the words 'lecture' and 'lecturer' do not appear in the index of the book on syndicate methods edited by Collier (Collier, 1983).

Collier's work on syndicates has been influential. Documented first in 1966 (Collier, 1966) and in subsequent writings (Collier, 1968, 1969, 1972, 1980 and 1983c and d) he has been able to add to this standard means of academic dissemination of ideas the more immediately practical matter of their implementation.

As Principal of Bede College, Durham, he was able to initiate the use of syndicates in his own teaching and to instigate and encourage their use by his colleagues. Beyond this, he was also instrumental in the setting up of the 'six college project' (Chambers, 1973 and 1983) which evaluated the use of syndicate methods in Sociology of Education teaching at six colleges of education. Because of this background there is a shared family tree that gives a unity of method to much of the published work on

syndicates. Although this unity derives in part from repetition (even including repeated showings through the years of the same film, Twelve Angry Men, as a 'trigger' for syndicate discussion) this achievement represents the implementation of syndicate methods at a number of colleges over a substantial number of years, affecting the learning experience for quite large numbers of students. Jane Abercrombie (1983, p 101) refers to Gerald Collier as "pioneering the [syndicate] movement in this country".

The long quotations from Collier, above, refer to two examples (in different years) of using syndicate groups in summer schools in the USA. Subsequently the method and materials were adapted for use at Bede College, Durham. In the 1966 paper, Collier describes a six-week educational sociology course for 40 students (qualified teachers on a Masters course) in the summer of 1965, in which syndicate work was organised around five concepts: social class differentiation; values; authority structures in industry; planning for change and innovation; and the conversion of these principles of social analysis in the school system. The course opened with a showing of the film Twelve Angry Men, starring Henry Fonda as a character of "more than usual integrity who is able to contain his uneasy doubts in the face of opposition and indifference" (Collier, 1972, p 45) which was intended to provide both a vivid shared experience as a starting point for the syndicates and to establish the validity of inter-relating the theoretical perspectives of the course to personal experience.

The class was divided into small groups of five or six students, which groups carried out joint assignments based on reading, discussion and writing for periods of 80 minutes. (Total contact hours numbered 37). Ten assignments or 'phases' were devised around the five underlying concepts, and one or more syndicates each week would give a written or oral report on their work on one of these assignments. Syndicates sometimes sat as a forum to answer questions at these plenary sessions. Written reports were handed in on eight of these assignments. Collier "summarised these the following day in a lecture, correcting misconceptions and extending beyond the students' material in directions I regard as important"

(Collier, 1969, *ibid*, p 338). Plenary sessions were held at appropriate points and assessment was via a one and a half hour examination.

Figure 7 shows one example included by Collier to demonstrate the characteristics of an assignment. As will be seen, it is a hefty task involving many sub-tasks. Whilst in the previous section on student-directed learning groups the tasks set were ones that could be completed, in the main, during timetabled hours, in this use of syndicates the timetabled hours are used to report, summarise and synthesise work that has been done throughout the previous week(s).

This pattern of working was repeated in all essential respects in Collier's second 'experiment' in 1968, again at a summer school in the USA (Collier, 1969), and then in England in RE teaching at Bede College (Collier, 1969, *ibid*) commencing in 1969, and continuing, with further analysis and evaluation of the method (Collier, 1972).

Figure 7 Example of a Syndicate Assignment

"Phase VII: Organisational Structure: Principles of Interpretation

1. What are the characteristics of the 'organic' and 'mechanistic' forms of organisation described by Burns and Stalker? In what circumstances does each have advantages? What features of the organisation of Plant Y under Messrs Stewart and Cooley fit in with Burns and Stalker's analysis? In what respects do the differences between Messrs Stewart and Cooley's methods of administration not come within Burns and Stalker's analysis?
See Burns and Stalker: The Management of Innovation, chapters 5 and 6
Revans: Standards for Morale, chapters 1, 8, 9 and 10
Guest: Organizational Change, chapters 2-5
J A C Brown: Techniques of Persuasion, chapters 2, 3 and 8
Thelen: Dynamics of Groups at Work, chapter 4
2. How far are the 'organic' and 'mechanistic' patterns of organisation valid or useful in schools in relation to (a) basic moral principles in the school community; (b) formal academic work; and (c) day-to-day administrative problems? Illustrate from your own experience.

(Figure 7 continues on next page)

-
3. How far does the Lippitt and White analysis coincide with Burns and Stalker's? In what respects does it differ? Illustrate from your own experience of schools or other organizations. Discuss the advisability or otherwise of using the word 'democratic' as a descriptive title in this context. For an account of Lippitt and White's experiment on social climates see
Sprott: Human Groups, chapter 2
or Collier: Social purposes of Education, pages 106-108
or Haimowitz: Human Development, chapter 31
or White and Lippitt: Autocracy and Democracy.
4. Benne and Muntyan introduce a further refinement of Lippitt and White's classification, making it fourfold: 'Benevolent Autocracy'; 'Harsh Autocracy'; 'Laisser-faire'; and 'Democracy'. How do you suppose the head of an organization, in each of these four cases, regards his own function (a) in regard to the making or delegating of decisions; (b) in regard to circulation of information; and (c) as 'father' or 'mother' figure? Refer where possible to your own experience of schools or other organizations.
See Benne and Muntyan: Human Relations and Curriculum Change Part IIIA, chapter 7 and Part IIIB, chapter 2
See also
Thelen, chapter 4
Haimowitz, chapter 43
Phillips: Small social groups in England, chapters 6 and 7"
-

(Collier, 1966, pp 338-9)

Meanwhile Collier's book (1968) and his own initiative had led to the setting up of the 'six college' project, (Chambers, *ibid*) which focussed on the teaching of Sociology of Education via syndicate methods, although teachers of other subjects such as human anatomy and kinesiology (Glew, 1983) were drawn into the experiment.

A common framework of topics was devised for Sociology of Education courses at the six institutions, and shared learning packages were constructed on these topics. The method of working, i.e. the mode of structuring the syndicate's tasks, followed the precedents set by Collier, including the showing of Twelve Angry Men as a common introductory exercise (Chambers, 1973, *ibid*, and Lawrence, 1972).

Despite the overall similarity of method there were some variations in the mode of implementation of syndicate working used by individual teachers. For instance Glyn Owen suggests, on the basis

of eleven years of syndicate experience in a co-educational college of education (an institution, incidentally, where syndicates continued to be used successfully after the completion of the six colleges project) that the obligation to present a written report runs counter to the ethic of open learning which syndicates are meant to express, and that, in fact, oral reporting carries greater potential for the learners (Owen, 1983, p 96). On the design of assignments, Owen has this to say:

"It has proved to be useful, in writing assignments, to try to ensure that material is as self-explanatory and self-contained as possible; that tasks are suited to team work; that material is arranged so that it cannot be used effectively without some preparation; that references do not provide ready-made answers; and that each assignment starts with an exploration of personal experience, 'commonsense' understandings or an active exercise involving real dilemmas in real contexts. Films, video-recordings, case studies, role-play simulations and other experiential exercises provide many stimulating openings to syndicate discussion ..."

(ibid, pp 95-96)

A 'before and after' effect is described by Rodger (1983) in his account of successful syndicate working during the six college project in 1973-75 (then at Bede College, Durham) being transformed into un-successful syndicate working in 1977-78 after a number of personal and organisational changes in the institution (retirement of Gerald Collier, merger of the college with another, replacement of Teachers' Certificate course by a BEd validated by the University of Durham). The latter factor led to a change in modes of assessment, so that students (who had been assessed on their contribution to syndicates in the first period) now faced a three hour written examination.

Along with the effects of the changes above, which in effect removed a 'defensive ring' that had protected syndicate methods, it was felt that the new assessment procedures were a major source of students' new-found resistance to the technique. The mode of assessment clearly formed part of the students' understanding of the nature of the task. That is, the structure of the learning task and

the nature of the assessment, in this instance, interlocked.

A pleasing variation within the six college project, again at Bede College, commencing in 1970, was the course on human anatomy and kinesiology already mentioned (Glew, 1983, *ibid*). This is of interest because like the 'Methods of Social Research' course considered in the previous section (Todd and Todd, 1981, *ibid*) it utilised a developmental sequence of assignments. This example also used oral reports rather than requiring written work, and these oral syndicate reports were assessed jointly by the audience of the other syndicates.

Tasks early in the course focussed on very simple topics (e.g. "name and define planes and axes, formulate a generalisation regarding their relationship, produce a simple teaching model and classify a series of activities of increasing complexity" p 44), and went on to more complex ideas in a 'spiral' model. For instance:

"Whilst Topic 4 was concerned with a basic understanding of gravital force in a general way, including the establishment of the position of their own centre of gravity, Topic 12 was an exploration of concepts concerning stability which finally asked students to formulate a set of 'Principles of Readiness' for various sporting activities as widely disparate as a sprint start or the readiness to receive a tennis serve." (p 44)

Further examples that fall within the framework of the syndicate method are also reported by Beattie (1974) and by Fransson (1976). Beattie reports the use of syndicates in the first part of a Comparative Education course, at the University of Liverpool: and it is noteworthy that by the final term of this course the students had brought the teacher back to the method of full class discussion, teacher-led, instead of the syndicates.

Fransson's paper concerns the use of syndicate type methods with Political Science students at the University of Uppsala, on a course in 'pedagogy' at the Göteborg Teachers' College, and in the Department of Education at the University of Göteborg. This paper is primarily concerned with the underlying educational model, and with evaluation of the method, so we do not find here the same circumstantial detail about task structure that has been documented

so far.

As we have seen, the students who have been the guinea-pigs for syndicate methods have tackled some large assignments (including some with a rather diffuse structure) which have required quite a substantial input of time.

In the final section of this chapter I want to turn to an examination of a mode of collaborative learning which poses students an assignment even larger than those already considered, and which unites the serial sub-task element of syndicate working with the problem-solving and performance elements seen in the engineering and social research examples in the section on student-led groups; namely, the Project Method.

GROUP PROJECTS AND CASE STUDIES

The term "Project Methods" covers a multitude of approaches. This section of the chapter is concerned with a defined sub-sample from that multitude. To arrive at a definition it may be helpful first to back track a little over some of the issues that have surfaced so far.

Two distinctions that have already been made concern: the extent to which collaborative methods are seen as adjuncts to traditionally taught elements of a course (compared with the extent to which collaborative techniques are used to replace such 'taught' elements); and the scale of the collaborative task, referring to the required product, the number of meetings, whether it requires a series of sub-tasks, and whether the students follow a fore-ordained route or in effect devise the task themselves. These distinctions live on in the discussion of collaborative project methods and case studies.

Many science and some social science courses require students to carry out a project individually; however such individual work is outside the frame of reference of this thesis. Some courses require students to work on projects in small groups, as an addition to

course elements taught in other ways. Examples of such smaller-scale projects, where the 'project' undertaken is one discrete learning task in the context of a whole course, have already been considered in the section on student-directed learning groups.

However, a group project, like the use of syndicates, may replace the whole course, or a substantial element of it. This is the epic end of the collaborative learning continuum, and it is with these marathon efforts that this section of the chapter is concerned.

I also include in this section examples of collaborative group assignments which are based on case studies. It is the large scale of the assignment, its serial nature, its incorporation of linked sub-tasks through time, the performance requirement for groups to produce a practical outcome (a problem solution, a series of recommendations for a real situation, a design, or an artefact, for example) linked with the use of these activities to replace taught course elements, that qualifies any one instance for inclusion in this section.

These criteria are adduced to serve the concerns of the thesis, which are to do with collaborative learning. It is therefore no surprise that these criteria may cross-cut other extant taxonomies which have been devised to serve other purposes.

For instance, Cornwall, Schmithals and Jaques (1977) offer a taxonomy of project methods which differentiates between what they call "Model A: the project as a vehicle for teaching technical skills and knowledge", "Model B: the project as a means of developing general professional skills and attitudes", and "Model C: project orientation; projects as the main determinant of course content" (ibid, pp 2-5).

Model A is seen as "the terminal part of an otherwise completely formally structured course in the 'fundamentals' of the subject", with "main aims ... related to the development of the skills of independent research in a subject area. ...Hence a substantial period for 'input' of the facts, principles, theories and techniques related to the subject matter must precede project work" (p 2). The proportion of time devoted to such a project would be between about 5-15% of the course.

Model B includes a-disciplinary aims and "is seen as a course component alongside conventional elements of a course, occupying a greater amount of course time, involving students working in small groups (which may or may not be tutor-led) on a topic with a strong real-life element" (p 4).

Model C is seen as having much in common with Model B (although in the same work it is also referred to as involving a 'quantum shift' [pl]) with the same a-disciplinary aims, but forming the dominant component of the curriculum. The essential criteria are that "subject matter studied in the course should itself be determined only by the theoretical and practical needs of real project work" (p 5) and that "the needs of real problems should determine the knowledge and skills which are to be studied as examples of the total subject field" (p 5).

A project from under any of these models could in principle be considered here, if it involved a large scale collaborative group task. Similarly, a project from under any of these models would be excluded if it were (a) carried out by a single individual or (b) if groups were tutor-led.

Similar qualifications must be made with regard to the use of the Case Study or Enquiry method. A small scale case study task completed within one timetabled meeting of the course has already been described in the section on student-directed learning groups. And whilst one writer has suggested that "to be really effective, the case method requires that students work mainly in small groups" (Leftwich, 1981, p 46) it is not seen as a necessary requirement of the method that such groups should meet without a tutor. This may or may not be the case, and in fact case studies are often used by teachers as a basis for tutor-led discussion.

The point of this preamble is to emphasise that this section is concerned with a sub-set only of the work on projects, and case studies, not with the 'universe' in either case.

Having emphasised also the marathon nature of the assignments in this section, it is time now to look at the ways teachers structure and manage these assignments.

Moss and McMillen (1980) describe "a major undergraduate

problem-solving exercise ... concerning a problem of foreign policy formulation" (p 161) - clearly no light-weight task. This exercise was devised for 100 first year students (the class was a mixture of mature students and school leavers) at the end of a foundation course in Modern Asian Studies, at Griffith University, Queensland. The greater part of the first two semesters had been made up of an interdisciplinary course (economics, sociology, politics and Asian language studies) of lectures and tutorials.

Students were divided up into groups of 25 for the last four weeks of the semester, with the following problem to work on:

"It has been said that 'Australia's strategic, political and economic future lies with Asia and that Australia should re-orient its policies accordingly'. Present arguments for and against this proposition and devise a coherent set of policies appropriate to your point of view."

(Moss and McMillen, 1980, p 162)

Two key note lectures were given at the beginning of the exercise on trends in Australian and Asian affairs; and extensive reading lists were provided for each student along with a copy of a journal summarising the findings of a recent government report on Australian/Third World relations; four tutors were assigned to be available to each group of 25 students "in the expectation that they would be able to handle any eventuality within the groups" (ibid, p 163) - although the aim was for the exercise to be student-led as far as was possible; and six timetabled sessions of one hour were set aside with appropriate provision of seminar rooms.

The groups had to present their policy recommendations to a plenary session at the end of the four weeks, and it was anticipated that the large groups would break down into smaller groups for specific sub-tasks, as summarised in Figure 8 (see p 110).

Figure 8 Working Model for Asian Studies Exercise - before the exercise took place

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
<p>a) Large group of 25 breaks into randomly made up buzz groups and brainstorming groups of 4-6 students to identify component sub-issues.</p> <p>b) Large group of 25 evaluates these and arranges into 4 or 5 areas deserving further study.</p> <p>c) A small interest group of 4-6 takes up one of these areas for further study, eg the problems of Asian refugees.</p>	<p>Repetition of (a), (b) and (c) until each individual has identified discrete research topic.</p>	<p>Individual research on own topic interspersed with cross-reference to interest groups. Each individual to produce a series of policy recommendations on own topic. (Individual student receives credit for this).</p>	<p>The small interest groups evaluate and co-ordinate individual ideas into inter-related policy statements for presentation to the large group of 25.</p>	<p>Large group of 25 students evaluates and synthesises small groups' proposals to produce an overall report for the plenary session.</p>	<p>Plenary session as the climax of the exercise.</p>

(based on account in Moss and McMillen, *ibid*)

The four large groups varied in the extent to which the collaboration ideal was realised in practice. One group followed the student-directed model altogether, with tutors remaining on hand for consultation, but with the group and its sub-groups organising and completing their work and programme of meetings independently.

At the other extreme, one group was tutor-led throughout, despite prior briefing of tutors and a prior agreement that students should work independently after the first tutor-led session had served as a launch.

In between were two groups where tutors at first took responsibility for recording buzz groups' ideas: and where this 'recorder' role rapidly transmuted into tutor domination. After meetings to discuss this, the tutors agreed to adopt a lower profile, the students elected chair-persons from their number, and the two 'middle' groups then proceeded much as the student-led group, except that they were behind that group in terms of progress through the task, and had to hold extra meetings to complete their assignment.

The model set out in Figure 8 was therefore implemented in its entirety for one group only. The other groups and tutors enacted a different task structure.

Part of the task for two groups incorporated coping with the

effects of inappropriate tutor domination and effecting their escape from this domination, whilst the fourth group's task lost the planned peer-learning elements altogether, with interaction being tutor-led throughout.

Accounts of more fully-blown uses of the project method, termed 'project-orientation' (Cornwall, Schmithals and Jaques, 1977) at first sight look promising territory to mine for exemplification of collaborative task structuring in large scale project work.

The ideology of project-orientation is sufficiently well-established for several European universities to have framed their teaching almost entirely around this method. For instance, the Natural Science Basic Studies course at Roskilde University Centre, Denmark, which admitted its first students in 1972, centred on a series of socially relevant problems approached via inter-disciplinary projects carried out by groups of students and teachers (Beyer, 1977). Another example is the University of Bremen, West Germany, which commenced inter-disciplinary project-based study at its inception shortly after the end of the second world war as a means of presenting science within its social context so as to "reveal the ideological nature of the assumption that 'science is value-free'" (Noack and Schmithals, 1977, p 19). The project-orientation principle at Bremen was reinforced in 1974 after a debate which argued that the inter-disciplinary ideal had never been achieved, and that courses should be reorganised to implement the project ideal fully.

The elements in the definition of project work formally adopted at Bremen ("The concept of project work means ... a type of study in which there is unity of learning and research and which is problem-orientated, inter-disciplinary, professionally orientated and socially relevant" [Noack and Schmithals, *ibid*, p 21]) are met repeatedly in accounts of project-orientated work at thirty odd other universities and colleges in the UK, Europe and the USA using project work (Cornwall, Schmithals and Jaques, 1977, *ibid*). Most of these accounts refer to the teaching of science and technology.

However, although students work in groups during such projects, the teacher is also a member of that group. Sometimes several

teachers are assigned to each group.

The role of the teacher within such groups is clearly intended to be rather different from the leading and structuring role commonly met in the tutor-led seminar or tutorial. The principle of 'collective direction' (Beyer, 1977, p 29) applies to a certain extent in all these cases: that is, the teacher is meant to function in the same way as other project group members, as a co-learner; but since scientific and pedagogic responsibility rests with the teachers in the last resort, there can be dilemmas of role facing the teacher member of a project group. A comparison of the way the teacher enacts this collective role in project-orientation as compared with the tutor's enacted role in tutorials and seminars would be an interesting study. For our purposes here, the essential point is that in most project group methods the group contains the teacher: and they therefore do not fall within the frame of reference of this thesis.

In a smaller number of instances, large scale project work either is carried out independently by student groups, who consult tutor supervisor(s) from time to time; or periods of smaller scale independent group work, without the tutor, are built into the cycle of project group meetings - the rest of the project group meetings having the tutor present. It is only with instances where it is clear that students meet without the tutor for all or some of the project work, that we are concerned here.

At the School for Independent Study, North East London Polytechnic, randomly chosen groups of students were required to work collaboratively on a group project of their choice, following a plan for the group work that was first approved by external examiners. The successful completion of the groups' goals, so demonstrating group competence, was part of the formal assessment scheme of the course. Other criteria for projects to satisfy included social usefulness and the clarity of the methodological approach (Boulter, 1977). One such group project investigated different aspects of colour; the specific task of one individual within that group was to look at the work of Newton and Goethe (Smart, 1977).

A short duration (seven days) project on a real life industrial

problem, forming part of the second year undergraduate course in Electronic and Electrical Engineering at the University of Sheffield, was supervised by staff but included periods of independent sub-group working. Groups of six students plus supervisory staff, worked on problems posed by industrial companies, travelling to the company on the first day of the project with their staff tutor to be briefed on the problem by the company engineer.

Successive days were spent back at the department and, after a brainstorming period, sub-groups researched the more promising ideas via literature searches, contacting specialists in other departments or companies and carrying out calculations or experiments. From the fifth day on, effort was directed towards the planning of the verbal and written reports to be made at the end of the week. Comments of the company engineers were incorporated into written reports later, which were also checked by a staff member. While this was a seven day project for students, academic staff typically put in three to four days each during the project (Brown, 1977, p 65) - an indication of the proportion of time spent by students working collaboratively without tutor supervision.

At the University of Provence, France, the first year course in mathematics, physics and chemistry was taught by what are essentially a graded sequence of mini-projects. Students were grouped into work cells of six to eight students and spent two half days per week working together on a series of integrated exercises and problems. They could call in teachers for consultation when required. From time to time the whole group of students was brought together for tutor presentations to synthesise and provide a thread to the series of problems being worked on (Tachoiré, 1977).

At the Technical University of West Berlin, a course in Numerical Analysis for (primarily) mechanical engineering students ran over one (or for some groups, two) semesters using project methods. Students worked in groups of three to four on a project consisting of a technical problem of their choice, which they attempted to solve using numerical methods. This collaborative project-orientated work formed the heart of the course, but was supplemented via taught or supervised sessions teaching necessary

knowledge of numerical analysis and also a computer language. Project groups also met regularly with a tutor to discuss questions arising from the chosen problem (Project gruppe Praktische Mathematik, 1977).

At the University of Edinburgh, teaching in the Department of Architecture has been based on project work with supplementary lectures since 1962. Technical projects, which aim to enable students to use technical information, and make better use of technology in design solutions, have been carried out by groups of between two to five students over a six week period. One element of the project must have a practical outcome, for instance, the construction of working apparatus to test data. Students meet with the supervisor in between periods of collaborative working, with the suggestion that groups are not required to follow the supervisor's advice, as long as they justify any departure from it in the oral and written project reports. There are also weekly seminars, made up of one (rotating) member from each project group, at which group representatives outline their plans for the forthcoming week's work. The working of the project group is manifested in a written report, a demonstration/exhibition of the practical solution to the rest of the class, and a short report (in any media other than written) to the rest of the class and the other tutors (Carmichael, 1977).

Finally, at the University of Technology of Compiègne, engineering students in their first term at the university devote 17 weeks to what is called a 'mini-project' or 'realisation'. Groups of one to three students work on a sub-topic derived from the theme of a workshop suggested by faculty. Workshops may be on themes such as Mechanics, Experimental Physics, Chemistry, Biology, Foreign Languages, Library or Town Life; and a staff member is responsible for each workshop which is made up of 12 to 20 students. Workshop themes may also be proposed from industry or commerce or the community and then might be managed by, for instance, an engineer from a local firm. The small collaborative sub-groups are required to produce a practical outcome to their problem (this may involve ordering and buying equipment) and to write a report at the end of their work. At the outset groups must estimate the time and cost of

their work (Delorme, 1977).

It is interesting to note that whilst these projects fall at the larger scale end of the continuum of collaborative methods they are at the smaller scale end of the continuum of project-orientated methods. Projects of between one to four (sic) years duration are reported in Cornwall, Schmithals and Jaques, *ibid*: small wonder that they incorporate the teacher as participant. Apart from the problems students would face in tackling such long term tasks alone, teachers would scarcely see their students if they set them to work independently for a third, a half, or the whole of a degree course!

CONCLUSION

The review of task structures in this chapter has considered a wide variety of ways of structuring collaborative tasks, with a range of scale that runs from a couple of students talking for two minutes about a heading offered by a lecturer at one end, to a group devising and carrying out a 17 week project with a real life practical outcome, at the other.

Examples of collaborative task structures have been given from the teaching of 17 subject areas covering the arts and the sciences, the pure and the applied, as set out below.

Figure 9 Course Areas of the Collaborative Task Structures Discussed

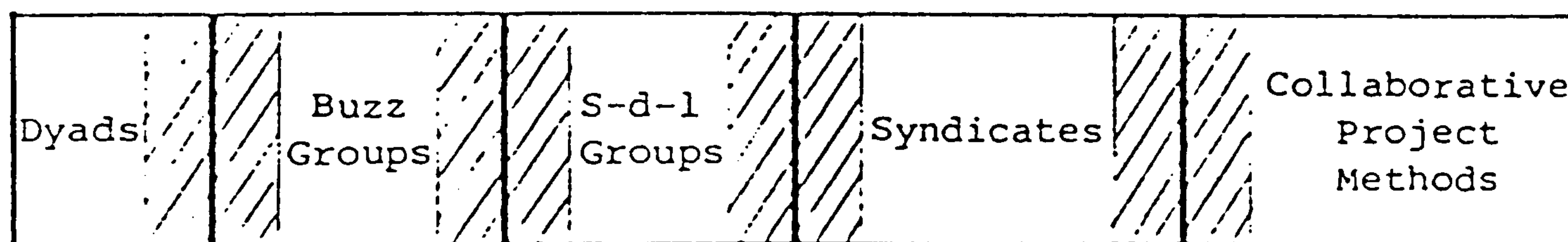
Applied Linguistics	Hotel and Catering
Architecture	Human Anatomy and Kinesiology
Asian Studies	Introductory Physics and Chemistry
Business Administration	Mathematics: Numerical Analysis
Computer Systems	Mechanical and Industrial Engineering
Education	Psychology
French Literature	Sociology
	Religious Education

In ordering this material, the chapter has used five classifications for collaborative task structures: dyads; buzz groups; student-directed learning groups; syndicates; and project/case study methods. A general progression runs through this

classification, a progression from smaller scale to larger scale tasks, from tasks that are tightly structured by the teacher to tasks that groups devise for themselves, from discrete tasks to tasks that require several meetings, from tasks that pose relatively simple procedural and social demands, to ones that are complex in these respects.

However, the divisions between the groupings are by no means watertight. Although it has been convenient to consider task structures under these separate headings, in practice there is an overlap at each of these arbitrary divisions in the manner set out in the diagram below, where the firm lines represent the divisions used in the chapter, and the shaded areas indicate areas of overlap between categories:

Figure 10 Collaborative Task Structures



Whilst there is a clear-cut division between each of the middle (plain) bands of the classifications set out above, the division is not so clear at the (shaded) borderlines. This is because the categories used are broad summaries of a complex series of interlocking and cross-cutting characteristics that can be discovered in the structures of collaborative tasks. Characteristics of the learners are also relevant, since the expectations, attitudes towards and experience of collaborative learning that they bring to the task affect how the task is construed and implemented.

The characteristics can be set out as a series of continua relating to social, procedural and cognitive aspects of collaborative working, to the task itself and to the learners. A closer examination of the task structures reported so far suggests that each specific example of a task used by a teacher may be thought of as occupying a particular point on each of these continua, the extreme points of which are set out in Figure 11, on the next page.

Figure 11

Social, Procedural, Task and Cognitive Demands of Collaborative Task Structures

SOCIAL

number in the group varies
from: 2 ←————→ 10 (or even more)

composition of the group varies
from: self-selected ←————→ teacher nominated

composition of the group varies
from: familiar ←————→ strangers

PROCEDURAL

work sharing is:
nominated by teacher ←————→ decided by the group

steps to follow are:
provided by teacher ←————→ devised by the group

chair and rapporteur roles:
specified ←————→ diffuse responsibility for
progress through task and
for record-keeping

chair and rapporteur:
nominated by teacher ←————→ selected by the group

teacher drops in to
answer questions ←————→ teacher unavailable for
consultation

TASK

small scale ←————→ large scale
(completed in a few minutes) (completed in a year)

one discrete task ←————→ series of sub-tasks

single meeting ←————→ several meetings

length of each meeting is:
short (e.g. few minutes) ←————→ long (all day)

problem is:
designed by teacher ←————→ constructed by the group

resources are:
provided by teacher ←————→ to be bought, sought or
devised by the group

desired outcome is:
collaborative process itself ←————→ a public product

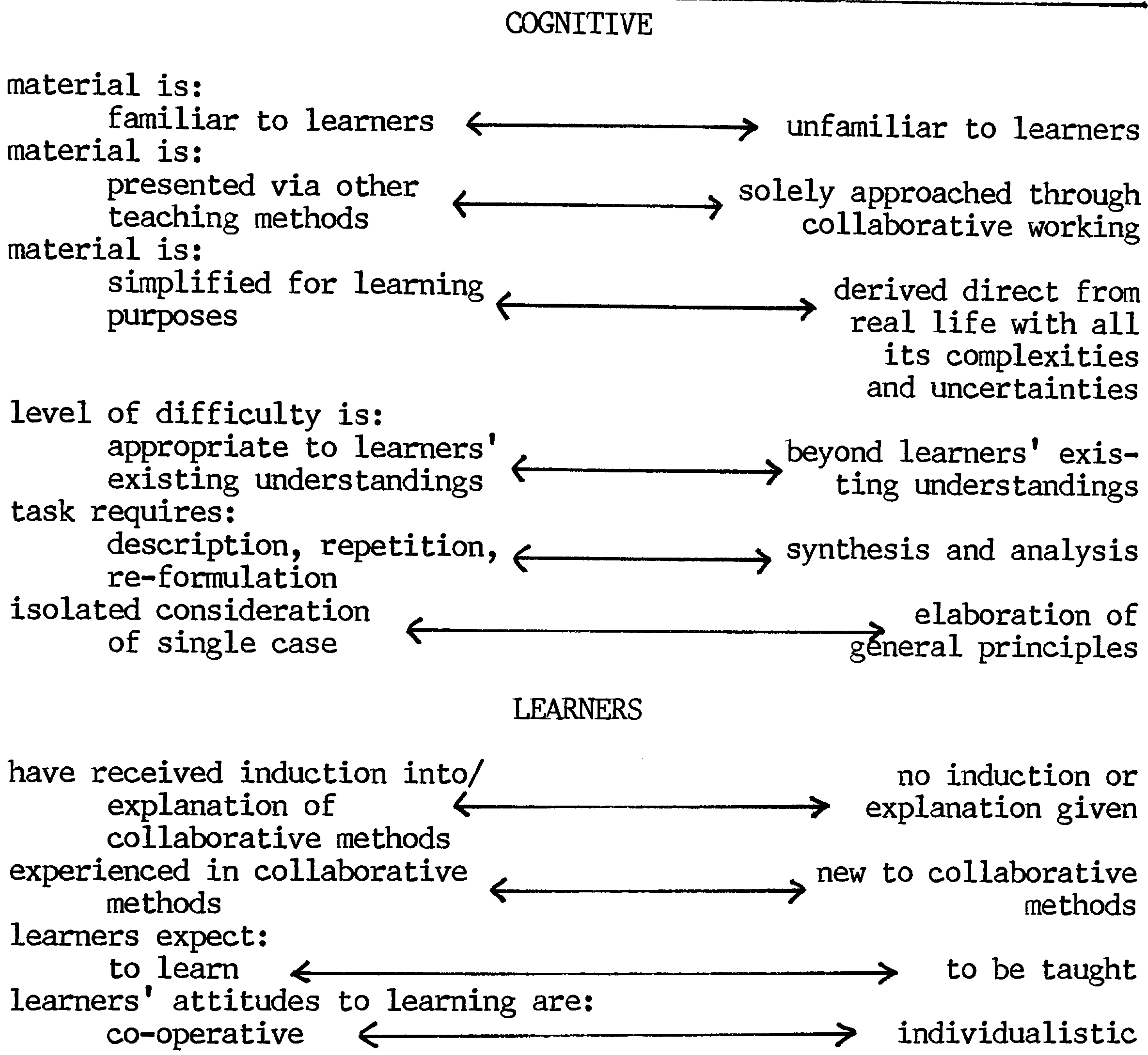
group product is:
oral report ←———— written report —————→ a practical solution

group product is:
unassessed ←————→ assessed

assessment is:
appropriate to ←————→ inappropriate to
collaborative working collaborative working
e.g. of shared product, or e.g. competitive exam
of contribution to the
co-operative venture

(Figure 11 continued on next page)

Figure 11 (continued)



In each case, the left hand end of the continuum represents the structural characteristic that poses least difficulty and makes fewest demands upon the learners, whilst the right hand end represents most difficulty and greatest demands.

Any one instance of collaborative learning may combine, in different domains, characteristics from different ends of the continua: for instance, social and procedural demands may be high, but cognitive demands may be low: a recipe for an unrewarding piece of group work. The project method, as one example, poses demands which are extremely high in the social, procedural and task domains without necessarily imposing the same level of demand with regard to cognitive outcomes. After the initial flush of enthusiasm, critics of the project method at Roskilde University Centre have pointed out

that the very difficulty and scale of such a task, combined with the lack of a rigorous conceptual and factual grounding in the sciences, has led to the production of a series of purely descriptive, journalistic projects - as compared with the analytic, experimental approach that was the goal of the course designers, and which seems to have been achieved in only a small proportion of introductory science projects at RUC (Kerszman, 1977).

There is little evidence in the studies cited in this chapter that teachers in higher education pay explicit attention to such small scale features of the task's structure as those above, or that tasks are designed with reference to careful analysis of task demands. The use of collaborative methods in these accounts rather seems to be based on a series of implicit models of the learner and the learning process, of the tutor's role and of the aims of education: all of these bound up with beliefs about the outcomes of collaborative learning. But as the models are left implicit it is not possible to do more than guess at them.

The next chapter heralds a shift in focus. It sets out the research design and methodology of new empirical work intended to bring matters such as these into sharper view.

CHAPTER THREE

THE CASE STUDY: RESEARCH DESIGN AND METHODOLOGY

"There is a second stage, more an aspiration than a reality, it must be admitted, in much case study work, namely to re-describe the phenomenon at a deeper level ... more theoretic, having greater explanatory power ..."

(Shaw, 1984, p 205)

INTRODUCTION

Chapter One considered a series of theoretical frameworks for the use of collaborative work and Chapter Two discussed published accounts of collaborative learning in action. But while these chapters have provided a framework of general understanding - in respect of existing published work - of what collaborative learning is and why one might want to use it, in many ways this preliminary examination has raised as many questions as it has answered. One wonders how representative these accounts are of the teaching practices of the non-enthusiast, who does not publish? What life does collaborative learning have in an ordinary institution of higher education? Does it exist at all? If so, in what form? Who utilises it and in which subjects? Why is it used? Are any of the philosophical and educational concerns discussed in Chapter One brought to bear upon its use? What factors seem to be linked with the success or failure of collaborative learning? And what do the students think of it?

In order to examine these questions in more detail it was decided to carry out a case study of the use of collaborative learning methods in a single institution of higher education. Here, English grammar ("it was decided" having the ring of a single decision at one particular point in time) rather blurs the true nature of the research process that has been undertaken.

Chapters One and Two sought to go beyond the standard literature search to set up an analytic framework rather than to give

a purely historical or descriptive account.

The design of the empirical work of the thesis has been closely informed by this analytical framework, while the two types of work (the desk-based study and the field work) have been carried out contemporaneously, the one feeding into the other. Rather than thinking of one single decision it would be more accurate to see the case study as a series of research decisions, decisions for which Chapters One and Two provide an analytical infra-structure.

Additionally, the field work has provided its own perspective upon the ideas and practices discussed in the first two chapters. This continual interaction between theory and method identifies the broad methodological home territory of this thesis as grounded theory (Glaser and Strauss, 1968; Glaser, 1978) and the research process as one of accommodation, assimilation and integration of theoretically based assumptions, research decisions, and insights from the field.

However, the decision to use a case study approach at all is logically (if nothing else) prior to the series of smaller scale decisions which realise that decision, for better or for worse. Before discussing detailed features of this particular case study I want to consider both grounded theory and the case study method and trace the thinking that led to the decision to employ these approaches here.

GROUNDED THEORY

Glaser and Strauss (1968, *ibid*) defined grounded theory as the "discovery of theory from data systematically obtained from social research" (p 2). Their approach, developed primarily in the course of work in hospitals and health care institutions, was a reaction against the positivist model of using theory to derive hypotheses which are subsequently to be operationalised and tested by data collection.

Others who have focussed on the problems of the positivist approach have based their critique on the difficulties of matching in a complex social world the control that is claimed to be found in

natural science research. A related element of such a critique is based on a view of the subjects of research as holding infinitely more complex views about the world than can be captured by the quantitative techniques of survey research. However, a major theme in Glaser and Strauss's thinking concerns the nature of theory and of theory construction. The positivist approach deals with a few favoured "grand" theories, whereas Glaser and Strauss offer a view of all social researchers as potential generators of theory. Theory is seen as the product of a creative and imaginative discourse with data.

Whilst Glaser and Strauss may be credited with the term "grounded theory" and with a series of exciting studies showing the approach in action, like most revolutions this one was itself well grounded in previous sociological research practice and theoretical writings. Timasheff, writing in 1957, had argued that:

"Theory cannot be derived from observations and generalisations merely by means of vigorous induction. The construction of a theory is a creative achievement ... There is always a jump beyond the evidence, a hunch, corresponding to the creative effort."

(Timasheff, p 10, cited Riley, 1963)

In particular, classic participant observer studies such as Whyte's Street Corner Society (1943) and anthropological studies such as Malinowski's Crime and Custom in Savage Society (1926) had laid a groundwork of exploratory research methods in which there is a two way interplay between emerging data and developing model.

Riley (1963, *ibid*) documents the tools of such exploratory research as including:

"abstraction of relevant aspects of the data, generalisation to wider situations, empathy or insight into social relationships and processes ... association of the phenomenon studied with analogous phenomena that are better understood and various other devices which we shall refer to as creative imagination ... when the interpretative process operates in this direction, starting with the facts, it is an explicit attempt to use research as the stimulus for new ideas and theories."
(p 27)

Setting on one side the discussion that could be raised here

about the inferential nature (or otherwise) of "facts" (Coombs, 1964) the methodological antecedents of grounded theory are clear in this quotation.

It is also helpful to clarify the relationship between grounded theory and qualitative research methods. Turner argues that a grounded theory approach:

"is likely to be of maximum use when it is dealing with qualitative data of the kind gathered from participant observation, from the observation of face-to-face interaction, from semi-structured or unstructured interviews, from case study material or from certain kinds of documentary sources."

(Turner, 1981, p 227)

However, Glaser and Strauss argue that qualitative and quantitative data are similarly useful either for the verification or for the generalisation of theory and that in many cases, both are necessary (ibid, pp 17-18). It is certainly not the case that grounded theory is necessarily implied by the use of qualitative or "soft-data" approaches (Erikson, 1978, cited Turner, 1981) although many accounts of qualitative research pay lip-service to the grounded theory ideal.

The interaction between researcher and data suggested by grounded theory requires practical implementation in the course of the research process. Glaser and Strauss argue that whilst ideas or insights may come from sources other than data, theory generation per se requires the process of research. "Generating a theory from data means that most hypotheses and concepts not only come from the data, but are systematically worked out in relation to the data during the course of the research" (ibid, p 6). The emphasis on the generation of theory rather than the verification of existing theory means that precise research questions are formulated in the course of the data collection rather than data collection being guided by pre-existing hypotheses.

"Beyond the decisions concerning initial collection of data, further collection cannot be planned in advance of the emerging theory (as is so carefully done in research designed for verification and description). The emerging theory points to the next steps - the sociologist does not know them until he is guided by emerging gaps in his

theory and by questions suggested by previous answers ... The basic question in theoretical sampling ... is: what groups or sub-groups does one turn to next in data collection? And for what theoretical purpose?"

(ibid, p 47)

The operation that underlines such "theoretical sampling" is the joint collection, coding and analysis of data. "The generation of theory, coupled with the notion of theory as a process, requires that all three operations are done together as much as possible. They should blur and intertwine from the beginning of an investigation to its end" (ibid, p 43).

The implementation of a grounded theory approach therefore relies greatly not only upon conjoint data collection and analysis but also upon practical ways of working with the data. Glaser and Strauss refer to the "core of emerging theory" that develops as categories and properties derived from the data become related and accumulate to form an integral theoretical framework - which itself guides the collection and analysis of data. Turner (1981) commenting on Glaser and Strauss argues that "there are cognitive issues central to theory production" pertaining to

"the basic but crucial research problems of how to record data, how to label or classify data in ways which facilitate the re-arrangement of the material to reveal new properties and how to tackle this re-shuffling process." (p 229)

Figure 12 shows Turner's recommendations for implementing this process via a list of 'stages' (extracted from Glaser and Strauss, 1968) to be gone through in handling data (see p 126).

Turner's view of the implementation of a grounded theory approach, while helpful, focuses primarily on operations to be performed on data already in the researcher's possession. To fit fully with the model set out by Glaser and Strauss one would need to add a tenth stage to the table, namely using the theoretical sampling criteria derived from stages 1 - 9 for further data collection.

Figure 12

Schematic List of the Stages in the Development of Grounded Theory
(extracted from Glaser and Strauss, 1968)

Stage	Main Activity	Comment
1	Develop Categories	Use the data available to develop labelled categories which fit the data closely
2	Saturate Categories	Accumulate examples of a given category until it is clear what future instances would be located in this category.
3	Abstract Definitions	Abstract a definition of the category by stating in a general form the criteria for putting further instances into this category
4	Use the Definitions	Use the definitions as a guide to emerging features of importance in further fieldwork, and as a stimulus to theoretical reflection.
5	Exploit Categories Fully	Be aware of additional categories suggested by those you have produced, their inverse, their opposite, more specific and more general instances.
6	Note, Develop and Follow-up links between Categories	Begin to note relationships and develop hypotheses about the links between the categories.
7	Consider the Conditions under which the Links Hold	Examine any apparent or hypothesised relationships and try to specify the conditions.
8	Make Connections where relevant, to Existing Theory	Build bridges to existing work at this stage, rather than at the outset of the research.
9	Use Extreme Comparisons to the Maximum to Test Emerging Relationships	Identify the key variables and dimensions and see whether the relationship holds at the extremes of these variables.

(taken from Turner, 1981, *ibid*, p 231)

In their work Glaser and Strauss set out two opposing views of the position of theory in research:

- (a) The logico-deductive position which views the research process as the verification and testing of pre-existing hypotheses derived from (grand) theory.
- (b) The grounded theory approach which views the research process as the generation of theory from data.

In their introduction they also posit the existence of "a middle zone between grounded and logico-deductive theorising, in which the researcher chooses examples systematically and then allows them to feed back to give theoretical control over his formulations ..."
(p 5).

The methodological framework for this thesis is perhaps closer to this middle ground than it is to fully blown grounded theory. This can be explained best by a consideration of the reasons why it was deemed appropriate to use elements of a grounded theory approach together with a discussion of ways in which some aspects of grounded theory were inappropriate.

Glaser and Strauss comment at one point that:

"one strategy for bringing the generation of theory to greater importance is to work in non-traditional areas where there is little or no technical literature." (p 38)

This conjures up a picture of the would-be grounded theorist intentionally seeking out previously uncolonised territory but the equation also works the other way round. For those whose substantive research interests happen to be in "non-traditional" areas where there is no established corpus of literature, the generation of theory assumes great importance. One cannot commence with hypotheses based on theory because there is no theory. Likewise there is no prior series of hypotheses whose past verification or rejection can form a framework for the next identifiable information gap to be filled. Although the researcher may resort to armchair theorising for the generation of hypotheses, the more valuable strategy is to explore the field of study through the interrogation of data.

It is this latter set of circumstances which apply to this thesis. As explained in the introduction, there was no pre-existing

corpus of work on collaborative learning in higher education. Nor indeed was there a pre-existing corpus of work on collaborative learning per se. Chapters One and Two represent attempts to hew this concept out of stone: on the one hand by producing a synthesis of potentially relevant frameworks; on the other by an integration of otherwise disparate and unconnected accounts of certain teaching methods in the field. The concept of collaborative learning in higher education is thus in large part a construct of the thesis.

At the heart of this construct is a view of the dialogic nature of the development of understandings - and this view is mirrored in dialogic characteristics of the enquiry itself. The data collection for the thesis was conducted over almost three years. Throughout all this time theoretical work and a survey of published accounts of collaborative learning discussed in the first two chapters was also being carried out. This does not mean that data collection was commenced without having done a literature search, but that the real work on what had been read - analysis, synthesis and construction of a new framework to support and develop these insights - went on contemporaneously with the data collection. This meant that there was a two way traffic between the two kinds of endeavour. The attempt at a synthesis of perspectives led to the stronger pursuit, in interviews with tutors, of some themes which had not seemed so central at the point when the framework for the questionnaire was first devised.

The issue of assessment, for instance, was one that emerged so strongly from the literature that I began to pursue this theme more thoroughly with both staff and students. Similarly, what respondents said to me in interviews led to new insights in theoretical areas and to the seeking out of new areas of theoretical inquiry. For instance the issues of power in the higher education classroom and of learner autonomy were in the compass of interest of the thesis right from the start - but not initially in the form they now take. The impetus to make these issues a main strand of Chapter One derived from interviews with tutors in which they linked their concern with their own over-dominance in the classroom to their decision to use collaborative methods.

I find it interesting to contrast the nature of the intellectual journeying for this thesis with that of previous researches I have undertaken (setting aside "bread and butter" commissioned research for government departments - where the parameters have been set by the funding body, the level of theoretical interest low and the intellectual endeavour not taxing). The study of children's communication and learning in the classroom (Barnes and Todd, *ibid*, 1977) was dialogic through and through in the way that is quintessentially facilitated in joint endeavours by researchers from different academic backgrounds and different prior experience.

My next research effort was an attempt at action research on my own use of collaborative learning in my teaching at a large polytechnic. Over a period of five years I collected audio and video tapes and transcripts of small groups of my students working independently; kept copies of the teaching materials used and documented the tasks on which students worked in their collaborative groups; made field notes (inevitably scrappy) of students' reactions to the group tasks; and collected in copies of the products of the group work. As I serviced examination committees I also had records of students' examination performance.

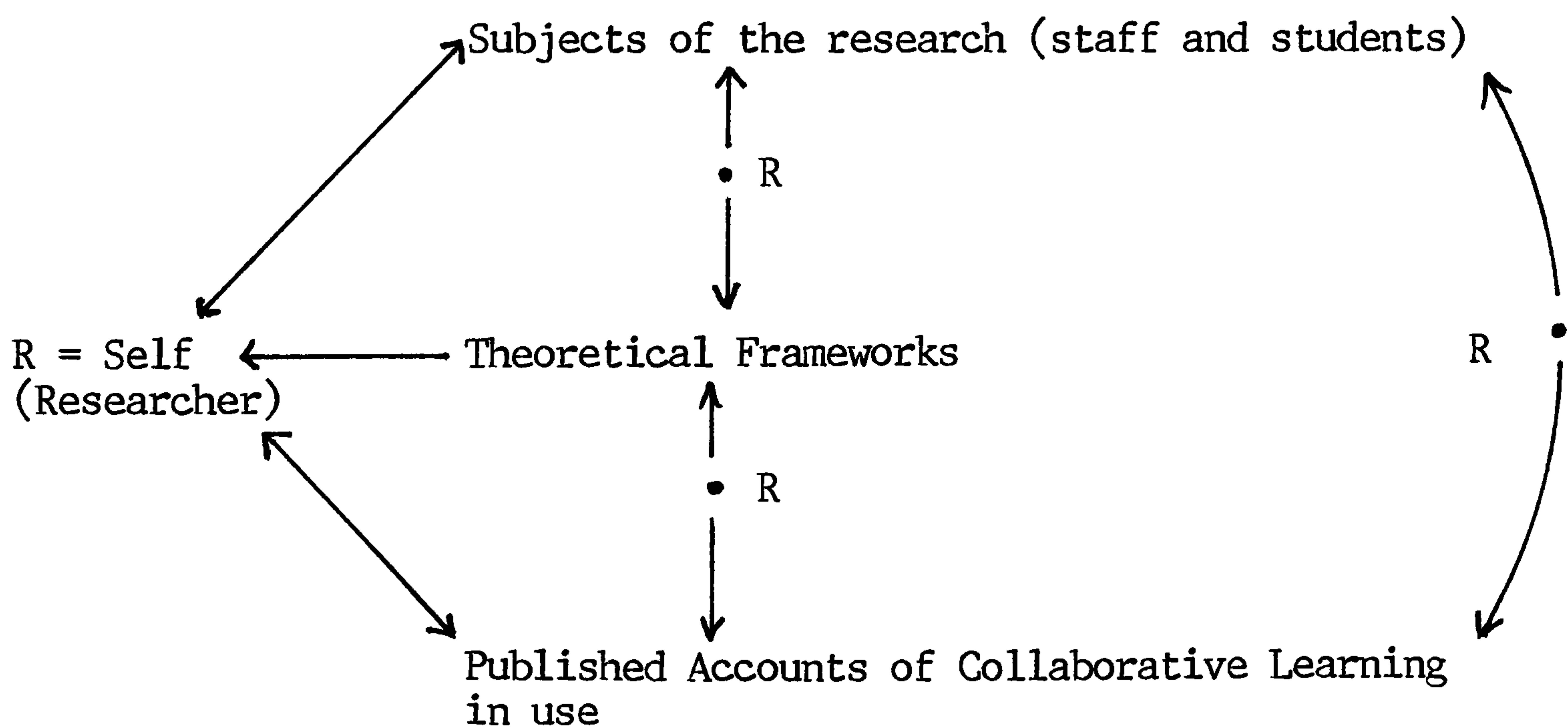
I used this material to adjust (I hoped, improve) my design of collaborative learning tasks with successive years of students; to protect me from marauding traditionalists who disapproved of my use of collaborative learning methods; as resources for a course I ran for colleagues on "The Use of Student-Directed Learning Groups in Higher Education"; as core material for a samizdat handbook for students discussing why student-directed learning groups are helpful and showing how they could use them independently of a tutor if they so wished (Todd, 1978); and as a basis for other papers and publications (Todd and Todd, 1979; Todd and Todd, 1981; Todd, 1981).

This research effort was solitary in the sense that I did not work on the data jointly with other researchers; when I talked about it to staff and students I was primarily communicating to them understandings I already possessed and although I took points and

comments from them these were surface alterations - I was not making knowledge jointly with them. It was also the case that the theoretical framework I applied to the data and to my teaching practice was very much the "Language and Learning" framework discussed in the first section of Chapter One which was carried over from my previous work with Douglas Barnes. This was not carried over uncritically or from simple reluctance to change, but accorded very much with my (then) main teaching interests on the psychology of human development and on language and cognition. Argyris and Schon (1975) would refer to these areas as containing my "espoused theories".

The point of this reflection is that looking back I can see that this action research was largely descriptive, and a-theoretical. The research questions were pragmatic (how can I improve my use of student-directed learning groups?) and the answers served their purpose; but the effort did not bring about interrogations of the self and others of the kind that support the forging of new knowledge. It did not promote the dialogic inter-play between the researcher and others that has been the hallmark of the experience of working on this thesis. This inter-play is illustrated in the figure below, where the researcher is shown as 'R'.

Figure 13: Dialogic Aspects of the Study



The figure shows schematically an interaction between the researcher and each of three significant sources of information, ideas and viewpoints. These were (a) the subjects of the research, (b) the varied corpus of material sought out and covered for the work on theoretical frameworks and (c) published accounts of collaborative learning in use. The figure also shows in the vertical arrows the interaction between these areas themselves. The researcher may be pictured as positioned at the mid-point of each of these three vertical arrows turning in inquiry from one to the other, for instance first to look at what the subjects had to say from the standpoint of the theoretical material, and then querying the theoretical material with what subjects had said in mind. Viewing the different areas of the thesis from these different perspectives - a cognitive form of taking the role of the other - has forged generative links between the theory and the method of the thesis.

However, the data collection and analysis also fall short of fully blown grounded theory in certain ways. It was not possible within the constraints of part-time work towards a post-graduate award to allow the long breaks from data collection for theory generation recommended by Glaser and Strauss (p 73). The analytical work therefore has possibly been more loaded to the end of the enquiry than Glaser and Strauss at times imply is ideal! Their recommendations are sometimes contradictory on this point (specifically in view of their discussion of the role of secondary analysis of data). Whilst the work for the thesis is not at all in conflict with their recommended timetable ("at the beginning there is more collection than coding and analysis; the balance then gradually changes until the end when the research involves mostly analysis with brief collection and coding for picking up loose ends" p 72-73) it is true to say that the initial sampling frame set up (all the tutors using collaborative learning in the University of X focussed more on achieving complete coverage than a sampling frame derived on purely theoretical grounds. The result of this has been the collection of more data than perhaps was necessary. But the lesson was learned in time to apply it to the collection of data from students and the

observational fieldwork both of which proceeded along more selective lines in the light of the preliminary analysis.

CASE STUDY METHODS

Having established the broad methodological home territory of the thesis it may be helpful to consider the arguments for carrying out a case study.

These arguments are tightly linked to the foregoing discussion and to the research questions of the thesis. The Introduction to the thesis set out some features of published accounts of the use of collaborative learning, focussing particularly on the fact that they are often self-report and often of one-off uses of collaborative learning; that individual examples of these accounts refer to localised sections of the literature; that they come from a wide variety of educational institutions and of subject areas; that the students' views are under-represented; and that developmental aspects of the use of collaborative work (whether it be development by students or by staff) tend, inevitably to be over-looked when the picture is a snap-shot at one point in time. All of these factors make it hard to suggest any generalisations from this literature in that it cannot support any systematic analysis of the variety of influences upon collaborative learning.

A case study of collaborative learning within a single institution of higher education offered the chance to hold institutional factors constant while permitting exploration of, for instance, collaborative learning as implemented in different subject areas.

Case study methods have their origins in clinical research where the focus of study is what Erikson (1958) has called the "universe of one". Jean Ruddock (1984) has pointed out the important distinction for educational research between case records (which are recorded like historical records but not interpreted) and case study methods which are wholly interpretive in intention.

In a paper on case study research methods in comparative

education Crossley and Vulliamy (1984) distinguish between three traditions of case study in educational research. These are (a) the anthropological study of a single community or culture; (b) case study techniques in sociology, linked particularly to the work of the Chicago school but also including case studies of schools in England; and (c) the use of the case study in qualitative approaches to curriculum and programme evaluation.

Whilst there are significant areas of overlap between these three groups, notably in the qualitative methods drawn on (ethnography, participant observation, field research and observation, naturalistic observation, collection and analysis of documentation and unstructured interviews, for instance) these three traditions at heart focus on different interests. In the instance of the anthropological case study the interest is in the culture (or some aspect of it) of the people in question. Case studies of schools, within the so-called "ecological" tradition look at the whole school (almost as if it were a tribal system) but using sociological concepts about the relationship between schooling and society. The case study approach to curriculum design and evaluation aims to include the processes of schooling or education within its purview and to use data collected within the educational setting in order to carry out an "illuminative evaluation" (Hamilton and Parlett, 1977) of what is happening there. The concept of "illuminative evaluation" particularly has been applied to the study of innovatory educational practices:

"The aims of illuminative evaluation are to study the innovatory programme; how it operates; how it is influenced by the various school systems in which it is applied; what those directly concerned regard as its advantages and disadvantages; and how students' intellectual tasks and academic experiences are most affected. It aims to discover and document what it is like to be participating in the scheme, whether as teacher or pupil; and in addition to discern and discuss the innovation's most significant features, recurring concomitants and critical processes. In short it seeks to address and to illuminate a complex array of questions."

(Hamilton, et al., 1977, p 10)

If we delete from this quotation the references to schools and school teachers; and if we set on one side the implication that we are dealing with an institutional "scheme" this quotation summarises the rationale of this case study in one paragraph.

The differences are that here we are concerned with higher education; and that the "innovation" is not part of an authorised "scheme" being implemented as a result of an institutional decision. The use of collaborative learning can well be viewed as an innovation, but the instances revealed by the data collected for the thesis exist as a result of the separate decisions of many individual tutors - often in ignorance of the fact that others were using them also.

Robert Walker (1983) has commented that the case study genre is particularly appropriate for capturing such diversity - and that the strengths of the method lie in its power to capture the "hidden curriculum", informal social structures and the unintended consequence of actions. Walker's criticisms of the case study method (in this same article) seem to me to confuse what is sometimes the case with what is necessarily the case - and in no way target specifically on the case study method alone. Arguments that the case study is an intervention in other people's lives, that it provides a biased view of the way things are, and that it is inherently conservative are in no way specific to the case study per se, but potentially applicable to any social science research method.

Whilst some of Walker's recommendations are obscure ("the classes I had studied needed to be balanced by equally penetrating studies of locations I hadn't studied" p 162 - as if reality is always just around the corner and as if a researcher can be both where s/he is and where s/he is not) the design of the case study for the thesis incorporates others. In particular, Walker's points about using a case study to capture changes through time, to capture a variety of points of view (for instance, those of students as well as of teachers), to complement interview data with observations and vice versa, and to include those with power in the scope of a study (as opposed to carrying out what Gouldner has called "under-dog sociology") are all ones that are catered for in the design of this

study - albeit as a result of decisions made prior to reading Walker's article. This approach is similar to Glaser and Strauss's idea of "slices of data" (Glaser and Strauss, 1968, p 65), namely the use of different kinds of data to provide different vantage points from which the research may develop the properties of a category.

AN N OF ONE

Patton (1980) discusses what he calls "purposeful" sampling, one type of which, the critical case, involves an "N of one" (p 218).

"Critical cases are those that can make a point quite dramatically or are, for some reason, particularly important in the scheme of things"

(p 218)

Patton's examples include Newton's apple, Galileo's feather, and the use of individual case records by Freud and Piaget. These single objects, phenomena or individuals were selected for observation and analysis either on the principle that if they can do it, anyone can or on the grounds that if they can't, we can't expect others to (Patton, *ibid*, p 219).

The educational institution used for the collection of data for the case study was chosen on the latter criterion, as being in the university sector (and thus, having enjoyed in the period prior to the study more generous funding per student head than public sector institutions); as having, moreover, a principled and publicly stated commitment (for instance, in departmental entries in the Prospectus) to more liberal teaching methods; as an extremely popular institution, in terms of student demand for places; and one which had to a significant degree developed new methods of assessment and types of course structure in its relatively short life as a "new" university of the 1960s. To rephrase one of the questions at the beginning of this chapter, if collaborative learning had no existence in everyday teaching methods here - it could hardly be expected to have any regular life anywhere in British higher education.

There was also another side to this thinking. The action research I had done on my own use of collaborative learning in a

public sector institution (and the feedback I had from colleagues for whom I had run courses) had shown me that collaborative learning might survive in a traditional institution, but that it would be like a tree on a cliff face, bent in the direction of the prevailing wind. Bernstein's concepts of classification and framing (see Chapter One) help to explain why this should be the case. I wanted, in this study, to document and analyse the use of collaborative learning in non-adverse conditions, used in the way tutors wanted to use it, not in the ways in which they could manage to use it. The chosen university seemed to offer the freedom that tutors would need if they were to exploit collaborative learning to the full.

LOCATING RESPONDENTS

As a first step, all academic staff in the University (both research and teaching staff) were sent a letter (Appendix 1) outlining the proposed research project, providing a definition of collaborative learning with examples, and asking tutors to return a tear-off slip if they used collaborative methods and were interested to be involved. These letters were distributed via heads of departments, with a covering letter, so as to gain their approval for the venture (or at least, if they disapproved, to discover it at an early stage!)

In the event, all heads of department save one distributed the enclosed letters to individual staff, and several heads of department wrote back helpfully discussing teaching methods used in their departments, and sometimes recommending names to contact. The one professor who did not distribute the letter wrote back to say that no-one in his department used collaborative learning methods and therefore circulation of the letter would be a waste of time. In response to a second letter asking if he would have the letters distributed anyway so as to ensure full coverage of the university's staff he agreed to do so - but he was right, and in the event no uses of collaborative learning by members of staff from that department are included in the data collection.

An early point of anxious discussion with the internal supervisor to the thesis had concerned the minimum number of tutors (using collaborative learning and willing to co-operate) necessary in order that the case study should be viable. At least ten seemed a number to be hoped for; the possibility of as few as four or five raised doubts about proceeding with the project. In the event, the initial letter produced an un-looked for wealth of responses: some from staff who defined themselves as using collaborative learning and who offered to be involved; some from staff suggesting other colleagues to contact (including nominations of some staff who were on leave of absence or sabbaticals); some from people who simply expressed interest in and support for the project whilst regretting that they did not use collaborative learning methods themselves and so could not be of help. Altogether 40 people out of a "mail shot" list of 300 staff replied positively in one way or another. The early fears of unviability due to lack of "subjects" were now replaced by anxieties about the huge volume of data collection and analysis that lay ahead consequent upon this unanticipatedly high response.

The initial "mail shot" seeking of respondents was supplemented in three ways: (a) by putting notices about the research in the university's news sheet so as to try to catch people who had not responded first time around, or new appointees as they took up their posts; (b) as the data collection got under way, by asking both staff and students if they knew of any other tutors who used collaborative methods; (c) as my interest in the users of collaborative learning became known, by unsolicited recommendations from colleagues to new staff to contact me, or to me to get in touch with them. Such recommendations were still coming in three years after the initial "mail shot" but a line had to be drawn or the data collection for the thesis would never have been complete. This boundary was drawn as "all tutors using collaborative learning at the University of X located between April 1984 and the end of the summer term 1985." This meant that while data collection was carried out between May 1984 and the new year of 1987, no new "subjects" were added to the list after the summer of 1985. (I learned after this

point of at least two staff members who were said to be using collaborative learning methods - one as a new appointee, one an existing member of staff who had begun using group projects - neither of whom was included in the data collection of the thesis as their use of collaborative learning began after the terminal cut-off point.) Within the defined time period, however, it is unlikely that there were any tutors using the methods in which I was interested to whom I did not talk. A timetable of the data collection is given as Appendix 2 at the end of the thesis.

DEPARTMENTAL COVERAGE

All of the 40 initial replies were followed up, in addition to "new referrals" between April 1984 - July 1985 as discussed above. Inevitably, preliminary conversations over the telephone or face to face revealed that some of the tutors who had responded (or who had been suggested by others) were using some variety of tutor-led group work, but not the collaborative work that was the focus of interest for the thesis. In the event thirty one tutors were interviewed for the data collection. These thirty one tutors were spread across the university's departments as shown in Figure 14 below.

Figure 14

Departmental Location of Tutors interviewed for the Thesis*

Archaeology	(1)	Education	(7)
Biology	(3)	History	(3)
Careers Service	(1)	Language	(2)
Chemistry	(1)	Music	(1)
Computer Science	(4)	Politics	(2)
Economics	(1)	Psychology	(1)
English	(1)	Social Policy and Social Work	(1)
		Sociology	(2)

(*Numbers in brackets refer to numbers of tutors in each department)

The next figure shows the departments of students included in the data collection (either by conducting group interviews or administering individual questionnaires as discussed later in the chapter).

Figure 15

Departmental Location of Students included in the Data Collection

Archaeology	English
Biology	History
Careers Service	Politics
Chemistry	Psychology
Computer Science	Sociology
Education	

FORMS OF DATA COLLECTED AND RESEARCH DESIGN DECISIONS

At this point it may be helpful to re-iterate the questions (given at the beginning of this chapter) which were raised by the theoretical work and the examination of published accounts given in Chapters One and Two and which form the initial research questions of the thesis. These were:

- How representative are these accounts of the use of collaborative learning of the teaching practices of the ordinary tutor in higher education?
- What life does collaborative learning have in the everyday practices of an institution of higher education? Does it exist at all?
- If it does exist, in what form? Who utilises it and in which subjects?
- Why is it used? Are any of the philosophical and educational concerns discussed in Chapter One brought to bear upon its use?
- What factors seem to be linked to the success and failure

of collaborative learning?

- What do the students think of it?

Within the general framework of the case study, a number of design decisions were made as to the form and style of data collection that could most appropriately answer these questions.

Patton (1982) has suggested that "a paradigm of choices" may be used to replace the "debate and competition between paradigms" (pp 19-20) that has characterised arguments in the social sciences as to the relative merits and de-merits of quantitative or qualitative approaches and inductive or deductive analysis. He suggests that this "paradigm of choices" about methods becomes clearer when considered under four main headings:

- (1) Measurement Options - What kinds of qualitative and quantitative data to collect?
- (2) Design Options - How much to manipulate or control variance in the settings under study?
- (3) Personal Involvement Options - What kinds of inter-personal contacts should there be for the researcher with the subjects under study?
- (4) Analysis Options - To what extent should the study be open to whatever emerges (inductive analysis) and to what extent should prior hypotheses be examined (deductive analysis)?

(based on Patton, 1982, p 196)

Taking these options in turn, the design choices made in this enquiry have been as follows:

- (1) Measurement options: the kinds of data collected fall into five groups, including (a) partially structured interviews with twenty five tutors; (b) eleven partially structured group interviews conducted with students; (c) questionnaires administered to eight sets of students (questionnaires were used either where classes were too large to permit conducting a group interview or where it proved impossible to get students together for a group interview); (d) observations of thirteen collaborative groups working together; and (e) documentation of group

tasks collected in from tutors, and occasionally, from students. (Appendices 3, 4 and 5 give the staff and student interview schedules and the student questionnaire, Appendix 6 gives a page from "field" observation notes and Appendix 7 an example of documentation of a task provided by a tutor.)

The interviews with tutors necessarily form the core of the data - in that it is tutors who occupy the teaching role and who make decisions about teaching materials. Tutors are also necessarily the focus of an interest in their reasons for drawing on collaborative methods. Thus the first four of the questions listed on pp 138-139 can be answered by asking tutors - if they use collaborative learning, what form it takes, and why they do so.

The fifth question, on the factors linked to the success and failure of collaborative learning is one that straddles two types of respondent (tutors and students) as is the sixth, what the students think of it. The previous action research conducted on my own teaching in a public sector institution had suggested that students may sometimes have an entirely different perception not just of the worth of a teaching activity, but even of what the activity was, and pilot work for the thesis (conducted in a third institution) also indicated this was an interesting area. Accordingly, wherever possible students' views were also sought either by interview or questionnaire providing the potential to draw comparisons between students' and tutors' perceptions of collaborative learning.

The other aspect of methodological 'triangulation' (Denzin, 1970) drawn on was to supplement these two broad types of data with observations by the researcher of group work in action, and by collecting in documentation of group tasks. Another type of triangulation, that of using more than one level of analysis, was also drawn on

in the combination of analysis of data drawn from the individual level (individual interviews and questionnaires) and from the group level (group interviews). 'Theoretical' triangulation is manifested in Chapter One and guided both the questions posed to subjects and the analysis of their answers. 'Space' triangulation was not achieved in the empirical work although the analysis presented in Chapter Two achieves this in so far as it is possible for published work. 'Time' triangulation was not incorporated directly into the design of the research in the form of a cross-sectional or longitudinal design, but it was included within the scope of the interviews/questionnaires, i.e. respondents were encouraged to discuss previous uses of collaborative learning (as set out in the introduction to the thesis).

The interview and questionnaire schedules were designed so as to permit a degree of quantitative analysis of appropriate items, as will be apparent from subsequent chapters, although the bulk of the analysis is qualitative.

- (2) Design options: since the whole aim of the thesis was to study collaborative learning as it occurred in so far as was possible, there was no manipulation or control by the researcher of any factors which may have caused variance in the course of the field work. One significant cause of variance was, of course, held constant by design, in that all the data was collected within one institution.
- (3) Personal involvement options: one essential feature ran through all of the interviews with tutors. This was that both as a researcher and practitioner I had a strong interest in the use of collaborative learning - and this was matched by a keenness to talk about their individual

use of collaborative learning on the part of the tutors involved. The fact that I was also a practitioner was important. It was not solely that staff - who perceived themselves, sometimes ruefully, as using a relatively rare teaching mode - experienced the familiar positive effects of finding that what one does is of interest to someone else, although this factor was undoubtedly there. In addition a key point a short way in to the start of each interview (or in prior conversations setting up an interview) was the tutor's realisation that my involvement was also that of a practitioner. The acknowledgement of this seemed to produce an atmosphere within most of the interviews that was more akin to what Watson and Potter (1962) have called 'sharing' rather than to 'presentation'.

Interviews with tutors typically lasted between one and a quarter to two hours; in a small number of instances, where a tutor used collaborative learning a good deal, the interview had to be split into two sessions, and lasted up to four hours.

One other feature that it is important to note was that the first few early interviews stuck quite closely to the interview schedule both in topic and ordering of questions. However, subsequently I became much more unstructured in approach, using the interview schedule as a check list that all these points were covered somewhere in the conversation. There was no attempt to use standardised wording of questions on each occasion; often tutors told me what I needed to know without my asking; otherwise the form of my question would be one that followed on appropriately from what they had been saying.

The interview was viewed essentially as "an encounter necessarily sharing many of the features of everyday life" (Cohen and Manion, 1980) following on from

Cicourel's (1964) strongly argued case that since all interaction is situated, there is no way of conducting an interview which is somehow context (or bias) free. The notion of bias is predicated upon a view of there being some 'master reality' (Garfinkel 1967) whereas the implication of ethno-graphic work is that there are multiple realities which make sense within their context. Bhaskar (1979) has argued "that for every action (or belief) there is a set of real reasons, constituting its rationale, which explains it. ...Reasons ... are beliefs rooted in the practical interests of life" (p 123). The interviews may perhaps best be encapsulated as conversations about these reasons, these beliefs, these practical interests.

The interviews were recorded in written notes. I felt uneasy about using a tape or cassette recorder because of the need to monitor when to turn on the cassette - which I felt distracted from the empathetic atmosphere of the interview. On a couple of occasions I tried it out and found none of them conducive to early rapport. On the advice of the internal supervisor I also did a comparison on the taped and hand written accounts for these particular interviews, which suggested the hand written notes, although only readable by myself, were quite adequate. At an ESRC conference I attended on field research methods round about this time, researchers seemed equally divided between the users of cassette or tape recorders and the makers of hand written notes - and the reasons for the choice seemed to be what suited or felt comfortable to the researchers. Part way through the data collection, at the suggestion of a respondent who was himself an educational researcher, I returned to him a clean transcript of the interview to mark anything he did not want quoted or to correct any factual errors. Subsequently I offered this facility to all respondents, but not all took it up.

In the group interviews with students, relations were necessarily different, in that the students viewed me as occupying a status close to that of their tutor, even though not as a tutor at the time. The aims of interviewing students in groups were in part to reduce the potential influence of the researcher by enhancing the social power base of the students, in part to capture the flavour of their group dynamics and in part to use the potential of their group interaction to encourage them to consider the range of possible responses and to give reflective and cross-cutting views rather than a series of singleton's top of the head responses (Lomax and McLennan, 1984). The group interviews that were conducted were set up with the help of the tutor in question, sometimes in teaching time, sometimes not, sometimes a combination, perhaps with a cup of coffee, and most often had the atmosphere of a small party. The comment I wrote in my notes for an early group was "sturdy rogues" and this summarises the joking banter and the tales told me out of school - often against themselves with disarming honesty about the balancing act between the relative claims of academic work and a satisfying social life.

Finally, in the observations of group work I tried to make myself as unobtrusive as possible whilst being well aware that in most cases my presence was something of a burden courteously borne. In a couple of instances a tutor made it a condition of my visiting a group that I should participate in the group task and this produced a much more comfortable atmosphere. During the period of the data collection I had an HMI sitting in at some classes I taught myself and found it salutary to experience the effects of an outsider both on me and on my students' collaborative work.

- (5) Analysis options: the interview and questionnaire schedules make it clear that I began the data collection with some prior conceptions of reasons why tutors might decide to use collaborative learning and that features of the institutional context, particularly methods of assessment, would be important in predisposing to successful use. However, this was a field study, not an experimental study and the aim was to explain rather than to predict. I have already discussed earlier in this chapter the way in which interviewees' responses led to the clearer crystallisation of some theories as important ones to follow, and the way the co-temporaneously developing analytical framework evolved for Chapter One led to similar slight shifts in the focus of the inquiry. The analysis has therefore been primarily inductive in response to what has emerged from the data collection - tempered by the initial framework for inquiry having followed themes which earlier work had suggested were important. The framework is therefore analytic rather than descriptive and explanatory rather than predictive.

CONCLUDING COMMENTS

The aims of a case study are of necessity different from those of experimental or survey research in that case studies rest upon a different logic and support different types of statements. Silverman (1985) summarises Mitchell's (1983) argument that the logic of case studies is theoretically rather than statistically defined. The claim to validity of a case study rests upon its base in articulated theory, whereas survey research is dependent upon the representativeness of the sample used. Survey research deals in correlations not causes, while the case study provides a framework for the elucidation of logical and causal conceptions. Survey research is theory - neutral and avowedly value-free, while the case study is theory dependent.

Silverman adds:

"Quantitative research takes great care to select a sample in a way to allow that no bias is present. The aim is to try to reflect accurately the characteristics of the parent population. Conversely in a case study the analyst selects cases only because he believes they exhibit some general theoretical principle. His account's claim to validity depends entirely on demonstrating that the features he portrays in the case are representative not of a population but of this general principle. As Mitchell points out, the aim is not to select a typical case, but a deviant or compelling case."

(Silverman, 1985, *ibid*, pp 113-114)

Lawrence Stenhouse takes this theme further:

"In case study the relationship between a case ... and any population in which similar meanings may apply is essentially a matter of judgement. Such judgement depends heavily upon assessment of multi-variant complexes and of contexts, but it consequently demands a degree of descriptive verisimilitude of cases ... Judgement of cases accumulate into prudence."

(Stenhouse, 1985, pp 265-266)

He goes on to cite Habermas (1974, p 44) to conclude that the "case study tradition may be seen as a systematisation of experience within which interpretations are critically handled in the interests of preventing experience from seeming opinionated" (p 266). Whether this goal has been achieved in this study is a matter for the reader's own judgement.

CHAPTER FOUR

COLLABORATIVE LEARNING IN INSTITUTIONAL LIFE

INTRODUCTION

Chapter Three having set out the research design and methodology of the case study it is now appropriate to commence reporting on the analysis of these data. In this and subsequent chapters the data are used to answer the questions listed on p 137 of Chapter Three.

This chapter focusses on collaborative learning in institutional life. In particular, the chapter examines the life that collaborative learning had in the everyday teaching practices of the university used in the case study. The chapter looks at who utilised collaborative learning, in what form and in which subjects, at the tasks used and at how the work was assessed.

There are five main sections in the chapter: first, an examination of which tutors used collaborative learning; second, a discussion of when it was used; third, a discussion of variations in the task structures called upon; fourth, an analysis of the range of types of task called on by tutors in the study, that is, an analysis of collaborative learning 'repertoires'; and fifth, a discussion of collaborative learning and assessment.

WHO USED COLLABORATIVE LEARNING?

This section sets out who used collaborative learning.

Figure 14 and Figure 15 in Chapter Three (pp 137-138) set out the departmental location of the tutors and students included in the data collection.

From time to time in the course of the data collection it became apparent that the tutor being interviewed was using a variant

of tutor-led small group work rather than the collaborative work which is the subject of this thesis. This happened despite the definition of collaborative learning methods given in the letter seeking participants in the study, which went to all staff and despite the fact that all interviews were preceded by telephone calls or face to face conversations which re-iterated this definition. In such cases the interview was completed but not used for further data analysis. This explains why Figure 16 which follows showing who used collaborative learning within the institution is not identical to Figure 14 in Chapter Three. If the content of Figure 16 is compared with Figure 14 it can be seen that the small group work used by five tutors has been defined as tutor-led rather than collaborative and excluded from further analysis.

Figure 16

Tutors Using Collaborative Learning (and interviewed for the Data Collection)*

Archaeology	(1)	History	(3)
Biology	(3)	Language	(1)
Chemistry	(1)	Music	(1)
Computer Science	(3)	Politics	(2)
Education	(7)	Psychology	(1)
English	(1)	Sociology	(2)

Total: 26 tutors

* Numbers in brackets denote numbers of tutors in each department using collaborative learning and interviewed for the data collection

During the period of the data collection, therefore, there were at least 26 tutors using collaborative methods of one form or another in this institution, spread across twelve departments. The phrase 'at least' is advised. Clearly there may have been other tutors using collaborative learning in these or other departments who were not located for inclusion in the data collection. In the case of one of the departments above it was made clear to me that most of the department's teaching was carried out using collaborative methods and

the one tutor interviewed was to be viewed as 'the voice of the department'. This tutor therefore described in the interview collaborative tasks used by colleagues in that department as well as those used by this tutor.

Additionally, three or four other tutors who had been using collaborative methods came to light after the data collection was completed; and the researcher's own use of collaborative learning was excluded from the data collection.

In one sense the size of this group came as a surprise. In terms of numbers, there were more tutors using collaborative methods than even the most optimistic estimates had predicted prior to the data collection. Researcher and supervisor had agreed that three or four tutors would not support a viable study but that ten might be a minimum acceptable number. To have thirty one positive responses, which then whittled down to twenty six users of collaborative learning seemed a great bonus.

However, in proportional terms, the tutors using collaborative learning were in the minority - around 10% of the teaching staff as a whole. There is no way of knowing whether this is exceptional or whether a similarly thorough trawl within other higher educational institutions would reveal matching proportions of tutors using collaborative methods. Certainly the author's experience of working in three other higher educational institutions (a college, a university and a polytechnic) prior to this study had suggested much lower proportions than this.

The immediate effects of this number of responses were two-fold. Firstly, this number of tutors, and their spread across departments, provided for a great deal of variety in the use of collaborative work. This variety is documented and analysed in the following pages and contributes greatly to the underlying validity of claims that are made in the thesis. Secondly, it has contributed to the length of the thesis in that there is a large amount of data to present and discuss. Wherever possible these data have been summarised in quantitative or tabular form but the heart of the analysis is qualitative and includes illustrative quotations from the interview or questionnaire data which necessarily lengthen the

thesis.

There are two other points it is worth putting forward with regard to the number of tutors using collaborative learning. One is that an informal survey carried out within the university by a committee concerned with teaching methods had provided indications of fairly common use of tutor-led small group teaching methods and of interest in developing their use further. (This survey was conducted quite independently of this research, co-temporaneously with the second year's work on the thesis and permission was given to look at the data.) Secondly, a number of departmental entries in the undergraduate prospectus at the time referred in their comments on teaching methods to tutor-led small group work, to practical and project work and to the aim of fostering discussion and independent work by students. It may be that the unexpectedly high incidence of collaborative work documented by the thesis is best understood in the context of a surrounding culture of tutor-led small group work which provided conditions under which staff felt they could experiment further.

WHEN COLLABORATIVE LEARNING IS USED

The timing of the use of collaborative learning and the frequency with which it was used by individual tutors are key markers of the role of collaborative learning in institutional life.

Thirteen tutors used collaborative learning methods in just one of the courses which they taught. These courses could be located in time as, for instance, a "term three course" or a "two term course in the second year".

Of the thirteen, nine used a single collaborative task within this single course whilst four used multiple tasks within a single course.

Thirteen tutors used collaborative methods in more than one course that they taught. The highest number of courses in which collaborative learning was used was four (two tutors). Six tutors used collaborative learning in three courses that they taught and

five tutors used collaborative learning in two courses.

Of these thirteen, six were using multiple tasks within multiple courses. The remaining seven used collaborative learning in more than one course but using a single task within each course sometimes the same task in different courses.

These data are summarised by department in Figure 17 below.

Figure 17

Tutors' Use of Collaborative Learning by Numbers of Courses and Tasks*

Single Task Single Course	Multiple Tasks Single Course	Multiple Tasks Multiple Courses	Single Task Multiple Courses
Archaeology (1) Biology (3) Chemistry (1) Computer Science (3) Politics (1)	Education (2) Language (1) Politics (1)	Education (4) Music (1) Sociology (1)	Education (1) English (1) History (3) Sociology (1) Psychology/ Computer Science** (1)
<u>Totals</u> <u>9</u>	<u>4</u>	<u>6</u>	<u>7</u>

* Figures in brackets denote numbers of tutors

** This tutor used collaborative learning methods in teaching for both the Psychology and Computer Science departments

Figures 18, 19, 20 and 21 which follow take each of these groups in turn to set out in more detail when collaborative learning was used.

Figure 18

Single Course, Single Task Tutors: Timing of Collaborative Learning

Archaeology Tutor A:	First Term, Year One
Biology Tutor B:	Third Term, Year Two
Biology Tutor C:	Sixth Term, Year Two
Biology Tutor D:	Sixth Term, Year Two
Chemistry Tutor	Sixth Term, Year Two
Computer Science Tutor F:	Sixth Term, Year Two
Computer Science Tutor G:	Summer Vacation, Post-graduate Year One
Computer Science Tutor H:	Summer Vacation, Post-graduate Year One
Politics Tutor W:	Eighth Term, Year Three

Figure 19

Single Course, Multiple Task Tutors: Timing of Collaborative Learning

Education Tutor J:	Third Term, Post-graduate Year One
Education Tutor O:	First Term, Post-graduate Year One
Language Tutor T:	Second Term, Year One
Politics Tutor V:	Mixture of Fourth and Seventh Terms, Years Two and Three

Figure 20

Multiple Tasks, Multiple Courses Tutors: Timing of Collaborative Learning

Education Tutor I:	First & Third Terms, Years One, Two & Three (Course One) First & Third Terms, Post-graduate Year One (Course Two)
Education Tutor L:	Third Term, Post-graduate Year One (Course One) First Term, Post-graduate Year One (Course Two) Short In-service Course (Course Three)
Education Tutor M:	First Term, Post-graduate Year One (Course One) Third Term, Post-graduate Year One (Course Two)
Education Tutor N:	First & Third Terms, Post-graduate Year One (Course One) First Term, Post-graduate Year One (Course Two) Short In-service Course (Course Three)
Music Tutor U:	Mixture of Years One, Two & Three (Course One) Mixture of Years One, Two & Three (Course Two) Mixture of Years One, Two & Three (Course Three)
Sociology Tutor Z:	Two term course, mixture of Years Two & Three (Course One) One term course, mixture of Years Two & Three (Course Two) One term course, mixture of Years Two & Three (Course Three)

Figure 21

Single Task, Multiple Course Tutors: Timing of Collaborative Learning

Education Tutor K:	One term course, joint first & second years (Course One) Post-graduate Year One (Course Two)
English Tutor P:	First and second years combined (Course One) Second years (Course Two) First years (Course Three) Post-graduate Year One (Course Four)
History Tutor Q:	First Term, Year One (Course One) Fifth Term, Year Two (Course Two)
History Tutor R:	First Term, Year One (Course One) Sixth Term, Year Two (Course Two) Fifth Term, Year Two (Course Three) Eighth Term, Year Three (Course Four)
History Tutor S:	First Term Year One (Course One) Fourth Term, Year Two (Course Two) Sixth Term, Year Two, (Course Three)
Psychology/ Computer Science Tutor*:	Summer Vacation, Post-graduate Year One (Course One) Fifth Term, Year Two (Course Two)
Sociology Tutor Y:	Fourth & Fifth Terms, Year Two (Course One) One term course, joint second & third years (Course Two) One term course, joint second & third years (Course Three)

* This tutor used collaborative learning methods in teaching for both the Psychology and the Computer Science Departments

The simple classifications and quantifications contained within the tables in this section give a bird's eye view of the departments within which collaborative learning was used and when it was used. They also begin to give an idea of the place of collaborative learning within the teaching of individual tutors in the study. However, they do not give any indication of what "collaborative learning" meant in practice on those occasions when it was used. The next section takes the corpus of data as a whole and examines the variations in structure of the tasks that were used.

VARIATIONS IN TASK STRUCTURES

In order to give an overview of what collaborative learning consisted of at the University of X during the period of the data collection, this section discusses the types of tasks used in accordance with the classification set out in Chapter Two.

Chapter Two derived five broad types of collaborative work from its examination of the task structures used in published accounts. These were (a) Dyads (b) Buzz Groups (c) Student-directed Learning Groups (d) Syndicates and (e) Group Projects and Case Studies.

To summarise the definitions of these different ways of structuring collaborative work: dyads put students to work in pairs, often for short periods of time, commonly but not always within a lecture and usually with a task structure that uses alternation between the two group members; buzz groups are larger groups, perhaps up to six members, discussing issues or problems for a short period within a taught session; student-directed learning groups have around three to eight members and work on discrete tasks which replace some taught elements of a course; syndicate groups replace taught elements of a course altogether, with groups of four to eight members carrying out a series of linked assignments (and producing written reports) over a period of time and several meetings, this work constituting the course; group projects and case studies are large scale tasks, with many sub-tasks, working on problems which cut across disciplinary boundaries to produce a solution (e.g. a report, an artefact, a design) to a live problem. The chapter noted that there was a degree of over-lapping between these categories and that they marked a broad progression in the demands of the task (from least to most difficult) with scale of demand defined by features such as number of group members, length and number of meetings of the group, size of task, degree of prior structuring provided by the tutor, number of sub-tasks, and type of product required from the group work. The chapter also noted that whereas the dyads and buzz groups considered were used often as a supplement to the lecture, (and then construed as a means of enhancing its efficiency) by contrast, student-directed learning groups, syndicate techniques and

group projects and case studies replaced most, perhaps, of all, traditionally-taught elements of a course and were utilised precisely because they served learning goals quite other than those of the lecture.

Figure 22 on the next page shows the tutors in the study who used these different types of task.

The categories used in Chapter Two and applied in Figure 22 were derived from published literature. They fit the data collected quite well but nevertheless some qualities of tasks in the data should be noted which mark qualifications to the spirit of these categories.

Firstly, with regard to dyads, it should be noted that there were no examples in these data of the use of the 'learning cell'. It should also be noted that 'dyad' was interpreted loosely by tutors where there was an odd number of students in a class or where three people expressed the wish to work together - so the dyadic group work in this category includes some threes as occasional exceptions to the rule of two.

Secondly, with regard to buzz groups, the tutors who used group tasks classified in this way reported that they never lectured in the accepted sense. These spells of group working were short and interspersed with other activities such as a whole class discussion. They thus fulfilled the criteria for buzz group working, but did not have the aim of enhancing or supplementing tutor monologue. Rather, the aims of the tutors who used these buzz groups were for learning outcomes quite different from those that they thought could be achieved in a lecture, and similar to those they intended to see achieved when they used other forms of collaborative learning groups. The same comment applies to those two tutors' use of dyads. These were both tutors who used multiple tasks in multiple courses and whose use of both dyads and buzz groups was part of a strong commitment to collaborative learning, reflected in the repertoire of the types of tasks that they used. The fact that only two programmes of group work were felt to fall into two categories (those of Chemistry Tutor E and Psychology/Computer Science Tutor X) taken

(continued on p 157)

Figure 22

Types of Task Structures Called upon

Dyads	Buzz Groups	Student-Directed Learning Groups	Syndicate Techniques	Group Projects and Case Studies
Archaeology Tutor A Chemistry Tutor E Education Tutor I Education Tutor J Education Tutor L Education Tutor M Education Tutor N Language Tutor T Psychology/Comp.Sc. Tutor X (for Psychology) (2) Sociology Tutor Y Sociology Tutor Z	Education Tutor I Education Tutor N	Biology Tutor B Biology Tutor C Education Tutor I Education Tutor J Education Tutor K Education Tutor L Education Tutor M Education Tutor N Education Tutor O History Tutor R History Tutor S English Tutor P Sociology Tutor Z	Chemistry Tutor E(1) Education Tutor J Politics Tutor V	Biology Tutor D Computer Science Tutor F Computer Science Tutor G Computer Science Tutor H Education Tutor I Education Tutor K Education Tutor L History Tutor Q History Tutor R Music Tutor U Politics Tutor W Psychology/Comp.Sc. Tutor X (for both Psychology & Computer Science) Sociology Tutor Z

(1) The one programme of group work used by this tutor has been put into two categories. The programme was a syndicate programme but conducted in pairs.

(2) The group project for psychology students conducted by this tutor was done in twos or threes.

together with the facts that there are examples in the data of each of the five categories and no examples in the data that cannot readily be placed in one of the five categories derived from the published work (i.e. there has been no need to devise another category or to use a get out such as 'other') can be interpreted as evidence that the tutors in this study are not divergent, as a group, from the tutors whose work is reported in the literature. There is also something of a vindication for the categories here. However, it should be noted that the categories are not watertight with respect to the data collected just as they are not with respect to the published literature. There is a degree of shading or overlap at the margins of each category.

The reader still does not know what these groups of students have done. As a preliminary to the next section, examining repertoires of task structures called on by individual tutors, the reader is invited now to turn to Appendix 8, which summarises each collaborative task in the data set. For convenience, Appendix 8 groups tasks as in Figures 18 to 21 above and the same ordering is followed in the first part of the next section, below.

COLLABORATIVE LEARNING REPERTOIRES

Single Task, Single Course Tutors

As was shown in Figure 18, above, nine of the tutors had a collaborative learning repertoire that was limited to a single task used in a single course. The types of tasks used by these **single task, single course** tutors are shown below in Figure 23 (see p 158). This figure also shows the time allotted to the task, whether the course itself was an optional one, and whether the task was carried out by students in timetabled time or in their own time.

Figure 23

Single task, single course tutors. Types of task used and time allotted to the task

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Archaeology Tutor A	dyads	talk on a church	1	3-4 weeks in students' own time	OT	no
Biology Tutor B	s-d-1 groups	isotopes practical	1	4½ hrs in one afternoon session	TT	no
Biology Tutor C	s-d-1 groups	enzymes practical	2	18 hrs over 3 weeks (3-5 meetings)	TT	yes
Biology Tutor D	group projects & case studies	world food	2	8 weeks timetabled and own time	OT + TT	yes
Chemistry Tutor E	dyads/syndicate techniques	Oil Strike	2	4 x 3 hr sessions over 4 weeks	TT	yes
Computer Science Tutor F	group projects & case studies	software engineering	2	8 x 3 hr sessions over 8 weeks	TT	no
Computer Science Tutor G	group projects & case studies	BR information system	PG1	up to 12 weeks of summer vacation	OT	no
Computer Science Tutor H	group projects & case studies	database management	PG1	up to 12 weeks of summer vacation	OT	no
Politics Tutor W	group projects & case studies	rural development	3	2 terms of 5 hrs timetabled per week + students' own time	OT + TT	yes

* Task structure categories are: dyads, buzz groups, student-directed learning groups (s-d-1 groups), syndicate techniques and group projects & case studies.

In this group there were two tutors using dyads, of whom one, the Chemistry tutor, paired students for syndicate work. Two used student-directed learning groups and five used group projects and case studies. None of these tutors used buzz groups.

The time allocated to collaborative work by these tutors was substantial, with eight of the nine devoting several meetings over several weeks to collaborative work. The one tutor in the group who used a single meeting (Biology Tutor B) allocated four and a quarter hours of timetabled time to collaborative work. Otherwise the time allotted for the completion of collaborative work ranged from three weeks to two terms (i.e. eighteen weeks of term plus a four week vacation in the middle). The length of time allotted related to the type of task used and reflected the amount of work it required students to do.

One of these tasks had to be done in term time entirely outside timetabled time. Four of the tasks were done in term time entirely within timetabled time. Two tasks were done in a combination of timetabled time and in the students' own time in term (and additionally in the vacation for Politics Tutor W). Two tasks were to be done entirely outside timetabled sessions.

Five of these tutors used collaborative learning tasks in course units that students were required to follow as part of the overall structure of their course. Four of the tutors used collaborative learning in course units that were optional. For each of the optional courses it was known to students beforehand that their choice of this option would entail working on a collaborative task.

It could be tempting to assume that the use of a single collaborative task in a single course represents a less than whole-hearted commitment to collaborative methods. However, these tutors' comments about why they used collaborative learning in this case but not in others indicates otherwise. Rather, several tutors indicated their feeling that collaborative tasks of this order of magnitude were demanding both for students and tutor - too demanding for use with every group of students on every course taught. The decision to use collaborative learning methods within one particular course unit

was linked to aspects of the course's aims and content that made it possible or appropriate to frame a collaborative task for these students to do.

The decisions of some individual tutors in this group to use a collaborative task also inter-sected with departmental decisions about the type of work to be done by students at a certain stage in the course.

In the case of Computer Science Tutors G and H (and of Psychology/Computer Science Tutor X - see the section on single task, multiple course tutors) the decision to require students on the taught MSc in Information Processing to carry out a group project was an extension of a departmental decision about the design of this course. The departmental decision was one in which they had taken part (except for Psychology/Computer Science Tutor X) and so their commitment to collaborative work was also personal (as will be discussed in more detail in Chapter Five). This department's commitment to collaborative and active teaching methods also formed the background for Computer Science Tutor F's use of project work with second year students. Similarly, Archaeology Tutor A's use of dyads in the first year was an extension of a strongly articulated departmental philosophy supporting active learning in teams and an early start on preparing students for a professional (not academic) role as practising field archaeologists.

For other tutors in this group their use of collaborative techniques inter-sected with but diverged from departmental philosophies and practices on teaching methods. Biology Tutor B used a practical that was required of students as an opportunity to develop the practical into a collaborative task - noting that his head of department and most of his colleagues did not know he did this. He added that if the relevant Board and Committee had known that the practical was conducted in this way they probably would not have made it a "required" practical for assessment purposes. Biology Tutor C felt that "collaborative work was not on the agenda" in that department but similarly used a "required" practical as an opportunity to try out his developing ideas on teaching methods. Biology Tutor D thought his use of collaborative methods was regarded

with "amused tolerance" by his departmental colleagues. He used the opportunity provided by teaching an option to frame that option with a strongly collaborative slant, where students and colleagues knew beforehand what taking this option would involve. Chemistry Tutor E and Politics Tutor W made use of options in a similar way. Thus for these single task, single course tutors, their use of collaborative learning either was an **extension** of a departmental decision on course design, or, where its use was a personal decision these tutors used departmentally-agreed course elements as **opportunities** to put in collaborative learning. The scale of these collaborative tasks, and the time allotted to them is therefore related to the time the department had allocated to the section of the course these tutors were to teach.

Single Course, Multiple Task Tutors

Four of these tutors used collaborative learning techniques in a single course but within that course used multiple tasks. The types of tasks these **single course, multiple task** tutors used are shown in Figure 24, on the next page.

In this group there were three tutors using dyads, two tutors using student-directed learning groups, one tutor using syndicate techniques and one tutor using a group project. None of these tutors used buzz groups.

One tutor (Education Tutor J) used three types of task (dyads, student-directed learning groups and group projects and case studies) and within this constructed several different tasks classified as student-directed learning groups. The other tutors each repeated their use of the same type of task.

Less time overall was allocated to collaborative work by these tutors than by the 'single task, single course' tutors considered above. The time allocated varied between nine timetabled weekly meetings of two hours to about half an hour of timetabled time. As with the single task, single course tutors, the time allotted related

(continued on p 163)

Figure 24

Single course, multiple task tutors. Types of task used and time allotted to the task

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Education Tutor J	dyads	school visiting 1	PG1	up to students	OT	no
	s-d-1 groups	school visiting 2	PG1	up to students	TT + OT	no
	group projects & case studies	research project	PG1	9 weeks x 2 hours weekly + own time	TT + OT	no
	s-d-1 groups	Roman lead pigs & navy letter	PG1	one whole day	TT	no
	s-d-1 groups	workshop programme	PG1	about half an hour	TT	no
Education Tutor O	s-d-1 groups	qualitative & quantitative methods	PG1	40-60 minutes	TT	yes
	s-d-1 groups	educational research methods	PG1	40-60 minutes	TT	no
	s-d-1 groups	other related topics	PG1	40-60 minutes	TT	no
	dyads	questions in Cantonese	1	one hr. fortnightly	TT + OT	no
Language Tutor T	dyads	adjuncts in Cantonese	1	one hr. fortnightly	TT + OT	no
	dyads	comparison English/Cantonese gloss	1	one hr. fortnightly	TT + OT	no
	dyads	division of strings to sentences	1	one hr. fortnightly	TT + OT	no
Politics Tutor V	syndicate techniques	series of 8 topics on government and parliament	2+3	fortnightly cycle of preparation for meetings of 2 hours	TT + OT	yes

* Task structure categories are: dyads, buzz groups, student-directed learning groups (s-d-1 groups), syndicate techniques and group projects & case studies.

to the type of task used (Education Tutor J's research project carried out over a term was the largest single task) and reflected the amount of work it required students to do.

One of these tasks had to be done in term time entirely outside timetabled time. Four of the tasks were done entirely in term time in timetabled time. Seven tasks required a combination of timetabled time and the students' own time - all in term time.

All except one of these tutors (Politics Tutor V) used collaborative tasks on course units that students were required to follow as part of their course. Students taking the option taught by Politics Tutor V knew beforehand that their choice of this option would entail collaborative working.

Two of the tutors in this group using multiple collaborative tasks used time and course structure more flexibly than the single task, single course tutors. These were Education Tutors J and O who each broke down timetabled time and course units into a series of collaborative tasks where the time allotted to each unit of collaborative activity varied according to the nature of the different tasks used. Two of the tutors (Language Tutor T and Politics Tutor V) stayed within the time already allocated by the departmental timetable, that is, their units of collaborative work corresponded with units of timetabled time. What they did was to devise a series of collaborative tasks which each fitted the given timetabled period - although they also required work in the students' own time.

Multiple Tasks, Multiple Courses Tutors

As shown above in Figure 20, six of the tutors in the study used several tasks on several courses. The types of the tasks used by these **multiple task, multiple course** tutors are shown in Figure 25 (see pp 164-167).

(continued on p 168)

Figure 25

Multiple Task, Multiple Course Tutors: Types of Task Used and Time Allotted to the Task

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)	
Education Tutor I	dyads	ice-breaking exercise	1,2,3/PG1	10 mins	TT	yes	
	buzz groups	negotiating curriculum	1,2,3/PG1	Varies between half an hour to greater part of 2 hour session. Negotiated with students	TT	yes	
	s-d-1 groups	subject matter of guidance and counselling	1,2,3/PG1		TT	yes	
	s-d-1 groups	unemployment	1,2,3/PG1		TT	yes	
	s-d-1 groups	counselling skills	1,2,3/PG1		TT	yes	
	s-d-1 groups	exploring and clarifying	1,2,3/PG1		TT	yes	
	s-d-1 groups	stages of an interview	1,2,3/PG1		TT	yes	
	s-d-1 groups	simulations	1,2,3/PG1		TT	yes	
	dyads	role play	1,2,3/PG1		TT	yes	
	group projects and case studies	guide for schools	PG1		TT + OT	yes	
	group projects and case studies	guide for department	PG1		TT + OT	yes	
	buzz groups	choosing materials	PG1		Varies between 20-30 mins to greater part of 2 hour session. Negotiated with students.	TT	yes
	dyads	trust exercise	1,2,3/PG1			TT	yes
	s-d-1 groups	role of form teacher	PG1			TT	yes
	s-d-1 groups	linking industry and community	PG1		2 hours	TT	yes
s-d-1 groups	syllabus review	1,2,3/PG1	2 hours		TT	yes	
s-d-1 groups	profiling systems	1,2,3/PG1	20-30 mins	TT	yes		

Figure 25 (continued)

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Education Tutor L	group projects and case studies	research project	PG1	9 weeks of 2 hrs weekly + own time	TT + OT	no
	dyads	school visiting 1	PG1	up to students	OT	no
	s-d-1 groups	school visiting 2	PG1	up to students	TT + OT	no
	s-d-1 groups	workshop programme	PG1	about ½ an hour	TT	no
	s-d-1 groups	analysis of school brochure	PG1, p-t	up to students	OT	no
	s-d-1 groups	small piece of classroom observation	PG1, p-t	up to students	OT	no
	s-d-1 groups	analysis of space and its use in a school	PG1, p-t	up to students	OT	no
	s-d-1 groups	variety of other topics	INSET	½ - one hour	TT	no
	dyads	avoiding	PG1	few minutes	TT	no
	buzz groups	introductions	PG1	few minutes	TT	no
	buzz groups	posters game	PG1	around 20 minutes	TT	no
	s-d-1 groups	attributes	PG1	around 20 minutes	TT	no
	buzz groups	dimensions	PG1	around 20 minutes	TT	no
Education Tutor M	dyads	blind trust	PG1	around 40 minutes	TT	no
	buzz groups	circle trust	PG1	few minutes	TT	no
	buzz groups	shared lift	PG1	few minutes	TT	no
	s-d-1 groups	machine building	PG1	20-30 minutes	TT	no
	s-d-1 groups	countries	PG1	up to 2 hours	TT	no
	s-d-1 groups	Raffa Raffa	PG1	3 hours	TT	no

(Figure 25 continues on the next page)

Figure 25 (continued)

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Education Tutor N	dyads	attitudes	PG1a/PG1b	few minutes	TT	yes/no
	buzz groups	circle time	PG1a/PG1b	between a few to 50 minutes as required and in response to students	TT	yes/no
	dyads	goal setting	PG1a/PG1b		TT	yes/no
	dyads	feedback	PG1a/PG1b	few minutes	TT	yes/no
	buzz groups	flow charts	PG1a/PG1b	2 minutes	TT	yes/no
	dyads	listening	PG1a/PG1b	few minutes	TT	yes/no
	dyads	If I were you	PG1a/PG1b	10-15 minutes	TT	yes/no
	dyads or buzz groups	brainstorming	PG1a/PG1b	50 minutes	TT	yes
	dyads	preferred and probable futures	PG1a	up to 50 minutes	TT	yes
	dyads and s-d-1 groups	guided fantasies	INSET	20-30 minutes	TT	yes
Music Tutor U	dyads	clay moulding	INSET	one month overall with 1-1½ days per week timetabled for group work. Additional meetings up to students	TT + OT	yes
	group projects and case studies	symphonies of Gustav Mahler	1,2,3		TT + OT	yes
	group projects and case studies	orchestral works of Delius	1,2,3		TT + OT	yes
	group projects and case studies	sonata principles	1,2,3		TT + OT	yes
	group projects and case studies	parametric analysis	1,2,3		TT + OT	yes
	group projects and case studies	style, interpretation and analysis	1,2,3		TT + OT	yes
	group projects and case studies	clerical music	1,2,3		TT + OT	yes

(Figure 25 continues on the next page)

Figure 25 (continued)

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Sociology Tutor Z	s-d-1 groups	stress & illness	2,3	one hour	TT	yes
	s-d-1 groups	African community health needs	2,3	one hour	TT	yes
	s-d-1 groups	perceptions of General Practice	2,3	one hour	TT + OT	yes
	s-d-1 groups	Wendy Savage Case	2,3	one hour	TT + OT	yes
	s-d-1 groups	various other topics (same course)	2,3	one hour weekly	TT + OT	yes
	dyads	role play on mental illness	2,3	1-1½ hours	TT	yes
	dyads	role play on leaving hospital	2,3	1-1½ hours	TT	yes
	group projects and case studies	Müller-Lyer Illusion	2,3	7 x weekly 2 hour meetings	TT + OT	yes

* Task structure categories are: dyads, buzz groups, student-directed learning groups (s-d-1 groups), syndicate techniques and group projects & case studies.

Five of the six tutors in this group used dyads, three used buzz groups, five used student-directed learning groups, and four used group projects and case studies. None used syndicate techniques.

One of these tutors (Music Tutor U) used only one type of task, namely group projects, in each of the courses that he taught. The students, broke their work up into smaller units, sometimes in effect mini-projects, as the task required.

The other five tutors each used three or more types of collaborative tasks. Education Tutor I used dyads, buzz groups, student-directed learning groups and group projects and case studies. Education Tutor L and Sociology Tutor Z each used dyads, student-directed learning groups and group projects and case studies. Education Tutors M and N each used dyads, buzz groups and student-directed learning groups.

The time allotted to collaborative work by these tutors varied, as one might expect where a variety of types of tasks is called upon. The smallest amount of time allotted to any one collaborative task was two minutes. This tutor, together with Education Tutor M also used tasks of a "few minutes" (i.e. less than ten). At the other end of the scale, the longer tasks used by these tutors included nine weekly meetings of two hours per week in addition to students' own time and the projects carried out for one to one and a half days per week over four weeks in addition to work in the students' own time.

There are several examples where the timing is left to the students as they carry out the work in their own time. Two of these tutors (Education Tutor I and Education Tutor N) spoke of negotiating with students the amount of time allocated to tasks and being prepared to let a task run on for a longer period (or to truncate it) if this was what students wanted.

These tutors not only used a range of different types of tasks, they also used large numbers of tasks (see Appendix 8). This is summarised in Figure 26 on the next page.

Figure 26

Multiple Task, Multiple Course Tutors : Number of Tasks Recorded

Education Tutor I	17+* tasks
Education Tutor L	8+ tasks
Education Tutor M	11+ tasks
Education Tutor N	11+ tasks
Music Tutor U	6+ tasks
Sociology Tutor Z	8+ tasks

* + denotes that tutors reported using other collaborative tasks in addition to those specified but found it too complicated to attempt to record them all.

Only one of these tutors used tasks which required students to work entirely outside timetabled time. This tutor additionally used one task done entirely in timetabled time and two which used a combination of timetabled time and students own time.

The other tutors used high numbers of tasks that were to be done in timetabled time, this high proportion linked to the way these tutors broke up timetabled time into a series of discrete tasks, using time as the task(s) required it. Education Tutors N and M used only timetabled time for collaborative work with no requirement that students work in their own time. Education Tutor I used only two (out of seventeen recorded tasks) that required a combination of timetabled and students' own time.

Music Tutor U used entirely tasks that required both timetabled time and students' own time. These were all group projects. This tutor noted that the department was "a law unto itself" in timetabling terms. As it ran only one combined honours course linking with one other department, in addition to its own single subject honours course, it could timetable as it pleased. The impression given by the tutor was that the notions of "timetabled" and "non-timetabled" time in the department blurred both for staff and students as the performance requirements of the music itself imposed its own internal rhythm on the use of time, with students working until something was right.

Sociology Tutor Z used four tasks carried out entirely in timetabled time and four tasks requiring a combination of students' own time and timetabled time.

Four tutors used collaborative learning in courses that were optional. One of these also used collaborative learning in one course that was not optional. Two others both used collaborative learning on courses students were required to follow.

There are four summary comments that should be made about these tutors. One is that they were not constrained, in their framing of collaborative tasks, to the time frames proffered by the departmental timetable. The numbers of different tasks used reflect a flexible approach to the use of time. Time is used as required by a pre-decided task rather than in the chunks in which it appears on the timetable. Secondly, the use of many tasks is associated with the use of many types of tasks. These multiple course, multiple task tutors have the largest task repertoire of any of the four groups of tutors. Thirdly, the tasks documented do not represent a complete and full record of all the collaborative tasks used by these tutors. In each case these tutors referred to using more tasks than those that could be described and noted in the interview. Essentially, they were saying that their use of collaborative techniques was such that boundaries could not be drawn readily about it. They were constantly developing new tasks, and used more than they could easily recall in detail. Fourthly, in only one case in this group (Music Tutor U) did an individual tutor's use of collaborative learning inter-sect completely with departmental policy on teaching methods. For this tutor (as with Computer Science Tutors G and H in the 'single task, single course' group) the use of group projects was directly in line with agreed departmental policy on teaching methods. (It will be remembered that this tutor had offered to be interviewed as an exemplar of the approach to teaching in the department as a whole.) The other tutors used collaborative learning methods because they personally chose to do so. However, none of these 'multiple task, multiple course' tutors felt themselves to be going against the grain of their department's approach to teaching, as we have seen was the case with Biology Tutors B, C and D above. In a sense,

therefore, they had a freedom to make choices about the use of time and the use of a number and a variety of tasks. This contrasts with tutors whose use of collaborative learning was an extension of a departmental decision (e.g. one project in a specific course with specific time allocated to it) as well as with tutors who perceived their use of collaborative learning as going against the grain of departmental philosophy and who therefore exploited for collaborative purposes certain course units (e.g. a practical) that lent themselves to such diversion. Again, this predisposed to the use of time more or less as it came and to the use of one collaborative task to replace what would otherwise have been a required but non-collaborative one of the same length.

Single Task, Multiple Course Tutors

The fourth group of tutors is made up of those who used collaborative learning methods in more than one course but who used only a single task. The types of tasks used by these **single task, multiple course** tutors is shown in Figure 27 on pp 172-173, together with other features of their tasks.

Two of these tutors used dyads. (In the case of Psychology Tutor X the students carried out an experimental project in pairs and this task is entered in Figure 27 under both these headings.) Four tutors used student-directed learning groups. Four tutors used group projects. None of these tutors used buzz groups and none used syndicates.

The repertoire of tasks used by these tutors was slightly wider than those of the 'single course, single task' tutors. Only three of the seven used as many as two types of task - and one of these (Psychology/Computer Science Tutor X) only falls into this group because of the double entry for the experimental project work, noted above. The rest of the tutors used one type of task only.

The time devoted to collaborative work by tutors in this group, where the work was allocated timetabled time, varied from eighteen

(continued on p 174)

Figure 27

Single task, multiple course tutors. Types of task used and the time allotted to the task

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
Education Tutor K	group projects & case studies	school-based research	1,2	one term: 9 x 2 hourly meetings	TT + OT	yes
	s-d-1 groups	preparation for school-based research	PG1, p-t	up to students	OT	no
English Tutor P	s-d-1 groups	preparation for seminar work	1,2	up to students	OT	yes
	s-d-1 groups	preparation for seminar work	2	up to students	OT	yes
	s-d-1 groups	preparation for seminar work	1	up to students	OT	no
	s-d-1 groups	preparation for seminar work	PG1	up to students	OT	yes
History Tutor Q	group projects & case studies	popular culture	1	one term: 9 x 2 hourly meetings	TT + OT	yes
	group projects & case studies	American Revolution	2	one term: 9 x 2 hourly meetings	TT + OT	yes
History Tutor R	group projects & case studies	popular culture	1	one term: 9 x 2 hourly meetings	TT + OT	yes
	group projects & case studies	Marxism and the study of history	2	one term: 18 x 2-3 hourly meetings	TT + OT	yes
	group projects & case studies	students' guide to Iran	2	one term: 18 x 2-3 hourly meetings	TT + OT	yes
	s-d-1 groups	relationship between theory and method	3	one or more 2-3 hourly meetings	TT	yes

(Figure 27 is continued on the next page)

Figure 27 (continued)

Tutor	Task Structure*	Topic	Students in Year	Time Allotted	Timetabled Time (TT) or Own Time (OT)	Optional Course (Yes/No)
History Tutor S	s-d-1 groups	Industrial Revolution	1	up to students	OT	yes
	s-d-1 groups	Were the English irreligious?	2	up to students	OT	yes
	s-d-1 groups	approaches to slavery	2	up to students	OT	yes
Psychology/Computer Science Tutor X	group projects & case studies	writing user-interface	PG1	whole of summer vacation	OT	no
	dyads/group projects & case studies	experiment on sensory processes	2	fortnight	TT + OT	no
Sociology Tutor Y	dyads	conversation analysis	2	up to students	OT	yes
	dyads	language and culture	2,3	up to students	OT	yes
	dyads	courtroom interaction	2,3	up to students	OT	yes

* Task structure categories are: dyads, buzz groups, student-directed learning groups (s-d-1 groups), syndicate techniques and group projects & case studies.

meetings of two to three hours over a nine week period and a whole vacation down to one or two meetings of two to three hours. In between are a series of projects carried out over one term and a project to which a fortnight was allocated.

There are also several entries of "up to students"; this applies to English Tutor P, History Tutor S and Sociology Tutor Y. In each case these tutors were using tasks to be done wholly in the students' own time as was the task supervised by Psychology/Computer Science Tutor X for Computer Science, and the preparation for school-based research carried out for Education Tutor K: thus five tutors in the group devised collaborative work to be done in the students' own time. There then remain six instances of tasks requiring a combination of timetabled time and students' own time.

Three tutors in this group used collaborative work in a required course of whom two additionally used collaborative tasks in three courses that were optional. The four remaining tutors in this group each used collaborative learning only in courses that were optional.

This group contains three tutors who devoted no timetabled time at all to collaborative learning, instead devising tasks for students to carry out entirely within their own time. These were English Tutor P, History Tutor S and Sociology Tutor Y. There were differences among the three. English Tutor P and History Tutor S each used this collaborative work in students' own time as preparation for seminar discussions in timetabled time. English Tutor P divided materials up among group members in such a way as to provide each with a unique viewpoint. Although this touches on the topic of the next section it should be noted that students' oral performance in the subsequent seminar was graded and the grade noted on each student's record. Thus while the group work itself was not assessed or required, but only encouraged, attendance at the seminar was required and individual contributions to it assessed. History Tutor S also used collaborative work as a means of helping students to prepare to take part in a subsequent seminar. This tutor provided a topic and a choice of alternative viewpoints on that topic for students to defend together with suggested reading. The subsequent

seminar was not assessed and the tutor left it entirely up to the students whether they did in fact get together in their groups or not. For both of these tutors, paradoxically, the aim of the collaborative work was to improve the amount and quality of students' contributions to a subsequent **tutor-led** seminar.

Sociology Tutor Y manifested the weakest requirement for collaborative working of any of the tutors in the study. This tutor simply suggested that students working individually on dissertation topics that linked or cross-referred to another dissertation topic might get together to do some joint work on the data set(s) provided for the topic. Having made the suggestion this tutor made no further effort to ensure that in fact students did work together. It was seen as immaterial by this tutor whether students took up the option to work collaboratively or not, and the 'product' of any such collaborative work was not used to contribute to work in timetabled time.

This discussion of the 'single task, multiple course' tutors completes this section on collaborative learning repertoires. The section has documented great variety in the ways in which tutors used collaborative learning: from those who never took a class without using some kind of collaborative task to one who placed collaborative learning completely out of timetabled time as a suggestion only; from those whose use of collaborative learning was so varied and complex it could not readily be documented to those who devoted clearly-identifiable single teaching slots to its use, the rest of their teaching being tutor-led; from those who used several different types of task to those who used only one; from those who actively and flexibly framed the use of time for collaborative learning to those who fitted collaborative learning into the time frame proffered by the timetable. One final aspect of the use of collaborative learning remains to be discussed and that is the extent to which it surfaced in the assessment procedures of the institution. This is the subject of the next section.

ASSESSMENT

This section looks at the contribution made by collaborative learning to the overall pattern of assessment of the institution in this study and also considers the impact of assessment procedures for tutors' use of collaborative work.

Beard (1976) commented that 'the last few years have seen the beginning of a radical change in emphasis in evaluating teaching and learning in higher education' (p 198). She suggested that the change consisted of 'giving far greater attention to evaluating learning, with a view to its improvements and less to evaluating performance at the end of courses when nothing further can be done for failing students...' (p 198). Beard and Hartley (1984) commented further on this shift which has been manifested in the use of more varied methods of assessment, adding open examination papers, long essays, dissertations, project work, case studies, oral performance in tutorials or seminars and short, objective questions to the unseen examination. It is also apparent in the use of wider time-frames for assessment with continuous assessment diluting or replacing assessment at the end of a course. Nevertheless, despite increasing concern with 'formative' rather than 'summative' purposes (Rowntree, 1977), assessment by tutors of students' work remains a key control activity of any higher education institution. The life consequences for students of assessment decisions can be serious, appertaining as they do to whether a student can remain on a course, to the class of degree a student obtains and to whether a student gains a degree at all.

Higher education assessment procedures are predicated around comparisons of the performance of individual students. It may therefore be expected that the use of collaborative learning may not fit easily with assessment procedures, with collaborative learning constituting a difficulty from an assessment standpoint and assessment posing problems from the standpoint of collaborative learning. The section on syndicate methods in Chapter Two cites writers who mentioned such problems.

Owen (1983, cited Chapter Two, p 104) argued after eleven years

of experience of syndicate work, that a requirement to produce a written rather than an oral account runs completely counter to the open learning ethic that syndicates express. Todd and Todd (1979, cited Chapter Two, p 91) reporting on a four year period of monitoring collaborative groups argued that the production of a collective written account made substantial demands on groups over and above those they already faced in managing learning independently. These tutors limited group work involving the production of a joint written account to one or two occasions per year. Rodger (1983, cited Chapter Two, p 104) noted that student resistance to syndicate work began after a shift from assessment of students' contributions in syndicates to a three hour written examination.

Three issues are surfacing here. One is the appropriateness of requiring a joint written account out of an essentially oral technique, in view of the difficulties of the production of such an account collectively. Another is the question of whether collaborative work should be assessed at all, or whether it should be treated as an end in itself. Finally, there is the question, if it is assessed, of whether collaborative work should be assessed via collaborative or competitive (collective or individual) products. As will be seen below, these issues also surfaced in the practice of the tutors in the case study. Interestingly one department in the institution where the case study was carried out specifically vetoed any collaboration between students, defining it as a disciplinary matter to be brought to a departmental committee for adjudication, if discovered. Needless to say, this department contributed neither tutors nor students to this study.

Initial examination of the data suggested tutors could make decisions, at minimum, about two aspects of the assessment of collaborative learning. These were that students working in this way could be asked to produce (a) group or individual products and that (b) these could be assessed or not assessed. These choices resolve into a two by two table shown in Figure 28 on the next page.

Figure 28

Tutor Choices on Assess/Non-Assess and Individual or Group Product

(* indicates tutors who make different decisions for different tasks)

ASSESS		INDIVIDUAL PRODUCT	
<p>Politics Tutor W</p> <p>TOTAL: 1 tutor</p>	<p>Biology Tutor B</p> <p>Biology Tutor D</p> <p>Chemistry Tutor E</p> <p>Computer Sc. Tutor F*</p> <p>Computer Sc. Tutor G*</p> <p>Computer Sc. Tutor H</p> <p>Education Tutor I</p> <p>Education Tutor K*</p> <p>Education Tutor L</p> <p>Education Tutor M*</p> <p>Education Tutor N*</p> <p>TOTAL: 20 tutors</p>	<p>Education Tutor O</p> <p>English Tutor P*</p> <p>History Tutor Q*</p> <p>History Tutor R*</p> <p>History Tutor S</p> <p>Language Tutor T</p> <p>Music Tutor U</p> <p>Politics Tutor V</p> <p>Psychology Tutor X*</p> <p>(for Comp.Sc.)</p> <p>Sociology Tutor Y</p> <p>Sociology Tutor Z*</p> <p>TOTAL: 0 tutors</p>	
<p>Archaeology Tutor A</p> <p>Biology Tutor C</p> <p>Computer Sc. Tutor G*</p> <p>Computer Sc. Tutor H</p> <p>Education Tutor I</p> <p>Education Tutor J</p> <p>Education Tutor L*</p> <p>TOTAL: 14 tutors</p>	<p>Education Tutor M*</p> <p>Education Tutor N*</p> <p>History Tutor Q*</p> <p>History Tutor R*</p> <p>History Tutor S</p> <p>Psychology Tutor X (for Comp.Sc)*</p> <p>Sociology Tutor Z</p>		
			NON-ASSESS

As can be seen, three tutors took only the combination of asking groups for a collective product which was not assessed. Eleven tutors took only the combination of asking individuals for a product which was assessed.

Eleven tutors followed double options, on some occasions requiring group products that were not assessed, on other occasions requiring individual work that was assessed. No tutors took the option to require group members to produce work individually that was collected in but not assessed (i.e. other than the preparation which students did for the group work). One tutor only took the option of requiring a group product which was assessed.

Putting these figures together, twenty two tutors required and assessed individual products at the end of collaborative work; fourteen tutors (including eleven of the twenty two above) required collective products of some form or other and did not assess them. One tutor required a collective product which was assessed. The polarisation is not complete but there is a strong association between individual products and assessment and collective products and non-assessment.

Looking at each of these groups of tutors in turn produces a more complex picture than contained in the two simple dichotomies in Figure 28.

The larger number of tutors fall into the 'individual product/assessed' group which may itself be sub-divided into the eleven who used only this combination and the eleven who on occasion additionally required group products and did not assess them. Each of these sub-groups shows interesting variations in the timing, mode and uses of the individual assessment. Figure 29 on p 180 shows the mode of assessment used by the tutors who used only the 'individual product/assessed' option.

The only case of 'deferred' assessment is an examination at the end of the third year of work based on a project carried out in the second year for Biology Tutor D. All the other collaborative work carried out for these tutors was used as preparation for individual work carried out when the collaborative work was completed. All of this work was written work, with the exception of English Tutor P.

Figure 29

Individual Product/Assessed only Tutors
Individual Products

Biology Tutor B	Students plot results and answer questionnaire about the experiment
Biology Tutor D	Material from option assessed at the end of third year via examination
Chemistry Tutor E	Students write account of the case for a strategy for developing an oil field
Computer Science Tutor F	Students write account of project including programming work developed
Education Tutor K	Students write up own reports individually
Education Tutor O	Students write individual reports/dissertations
English Tutor P	Students' oral performance in a seminar assessed (after the group work)
Language Tutor T	Students write up individual solutions
Music Tutor U	Students submit folio which may include essay, performance tape, analysis, pastiche composition
Politics Tutor V	Students submit essays
Sociology Tutor Y	Students submit essays (they choose which units they want to be assessed in)

Figure 30

Individual Product - Assessed/Group Product - Non-Assessed Tutors
Individual Products

Computer Science Tutor G	Students write 10,000 word project report
Computer Science Tutor H	Students write 10,000 word project report
Education Tutor I	Students write long essay on a chosen topic from the course
Education Tutor L	Part-time INSET students write dissertation
Education Tutor M	Students write essay in summer based on induction week group work plus subsequent experience of teaching practice
Education Tutor N	Students write essay in summer based on induction week group work plus subsequent experience of teaching practice
History Tutor Q	Open examination at the end of following term
History Tutor R	One course using collaborative work assessed by closed examination, one by open examination paper students can take away
History Tutor S	One course assessed by formal 3 hour closed examination, one by open paper students can take away. Another by three essays each of 2,000 words
Psychology/Comp.Sc.Tutor X (for Comp. Sc.)	Students write 10,000 word project report
Sociology Tutor Z	Students choose whether their 3-5,000 word essay will be submitted for assessment (they take 16 units and choose in which 8 they wish to be assessed)

Figure 30 on p 181 shows modes of assessment used by the eleven tutors who required individual products for assessment, but who also on other occasions required group products which were not assessed.

There are six examples of deferred assessments in this group, where the individual's assessed work occurs at the end of the whole course (Tutors L, M, N, Q, R and S). All the other collaborative work was used as a preparation for individual work which was carried out when the collaborative work was completed. All of this work was written work.

The next figure (Figure 31, pp 183-184) shows the type of product which these same tutors required on other occasions when they required a group product and did not assess it.

Six tutors in this group required written products at the end of collaborative group work. Two tutors required the production of planned oral presentations in the semi-permanent and fairly polished form of audio-tapes. For all the other tutors the collaborative process itself, in whatever form, served as the group product.

Figure 31

Individual Product - Assessed/Group Product - Non-Assessed Tutors
Group Products

Computer Science Tutor G Team documentation of work done in the course of the project
(backs up individuals' project reports)

Computer Science Tutor H Team documentation of work done in the course of the project
(backs up individuals' project reports)*

Education Tutor I Many short exercises in which carrying out the exercise and reflecting on it is the product, e.g. role plays, in-basket exercises, simulations, suggested solutions to problems, evaluations. Outcomes on paper include guide for schools and guide for education department

Education Tutor L A small-scale piece of classroom research (written up). Discussions preparatory to school observations and various short group exercises in which carrying out the process and reflecting on it is the product

Education Tutor M Many short and long exercises in which carrying out the exercise and reflecting on it is the product

Education Tutor N Many short and long exercises in which carrying out the exercise and reflecting on it is the product

History Tutor Q One or more audio-tape(s) on the given topic in radio programme format or a written up joint essay on the topic

(Figure 31 is continued on the next page)

(* On this occasion this team report was not produced)

Figure 31 (continued)

History Tutor R	An audio-tape on the given topic in radio programme format; a single, collaborative written account on a topic; a guide for students to 19th century Iran; the discussion itself and reflection on it as product
History Tutor S	The discussion itself and reflection on it as preparation for inputs to tutor-led seminars
Psychology Tutor X (for Psychology)	Conducting an experiment and reporting back on it in a plenary session
Sociology Tutor Z	The design of a study (in oral discussion) to test a particular hypothesis or to study a particular problem; discussion of and reflection on materials brought into class; role plays; designing and carrying out an experiment, analysing results and reporting back on this in plenary session; reading and summarising literature relevant to this work and reporting back on it

The next group of tutors, three in number, were those who used only the option of requiring a collaborative product which was not assessed. Figure 32 shows the type of work they required.

Figure 32

Group Product/Non-Assessed Tutors: Group Product

Archaeology Tutor A	Group report on a church in plenary session
Biology Tutor C	Designing, conducting and analysing an experiment
Education Tutor J	Discussions in preparation for school visits; a small piece of classroom research (written up); discussion of transcripts and tapes of children working in groups (reported back in plenary session); various practical exercises viewed as ends in themselves

There is one example here of a collaborative written product, one of a fairly substantial project (the experiment for Biology Tutor C) which was an end in itself; and one of a group product consisting of preparation for a further piece of work. There are several of discussion being an end in itself, with summary reports in plenary sessions. All except two of these products are oral in form, the exceptions being the written report and the experimental operations accompanied by talk.

Group Product Assessed

One tutor only required a written group product which was formally assessed. This was Politics Tutor W who had obtained the agreement of the departmental Board of Studies to collectively written assignments produced by groups taking the place of individually carried out long essays. Long essays were defined as 6,000-10,000 words; the shared long essays produced by students

might end up as 30,000 words in length. The mark given for a group's shared long essay was then the mark recorded for each individual student, assessed on a standard degree scale of first to fail.

Assessment and Collaboration

There are several points worth noting about the inter-linking of collaborative work and assessment. One is that even where collaborative work was not assessed itself and also not used to prepare for assessment of individuals it was in all cases required by the tutor as a contribution to the teaching and learning process. Tutors reinforced the role assigned to collaborative learning by drawing on its outcomes in varied ways, despite the fact that it was not assessed. The work carried out for unassessed collaborative tasks was therefore on a par with other types of course work.

Another point to note is that even where collaborative work was **formally** unassessed, **informally** it could be viewed as contributing to overall assessment of students. Education Tutor J noted that the main assessment in the PGCE course was of teaching practice and the collaborative group work was not assessed formally. However,

"the students know that they are being watched all year for their reference. They know that their tutors are looking for the ability to do team planning as a professional so they have this at the back of their minds. This constitutes a form of hidden assessment that works in favour of student participation in the groups."

In one other instance in the data a tutor used an informal device to get around the requirement of individual work for individual assessment. This device was known to and agreed with the students, but had not officially been agreed with Boards of Studies or other relevant committees. Biology Tutor B, at the end of a practical, required students to plot their results and also to answer a questionnaire about the experiment. Formally this counted as an individual assessment, but the groups did it collaboratively, although they filled in their forms individually. The tutor then

zero-weighted it by giving everyone the same mark on a scale from 0 - 25. A mark below 5 was a failure - the tutor usually gave between 13 - 17. Those who had not done the practical scored 0. This tutor "had expected stick about crunching marks towards the mean because this down-weights the practical. The students know and accept this as unfair. Colleagues haven't noticed it as yet".

It has already been noted that two other tutors in the Biology department chose to use collaborative learning in certain course elements precisely because these course elements were not assessed. This also applied to the use of a group product for collaborative work by History Tutors Q and R.

Computer Science Tutor F used a combination of individual and group products for assessment purposes. Students did individual work at the end of their group project with this tutor, and this was marked individually - but then half of the total marks was shared between other members of the groups of three. In contrast to Biology Tutor B, above, this was not a covert practice, but the amount contributed by collaborative work to the overall assessment was small - around 3%-4% of the total marks.

Finally, there is just one example in the data of orally-conducted collaborative work being used as preparation for an assessment of oral performance. The assessment of students' performance in tutorials was an established and publicly known aspect of this English department's procedures. However, English Tutor P was the only member of the department known to be using oral work as preparation for this assessment based on oral performance.

The main point arising from this discussion of collaborative learning and assessment is that there are a number of tensions between the two.

Tutors can devise group products for collaborative work but they cannot readily and overtly find ways of incorporating these products into formal assessment. Collaborative learning is visible as required course work but visible only in one instance as required and formally accepted group assessment. It is conducted collectively but often leads on to individual work. It is conducted orally but mainly leads on to written work. These tensions are taken up again

in the fourth section, Chapter Five, where they are explored from the vantage point of the tutors' perceptions of factors that influence the success or otherwise of collaborative work.

CONCLUSIONS

This chapter, taken together with Appendix 8, has given a detailed picture of the place of collaborative learning in one institution's life over one particular three year period. It has shown when collaborative learning was used, in which departments, the form that it took, the types of collaborative task called on, whether it was assessed and if so, in what form.

The use of collaborative learning in this institution has proved to be complex and varied. Although used by a minority of tutors in quantitative terms - around one in ten of the teaching staff - it formed an important part of these tutors' teaching. It was not peripheral or hidden but a public and (in all but one instance) required part of the work which students following these courses had to undertake. Collaborative methods were a regular part of the teaching and learning methods used by these tutors and the size of the group - twenty six tutors in a fairly small higher educational institution - has provided a substantial data set for examination. It is also noteworthy that there is a spread of instances of the use of collaborative learning across different subject areas.

The significance of these uses of collaborative learning lies in their qualitative characteristics not in their quantity as a proportion of the use of tutor-led methods. This chapter, taken together with Appendix 8, documents a complexity and variety of ways of using collaborative learning which is significant in its own right.

One feature which the analysis of these data has brought to attention is the existence of collaborative learning repertoires, that is the use by tutors of different types of task structures on different occasions and for different purposes. This contrasts

strongly with the bulk of the published work discussed in Chapter Two where higher education tutors describe, predominantly, their use of a single type of collaborative group task structure. For some of the tutors in this study these repertoires proved to be extensive - in a small number of instances more extensive than could be captured in the interviews.

Another strong message from the data concerns the paradoxical relationship between working method and mode of assessment, namely that collaborative work primarily gave way to the assessment of individual products. Chapter One (p 51) discussed Bernstein's concept of educational knowledge codes, a concept which expresses his idea that control over knowledge-making may be exerted in the way in which knowledge is coded. The lack of consistency between teaching and assessment modes which this chapter has begun to document hints at a tension between different pedagogies, between the pedagogy which guides certain tutors' teaching practices on the one hand and the pedagogy underlying the institution's assessment practices on the other.

Bernstein's discussion of pedagogies is in the context of an examination of 'progressive' teaching and is used to support the claim that even where the overt educational values - the 'visible pedagogy' may be progressive, the 'invisible pedagogy' may still leave little autonomy for teachers and/or taught over the knowledge-making in which they participate. Two mechanisms by which the 'invisible pedagogy' is enacted are Classification (control over subject matter and its segmentation) and Framing (control over the allocation of time to learning effort). These data on assessment raise a question about the relevance to them of the concepts of visible and invisible pedagogies. However here it is the traditional, institutional pedagogy based on individual work that is manifested - 'visible' - in routine assessment procedures. Collaborative learning is almost totally confined to non-assessed work and is not considered (knowingly) by boards or committees - so here the progressive pedagogy would seem to be 'invisible' to assessment practices. Thus the relationship is the reverse of that which originally prompted Bernstein's idea.

However, institutional and individual pedagogies were not inevitably in conflict. We have seen that for some tutors their use of collaborative learning was an extension of their department's educational philosophy while for others the departmental philosophy was such that tutors disguised or purposely did not draw attention to their use of collaborative learning. For yet other tutors their use of collaborative learning was set in a context of departmental neutrality with regard to the teaching methods that tutors might care to draw on.

Bernstein's discussion of the way knowledge-making is segmented in time - Framing - suggests that strong Framing precludes the exercise of choice, even for the teacher, over the way time is broken up and allotted to learning. The data analysed here support the applicability of this concept, showing, as they do, some tutors using time in portion-sizes pre-allotted by the timetable and tailoring collaborative tasks to fit that time; and other tutors breaking down timetabled time into a multiplicity of units as required by different collaborative tasks.

However, once again there is no simple relationship here. Some tutors who took over the time-frame proffered by the departmental timetable were working in line with a departmental pedagogy which supported collaborative learning. Others who similarly took over a proffered time-frame did so because they were working against the departmental pedagogy. Thus strong Framing could be associated both with traditional and non-traditional departmental pedagogies. The weakest Framing - here defined as the way in which some tutors broke time up in response to the requirements of the learning tasks and, further, negotiated the use of time with students in response to their wishes - was manifested by those tutors whose use of collaborative learning was set (by them) precisely in the context of departmental neutrality with regard to tutors' teaching practices mentioned above. In these instances, autonomy for the teacher is translated into weak Classification of subject matter and weak Framing of time via negotiations with students. In their turn these are the conditions which support autonomy (involvement in decisions over these matters) for students.

The idea of the "hidden curriculum" was introduced in Chapter One (p 55). It is commonly used as a summative image for what is communicated to learners about themselves and about expectations for their role as learners by everyday classroom practices and mechanisms of control. These messages are communicated at the same time as and are part of what is communicated about any particular subject matter. The hidden curriculum documented in Chapter One is one in which teachers or tutors orchestrate classroom interaction and leave little space for the learners' voices to be raised in decisions about what is to be learned and how. The power relationships upon which it is based contrast strongly with what we begin to see emerging from the data here. The use of collaborative learning by this group of tutors can be marked out itself potentially as a hidden curriculum, but a hidden curriculum with very different goals and values from the hidden curriculum of traditional classrooms.

To substantiate this we need to turn to tutors' and students' perceptions of and purposes for collaborative learning. Analysis of the data makes it clear that the use of collaborative learning was the subject of questioning and heart-searching by the tutors involved, not undertaken either unwittingly or lightly, but for serious and principled reasons. The next chapter moves on from the institutional level of analysis to focus more clearly on the factors that led tutors to use collaborative learning, what they hoped to achieve, whether they did, in fact, achieve the outcomes they had hoped for and the factors which they thought affected the success or otherwise of collaborative learning episodes. Taken together, the tutors' commentaries on these matters provide insight into the pedagogy of collaborative learning.

CHAPTER FIVE

THE PEDAGOGY OF COLLABORATIVE LEARNING

INTRODUCTION

Chapter Four established that the tutors using collaborative learning in this study constituted around one in ten of the teaching staff in the institution where the case study was based.

A number of questions therefore arise about why tutors chose to work against the trend in this way, what they hoped to achieve and the extent to which institutional and other contextual factors affected the way in which they used collaborative learning.

This chapter explores the tutors' perspectives on collaborative learning with sections on the initial impetus that triggered its use, tutors' goals for collaborative learning, their views about the purposes of higher education and the ideal roles of tutors and students and the influence of institutional and contextual factors, including assessment. Taken together, the data considered here build up an account of the pedagogy of collaborative learning.

THE INITIAL IMPEIUS

One way in which collaborative learning has been considered in this thesis is as an educational innovation. Two aspects of innovations are important here. One is the departure of an innovation from some existing surrounding norm and this is essentially what has been documented in Chapter Four. Another is the before and after of the innovation's life in time: in what lay its origins, what started it off? The collaborative learning that occurred in this institution was not the result of policy decisions at institutional level and so we must look for its origins in the factors that influenced decisions by individual tutors. What led them - independently - to construct this innovative pedagogy?

The interviews explored with tutors the origins for their decision to use collaborative methods in their teaching. This section of the interview offered five (non-exclusive) potential origins and invited interviewees to expand on them or to substitute others. The five proffered possibilities were: attendance at a staff development programme on teaching methods; articles or books the tutor had read; the influence and/or example of a colleague; the experience of having learned in collaborative groups oneself; and the use of collaborative learning as the tutor's own idea (see Tutor Interview Schedule in Appendix 3).

This probing about origins made sense to the tutors. They could all point to factors that had acted as trigger(s) for their use of collaborative methods. Figure 33 on the next page summarises tutors' answers to this question.

Some of the entries in this figure require further comment. Biology Tutor D does not figure in the column noting the influence and example of a colleague: this tutor's reply to this question was that "it was the other way round" (Biology Tutor D was an active member of a committee concerned with teaching methods). Politics Tutor W does not figure in the column on reading articles and books: this tutor was in fact the author of a journal article on the use of the case study method in higher education. Psychology/Computer Science Tutor X qualified the statement on the influence of a colleague: this tutor's original use of collaborative learning had been done simply as a favour for another tutor in the Computer Science Department. Twelve of the tutors who indicated that the origin of their decision to use collaborative learning was their own idea qualified this statement and these qualifications point to triggers for the use of collaborative learning other than those proffered in the interview. These are considered at the end of this section.

Figure 33 in effect provides a bar chart which shows that the origins of the decision to use collaborative learning in rank order were: the tutor's own idea, the experience of learning in collaborative groups oneself, the influence or example of a

(continued on p 195)

Figure 33

Origins for Tutors' Decisions to use Collaborative Learning

Staff Development Programme (on teaching methods)	Reading Articles and Books	Influence and/or Example of a Colleague	Experience of Learning in Collaborative Groups Oneself	Own Idea
Biology Tutor D Comp Sc Tutor H Education Tutor I Education Tutor L	Biology Tutor B Biology Tutor D Chemistry Tutor E Comp Sc Tutor F Comp Sc Tutor H Education Tutor J Education Tutor L Education Tutor M Education Tutor N Education Tutor O English Tutor P History Tutor Q History Tutor R History Tutor S Language Tutor T Music Tutor U Psychology/Comp Sc Tutor X Sociology Tutor Y	Archaeology Tutor A Chemistry Tutor E Education Tutor I Education Tutor J Education Tutor L Education Tutor M Education Tutor N Education Tutor O English Tutor P History Tutor Q History Tutor R History Tutor S Language Tutor T Music Tutor U Psychology/Comp Sc Tutor X Sociology Tutor Y	Archaeology Tutor A Biology Tutor B Biology Tutor C Biology Tutor D Chemistry Tutor E Comp Sc Tutor F Comp Sc Tutor G Comp Sc Tutor H Education Tutor I Education Tutor K Education Tutor L Education Tutor M Education Tutor N English Tutor P History Tutor R History Tutor S Language Tutor T Music Tutor U Politics Tutor W Sociology Tutor Y Sociology Tutor Z	Archaeology Tutor A Biology Tutor B Biology Tutor C Biology Tutor D Chemistry Tutor E Comp Sc Tutor F Comp Sc Tutor G Comp Sc Tutor H Education Tutor I Education Tutor K Education Tutor L Education Tutor N Education Tutor O English Tutor P History Tutor Q History Tutor R History Tutor S Music Tutor U Politics Tutor V Politics Tutor W Psychology/Comp Sc Tutor X Sociology Tutor Z
TOTALS: 4 tutors (15% of sample)	11 tutors (42% of sample)	16 tutors (61% of sample)	18 tutors (67% of sample)	22 tutors (85% of sample)

colleague, having read articles or books on the subject, and having attended a staff development course or programme on teaching methods in higher education. These origins are now considered in turn.

Staff Development and Literature on Teaching Methods

The next two figures provide more detail about the staff development programmes attended and the articles and books that had acted as triggers for the use of collaborative learning. Each of these were defined in this section of the interview as relating to teaching methods in higher education but as will be seen, schools-related programmes were also influential.

Figure 34

Staff Development Programme as Trigger

Biology Tutor D:	Workshops on Teaching Methods put on within the institution (this tutor helped to plan and organise them as a committee member). University of London Teaching Methods Unit (TIMU) Course 1976 and the annual reunion: "The big conversion and back-up."
Computer Science Tutor H:	University of London Teaching Methods Unit (TIMU) Course "gave confidence and re-informed the approach".
Education Tutor I	Counselling courses mid-70s. Later a Careers Counselling Development Unit Course. Then courses were attended by the tutor in the role of Schools Industry Project Co-ordinator.
Education Tutor L:	At a school this tutor had taught in.

Thus only two out of all these tutors had been influenced by a staff development programme concerned with teaching methods in higher

education. For one of these tutors the experience was very important:

"These sessions always talk about small group teaching methods, teacher-led and student-led. I picked up ideas from colleagues there. What's impressive is the novelty of it all. This was a big influence - you felt you could move mountains at the end of the week."

(Biology Tutor D)

However Computer Science Tutor H added that it was "difficult to say" to what extent the UTMU course was an impetus in comparison with others, especially compared with this tutor's experience of learning in collaborative groups as a student (see below).

Rather more tutors cited articles and books they had read as an original impetus and Figure 35 gives details of what these were.

Figure 35

Articles and Books as Trigger

Biology Tutor B:

"Idealistic books on education and enquiry, for instance one by Jane Abercrombie called The Anatomy of Judgement. And Summerhill. I was impressed by its ideas and liked the idealism, but wonder whether its approach would be a disaster in practice."

Biology Tutor D:

"[Teaching methods] bulletins shared from other universities. Also New Scientist which runs lots of articles on the wider applications of biology to society. And the Nutrition Society and its publications."

Chemistry Tutor E:

"[A colleague] was doing trial work in schools at the same time and reading about this was an influence. Some of this gelled at the same time. Learning by doing was the catch-phrase."

(Figure 35 is continued on the next page)

Figure 35 (continued)

Computer Science Tutor F:	"At [another institution] I taught a software engineering course and read a paper ... on 'The Software Hut' at Toronto. It described a group project and it seemed like a good idea so I tried it ..."
Computer Science Tutor H:	"Odd bits of books. A book about group work and HE teaching."
Education Tutor J:	"Various articles and books including Barnes and Todd. Barnes and the LATE from early stages, plus in particular Pat D'Arcy and her colleagues and a pamphlet they produced called <u>From Information to Understanding.</u> "
Education Tutor L:	"was involved in the Discussion Skills Project ... and impressed by that ... and read Eileen Francis's papers"
Education Tutor M:	"for instance on minorities"
Education Tutor N:	"David Walsh's book on <u>The Experience-centred Curriculum</u> and then the work of Robin Richardson" [on World Studies]
History Tutor Q:	"a conversation with [a colleague] about his article on the case study method"
Sociology Tutor Z:	"Jane Abercrombie on perception. And her book <u>The Anatomy of Judgement</u> "

It is worth drawing out of the figure that for five of the twenty six tutors in the study (19%) reading articles and books on higher education teaching methods had contributed to their decision to use collaborative learning. Of these five, two specifically mentioned Jane Abercrombie's book The Anatomy of Judgement and one mentioned a paper by a colleague. Five tutors (19%) were influenced by reading articles and books relating to teaching in schools, whilst three (11% of the sample) were influenced by having read materials related to the curriculum content of their subject area.

At first sight these two columns provide little encouragement either for those who run programmes on teaching methods in higher education or for those who write on this theme! However, it should be borne in mind that higher education teaching methods programmes which address collaborative rather than tutor-led small group work are few in number and that the literature on collaborative learning - as discussed in Chapters One and Two - is scattered in many sources. As also discussed there the literature on higher education teaching methods per se focusses much more strongly on tutor-led methods than on collaborative methods. So it is a point for debate whether the limited influence of such programmes and such literature reflects to a greater degree the fact that they do not, in the main, treat collaborative learning or their failure to attract higher education tutors. One tutor in the study spoke of being "absorbed into the culture of not training university teachers. There is a common prejudice against writing about what you do in teaching."

Collegial Influence

Figure 33 shows that the influence or example of a colleague was identified as a trigger factor by sixteen tutors (61% of the respondents). Eleven of the sixteen acknowledged the influence of another colleague within the same institution whilst for five tutors the colleague was an external one. The location of these influential colleagues is amplified in Figure 36 on the next page. The tutors listed are those who acknowledged an influence.

Figure 36

Location of "Influential Colleagues"

Same Institution		External Colleagues		
Same Department	Another Department	On a Professional Development Course	At Another Higher Education Institution	At a School
Archaeology Tutor A Chemistry Tutor E Education Tutor J Education Tutor M Education Tutor O Language Tutor T Music Tutor U	English Tutor P History Tutor Q History Tutor R History Tutor S Psychology/Comp. Sc. Tutor X	Education Tutor N Education Tutor I	Education Tutor L History Tutor S Sociology Tutor Y	Education Tutor L

Within the same institution it is illuminating to see who influenced whom. Figure 37 below shows this.

Figure 37

Internal "Influential Colleagues"*

Archaeology Tutor A:	Another lecturer who had inherited the task from the former head of department.
Chemistry Tutor E:	A visiting lecturer seconded to the department from industry to work with schools.
Education Tutor J:	Education Tutor N
Education Tutor M:	Education Tutor N
Education Tutor O:	Took the course and the task over from Education Tutor K.
English Tutor P:	History Tutors Q and R
History Tutor Q:	Politics Tutor W
History Tutor R:	Politics Tutor W
History Tutor S:	Politics Tutor W
Language Tutor T:	Talking about teaching with head of department.
Music Tutor U:	Current and former heads of department.
Psychology/Comp. Sc. Tutor X	Worked with the group as a favour for Comp.Sc. Tutor G.

*Tutors influenced are listed at the left, influencers to the right.

In some cases the interviews even give additional indications about the source of influences on the 'influential colleagues'. For instance, Music Tutor U commented of the two heads of department he named and of other departmental colleagues that they had all at different times, been

"through the same traditional lecture-type teaching [at Cambridge] but the students at Cambridge generated their own sub-culture of student-generated activity ... and [the head of department] recognised the value of the intense involvement in such activity so the aim was to bring this out of the woodwork. These tutors over-lapped a little, many shared a similar Cambridge experience. But [Professor X] made the department what it is. No-one ever thought at the start that the department would be like this."

Chemistry Tutor E's influential colleague had in turn been influenced by industrial experience and by practice in schools. Education Tutor N (who influenced two departmental colleagues) had been influenced by the work of leading figures in (schools) curriculum development encountered on professional development courses and conferences as a school teacher and by their written work. English Tutor P had been influenced, among other things, by the three History Tutors who each in their turn noted the influence of Politics Tutor W.

"I was just looking for other ways to teach at a point when [Politics Tutor W] came along with an idea audacious and radical enough, to go the whole hog, that the students should run the whole thing. That solved the problems I had experienced with half-way measures."

(History Tutor Q)

"One thing that greatly influenced me is what the students say about the teachers that the students find good as teachers. These have been the ones who experiment, for instance, [Politics Tutor W]. He is one of the few people all the students pick out as a good teacher."

(History Tutor S)

"Also I had heard about it being tried by other academics. [A colleague] and I had both heard about this from [Politics Tutor W]."

(History Tutor R)

The Experience of Learning in Collaborative Groups

The second most common impetus for these tutors was the experience of having learned in collaborative groups themselves. Altogether 18 tutors (67% of the twenty six respondents) gave this as an influence. Four of these tutors had worked in collaborative groups as undergraduate students, two as post-graduate students and five during courses or conferences which they had attended as professionals. Three had worked in collaborative teams as researchers, one had worked in collaborative groups in the women's movement and one had participated in an encounter group for personal developmental purposes. These experiences had clearly been powerful ones as the following quotes exemplify:

"A major factor. As a graduate student, but to some extent also as an undergraduate, I learnt most from talking to other students about problems. There's a benefit in talking to someone else who also doesn't understand. This worked informally. It just happened among committed, good graduate students."

(Biology Tutor B)

"I went on a counselling course in the mid 70s. I learnt a lot and re-vamped all my courses after that. But a turning point was a CCDU course where the team included Barrie Hopson - that was pretty crucial. Then [in another post] I went on nine days of professional development per year ... we were in core groups of eight people throughout each three day period. It was hard work but I got a lot out of it and it gave re-inforcement to my developing ideas."

(Education Tutor I)

"Research projects as a post-graduate student ... where I had highly compatible colleagues and we did lots of working collaboratively ..."

(Language Tutor T)

"I'd worked in collaborative groups at conferences and found it stimulating and enjoyable if the group was set up in a clear framework ... Also, in a school I taught in, I was impressed by the way the head put teachers into small groups for sensitising them to policy issues ... [these groups] then worked on a self-directed basis, perhaps

producing a report or paper at the end."

(Education Tutor L)

"As a graduate student I was a member of a reading group on Capital. The aim of this was to overcome the alienation of the individual learner. So there was an example in my head of collective work producing results that individual work did not."

(History Tutor R)

"This is connected to Mutual Tuition Groups. I had learned in them that the things that stuck were the things I took part in when I was active not passive, so I wanted to promote involvement in my own teaching."

(Sociology Tutor Z)

However, for one of the twenty six tutors (Sociology Tutor Y) the emphasis had been not on collaboration but on working in groups as a better method of data analysis. "Collaborative data sessions" were seen as an "apprenticeship to a craft. You need to work on the data, rather than let them [students] read about it." This was the tutor with the most schematic form of collaborative work, as set out in Chapter Four, and this ties in with the statement that this tutor was "not interested in collaborative work but used it as a focus for data analysis."

There are some interesting small coincidences in these accounts. Computer Science Tutor H had worked in collaborative groups as an undergraduate student on courses taught by tutors who had attended a course on collaborative learning methods run by the author of this thesis (these courses are referred to in the Introduction). Sociology Tutor Z had worked in Mutual Tuition Groups as an undergraduate in the same department (not at the same time) also described in the Introduction as an influence on the author. Barrie Hopson, mentioned by Education Tutor I, had been a lecturer in that same department and was the tutor referred to in the Introduction who suggested that the student cohort of which the author was a member should continue the Mutual Tuition Group tradition. These discoveries of shared influences came as a complete

surprise; they had acted across separations both of time (more than two decades) and geographical distance.

Collaborative Learning as the Tutor's Own Idea

Twenty two tutors (85% of the respondents) indicated that the origin of their decision to use collaborative learning was their own idea. However in doing so they often linked this idea to other factors, including some factors not proffered in the interview.

For four of the tutors their 'idea' to use collaborative learning methods was linked to their experience of industry and their knowledge of the qualities industry was seeking from graduates.

"the group idea is gaining currency with the pressure on industrial relevance so where new courses are being considered I am putting in collaborative work."

(Biology Tutor C)

Education Tutor I referred to the "industry-education link and learning through experience" as having "reinforced all these skills and approaches." Computer Science Tutor G's use of collaborative learning was "informed ... from knowledge of working in industry", while Chemistry Tutor E traced the origins of his collaborative group task back to a regular three day symposium on the chemical industry which this tutor first organised in the mid-60s. This was "when industry flourished and good students didn't go into industry". A group exercise was developed (jointly with industrial colleagues) for students to work on throughout the three days, with the aim of showing that "industry wasn't boring ... The students worked in groups on structured tasks ... so when setting up a new resources course this was an obvious course to follow."

Five of the tutors linked their 'idea' to use collaborative learning to their experience in schools or to knowledge of teaching methods and curriculum practice in schools. Not surprisingly, four of these tutors (I, K, L and N) were in the Education Department, but Music Tutor U also noted that the "philosophy of education in schools [of the current head of department] is collaborative and

experimental, aiming to get students involved in making music, composing their own music, irrespective of their acquisition or lack of conventional music skills."

Education Tutor I had noted when teaching school children that "if they're doing something it's all lively, if you talk, everyone's bored" and had found when evaluating materials for the Economics 14-16 project that "all the things with group work went down well - the kids got involved and interested. So I began to dread sessions where I only had bits of paper, so I was always looking for some activity."

Other tutors considered earlier had also referred to schools (for instance, under articles or books read, the influence of a colleague, and the experience of having learned in collaborative groups oneself). Figure 38 puts all the references to school teaching in all the interviews together.

Figure 38

All References to School Teaching as an Impetus for the Use of Collaborative Learning

Teaching methods in schools:	Chemistry Tutor E Education Tutors I, J, K*, L, N*, M Music Tutor U
In-service Education for teachers:	Education Tutors I, K*, L, N*
Literature on School Teaching:	Education Tutors J, K*, L, N*
	TOTAL: 8 Tutors

*Tutor K influenced Tutor O, Tutor N influenced Tutors J and M

The concerns that surface in these references to schools and school teaching are closely related to those discussed in the section on 'Language across the Curriculum' in Chapter One. The link with school teaching is not quite limited to tutors in the Education

Department; it does also apply to two other tutors although for each of those the link is via a colleague's work in schools (a colleague in the same department in each of these two cases). What we can see for both the four tutors influenced by industry and the eight tutors influenced by schools is a degree of importation (through these twelve individuals) into this institution of educational values and ideas from other parts of the educational and social system. In the case of the ideology of school teaching which focusses on active learning and giving learners a voice, this import primarily goes into the Education Department (although it also touches the Chemistry and Music Departments). The 'industrial' route to collaborative learning via the need for team working and good communication skills has affected a smaller number of tutors but has reached four Departments (Biology, Chemistry, Computer Science and Education).

Reflection on Practice

Detailed work on the data suggests a higher order concept which arches over all the categories of impetus discussed so far. For all of the tutors save one the original decision to use collaborative learning methods seems to have arisen out of their reflecting upon their own practice of teaching. Previous experience as learners themselves, conversations with colleagues, comments from students, educational ideas from articles or books or from courses on teaching methods, reflections on pedagogic approaches in schools and on the requirements of industry each in different ways and in different combinations informed these reflections. There seems to have been a two way traffic in that the reflections sometimes led to the seeking out of further reading, further conversations with a colleague, further participation in a development project, further attendances at courses or conferences. But these reflections were applied to something and that something was the practice of teaching. They also arose out of the practice of teaching.

We have seen that school pedagogy played a part in informing the higher education teaching practice of some tutors. So also did the experience of teaching other groups, for instance mature students and fellow professionals. This work provoked the need to develop new and more participative approaches - and subsequent reflection upon the success of these approaches suggested their applicability also to undergraduate teaching.

Politics Tutor V described contributing to residential courses for civil servants:

"The civil servants were sceptical about politics and were on a course looking at economic matters. I was looking for something to get them engaged in politics ... clearly a series of lectures wouldn't work ... and the brief given was that what the course was trying to achieve was more towards collaborative work."

Having tried collaborative methods and found they worked with these mature students "then I tentatively proposed introducing it here."

For Education Tutor K:

"the course grew almost overnight from a more traditional and academic course, largely because of direct personal experience of working with in-service courses for teachers. You had to give them something practical."

This tutor's collaborative undergraduate course was devised initially in response to the problem of a primary school head (on an INSET course) who "had a problem he couldn't deal with immediately." The head teacher wanted to change an authoritarian primary school, having newly taken up his headship. The tutor wanted to give undergraduate students better ways of learning to do educational research:

"the idea grew almost overnight in discussions with the head teacher that the obvious way was to help students learn about doing research by doing research ... there was the influence of the primary school head producing an almost Eureka-like idea."

The primary school head offered his school as a setting for the first research project conducted collaboratively by this tutor's students (as set out in Appendix 8).

The material to be taught could itself foster reflection upon

the best way to teach it: "when I discovered the enzyme had these properties it just happened" (Biology Tutor C). Reflection upon the teaching of others, we have already seen, played a part. History Tutor S referred to a head of department at another university as:

"a rare beast, one of only two I've known, a natural great teacher. He used [collaborative learning] very effectively. He would have people working on a collaborative project, for instance, the third years working in a team. He really enthused people, he was an extraordinary person."

The experience of teaching sometimes posed problems and reflection on these problems suggested collaborative learning as a solution. English Tutor P had wondered "what to do with these seminar groups here" having previously had experience only of one to one tutorials and of lectures. So in part "the origins, really, were the necessity of getting to know a large group." But also "there's the sheer impossibility of any one student doing all that reading him or herself each time. I realised one could exploit that." History Tutor R referred to:

"my own critical thinking about established practice. I spent years saying students don't take responsibility for seminars so one solution was to structure work around a different agenda and for students to produce for themselves."

History Tutor Q commented that:

"as a graduate student ... on the first course I taught I was looking for unusual ways of organising my teaching and used to set seminar papers to small collaborative groups and ask them to run the seminars."

"There's a tendency in teaching to be really boring and hand out things - and the students want this. I wanted to try something different."

(Computer Science Tutor H)

Having both the idea and the opportunity to implement it was important. Education Tutor N "came across collaborative techniques by chance at the point of being in charge of the integrated curriculum at [...] high school" and drew on this successful experience in instituting collaborative techniques in subsequent

teaching in higher education and in in-service education for teachers.

Politics Tutor W's higher education teaching post had provided the opportunity to implement ideas on teaching developed during previous research:

"The most powerful influence was being hired to write case studies at [...] and realising the only way they could succeed was in groups ... these are larger and more complex problems that only a group can tackle. I put the literature together [for the case studies] and then started teaching this way by the seat of the pants."

Tutors also reflected upon what it meant to practice as a professional in areas outside their own higher education teaching. Their use of collaborative learning was linked to their views on professionalism, professionalism in research, in music, in archaeology, in school teaching and in industry. "Excavations are team efforts" (Archaeology Tutor A). "The most important skills are learned collaboratively in music" (Music Tutor U). "An apprenticeship to a craft ... you need to work on the data rather than ... read about it" (Sociology Tutor Y). "Looking forward to professional practice rather than simply being to do with teaching of research methods" (Education Tutor L).

Some of these quotations are beginning to lead on to questions about the tutors' goals for collaborative learning. This is the subject of the next section but in closing this one certain summary points should be made.

One is about the number of factors which, for most of the tutors, gelled together in bringing them to a decision to use collaborative learning. Out of five possible factors offered in the interview, only two tutors identified a single factor ("own idea" for each of tutors G and V) and at later points in the interview each of these qualified this by referring respectively to industrial experience and the experience of having taught mature professionals. The average number of influences identified per tutor was 2.7 - but the figure in Figure 39 below gives a more meaningful impression.

Figure 39

Original Impetus: Numbers of Impeti Identified by Tutors

5	4	3	2	1
L	D H I N	A B E M P R S U Z	C F J K O Q T W X Y	G V

Another is the link between personal experiences and professional practice. Peter Woods' work on teacher biographies with school teachers has highlighted the level of personal engagement which a professional brings to practice, and the effects of critical incidents in a teacher's career upon subsequent practice approaches (see, for example, Woods and Sikes, 1987). This "fine grain of personal histories and attitudes that are the origins of professional action" (Todd, 1987, p 154) is well demonstrated in the data analysed for this section.

Yet another point to be noted is the resonance between these trigger factors and some of the frameworks discussed in Chapter One. The themes of language across the curriculum in schools, dissatisfaction with higher education teaching methods such as lectures, tutor-led seminars and tutorials, and the needs of mature students echo pedagogic concerns discussed in that chapter. These links are strengthened when not only the original impetus but also the tutors' goals for collaborative learning are taken into account and it is to these goals that we turn in the next section.

TUTORS' GOALS FOR COLLABORATIVE LEARNING

The first thing to establish is whether these tutors had similar goals for collaborative learning as they did for their use of other tutor-led teaching methods. Table 40 summarises tutors' replies to this question in the interview.

Figure 40

Similarity of Goals for Collaborative Learning with Goals for Other Teaching Methods

Similar Goals	Partially Similar Goals	Dissimilar Goals
Tutors: None	(A)* (S)*	(A)* B C D E F G H I J K L M N O P Q R (S)* T U V W X Y Z

* Tutors in brackets had some similar and some dissimilar goals for their use of collaborative learning.

Thus no tutors had entirely similar goals for their use of collaborative learning to those they had for other tutor-led teaching methods (when they used them). Two tutors had some similar and some dissimilar goals. For Archaeology Tutor A, two elements of the goals for the group task were (a) to give students a knowledge of a church and of churches in terms of what one can say and do in professional archaeological terms with the standing remains of a building and (b) to give students a knowledge of working documents and of the relationship between documents and archaeological evidence. These goals applied equally to some tutor-led teaching. Two other goals - (c) "to enable them to work in pairs or small groups" and (d) "to give them, through the experience of conducting a group around a church, an element of professional training" - were seen as different

to the tutor's goals for other types of teaching situations. However, for this tutor the difference was one of degree - a point to be referred to later.

History Tutor S had four main goals for the collaborative tasks used. Three of these (getting students to cover basic reading, getting students to identify from the reading the essential ideas that inform a particular topic and encouraging students to come up with their own views on topics and problems) were similar to what the tutor hoped to achieve in non-collaborative classes. The fourth - "trying to encourage students in an element of working with each other in a co-operative sense" - was seen by the tutor as "very different".

The evidence is, therefore, that tutors turned to collaborative methods in order to achieve something different from what they aimed to achieve with tutor-led methods. The interviews provide two ways in which to explore what those "different" goals for collaborative learning were. One is through tutors' answers to a semi-structured question about their overall reasons for using collaborative learning. The second is through their answers to a completely open question about their aims and objectives for particular collaborative tasks. These questions were in different sections of the interview and the more specific one (aims and objectives for particular collaborative tasks) provides in effect an operationalisation in action of the overall pedagogic rationale.

To take the overall rationale first, tutors were offered four non-mutually-exclusive choices (plus an open "other, please specify" possibility) of reasons why they used collaborative methods. These were: because their use promotes students' understanding of the subject; because their use develops students' social skills; because their use prepares students for work; because their use helps students to become autonomous learners throughout their lives; and for some other reason to be specified (see Tutor Interview Schedule in Appendix 3). Table 41 on the next page summarises tutors' answers to this question.

Figure 41

Tutors' Overall Rationale for Using Collaborative Methods

To Promote Students' Understanding of the Subject	Tutors: A B C D E F G H I J K M N O P Q R S T U V W X Y Z	TOTAL: 25
To Develop Students' Social Skills:	Tutors: A B D E F H I J L M N O Q R S T U V X Z	TOTAL: 20
To Prepare Students for Work:	Tutors: A B F G H I J L M N R S T U W	TOTAL: 15
To Help Students become Autonomous Learners throughout their Lives:	Tutors: B D E F H I J L N R U W Z	TOTAL: 13
Other Reasons	(1) To give students a sense of accomplishment and to improve morale: Tutors B U P V	TOTAL: 4
	(2) To provide variety: Tutors E V Q	TOTAL: 3
	(3) To establish social cohesion: Tutors H I	TOTAL: 2
	(4) This endeavour <u>has</u> to be collaborative (experiential learning): Tutors J L P U	TOTAL: 4
		TOTAL OTHER REASONS: 13

Turning from these overall rationales to specific aims for specific tasks the interviews provide a series of inter-related aims and objectives offered by these tutors. These can be categorised

into eight main categories, namely:

- to enable students to work in groups
- to orient students towards the production of knowledge rather than its consumption
- to increase students' autonomy
- to give students a voice
- to provide direct experience (e.g of a problem, a case)
- to encourage critical reflexivity in students towards the self and others
- to prepare for future professional and personal life
- to increase enjoyment and variety and to enable students to get to know each other

These categories of aims and objectives will now be considered in turn.

To Enable Students to Learn in Groups

The tutors' aims for some collaborative group tasks quite clearly were that by working collaboratively in groups students would learn to work collaboratively in groups. Figure 42 on the next page brings together all the excerpts from tutor interviews that were classified under this heading.

Tutors' Aims: To Enable Students to Work in Groups

- Archaeology Tutor A: "To enable them to work in pairs or small groups on a specific topic and to organise themselves." "Working together."
- Biology Tutor D: "The aim really is to encourage them to work in groups ... no one person can solve the project on the world food situation. It's got to be a collaborative effort, they've got to learn to interact, and to realise that different expertise is necessary from different people."
- Comp.Sc. Tutor F: "It gives an introduction to the difficulties of working in groups towards a common goal."
- Comp.Sc. Tutor G: "As a secondary goal, I anticipated they would discover the tensions and problems of group work, but this was not a major aim." "But this could only be done in teams."
- Comp.Sc. Tutor H: "One aim was that they would get experience of working in a group. I wanted to devise a project that would require this."
- Education Tutor I: "The group process is important not the information."
- History Tutor Q: "Its explicit value is that it encourages people to work together. I'd been thinking through the logic of what [Politics Tutor W] had been advocating in 1981 and realised that in a sense it was necessary to go the whole hog, that is to finally renounce one's traditional role as a teacher so as to make sure the students do, in fact, work collaboratively. There are many ways to set tasks but it is only by setting a collaborative project and requiring students to work out their own syllabus and approach that one ensures they work together."
-

(Figure 42 is continued on the next page)

Figure 42 (continued)

History Tutor Q:
(continued)

"The rationale behind the collaboration itself is because I'm convinced it is socially necessary for people to work together and the education system is frequently geared to individual results and individual performance. It's a way of using one's position to introduce people to other forms of working."

History Tutor S:

"Trying to encourage students in an element of working with each other in a co-operative sense. I like to think the point of the exercise is getting them to work together and learning to do this."

Politics Tutor W:

"At one level it is non-academic, that is, to give the students the skills and habits of working in a group with a specific group task in mind, whatever level it is."

"A group can take on bigger topics and can argue out issues and defend positions, reach a compromise or agree to differ, formulate new ideas. Really they are learning about learning in groups."

Orientation of Students to the Production of Knowledge

A second set of aims and objectives were concerned with orienting students towards the production of knowledge rather than its consumption. The interview excerpts classified under this heading are given in Figure 43.

Figure 43

Tutors' Aims: To Orient Students towards the Production of Knowledge rather than its Consumption

Biology Tutor B:

"The process of interpretation and enquiry is important as also is the opportunity to contribute something themselves, to think a little bit originally. They must put in an input."

Biology Tutor C:

A large number of normal practicals is concerned with the manipulation of equipment. Failure to get the equipment to work satisfactorily may stop students planning the design of experiments. So this gives them experience of planning an experiment, analysing the - unexpected! - results, thinking them through, solving the problem and then on to the next step."
"They're not used to being treated like this by tutors and demonstrators, normally you'd explain."

Comp.Sc. Tutor F:

"The goal is the production of a programme, its design, description, etc."

Comp.Sc. Tutor G:

"To produce a report of value to British Rail."

Comp.Sc. Tutor H:

"I wanted them to produce a system that could be put into use in October that year. I would have been disappointed if there hadn't been anything as an outcome or if what they produced had been messy and I'd had to tidy it up."

Education Tutor I:

"I don't give out facts. The course is about what you do with what you've learnt."

"They may go away with not much knowledge but knowing where to go."

"The course content is not a body of knowledge in the sense of putting over a syllabus, but a set of skills and attitudes. You can't get at these by talking directly so the experience is what you learn from. The process is as important as the content."

Figure 43 (continued)

- Education Tutor J: "The groups acted as source groups. They'd got a task and each had to produce an answer for the big group."
- Education Tutor K: "[the students are] doing something active and original on this course. The students will learn something about techniques. They should know at the end that research is done in a variety of ways. They will have come to realise, through discussion and their own action, that there are no right answers in research."
- Education Tutor N: "[The aim could be] stimulatory, for instance to stimulate research activity ... in the statements game I might recommend to the teachers to take the game so far, then build in a research element when children can face up to other viewpoints, then move back to the unit. This might go on over, for instance, three weeks including coming back to the activities. The research results are fed to each other collaboratively."
- Education Tutor O: "I want them to think and discuss the issues so that the answers come from them not me. I make the task reasonably easy so that people will come up with them."
- English Tutor P: "The collaborative goal is involving students and giving them a sense of responsibility and a zest for seeking things out, not being spoon-fed."
- History Tutor Q: "A political view of the role of teachers and teaching underlies this and a political view of the nature of knowledge as well as its ownership. This is a radical view in many ways. Although in the end the students have their own knowledge, as with other methods, it suggests the students are as capable as the tutor of defining what is important and getting something out of this. The collaborative task is

(Figure 43 is continued on the next page)

Figure 43 (continued)

- History Tutor Q:
(continued) essential because it sets a task that requires people to think what they are doing and supplies a peer group to test ideas against. So it encourages the notion that students are able to learn as much from each other as from me."
- History Tutor R: "It's a challenge to their assumptions that the tutor knows the answer and is right. I'm pleased if they're disconcerted." "All the examples spring from the same philosophy which is that the group should cohere around production rather than consumption."
- History Tutor S: "For the students to come up with their own view of the problem."
- Music Tutor U: "The augmentation of knowledge is lateral, not additive. We're always returning to the basic questions of life - why do we communicate and what do we communicate?"
- Politics Tutor W: "There is also an academic purpose. The fact that it's done in a group is distinctive from individual work in that they have an opportunity to specify a problem that turns them on and seek to resolve it. In this instance, the group is producing a theory of the causes of famine, seeing famine as an extension of poverty. They are creating a framework with predictive capacity, concerning which societies are more, rather than less, vulnerable to famine.." "To enable people to think independently and critically. To define a problem, argue about it, write it up and come up with their own material."
- Sociology Tutor Y: "With theoretical work you can use concepts and rely on their generality to cover for you on things you can't come to terms with. The reason I don't give reading on this task is that people tend to reproduce what they read. I'm making this aim explicit, I don't want them to reproduce this stuff. They're used to reading and note-taking, this is very different."
-

Figure 43 (continued)

Sociology Tutor Z: "You can't fully promote the experience of discovery without other people. The group gives social reinforcement through the difficulties of discovery. Knowledge is essentially a social theory. You need other people. You've got to be able to talk and share."

"The students have to generate hypotheses and say which one they'll test. Then they plan it between seminars, then they come back and discuss the feasibility of their plan, then they do it and get results. Essentially that hypothesis and that experimental planning comes from them."

The Promotion of Student Autonomy

A third set of aims for collaborative work were concerned with the promotion of student autonomy. Figure 44 shows the interview excerpts that were classified under this heading.

Figure 44

Tutor's Aims: To Promote Student Autonomy

Archaeology Tutor A: "Autonomy, structuring the whole thing themselves and with others..." "Having autonomy"

Biology Tutor B: "they must do something independently"

Education Tutor I: "I'm hoping to hand over the responsibility to them. The students are now running their own exercises and aware that the process of managing this is what they're supposed to be learning. They know they have to be in charge of what they're going to learn and how to do it. Different tasks appear on the course all the time in response to the students' requests for skills."

(Figure 44 is continued on the next page)

Figure 44 (continued)

- Education Tutor J: "Hopefully they should say at the end, 'I've begun to train myself', not 'I'm trained'"
- History Tutor Q: "Because they are required to work in groups by themselves without the teacher they often overcome their usual undue respect for the teacher's presence. One can leave the room and come back to find them in the middle of a ferocious row. The first time, they all stop and there's a deathly silence. Later they carry on as if I'm not there."
- History Tutor R: "To re-energise the students, to get the students enthusiastic and involved because they are more in control and getting more out of it - because you do get out what you put in."
- Politics Tutor V: "When I was younger students were prepared to argue with me. Now I'm older, they are less prepared to argue with me, so it can become one way. There's also the question of my personal style. I tend to get into aggressive argument if I'm engaged in an issue. So in this method they're not so dominated by me. It seems best to remove myself so as not to dominate the students."
- Sociology Tutor Z: "I'm trying to achieve in the students the sense of being powerful and active rather than passive and receptive in relation to learning. 'You can do it,' is what I'm saying. I believe on the basis of my experience with Patrick Meredith and his mutual tuition groups that the things of value in learning are those you've sought and discovered. So I hope to give them that experience of discovery and to make it possible for them to go on discovering."
-

To Give Students a Voice

A fourth set of aims were to do with increasing student participation in discussion, more specifically to give students a voice in learning interactions. Figure 45 gives the excerpts from interviews that were classified under this heading.

Figure 45

Tutors' Aims: To Give Students a Voice

- English Tutor P: "I give a set of different materials to each group, each set including, for instance, a text, a critical work, biographical material or historical background. My aim is to give each student a voice so they all have something to say. I would close a group of volunteers when materials are exhausted, for instance, if it wouldn't give enough viewpoints."
- History Tutor Q: "There are people talking who wouldn't open their mouths otherwise."
- History Tutor S: "It breaks down the artificial barriers between people by working together. If people sitting in an ordinary seminar are constipated and unable to speak, you're not teaching them."
- Music Tutor U: "We build the whole thing as a communicative process. We want the students to speak their minds through playing music ... what we're looking for, ideally, is a personal voice."
- Politics Tutor V: "I began working in this way as an attempt to increase students' participation in discussion and to remove from them all a feeling that they could come in and then come out without having anything to contribute ... one problem getting students to participate is that the shy and reticent people feel all

(Figure 45 is continued on the next page)

Figure 45 (continued)

Politics Tutor V
(continued)

the others know more than they do. But if they each have a piece of reading and know it, their piece is unique. It gives each student something different to say, they know something no-one else does."

To Provide Direct Experience of a Problem or Case

For quite a large number of tutors, their aims for collaborative group working were that it should provide direct experience for students of a problem, a data set, a live case, of experimental methods and so on. Excerpts from tutor interviews classified under this heading are shown in Figure 46.

Figure 46

Tutors' Aims: To Provide Students with Direct Experience of a Problem or Case

Biology Tutor B:

"The point is to show the students how the use of radioactive isotopes can answer questions." "... to give the opportunity to design an experiment and to interpret it and to find out how difficult it is to do." "They like getting data (the experiment always works unless the students are very sloppy). But they do find that designing the experiment is difficult. It gives them lots of things to think about. The interpretation is difficult."

Chemistry Tutor E:

"This is a better way to teach about the uncertainties in dealing with natural resources. There is no right answer. The material is highly structured, intentionally, because this is a better preparation for real life, which means recognition of uncertainty. This is preparing a precisely-minded scientist for a world where not

(Figure 46 is continued on the next page)

Figure 46 (continued)

Chemistry Tutor E
(continued)

everything is precise. It's not vocational, not preparation for a career. It's getting away from the one right answer ideology and away from concentration on accurate measures in laboratory conditions."

Comp.Sc. Tutor G:

"To make practical use of what they've learned on the course by making proposals for the enhancement of an existing information system for station booking clerks and its integration with existing PRESTEL services."

Comp.Sc. Tutor H:

"the experience of writing a big computer programme. The principles are the same as for a small one but it's a different experience and needs considerable time to prepare it."

Education Tutor J:

"The pairing arises from methodological considerations of techniques of observation, from the need for multiple observation in the classroom."

"To make them interested in what the children said in class."

"It's better to lift a stone and see for yourself what crawls out. There's a thrill in doing research."

Education Tutor K:

"They should understand the principles of doing research as well as having done some and talked to people about it and they will have encountered and worked on a real problem instead of an artefactual one."

Language Tutor T:

"That the students should get to understand the practical manipulations that lie behind the theory of syntax. It's easy to be impressed in a bland and unaffected way by what one hears in a lecture, but still not be able to do it."

Music Tutor U:

"Producing essays or taped examples is not like playing eighteenth century keyboards or playing the shawm and is

(Figure 46 is continued on the next page)

Figure 46 (continued)

Music Tutor U: (continued)	certainly less likely to afford intense musical insight."
Politics Tutor W:	"It's not common that immediately relevant problems are looked at at undergraduate level. The usual way to start is to give theory, then explain it to them, then to show how it is relevant. But this is a relevant problem. It's interdisciplinary. Ecology, economics, philosophical and political questions, all the important questions in the world are like this, it's interesting to pull together all the aspects. The sources they use come from embassies, journals, newspapers, books, the town and the university libraries."
Sociology Tutor Y:	"To develop analytical skills in handling data that they don't get in most of the other courses. They're not alone with the data in other courses but here they are. They're challenged by the collection and analysis of their own data."
Sociology Tutor Z:	"I wanted to give them a feel for how you plan and do an experiment." "I wanted them to find out what statistics meant in this field by finding out the ways you can use them - and the restrictions."

To Encourage Critical Reflexivity

A sixth group of aims and objectives was concerned with encouraging in the students critical reflexivity towards the self, others and the subject matter. Excerpts from interviews classified under this heading are given in Figure 47.

Figure 47

Tutors' Aims: To Encourage Critical Reflexivity towards the Self, Others and the Subject Matter

- Biology Tutor C: "The most valuable thing about the practical is that the enzyme does all the wrong things in terms of what they'd expect. So they're caught by this. They have to puzzle out the unexpected result."
- Biology Tutor D: "The most important thing is stimulating awareness. The project is a consciousness-raising exercise and an example of how complicated it [the world situation] is."
- Comp.Sc. Tutor G: "I hope it would give experience of and insight into systems analysis and into some of the earlier stages of systems design."
- Education Tutor I: "If I'm teaching an ostensible skill, like counselling skills, perhaps with pairs working on video, they take it in turns to say, what is the relationship between what we're doing today and what they'll do in schools."
- "I believe teachers in school ought to be more aware of the learning needs of their pupils and should be able to listen actively to what these needs are and try to meet them. Only by indulging in collaborative learning can one hope to achieve this."
- "If you're going to learn about yourself in the teaching process and become self-aware then you've got to be involved. You learn from all this."
- Education Tutor J: "To get them to reflect on the assumptions they are bringing to [tapes of children's] talk. To develop a sensitivity to the nuances of what is said and done. Making the familiar unfamiliar."

(Figure 47 is continued on the next page)

Figure 47 (continued)

Education Tutor K:

"They should also realise that conclusions are conditional and contingent and loose, according to the nature and conduct of the research. At the writing up stage, similarly, for them to appreciate there may be fantasy versions or descriptive versions of research and that these possibilities apply in 'real' research. The students should appreciate that it's a messy process, not cold and clinical."

Education Tutor M:

"Self-recognition of individuals in the group that cultural differences were extremely important. [And] realisation that these differences could lead to conflict where not recognised."

Education Tutor N:

"Reflexivity, that is reflection upon the self, is one aim ... there is a need for a journey inwards, that is, an examination of one's own belief system, values and assumptions, not at a cognitive level but at an affective level ... understanding our personhood in dialogue with ourselves."

"The group work is meant to walk the edge between the cognitive and the affective, to make people think and feel."

English Tutor P:

"They discover more readily via collaborative projects what their peers are capable of ... and it has seemed to me that they are more interested in this kind of standard than the one set by me."

History Tutor Q:

"By leaving the students to set the syllabus and to work collaboratively the students stand to learn things differently from the way they would if they were taught in a more formal manner. It requires them to examine why they are doing things, because they are not told what to do. They've got to work out the significance of working things out for themselves."

(Figure 47 is continued on the next page)

Figure 47 (continued)

History Tutor R:	"My aim is deliberately to offer something which by implication criticises individualism and competition."
Music Tutor U:	"[The students'] experience is diverse, for instance you might have a brilliant instrumentalist with no written skills rubbing shoulders with the reverse, that is, someone who is good at composing but who is not an instrumentalist. Each has a lot to teach the other, it makes the most of the talents available ... The department's aims are liberal-minded, no more and no less than to encourage musical insight and depth of understanding."
Politics Tutor W:	"To enable people to think critically."

Preparation for Personal and Professional Life

A seventh group of aims and objectives were strongly future-oriented, namely to prepare students for future professional and working life. Excerpts from tutor interviews classified under this heading are given in Figure 48.

Figure 48

Tutors' Aims: Preparation for Personal and Professional Life, Work and Industry

Comp.Sc. Tutor F:	"This course is the only group assessment the students do. Almost all the work they do when they leave will be in groups."
Comp.Sc. Tutor G:	"In real life computer systems are big and complicated and need to be addressed in a group."
Education Tutor I:	"The course is about my modelling things for them. This is especially important for the PGCE students who carry away ideas about what they could

(Figure 48 is continued on the next page)

Figure 48 (continued)

- Education Tutor I:
(continued) do in class. But it applies to the undergraduate students as well who otherwise haven't understood much about active learning."
- Education Tutor J: "It's related to the notion of the teacher as an autonomous and self-critical professional who will come back in five years time and do an MA. It's bringing the PGCE approach in line with [INSET] and to encourage students to keep on learning."
- Education Tutor L: "[My] background is in case study and action research and a lot of it involved getting teachers to think critically about practice. This was in in-service work, but there are implications here for pre-service work too, in getting students to view teaching as a problematic activity. Not just to see it as problematic in the obvious sense of continuing problems, but to see teaching in Stenhouse's term, as an art."
- "So the underlying objectives are really looking forward to professional practice, rather than simply being to do with the teaching of research methods. It is introducing the students to a view of teaching as a worthwhile activity with a professional dimension to the job."
- History Tutor Q: "Many students are going on to jobs where they will be required to work together, so collaborative working can provide a preliminary experience of that. There is a significant, but indirect, vocational aspect."
- History Tutor R: "A lot of them will go into managerial and administrative work so a team and project approach is very relevant to them."
- Music Tutor U: "We have replaced coverage with the more focussed scrutiny of a few areas of musical study with the expectation

(Figure 48 is continued on the next page)

Figure 48 (continued)

Music Tutor U:
(continued)

that intensity of approach in one area will release the same in the other areas that the student takes up in life, in musical and other matters. The most important skills are learned collaboratively in music. It's to do with communication, essentially."

"Collaboration prepares the students as musicians and prepares them for later working life."

Politics Tutor V:

"These skills are of enormous importance whether the students will go on to the civil service, research or to be teachers, thereafter."

Sociology Tutor Y:

"This mode of analysis requires a level of detail they're not used to - making a case, inductive reasoning and building evidence. This is a competence which people in whatever field could use, although it is most explicit in a lawyer's work."

Morale, Variety and Enjoyment

Finally, the eighth set of aims for collaborative group work working was a cluster related to raising morale by promoting variety and enjoyment and helping students to get to know each other. Interview excerpts classified under this heading are given in Figure 49.

Figure 49

Tutors' Aims: Morale, Variety, Enjoyment and Helping Students to Get to Know Each Other

Education Tutor I:

"Getting people to know each other quickly is part of the ice-breaking exercise. Then these groups become working groups ... by the end of the third week all the students should have met each other."

(Figure 49 is continued on the next page)

Figure 49 (continued)

Education Tutor M:	"Enjoyment - which is not a small measure for learning in groups of this kind."
Education Tutor O:	"The first group task in the first session is designed primarily to get people to know each other better. That's easier if they are asked to talk among themselves. The students come from a large regional area and don't necessarily meet up much on campus outside classes."
English Tutor P:	"This is a response to the need to raise morale - both by doing what we are doing more effectively and by making students feel they have a stake in this."
History Tutor Q:	"It's a different way of doing what we could do in other ways. On the whole the department and the university run seminars in a different way, so this gives the opportunity to provide some variety. Collaborative work of this nature, setting the syllabus themselves, should, in theory, bring out talent in a variety of ways, for instance, those students who are good at organising people to do things or at putting ideas in a concise manner. They may not discover they have got these talents, or exercise them, otherwise."
History Tutor R:	"There is another aim and that is for myself, to develop a new and interesting way of teaching. I couldn't teach all my courses like this but this provides some variety. It was something I wanted to try to find out about, to see, did it work?"

These eight categories document ambitions and varied aims and objectives for collaborative learning and it is significant that they are seen by the tutors as intrinsically linked to collaborative learning, that is, collaborative learning tasks are used as the

vehicle for learning aims and objectives which tutors thought could not be achieved in other ways.

Were these Aims and Objectives Achieved?

But were these aims and objectives achieved? This question was examined in section 2.12 of the tutor interview schedule (see Appendix 3), which focussed on the tutors' perceptions of the success (in terms of the aims and objectives they had previously stated) of the collaborative tasks they used. Figure 50, on the next page, summarises tutors' replies to this question.

As the figure shows, tutors' perceptions of their use of collaborative tasks were that they were successful or moderately successful in achieving the aims and objectives set out in Figures 42 to 49 above. The only exceptions were the group project for Computer Science supervised by Psychology/Computer Science Tutor X and the group projects for Biology Tutor D.

Psychology/Computer Science Tutor X referred to the group project as:

"a total failure. The group produced nothing. There were too many of them, they had problems with the machines and also they couldn't join their separate components together ... their new system never worked."

However, it is worth noting that all the students in this project team completed their reports and they each received a pass mark for their work. What the group failed to do was to "produce the desired user interface."

Biology Tutor D reported that several of the groups in the class had not met and many individuals had dropped out of the option "because it is not assessed and the weather is too nice. The same thing has happened on the traditionally taught Biochemistry course." The groups had not taken the opportunity provided by the tutor to meet in timetabled time, nor had they met in their own time. Only one group completed their project and gave a report on it at the end

(continued on page 234)

Figure 50

Tutors' Assessment of the Success of Collaborative Tasks in Meeting their own Stated Aims and Objectives for them

SUCCESSFUL	MODERATELY SUCCESSFUL	UNSUCCESSFUL
Biology Tutor B Biology Tutor C Chemistry Tutor E Education Tutor I Education Tutor J Education Tutor K Education Tutor L Education Tutor M Education Tutor N Education Tutor O English Tutor P History Tutor Q History Tutor R Language Tutor T Music Tutor U Politics Tutor V Politics Tutor W Sociology Tutor Z	Archaeology Tutor A Comp. Sc. Tutor F Comp. Sc. Tutor G Comp. Sc. Tutor H History Tutor S Comp. Sc./Psychology Tutor X (for Psychology) Sociology Tutor Y	Biology Tutor B Comp.Sc./Psychology Tutor X (for Comp.Sc.)
TOTALS: 18 TUTORS	7 TUTORS	2 TUTORS

of the term. This tutor was "very disappointed" at this outcome.

Seven tutors reported moderate successes for their uses of collaborative group work. This moderation derived in some cases from what the tutors felt to be middling levels of achievement but in others was used to refer to a variable pattern where successes mixed with less successful uses of collaborative learning. To take examples of these different types of moderate success, Archaeology Tutor A, for instance, reported that the group task had "produced good work last year" but had "not been so successful this year". However, there were "no great moans, no great disaster" and the students had "enjoyed the freedom of the course". Computer Science Tutor F had found the students "not as skilled at the technical elements of the task" as the tutor would have wished. Other comments in this group include those such as "reasonably successful on the system analysis but not so successful on system design" (Computer Science Tutor G), "sometimes successful and sometimes not" (History Tutor S) and "the group work was successful" but "they ran into personal problems ... if they did it again they might cope better."

By far the greater number of tutors in the group reported success for the tasks they used, even though they might have caused students some difficulties along the way. Figure 51 gives examples of tutors' comments under this heading.

Figure 51

Examples of Success in Meeting Tutors' Prior Aims and Objectives for Collaborative Tasks

Biology Tutor B:

"Yes, it achieves interpretation and enquiry. Eighty per cent of the students throw themselves into the spirit of it. They enjoy it and find it a good practical. But they do find out that designing an experiment is difficult."

Biology Tutor C:

"They seem to get on and work quite well. I'm always surprised at how well it seems to work."

(Figure 51 is continued on the next page)

Figure 51 (continued)

- Chemistry Tutor E: "It didn't go badly, it went alright. It was not as good a session as I would have liked on the comparison of strategies. But if you judge it also by the extent to which students actually participate then it went well. Yes, it went well. It goes better every year because we get better at doing it."
- Education Tutor I: "The students are running their own exercises and they're aware that this process is what they're supposed to be learning."
- Education Tutor J: "It worked very well indeed. The whole meeting was an example of the theory working well."
- Education Tutor K: "It is successful. One way it is successful is that you can get through such a lot in a short space of time because the students have done a lot and have shared what they have done. It is also successful in that the quality of the work is good. The quality has never been worse than I have got before and is probably better than I would otherwise have got."
- Education Tutor L: "I was a bit nervous about this but they were keen on defining it for themselves and some of them have come up with projects I wouldn't have thought to suggest."
- Education Tutor M: "It works with children and with school and university students very well. Sometimes I have encountered problems with teachers on the weekend courses. Occasionally teachers rush back to school, which is probably a typically hierarchical set up, and try the whole thing out immediately which then ... rebounds on them. But with that rider it works superbly and leads to heightened levels of motivation and attainment."
- Sociology Tutor Z: "I never believed that students can't work like this but I would have been disabused by a first year group, with

(Figure 51 is continued on the next page)

Figure 51 (continued)

Sociology Tutor Z:
(continued)

three mature students and four younger students. They always had a lively discussion [...] the assumption is that students don't want to learn but they bloody well do. I was redundant, they could run it without me."

These comments are consistent with tutors' answers to two other questions in the interviews about whether they intended to use collaborative learning again (all the tutors did so intend) and whether they would use these tasks again (all tutors indicated they would use their tasks again, many with minor modifications). However, although tutors overall were fairly well-satisfied with the particular tasks they had designed, there were other factors, beyond their control, which impinged upon their use of collaborative learning. These are discussed below in the fourth section of this chapter.

The first section of this chapter looked at the initial impetus which acted as triggers for tutors' use of collaborative learning; this section has looked at tutors' overall goals in using this method and, at a more detailed level, at aims and objectives for the wide range of tasks used.

The next and third section pulls back to a wider focus by setting the material covered so far in the context of the tutors' views about the purposes of higher education and their views of the ideal roles of tutors and students if these purposes are to be achieved.

TUTORS' VIEWS ABOUT THE AIMS OF HIGHER EDUCATION

The data make it possible to consider the tutors' overall goals for collaborative learning and their aims and objectives for specific collaborative tasks within the wider context of their views about the aims of higher education. Within this framework the data also give tutors' views of what the differing roles of tutors and students are or should be. Sections 5.3 to 5.5 (inclusive) in the questionnaire explored these themes (see Appendix 3).

Tutors' views about the aims of higher education clustered into four main groups (shared in common by most of the tutors) and a small number of outliers. The four main groups of aims were: to produce a capacity for problem-solving and critical enquiry; to prepare for life and work; to develop intellectual abilities and analytical skills; and to help students come to terms with uncertainty. Smaller numbers of tutors suggested as aims promoting students' abilities to communicate; providing an opportunity for collaborative reflection; helping to integrate knowing and doing; and widening access. Replies in all these categories are summarised in Figure 52.

Figure 52

Categorisation of Tutors' Views about the Aims of Higher Education

To produce a capacity for problem-solving and critical enquiry:

Biology Tutor C
Biology Tutor D
Chemistry Tutor E
Comp.Sc. Tutor F
Comp.Sc. Tutor H
Education Tutor I
Education Tutor K
Education Tutor L
Education Tutor N
Education Tutor O
History Tutor Q
Politics Tutor W
Sociology Tutor Y
Sociology Tutor Z

TOTAL: 14 Tutors

(Figure 52 is continued on the next page)

Figure 52 (continued)

To prepare for life and work:

Comp.Sc. Tutor G
Comp.Sc. Tutor H
Education Tutor I
Education Tutor L
Education Tutor M
Education Tutor N
English Tutor P
History Tutor R
History Tutor S
Music Tutor U
Politics Tutor V
Politics Tutor W

TOTAL: 12 Tutors

To develop intellectual abilities
and analytical skills:

Archaeology Tutor A
Education Tutor O
History Tutor S
Language Tutor T
Music Tutor U
Politics Tutor V
Politics Tutor W
Psychology/Comp.Sc.
Tutor X
Sociology Tutor Y
Sociology Tutor Z

TOTAL: 10 Tutors

To help students to come to terms
with uncertainty:

Biology Tutor B
Biology Tutor D
Comp.Sc. Tutor F
Education Tutor K
Education Tutor L
Education Tutor O
Psychology/Comp.Sc.
Tutor X
Sociology Tutor Z

TOTAL: 8 Tutors

To help students to communicate:

Comp.Sc. Tutor H
Language Tutor T
Music Tutor U

TOTAL: 3 Tutors

(Figure 52 is continued on the next page)

Figure 52 (continued)

To provide an opportunity for collaborative reflection:	Education Tutor J Education Tutor K Education Tutor N
	TOTAL: 3 Tutors
To help integrate knowing and doing:	Music Tutor U
To widen access:	History Tutor Q

Some quotations from what tutors said in the interviews will illustrate these categories.

To provide a capacity for problem-solving and critical awareness

"What sets a graduate apart is the capacity to find out for themselves and to use information."

(Biology Tutor C)

"To make people think, to help them think and in circumstances they haven't come across before."

(Chemistry Tutor E)

"To understand problems and apply reasoning to them, to communicate and to justify their ideas."

(Computer Science Tutor H)

"...ensuring an awareness of what seem to be critical questions ... and also to help students work out their own answers."

(Education Tutor K)

"...to generate critical capacity and teach people to think for themselves."

(History Tutor Q)

To prepare for life and work

"Preparation for life and work are each important - and the balance is important."

(Computer Science Tutor G)

"To impart generalisable skills - a lifelong aspect"

(Computer Science Tutor H)

"The aims are personal development, professional development, learning to learn and learning how to make use of what has been learnt."

(Education Tutor I)

"... as an intellectual education directed at lifelong learning, not an end complete in itself but a preparation for going on."

(Education Tutor M)

"... there's a strongly vocational element at present with the emphasis on graduate employment so what we teach should be relevant not just to make them specialist Chaucerians."

(English Tutor P)

"University education generally should be about this [lifelong learning] and it is possible in arts-based education."

(History Tutor R)

"... develop independence of judgement, the ability to argue, confidence and the capacity to learn on - in the sense of lifelong learning."

(Politics Tutor W)

To develop intellectual abilities and analytical skills

"... to develop intellectual abilities using archaeology as a medium. This general one is superordinate to archaeology as a specific."

(Archaeology Tutor A)

"Learning certain intellectual and practical skills. The student chooses history as a medium. Thinking critically, arguing a case, gaining a grasp of the role history plays in the world we live in."

(History Tutor S)

"To inculcate and develop skills in learning and thinking."

(Language Tutor T)

"... to develop analytical skills through handling data."

(Sociology Tutor Y)

To help students to come to terms with uncertainty

"The prime aim is to teach them that nothing is ever really certain. Evidence is just evidence, always interpreted with assumptions. They've got to know that everything is uncertain. I'm not trying to turn them into biologists but to let them experience certain ideas and to learn to distinguish bullshit from bullshit."

(Biology Tutor B)

"... to help students to become problem-solvers and to cope with uncertainty."

(Computer Science Tutor F)

"... to encourage them not to take things as gospel, to be comfortable with uncertainty."

(Education Tutor O)

"... to make people fairly sceptical about things."

(Psychology/Computer Science Tutor X)

To help students to communicate

"... to help students to communicate and to justify ideas"

(Computer Science Tutor H)

"... interaction with other people at the level of the exchange of ideas"

(Language Tutor T)

"We want the students to speak their minds through playing music ... musical insight at a general level splitting down into the development of communicative skills in music."

(Music Tutor U)

To provide an opportunity for collaborative reflection

"With reference to the PGCE, the only advantage in having this training in the University rather than in schools is the opportunity it gives to reflect and collaborate with other people in the same boat."

(Education Tutor I)

"In this area, making people aware of factors which have influenced and shaped their experience. Producing reflexivity about the analysis of personal experience."

(Education Tutor K)

"... an examination of one's own belief system, values and assumptions, not at a cognitive level but at an affective level."

(Education Tutor N)

To help integrate knowing and doing

"... integrating knowing and doing ... is the core of the philosophy."

(Music Tutor U)

To widen access

"In terms of what it should be, this is more to do with who should be able to come. I'd like this to widen. One could deal with reservations about the problem of so-called 'quality' and admit more mature students. We should admit people who want and are motivated to do it, even if they are lacking in formal qualifications, but we don't know how to do this. If there's an assessment system one tends to use it."

(History Tutor Q)

The Tutor's Role

If these, then, are what higher education should have for its main aims, what should be the role of the higher education tutor?

Tutors' answers to this question were classified into three main categories, namely to facilitate students' learning, to support students' personal and social growth and to be willing to negotiate learning with students. A much smaller number of tutors added the suggestion that the tutors' role should be to promote enthusiasm for the subject. Tutors replying in each of these categories are shown in Figure 53 on the next page.

Figure 53

Tutors' Views of the Higher Education Tutors' Role

To facilitate students' learning:

Archaeology Tutor A
Biology Tutor C
Biology Tutor D
Comp.Sc. Tutor F
Comp.Sc. Tutor G
Comp.Sc. Tutor H
Education Tutor I
Education Tutor J
Education Tutor K
Education Tutor L
Education Tutor M
Education Tutor N
Education Tutor O
History Tutor Q
History Tutor R
Music Tutor U
Politics Tutor V
Politics Tutor W
Sociology Tutor Z

TOTAL: 19 Tutors

To support students' personal and social growth:

Education Tutor K
Education Tutor M
Education Tutor N
English Tutor P
History Tutor S
Language Tutor T
Music Tutor U
Sociology Tutor Z

TOTAL: 8 Tutors

To negotiate learning with students:

Archaeology Tutor A
Education Tutor I
Education Tutor N
Music Tutor U
Sociology Tutor Z

TOTAL: 5 Tutors

To promote enthusiasm for the subject:

History Tutor S
Music Tutor U
Psychology/Comp.Sc.
Tutor X

TOTAL: 3 Tutors

The message that comes out strongly from this section of the data is the importance in the tutors' views of the tutor as **facilitator** of students' own learning rather than as the transmitter of pre-digested knowledge. Excerpts from the interviews illustrate this.

"To facilitate that process. Not to lead, but to convey a context in which that can take place. This means to be more equal to the students."

(Archaeology Tutor A)

"You can't just run a University with a library, full stop. You've got to fill that gap, to provide guidance, encouragement and criticism."

(Biology Tutor C)

"I assume that, technically, students will often know more than I will, and even if they don't are quite competent to find out ... My direct contribution is at the level of strategies of work and organising themselves and their material and seeing relationships between parts of the course."

(Computer Science Tutor G)

"to create an environment in which the students can create that for themselves"

(Computer Science Tutor H)

"... to be facilitative of their learning, not a fount of information. I am a fellow learner lots of the time, what I'm saying to the students is, I will learn with you and help you to think but I can't give you the answers."

(Education Tutor I)

"It's to facilitate that process of getting distance from experience and reflecting on experience productively."

(Education Tutor J)

"You're saying to the group: I'm not the expert here, let's see what comes out of the discussion."

(Education Tutor L)

"To help people do that for themselves. The problem is in the term 'education', which is so often explained as to 'lead out'. In the 'duc' bit there's an elitist assumption. My image, when this was explained when I was young

was of the teacher leading the child over ground with the ground being the material to cover. This is often the authoritative image. But I don't take that now as an image - maybe the teacher is now more inviting and guiding the students."

(History Tutor Q)

"We're catalysts, essentially, as all teachers are."

(Music Tutor U)

"To foster and provide the opportunity for them to develop these skills - as opposed to telling people what to think."

(Politics Tutor W)

To support students' personal and social growth

A secondary theme was that the role of the tutor should be to support students' personal and social growth:

"... getting them to grow, intellectually and personally in the context of the course."

(Education Tutor K)

"While a principle concern is aiding the intellectual development of my students, it involves other things like their social and emotional development as well. I don't see it ending at just intellectual development."

"... to walk the edge between the cognitive and the affective - to make people think and feel. There's an emphasis on the 'core' of the learner's emotive and affective state. What I'm doing here is not teaching about or teaching for but teaching in."

(Education Tutor N)

"Increasingly, to promote an element of self-improvement by the students. To help them relate to people in groups, which is much more difficult than one to one, to control their hostility and to recognise prejudice and make something of it."

(English Tutor P)

"Trying to perfect these social and practical skills I talk about and also to enthuse the

students in the intellectual excitement of the subject itself."

(History Tutor S)

"It's important to get to know individual people and to know what their problems and interests are. Also to develop students' skills to work with other people because that's useful for employment and for life."

(Language Tutor T)

To negotiate learning with students

A smaller number of tutors strongly emphasised the requirement that a tutor should negotiate material to be learnt and the pace at which it should be tackled, with the students.

"The tutor should be open, prepared to listen to comments and criticisms, really to engage in a dialogue. I always encourage them to treat part of a session as an opportunity to bring in anything they have come across and to let them have a choice about the topics to deal with."

(Sociology Tutor Z)

"There's little constraint on the selection of projects and selection ignores year divisions so first, second and third year students are rubbing shoulders. Their experience is diverse ... each has a lot to teach the other. It makes the most of the talents available."

(Music Tutor U)

"I'm not throwing away the idea of input. But instead of saying, 'Today I'm lecturing on human rights,' I would ask the students to go through a process where they will begin to ask for that input. This is qualitatively different from an imposed input. It's a proper negotiated curriculum - instead of only sitting down at the beginning and asking, 'What do you want to do?'"

(Education Tutor N)

"My focus all the time is on negotiating with them what they will learn and how they will learn it. If there's any place in schools where it is possible to negotiate learning

then it is in pastoral care and guidance and careers - in the broadest sense. So I'm trying to provide a model."

(Education Tutor I)

"There's a delicate balance between suggesting a structure and enforcing it, that's borne in mind in everything I do. I negotiate with the students about what is taught."

(Archaeology Tutor A)

To promote enthusiasm for the subject

A small number of tutors in each case included in the ideal role of the tutor the promotion of enthusiasm for the subject:

"... also to enthuse the students in the intellectual excitement of the subject itself."

(History Tutor S)

"Underpinning the notion of the project system is the conviction that we're here to show an enthusiasm about music ourselves."

(Music Tutor U)

"To pass on my enthusiasm"

(Psychology/Computer Science Tutor X)

Tutors' Views of the Role of Students

Finally, tutors' views were sought about the role of students. What should that be, ideally, given the views already set out about the aims of higher education and the proper role of the tutor?

This question prompted some frank and wryly humorous statements by tutors about what they perceived as the everyday reality of the student role. "Confused!" (Biology Tutor B), "politely bored" (Computer Science Tutor F), "to pass their exams" (Computer Science Tutor G) and "to survive as a teacher" (Education Tutor J) were among these comments.

However, the body of tutors' views about the ideal role of students could be categorised into three main groups, namely a

commitment to students' own intellectual and personal development, a commitment to inquiry, and to participate in learning. Tutors whose views were grouped into each of these categories are shown in Figure 54.

Figure 54

Tutors' Views of the Students' Role

A commitment to inquiry:

Biology Tutor D
Chemistry Tutor E
Comp.Sc. Tutor G
Education Tutor I
Education Tutor J
Education Tutor K
Education Tutor N
Education Tutor O
History Tutor Q
History Tutor R
History Tutor S
Language Tutor T
Music Tutor U
Politics Tutor V
Politics Tutor W
Sociology Tutor Y

TOTAL: 16 Tutors

A commitment to students' own
personal and intellectual
development:

Archaeology Tutor A
Biology Tutor C
Comp.Sc. Tutor F
Comp.Sc. Tutor G
Education Tutor I
Education Tutor J
Education Tutor K
Education Tutor M
Education Tutor N
History Tutor Q
Language Tutor T
Music Tutor U
Politics Tutor V
Psychology/Comp.Sc.
Tutor X

TOTAL: 14 Tutors

(Figure 54 is continued on the next page)

Figure 54 (continued)

To participate in learning:

Comp.Sc. Tutor H
Education Tutor I
Education Tutor J
Education Tutor M
Education Tutor O
English Tutor M
History Tutor Q
History Tutor R
History Tutor S
Language Tutor T
Music Tutor U
Politics Tutor V
Politics Tutor W

TOTAL: 13 Tutors

Some quotations will illustrate each of these categories.

Commitment to Inquiry

"They should be willing to inquire into things. They've got to read without being told, to have a spirit of curiosity."

(Biology Tutor D)

"The role of the ideal student is questioning, in a critical way, and learning to doubt all that they hear is right. Finding out instead of accepting."

(Chemistry Tutor E)

"I'd like to feel students will go away with things in a file and go back to them, and look it up or remember an experience. These sessions are not only to deal with today's needs."

(Education Tutor I)

"It's essential that people work out 'why' for themselves."

(Education Tutor N)

"... to be interested in the topic ... and have the enthusiasm to read as much as possible."

(History Tutor S)

"If they get through the doors it's presupposed they will show musical curiosity ... and a preparedness to broaden their tastes, especially with regard to recent music and non-Western music."

(Music Tutor U)

"... to formulate for themselves questions which they are curious to explore."

(Politics Tutor W)

Commitment to their own Personal and Intellectual Development

"Students should develop themselves with skill and dedication."

(Biology Tutor C)

"Students should be learning whatever their course is about but also about their own attitudes and values and how to make use of that after their course."

(Education Tutor I)

"I'd like the PGCE students to come in with an interest in research and a research stance towards work and with the confidence and stamina to develop that initial interest into something more systematic and well-founded."

(Education Tutor J)

"Flexibility, adaptability, openness, to be critical, analytic and humane"

(Education Tutor K)

"To develop the intellectual apparatus to do psychology"

(Psychology/Computer Science Tutor X)

To Participate in Learning

"A participative role. The students must contribute their current knowledge and experience to situations with which they are presented."

(Computer Science Tutor H)

"Participation is important"

(Education Tutor O)

"I can't know what influence I will have on the students so it rests with them, they must facilitate their own experience of teaching and learning."

(History Tutor Q)

"... the philosophy ... that the group should cohere around production rather than consumption."

(History Tutor R)

"We can really only intensify what they have within them. The projects relate to the teacher's own interests. They try to generate enthusiasm and then leave it to the students."

(Music Tutor U)

"The point is made that it is in the interests of all to participate."

(Politics Tutor V)

"To learn to produce rather than to consume. Our culture encourages students to think we'll be fulfilled by consuming but that's a terrible fallacy. It's only by creating, whether babies or books, that we feel OK about ourselves. So we should encourage people to be productive and to cease wanting to consume."

(Politics Tutor W)

This concludes the analysis of the data on tutors' views about the aims of higher education and of the roles within that framework of tutors and students. One should note the consistency of the views expressed in this section with tutors' overall goals and specific aims and objectives for collaborative learning as discussed in the second section of this chapter. One should also note the consistency of the developed practice of collaborative learning with the mix of hopes, ideals and reflections on experience which formed the origins for its use (as discussed in section one). The tutors, then, were prepared to identify and express ideal visions of what teaching and learning should be like and there is a strong internal consistency between these ideals and their collaborative teaching practices. The term 'idealist' is commonly used in education - in the current hard times - more as a pejorative term than as a term of commendation. This analysis has, purposely, first set out what the tutors did (in Chapter Four and in Appendix 8) and then moved on to look at why

they did it. One may disagree with their approach and disapprove of their practices but one cannot dismiss them as 'idealist' in the sense of having airy-fairy ideas that are all very well but that cannot be put into practice. The tutors themselves had a pragmatic view of the everyday teaching realities that surrounded them, both in terms of students' initial unpreparedness for a productive and enquiring role and of the stance of other tutors who did not use collaborative methods. They noted that students sometimes "look to us as master teachers who know all the answers" or "had as an immediate purpose to pass exams" (Computer Science Tutor G) or had "a tendency to ... be looking for 'how to survive' [as a teacher] which alone would be a negative aim" (Education Tutor J) or "want certainty" (Biology Tutor B).

Some colleagues "only wanted to give information" (Biology Tutor B) or "would give a different answer" (Chemistry Tutor E) or "may only want to talk and would want to suppress non-biddable students" (English Tutor P).

Thus the perceived context surrounding tutors' uses of collaborative learning had its effect - collaborative learning was not used in a vacuum. The next section examines the influence of other contextual features.

THE INFLUENCE OF THE CONTEXT FOR COLLABORATIVE LEARNING

The points have been made that the use of collaborative learning in the case study institution was a matter of individual choice by certain tutors not a feature of institutional policy and that the tutors in the case study were a minority of the teaching staff. Both of these points lead on to questions about the effects of a pre-dominating non-collaborative context on the practice of collaborative learning. Did these contextual features have any effect and, if so, what were they? These questions were explored specifically in section four of the interview (see Appendix 3) but comments on such matters were also given unsolicited by tutors elsewhere. As we have seen in Chapter Four, assessment was one

contextual feature that was explored; others were the influence of the head of department, of departmental colleagues and of features or practices of the wider institution.

Seventeen tutors felt that their heads of departments were supportive of their use of collaborative learning. The degree of support might vary: for instance, "strongly in favour" as reported by Chemistry Tutor E, "dreamt up the scheme in outline" (Language Tutor E) or "helped devise it" (Politics Tutor V) and "would be positive if he understood what this is about" (Education Tutor J). One head had paid for colleagues to go on an UTMU course on small group teaching methods and was said by Computer Science Tutor G to have "realised that this is the only way we can do it" (that is, the only way to teach team working skills) despite being "worried about some of the technical content of the team project reports."

Eight of the tutors reported that their head of department left the choices about teaching methods to individual tutors and thus they regarded their head of department's views as neutral. These tutors spoke of "having total independence", "having complete autonomy" and of the head "having confidence in a tutor to do as she or he thinks fit". One tutor said simply that the head of department did not know - this was Biology Tutor B.

A broadly similar pattern pertained with regard to colleagues. Thirteen tutors reported their colleagues as clearly supportive, eleven as neutral and three as being unaware of their use of collaborative learning. The neutrality was described, for instance, as "amused indulgence" (Biology Tutor C) or "bemusedly neutral" (History Tutor Q). One tutor thought that colleagues were neutral about this tutor's use of collaborative learning but "hostile to teaching in general" which they regarded as "getting in the way of research". Of the tutors who reported support, the level they perceived varied from "a handful are supportive" (Biology Tutor D) to the view that some who knew were supportive, others did not know - and it did not much matter either way. History Tutor S commented:

"the department is shaped on the principle that freedom over the way you teach gets the best out of people"

This remark serves as a reminder that to address contextual features fully the focus of analysis should pull out to include departments not just individual tutors. Of the twelve departments represented in the study, there were four (Archaeology, Computer Science, Education and Music) in which the use of collaborative learning by some tutors could be said to be in line with a departmental philosophy, in that its use was supported by the head as well as by other colleagues and in that more than one tutor was using the method. In these departments the use of collaborative learning was completely open and was linked to prior discussion about the aims of higher education and the educational philosophy of this particular department. Other tutors in these same departments might choose to realise this philosophy in other ways - for instance, other Archaeology tutors made substantial use of extremely informal, tutor-led small group work and team digging projects - but the use of collaborative learning was felt to be in line with this philosophy, not aberrant from it, even though it took the apparently small but significant step of setting the students to work on their own. Three departments (Chemistry, Language and Politics) had heads who were in favour of collaborative learning - although these departments lacked the wider use of it by other colleagues that distinguishes the first four. Tutors in these departments were encouraged by their heads of department but had no general or overt departmental philosophy to draw on nor did they have collegial support from a wider group. Four departments provided an atmosphere of neutrality for the tutors who used collaborative learning: these were English, Politics, Psychology and Sociology. Here the tutors in the study profited from the autonomy accorded to them to teach as they saw fit. One department provided a context for collaborative learning which was in part neutral but which in some ways bordered upon the negative - this was the Biology department where a tutor commented that s/he "would have been happier if there were more people doing it".

Looking at departments in this way, based on the data, further

illuminates the idea presented in Chapter Four of tutors working "with the grain" of departmental philosophy or "against the grain". The number of departments which in the event provided either support or a neutrality that permitted autonomy gives its own gloss on the intuitive judgement (discussed in Chapter Three) prior to the data collection that this institution had an internal culture in which collaborative learning might be expected to be found in a sufficiently significant role to warrant further study.

Light is also shed on the context for collaborative learning by the examination of what may be thought of as 'critical incidents' that were reported by the tutors. All of these incidents concern assessment. We already know that Biology Tutor B disguised the use of collaborative learning for assessment purposes, submitting group averages as individual marks. Despite reporting that tutors were "free to do our own thing" this tutor felt that the status of the practical used for collaborative learning would have been altered away from 'required' if the rest of the department had been aware of how students' scores were treated for assessment (see Chapter Four).

History Tutor Q reported:

"having once suggested to the Department that all of us should teach this way ... there was actually a vote as to whether to allow anyone to do it and the vote went twenty two for and two against. So two of my colleagues thought it shouldn't be allowed to be done. But they weren't as hostile really as they at first made out."

The same tutor also reported an interesting exchange of views with the external examiner for the course:

"The external examiner a few years ago was someone I know and was bemused and somewhat concerned about the way in which the course had been run. He was instinctively sceptical anyway. My impression of the two years comparison, two years taught non-collaboratively and the rest collaboratively, was that there were interesting effects on exam answers. There's a tendency for exam answers to be predictable but I didn't find this in the two years of collaborative work. For instance, there's a tendency to bunch around issues in an exam paper. My impression for the collaborative years was that they were spread out

more. But most striking was that the factual answers and examples brought to bear were more varied. They had found their own way, not followed a line.

The examiner didn't accept that but he didn't attempt to alter what I was doing and he said nothing about it in his report to the Department. In the Department as a whole there is a tacit understanding between gentlemen that we don't comment on or criticise each other's methods."

Another tutor in the same department (Tutor R) was quoted earlier in this section as noting that because of the degree of autonomy for individual tutors, colleagues might think the use of collaborative learning was eccentric but they remained neutral about it. To this the tutor added:

"... But there would be active opposition if we said we wanted this to stand instead of an exam."

Other tutors had similar understandings of the limits to Departmental tolerance:

"If people collaborate the work handed in must be seen as separate with a demarcation line. Two similar reports would not be tolerated - they would be viewed as plagiarism. The students understand this."

(Computer Science Tutor H)

There were two instances reported in the data of attempts to have collaborative work formally assessed as being collaborative and thus to give students a joint mark. One was initiated by two students in the Language department who asked the appropriate Board if they could have a joint mark for collaborative work on an assessed essay. This request was refused.

The other was - successfully - initiated by Politics Tutor W who was able to persuade another Board to accept joint assessment for the collaborative group project described in Chapter Four and in Appendix 8. This tutor had argued that:

"if students work like this there has to be a prize - otherwise there is profound discontinuity between assessment and the teaching method ... that's been the hardest thing to get through the institution."

This tutor added that "the assessment has been unhelpful in the

past but I've cracked it now." However, despite having "cracked it" this victory was hedged by conditions:

"Collective assessment was seen as contentious so the essay was marked internally twice (as are all assessed essays) but then they all went to the external examiner. It took quite a long fight at a Board meeting to get it through. I don't know how things stand at the moment. The principle has been conceded but other tutors who wanted to do the same would still have to argue."

Although, as History Tutor R noted, "departments are sovereign" beliefs about assessment properly being applied to individual work form a cross-institutional paradigm. Even the four departments with the strongest departmental philosophy supporting collaborative learning had no instances of collective products being counted for assessment purposes. (A tutor not included in these data did win such an agreement in the Education Department after the period of the data collection was concluded.) Apart from the significant instance of Politics Tutor W, tutors either evaded the assessment issue by using collaborative learning on non-assessed courses or put up with the unsatisfactory disjuncture brought about by individual assessments following on from collaborative work or, in another significant instance, used collaborative assessment for collaborative work but did not draw colleagues' attention to this fact.

Tutors who used collaborative learning on non-assessed courses did not report problems with assessment. They made statements such as "assessment doesn't get in the way because it's non-assessed" or "assessment stands aside because this work isn't assessed" or "it's no hindrance because the work isn't assessed". But the tutors who used collaborative learning on courses that led on to individual assessment reported considerable problems:

"individual assessment is bound to be a bit unhelpful"

(Biology Tutor C)

"it's individual assessment and so it's pulled apart"

(Computer Science Tutor H)

"it's up to us how we assess those things - but the need to assess and to give a grade is a great impediment. That's based on the need to give an individual mark to able people."

(Computer Science Tutor H)

"The question highlights a general problem about assessment, which is that of the people who do more than the basic minimum. For instance the person who does extra interviews to carry a lazy so and so, or who tracks down summaries and circulates copies of the research for everyone to share. But assessment is a terminal, product-based thing so you can't incorporate this."

(Education Tutor K)

"Some teams have blow ups and rows. There's a competitive element which is inevitable, because of the degree at the end. There's a tension in the course that arises out of the individual assignments and dissertations. I would like to see some corporate or joint assessment to remove this competitive element."

(Education Tutor L)

This same tutor added that some of the teachers on the course had reservations about sharing their work, because of the individual assessment at the end:

"The teachers feel one or two might do the work in the end and the others share in the credit. One teacher in a team of two, for instance, gave up telling her colleague about the references she'd found because, she said, 'he wasn't telling me - he was getting the benefit of my work and I wasn't getting anything back'. Also, this teacher had done the work for a team presentation but he did all the talking - about her work - so she didn't feel she got the credit for what she'd done."

Another tutor reported a similar problem with the competitive spirit:

"I had a big group this year which I split into two and it is difficult to stop them having a competition. The groups thought we'd say, for instance, that one group had done better than the other. And they were saying things like, 'Do we want to tell the others what we're doing?' It shows how deep is the competitive ideology."

(History Tutor R)

Further comment on the tensions caused by individual assessment in relation to collaborative work comes from other tutors:

"The problem is that unlike [Politics Tutor W] I haven't got approval for assessment of joint work. This is a problem ... There is something of a disjuncture between the collaborative preparation of the subject and the individual preparation for an exam. The students have pointed out this awkward fit."

(History Tutor Q)

This tutor went on to add that:

"I would like to experiment for a term, examining it collaboratively if the Department would let me. The Department would argue that the best student is penalised, the usual argument. But I would argue that the students have a choice whether to take this course and they would know the risks."

And finally:

"Assessment has a damaging effect on one of the courses that I teach collaboratively. It's not a problem on the course that is not assessed. For an Assessment essay students have got to stick to topics that are laid down and decided early in the course."

(Sociology Tutor Z)

This quotation also illustrates the lack of fit between course content that is negotiated with students and pre-determined assessment topics. The tutor was able to help in part by suggesting re-phrasings of standard essay titles.

Assessment as Legitimation of a Pedagogy

Assessment is revealed, in these accounts, as a boundary function for tutor autonomy. We have seen in the discussion above that within the institution departments were "sovereign" (in the words of one tutor quoted earlier) and also that within departments this sovereignty was passed on to individual tutors in the form of considerable autonomy over what they did in their classrooms.

Nevertheless, the institution as a whole is predicated upon the assessment of individual students and this requirement is enshrined in departmental assessment practices which in turn set limits to what tutors can do with collaborative learning. This is not to suggest that an institutional fiat prevented joint assessment of collaborative products - if this had been so Politics Tutor W could not have won joint assessment from the Board of Studies of his department. Rather it seems to be the case that the majority of academic staff in the institution shared the assumptions upon which assessment procedures set at institutional level were based and thus were not readily persuaded of the propriety of the joint assessment of collaborative products.

It is worthy of note that even the tutors in the four departments where the educational culture most strongly supported collaborative learning were not able to achieve this. The one tutor out of the twenty six who won this point considered that the victory applied only to this one instance rather than a general principle having been conceded - and that any other tutors in that department wanting to do the same would have to fight the same battle all over again.

The comments of tutors in the section above will indicate both their awareness of the problems posed for collaborative learning by individual assessment - the "profound discontinuity between assessment and teaching method" as one tutor called it - and the limits to the neutrality of colleagues and Boards towards collaborative learning methods which assessment issues marked. Statements above such as "but there would be active opposition if we wanted this to stand instead of an exam" or "if people collaborate the work handed in must be seen as separate with a demarcation line. Two similar reports would [...] be seen as plagiarism. The students understand this" are examples of well-understood boundaries to the uses of the outcomes of collaborative learning.

But a boundary to the use of the outcomes of collaborative learning also thereby constitutes some sort of a boundary to its use. The data presented in Chapter Four show that the discontinuity between assessment and teaching method did not prevent the use of

collaborative learning, per se. However, the data on the assessment of collaborative learning presented there taken together with the tutors' comments on assessment earlier in this section show that assessment was a contextual factor which posed significant problems for the process and the success of collaborative learning episodes. Its underlying paradigm of individualism and competition discouraged co-operative effort and could not accept joint products as legitimate. Tutors tackled this dilemma in the main by using collaborative learning on courses that were not assessed; or else, perforce, used collaborative learning in courses that were assessed individually - and found this caused problems for its use.

Chapter Four discussed collaborative learning within the framework of visible and invisible pedagogies. Each of the two tutor approaches above have the same effect which is to render collaborative learning less visible, as a pedagogy, than the pedagogy of traditional tutor-led teaching methods. The phrase 'less visible' is used advisedly for it must be noted that the collaborative learning documented in this thesis was not, in the main, kept totally invisible. It was visible, variously, to certain colleagues, to some heads of departments, to two external examiners, in unassessed but evaluated and required collective coursework products and, in one instance only, in a departmentally approved joint assessment. This latter instance, in the Politics department, was the only instance where collaborative learning was brought to the attention of central institutional management and administration via receipt and approval of minutes of the Board of Studies. By contrast, and at the other end of the continuum of visibility, Biology Tutor B smuggled a joint assessment of collaborative work, unnoticed, past the departmental course committee and Board of Studies and thus on to institutional ratification, "expecting some stick" if this were ever discovered.

Assessment can be viewed as the legitimation of a pedagogy through the powers devolved from the heart of the institution, via ordinances and regulations, to departments and individual tutors. The tutors in this study, with the one exception, forewent this legitimation in order to be able to sustain their use of collaborative learning. The institutional and departmental code of

neutrality towards what happened in individual teaching rooms provided an area of autonomy within which collaborative learning could be partially visible as a pedagogy. But to attempt to make it fully visible by having it legitimated in assessment practices was to take on the full force of the opposing and totally visible pedagogy of traditional teaching. Non-assessed courses promised something like a nature reserve in which teaching methods of special scientific interest could survive. Outside this habitat the methods came under threat.

When used on individually-assessed courses this created problems for the collaborative process and detracted from the quality of learning outcomes and from the quality of collective products that might be required by the tutor prior to the individual assessment at the termination of the course. Yet tutors were aware that to attempt to win legitimation for collaborative learning by the incorporation of joint products into assessment schemes could be to jeopardise its use altogether. For this would bring it into the public domain and so out of the zone of neutrality towards individual tutor's teaching practices which provided the tutor autonomy that in turn guaranteed the possibility of its use.

It seems that tolerance of collaborative learning in this institution was a function of the collaborative pedagogy not being made visible in assessment practices. The traditional teaching methods of lecture, tutor-led small groups or tutor-led practical work were linked routinely to assessment procedures. Not all such work was directly assessed but where such work prepared for assessment the assessment was of individuals and was a matter of routine - and highly visible - practices. Co-existing with this traditional pedagogy was the pedagogy of collaborative learning based on co-operation and (with one significant exception) lacking the follow-through to legitimation via joint assessment of collective products.

CONCLUSIONS

This chapter has given a detailed analysis of the pedagogy of collaborative learning. It has considered what factors lead tutors to use this innovative teaching method in the first place; it has set out the overall purposes they hoped to achieve by its use and has discussed the specific aims and objectives tutors had for the tasks they devised and the extent to which they felt they were able to achieve them. The chapter has demonstrated that tutors used collaborative learning for principled reasons linked to their beliefs about the purposes of higher education and to their views of the roles that tutors and students should play to achieve those purposes. It has demonstrated coherence between these different levels of the pedagogy, that is, between the tutors' educational theories and their teaching practices and has shown how contextual factors impinged upon the tutors' use of collaborative learning.

Certain points should be drawn out from this discussion. One is simply but importantly that the tutors used collaborative learning in a purposive way. They were aware of what they were doing and they chose collaborative learning methods as a means to the achievement of learning outcomes quite different from those they thought they could achieve by tutor-led methods. A second is the extent to which the decision to take this step was rooted in reflection on practice (Schön, *ibid*, 1983) rather than arising from abstract theories of education. A third is the existence of significant levels of autonomy for tutors with regard to what they did in their teaching. This autonomy made the use of collaborative learning possible. A fourth is the limits set to this autonomy by the principles upon which the assessment practices of the institution were predicated. These limits, fifthly, rendered collaborative learning only partially-visible at institutional level, the partial visibility being construable as the pay-off for its very existence. The acceptance of partial visibility for the pedagogy, by tutors, is a way of ensuring its continuance - paradoxically to blossom in the richness and variety documented in Chapter Four. Sixthly, outside the four departments where collaborative learning could be described

as working with the grain of departmental philosophy (rather than against or in - permitted - contrast to it) tutors were unaware of each other's use of collaborative learning. In the main, the tutors who used collaborative learning followed a strategy of "keeping their heads down" - Politics Tutor W formed an assertive and highly visible exception to this rule - and this very individualism was a response to the strength of the alternative, traditional pedagogy but also posed little challenge to it. In other words, the neutrality which the institution offered to individual tutors' teaching methods was offered to and grasped by tutors as individuals. Collective action by tutors to achieve the legitimation of collaborative learning in assessment was not possible in that they did not, in the main, know of each other's existence as users of collaborative learning methods. But if they had, it would have been unlikely to be successful, partly because of departmental sovereignty - the battle would need to have been fought not once, for an institution-wide agreement but for each department and perhaps even more than once for some departments - and partly precisely because the autonomy given to individuals regarding what happened within their teaching rooms was given to them as individuals. Collective action would have nullified this "gentlemen's agreement" and would have provoked the expression of an opposition to collaborative learning that otherwise was left unspoken and unimplemented. So the conditions for the rich flowering of collaborative learning were that it remained on the fringes of institutional teaching practices.

However, here we are speaking of the context provided by colleagues. Collaborative learning was experienced directly by another group within the institution, namely by the students and their reactions to the method form a part of the context for collaborative learning that has not been discussed so far. Their responses are important in many ways, not least in that collaborative learning could not occur at all without their co-operation and involvement.

How did they respond to this experience? Did they even notice it? And if so, did they realise that their tutors were being innovative? Such questions are the subject of the next chapter.

CHAPTER SIX

THE COLLABORATIVE LEARNER

INTRODUCTION

"I'm keen to do it when the students arrive because then they are still open-minded. By the second year they've experienced eighteen months of the conventional format and there's a greater degree of resistance because they're socialised differently. The first years just know it will be different from what they've done before and they accept that."

(History Tutor R on first year students)

"The students are a bit bemused. It's like shock treatment. They don't know what the full implications will be until the first session and then their jaws drop. The blurb they get prior to the course mentions that students will help to shape the course, but it doesn't give all the specifics of what they will do."

(History Tutor R on second and third year students)

The introduction to the thesis noted that an original aim was to incorporate students' perspectives on their experience of collaborative learning into the study. It suggested that the use by tutors of collaborative learning methods had important implications for the roles in the learning exchange that students would be expected to play. These were summarised as shifts from individual to group work, from competitive performance to co-operative sharing and from a passive recipient role to active participation in the shaping of learning. Existing literature tells us more about tutors' teaching practices and their programmatic purposes than it does about learners' perspectives. Accordingly, "what did the students think of all this" was one of the original research questions for the study.

But a perspective on learners is important in other ways. If

students are unable or unwilling to accept the role changes summarised above then, quite simply, collaborative learning cannot occur - even if a tutor sets up a collaborative task and asks students to do it. Student reactions to engagement in collaborative learning are therefore part of the context in which the tutors work.

Further, since collaborative learning involves handing over (in varying degrees according to different task structures) responsibility to the students to identify, plan, manage and carry out the various sub-tasks which have to be done for the completion of any one collaborative task, collaborative learning consists to a great extent of what the students decide to do and how they do it. That is, once the task has been devised by the tutor and communicated to the students it is the students' own working practices that implement collaborative learning in action. The way in which students plan and manage their work is therefore of no small significance for the enactment of collaborative learning in practice.

Finally, the learners' perspectives provide their own gloss on the claims and views put forward by the tutors. Chapter Three noted that action research carried out prior to the work for the thesis had suggested that students may sometimes have entirely different perceptions from those of a tutor not just about the worth of a teaching activity but even of what the activity was. It therefore seemed important to explore the degree of consonance between tutors' intentions for collaborative learning and students' perceptions of these intentions and even, their awareness that it was collaborative learning in which they had been engaged.

These four broad areas of interest were explored through three types of data collection: a series of interviews with groups of students; questionnaires completed by students individually; and observations by the researcher of collaborative work in action. This material was supplemented by task documentation supplied by tutors, and by materials on work in process supplied by students.

The unexpectedly high number of tutors using collaborative methods raised questions about the best strategy to follow in collecting data on collaborative learners. It was clearly not feasible to carry out and analyse twenty six task observations and up

to twenty six group interviews or sets of individual questionnaires.

However, it seemed important to gain a fair degree of coverage of the learners' experiences and views. Researcher and supervisor agreed on a target at minimum of fifty percent coverage, that is that for at least half of the tutors there should be additional data collected in the form of a task observation or of group interview/student questionnaires.

In the event, it was possible to exceed this target. Learner data in one or other form (and in seven instances, both forms) were collected pertaining to eighteen out of the twenty six tutors, that is to sixty nine percent of the group. Learner data were also collected pertaining to additional tutors later excluded from the study as using tutor-led rather than collaborative methods. Figure 15 in Chapter Three showed the departments in which student data were collected. Figure 55, below, summarises the student data collected in relation to each of the twenty six tutors retained in the study.

Figure 55

Amount and Type of Data on Students (shown by Tutor)

Archaeology Tutor A:	group interviews with 1st, 2nd and 3rd year students
Biology Tutor B:	no student data collected
Biology Tutor C:	6 individual questionnaires; 1 task observation
Biology Tutor D:	1 group interview; 1 task observation
Chemistry Tutor E:	1 group interview; 3 task observations
Comp. Sc. Tutor F:	1 group interview; 1 task observation
Comp. Sc. Tutor G:	4 individual questionnaires*
Comp. Sc. Tutor H:	3 individual questionnaires*
Comp. Sc./Psychology Tutor X:	3 individual questionnaires (for Computer Science)

(Figure 55 is continued on the next page)

Figure 55 (continued)

Education Tutor I:	4 individual questionnaires; 1 task observation
Education Tutor J:	1 group interview
Education Tutor K:	no student data collected
Education Tutor L:	1 group interview
Education Tutor M:	1 task observation
Education Tutor N:	1 task observation; (plus individual questionnaires not returned)
Education Tutor O:	no student data collected
English Tutor P:	1 group interview
History Tutor Q:	no student data collected
History Tutor R:	no student data collected
History Tutor S:	1 group interview
Language Tutor T:	no student data collected
Music Tutor U:	no student data collected
Politics Tutor V:	4 individual questionnaires*; 1 task observation
Politics Tutor W:	2 individual questionnaires; 1 task observation
Psychology/Comp.Sc. Tutor X:	4 individual questionnaires*; 1 task observation
Sociology Tutor Y:	1 group interview
Sociology Tutor Z:	no student data collected
¹ Medieval Studies Students:	1 task observation

* Additional questionnaires were issued to cover all the students in the group but not all were returned.

¹ This group of students ran their own collaborative learning group independently of any tutor.

The figure shows that student data were collected on the collaborative learning used by all but eight of the tutors and in all but two of the departments in the case study. The totals for the different types of student data were as follows: eleven group interviews; thirty one individual questionnaires; and thirteen task observations, including one observation of collaborative learning carried out by a group of post-graduate students independently of any tutor.

Within the framework of the "at minimum, fifty percent of the tutors" target, sampling proceeded largely but not exclusively on principled lines. Learner data were gathered on tasks because they seemed particularly interesting for some reason (as for instance the large scale projects by Computer Science post-graduate students); as a means of checking whether the method of working should be defined as collaborative or excluded as tutor-led (observations proved crucial in such decisions); on tasks that had been indicated as either problematic or extremely successful by tutors; and on tasks that were significant from the point of view of other aspects of the ongoing early analysis of the tutor interviews, for instance on the only task in the data set for which a tutor had gained approval for a group assessment. Several groups that were observed were at the reporting back stage so as to hear direct from the learners what they had done.

However, pragmatism inevitably also played a part. Learner data were collected on some tasks because the chance was there and was seized, as for instance the offer of access to three successive years of archaeology students who had done the same collaborative task in their first year. By contrast, it was not possible to gain access to some students because they had already left by the time the tutor interview was concluded, or to observe some tasks because the tutors were going on sabbatical or on to jobs elsewhere and their teaching would be taken over by 'non-collaborative' tutors. Some groups of students or individuals within groups did not return the questionnaires sent to them. And as a part-time researcher who also had a full-time job it was not always possible to shuffle work commitments to take advantage of opportunities to sit in on group

work or to meet and talk to students.

Reflecting now on the data that were gathered on learners it seems more than adequate in volume, in type and in range to use as a reliable and valid basis for answering the initial questions of the study together with those that arose during detailed analysis. Inevitably there are regrets at what was not covered but a sensible limit had to be set if the study was to be brought to a conclusion.

The chapter examines these data in sections on social and spatial organisation in the collaborative classroom; on students' perceptions of tutors' goals and purposes for collaborative learning and of the purposes of higher education; on the working methods they used to manage the tasks; and on their views of the benefits and disadvantages of collaborative learning.

SOCIAL AND SPATIAL ORGANISATION IN THE COLLABORATIVE CLASSROOM

The classrooms in which collaborative learning took place were the same classrooms in which tutor-led teaching took place at other times. None of the tutors in the study had exclusive access to a classroom which they could use as a home-base and there were no spaces especially designed to facilitate the use of collaborative learning. The spaces which tutors adapted to the use of collaborative learning existed as physical entities architecturally, and administratively as resources to be allocated on a timetable, indistinguishably from any other. The lists of subjects and times on the doors of the teaching rooms gave no clues that any of these sessions - say "Politics, 9.00 - 11.00" - differed from the rest other than in topic. Equally, if one arrived in one of these classrooms prior to a collaborative session there was nothing in the layout of seats, blackboard and/or overhead projector screen to indicate that the next session would not be tutor-led.

The "collaborative classroom" then was an entity jointly constructed out of the shared practices of tutors and students. As such, it was a temporary entity - before and after collaborative sessions life in these teaching rooms reverted to more familiar

social and spatial orders.

The collaborative classroom impressed its special qualities upon the observer from the very point of entry to the classroom. To reach whichever classroom had been allotted to a tutor for a session to be observed entailed walking through different departments in the institution. The doors on these corridors had windows in them so these journeys provided glimpses into other teaching sessions along the way whose sights and sounds provided an instructive contrast to what lay ahead. In these 'traditional' classrooms were rows of students facing a tutor at the front. Occasionally in a seminar room an open horseshoe arrangement replaced the rows, still with the tutor at the front. Teaching aids, blackboard and overhead projector and screen, were also at the front. Sometimes students were present in numbers into the hundreds and sitting on tiered fixed benches. At other times the numbers were smaller, perhaps twenty to thirty sitting at moveable tables in rows.

The sound of those classrooms was the sound of the tutor's voice, sometimes loud and carrying, sometimes scarcely audible from outside so that a puzzling semi-silence seemed to reign within. Students wrote industriously with their heads down and occasional glances up at the tutor or gazed at the blackboard or the overhead projector screen as the tutor wrote or drew on it. Regardless of the subject area of the teaching and despite certain variations on these themes (for instance science laboratories where students were engaged in activities other than writing) these were the common underlying social and spatial structures of the tutor-led classroom. They have, of course, been documented from the examination of research on higher education teaching in Chapter One.

Stepping into the collaborative classroom was to enter territory obviously ordered by different rules. Voicing, position of the tutor, movement, noise, activities and arrangement of the furniture all testified to a different social order. These aspects will now be considered individually, illustrated by reference to notes on observations.

Voicing

One of the most striking aspects of the collaborative classroom was that it was a place where voices could be heard. There are three important points to note about these voices, namely that several could be heard at once, that they belonged to the students and that they were engaged in the sequential turn-taking and sharing of subject matter that characterises conversation. If the class was small, there might be only one conversation going on as the students all worked together in one group. If the class was larger (or, even if small, if the students worked in pairs) there could be several conversations going on at the same time.

To give some examples, the session in which students of Biology Tutor D were observed was their final meeting at which they constructed a joint report on their project. The tutor was not present except at the start and the finish of the session. Students took it in turn to read out from work they had prepared and this series of short monologues (5-10 minutes in length) to which all members contributed, was interspersed with collaborative discussion, in which all the students present again participated. This, in effect, was one single conversation on a shared topic; quite a lengthy conversation, in that it lasted one and a half hours.

By contrast in the classes working for Biology Tutor C, Chemistry Tutor E and Computer Science Tutor F there were several groups at work at the same time. These were working sessions not report back sessions and each group was occupied separately with its own agenda.

In such cases there were the same number of conversations going on at the same time as there were groups: three conversations (in pairs) for Chemistry Tutor E; four conversations (in groups of three, four, three and two students) for Computer Science Tutor F; and six conversations (in six groups of four) for Biology Tutor C.

My strategy for observing such complex social settings was first, to attend to general features of the classroom overall (for instance, numbers present, noise level, what they were doing, how they were arranged, where the tutor was) and then to focus on each

group in turn, followed either by more general observation again or by paying attention to any individual or group that puzzled or interested me. In all these observations one matter of interest was to monitor if each of the students contributed to the joint discussion - they all did in each case.

There were instances of off-task behaviour (laughing, joking, spending a moment or two discussing something not related to the task) but these were short lived episodes. The students seemed genuinely absorbed in the work they were doing and their discussion and activities related overwhelmingly to the collaborative task with which they were concerned.

In some instances the type of conversation(s) remained the same throughout the collaborative session. But in other instances there were sequences of different types of conversation, perhaps tutor-led, and of short bursts of tutor monologues. Summaries of conversational sequences are given in Figure 56, below.

Figure 56

Examples of Conversational Sequences

Tutor	Sequence
Biology Tutor C:	Tutor introduces observer (2 mins) → 6 simultaneous conversations in groups of 4 → average of 4 simultaneous conversations as groups take coffee break in turn → 6 simultaneous conversations
Biology Tutor D:	Tutor introduces observer (5 mins) and leaves → 1 group conversation between 6 students → short student presentation → 1 group conversation → short student presentation → 1 group conversation → short student presentation → 1 group conversation → short student presentation → 1 group conversation → short student presentation → 1 group conversation → short student presentation → 1 group conversation → tutor returns and makes administrative announcements (5 mins)

(Figure 56 is continued on the next page)

Figure 56 (continued)

Chemistry Tutor E (Session A):	Tutor introduces observer and task (10 mins) → 3 simultaneous conversations (1 hour and 10 mins) → 20 minute tea break → 3 simultaneous conversations (45 mins) → tutor-led whole group discussion (25 mins) → tutor monologue (5 mins)
(Session B):	Tutor introduction (15 mins) → 3 simultaneous conversations (15 mins) → progress report from a group → single group discussion → progress report from another group → single group discussion → progress report from another group → single group discussion (this latter whole section lasts for 22 mins) → 3 group conversations (18 mins) → 1 whole group conversation (students report results to tutor who puts them all up on the board) (7 mins) → tea break (20 mins) → tutor monologue (7 mins) → 3 simultaneous group conversations (45 mins) → tutor monologue (10 mins)
Comp.Science Tutor F:	Tutor introduces observer (5 mins) then leaves → 4 simultaneous group conversations → 3 simultaneous group conversations (one group goes to computer terminal) → 2 simultaneous group conversations (another group goes to computer terminal) → tea break (20 mins) → 4 simultaneous group conversations → 3 simultaneous group conversations (another group to computer terminal) → tutor returns but does not address class as a whole → groups stop, session ends, several leave, several cluster round tutor, talking
Education Tutor I:	Tutor introduces observer (3 mins) → each of 7 students introduce selves in turn to observer (5 mins) → each student says in turn what they want to get out of this session (tutor puts these on board) (7 mins) → observer speaks about the study and purposes of observation (3 mins) → tutor monologue (10 mins) → 4 separate conversations in

(Figure 56 is continued on the next page)

Figure 56 (continued)

Education Tutor I:
(continued)

pairs (5 mins) → each pair reports back in turn (30 mins) summarised by tutor on the board (1 shared conversation) → 2 conversations in 2 groups of 4 (30 mins) → the 2 groups report back in turn and all discuss in 1 shared conversation (20 mins)

Education Tutor M:

Tutor introduces observer (3 mins) and the rules of the game (20 mins) i.e. tutor monologue, broken by student-initiated questions and tutor's answers → group splits and half go to another room, 10 left here → 1 group conversation (10 mins) → 2 members go next door, 2 from next door arrive and try to establish interaction with home group (10 mins) → visitors to next door return and report what they found → 2 short student monologues → questions, answers and discussion of report in 1 joint discussion (10 mins) → further exchange of visitors, inquiry from visitors (5 mins) → explorers return and report (3 mins) → 1 joint conversation (10 mins) → explorers depart, visitors return and inquire (5 mins) → explorers return and report (6 mins) → 1 joint conversation (10 mins) → 2 groups reconvene together and jointly report back in 1 joint conversation (20 mins) → tutor summary in monologue (10 mins)

Education Tutor N:

Tutor monologue introduces two observers and task (10 mins) → each observer says something about self, i.e. 2 short monologues (5 mins) → 6 conversations in pairs (45 mins) → each pair reports back in turn, interspersed by whole group discussion (35 mins) → merges almost imperceptibly into whole group discussion and integration of all the reports in one joint conversation (20 mins) → tutor monologue of closure (4 mins) plus brief thanks from observers (1 min)

(Figure 56 is continued on the next page)

Figure 56 (continued)

Politics Tutor V:

Tutor monologue introduces observer (3 mins) → self introduction by observer (3 mins) → student chair introduces the task (5 mins) → student report in monologue (3 mins) → student chair summarises → student report in monologue → student chair comments → all discuss → student report in monologue → all discuss → student chair poses questions → student report in monologue → all discuss → student chair comments → all discuss → student report back in monologue → all discuss → student report back in monologue (this sequence of 6 reports and discussion takes 50 mins) → 1 joint conversation (30 mins) → student chair summarises and closes in monologue (10 mins)

Politics Tutor W:

Tutor monologue introduces observers then tutor leaves (5 mins) → self-introduction by observers (5 mins) → 1 shared conversation between 4 students (35 mins) → tutor returns but remains silent → students indicate they have reached a break point and alright now for observers to ask about working methods → 1 joint conversation involving all present, including 2 short answers from tutor at request of students (13 mins) → short monologue from tutor (2 mins) → thanks from observers (1 min)

Psychology/Computer
Science Tutor X:

Tutor monologue (5 mins) → student pair (1) reports back → group discussion → student pair (2) reports back → group discussion → student pair (3) reports back → group discussion → student pair (4) reports back → group discussion → student pair (5) reports back → group discussion → student pair (6) reports back → group discussion → student pair (7) reports back → group discussion (this whole sequence takes 55 mins) → tutor monologue (15 mins) → questions and answers (questions from students, answers from tutor) (10 mins) → merges into 1 group discussion (10 mins) → tutor monologue of closure (5 mins)

(Figure 56 is continued on the next page)

Figure 56 (continued)

<p>Medieval Studies Students:</p>	<p>Student monologue introduces observer (2 mins) → observer monologue introduces self (3 mins) → questions from students to observer about the study, plus answers i.e. 1 joint conversation about this study (6 mins) → another student commences giving paper i.e. student monologue (10 mins) → questions to student and answers (20 mins) i.e. 1 group conversation → student monologue (5 mins) → further questions and answers i.e. 1 joint conversation (20 mins) → silence (2 mins) → first student closing comments (½ min) → students break up into several conversations in 2s and 3s (10 mins) → students go for tea, still 1 group conversation about the topic, 1 sub-group talking about non-task matters</p>
---------------------------------------	---

This is not a study which is directed towards the analysis of discourse - that aspect being one of the best covered in existing studies of collaborative learning groups at work (albeit largely within the framework of analysis of communication in school classrooms - see the first section of Chapter One). Nevertheless it is illuminative to apply some of the insights gained from analysis of discourse in classrooms - and more specifically from conversational analysis - to the group discussions outlined above.

Conversation analysts define conversation as 'talk between equals' (Edwards and Westgate, 1987, p 25). In such talk "no participant has special rights, allocated in advance, on which the management of the talk is based" (Edwards and Westgate, 1987, p 25).

"Its management is a corporate responsibility, no participant having any predetermined special rights or special obligations which allow the others to (metaphorically or literally) sit back and leave someone else to solve the problems to which we have referred. Conversation is therefore described as being managed both collectively and 'locally' - that is, as it goes along"

(Edwards and Westgate, 1987, p 114)

There are many settings in which certain participants do have

such special rights and classrooms, courts and doctor-patient interactions are three which have been extensively studied. Outside such special settings other factors such as gender, race and/or ethnic background may also produce contexts for talk which emphasise the relatively greater power of some participants to shape the discourse or to take on pre-allocated roles. Nevertheless, much of ordinary, everyday, informal interaction occurs as conversation, that is as 'talk between equals'. Barnes and Todd (1977, *ibid*) - and other researchers since - have noted that the achievement of conversation as 'talk between equals' in educational settings requires that learners themselves manage features such as opening and closing a section of interaction, turn-taking, sequencing, the sharing of a topic and the shift to a new topic for discussion. Behaviours which in the teacher-focussed classroom would belong to the teacher by right, for instance, evaluative comment on a previous utterance, nomination of a speaker, posing questions, initiating new topics and closing previous ones, are here open to all participants alike and for that very reason give their use a different context.

Groups of peers talking together in learning conversations show features which are rarely found in teacher-orchestrated talk. Barnes and Todd (*ibid*) noted learners encouraging each other's efforts, the common use of tentative prefaces to statements, genuinely open questions and the collaborative elaboration, in sequence, of a jointly constructed idea. Edwards and Westgate note that "conversation is not only 'talk among equals'; it is also talk among a few" (*ibid*, p 44) because the management of turns becomes much more complex and the chances of having to wait for a turn become much higher as the size of a group increases.

McHoul (1978) has described interaction as varying on a continuum between local management on the spot and systems which pre-allocate certain rights - the traditional, teacher-focussed classroom being an example of the latter. The collaborative learning sessions observed for this study are "'conversational' in this technical sense of being locally managed on a basis of rough equality" (Edwards and Westgate, *ibid*, p 115). This is not exclusively so and it is interesting to see that even in these collaborative sessions opening

a session was carried out by the tutor on each of the occasions where the tutor was present. A student took this role in the Medieval Studies group that was run by students independently of any tutor. In four of these twelve instances, the opening consisted solely of the courtesy of introducing the observer, not of introducing or prefacing the collaborative work. In the other eight there was, however briefly, an opening introduction to the collaborative task by the tutor or by a student acting as chairperson. Since the need to introduce an observer influenced the nature of the opening it is useful additionally to examine who closed sessions. In six of the twelve sessions this was the tutor, usually having returned very briefly and in one instance closing was done by a student acting as chair. Otherwise, closing was a matter for local management, not accomplished by any person with a role which pre-allocated this responsibility.

It is also interesting to contrast sections of sessions in which the tutor participated with those segments of interaction in which only students participated. In quantitative terms (excluding the Medieval Studies students) student-only collaborative conversations occupied an average of 67% of these observed sessions as a whole, with a range from 30% to 99%. Monologues from the tutor occupied an average of 10% with a range from 3% to 25%. Non-tutor-led full class conversations occupied an average of 17% with a range from 0% to 59%.

These figures provide an impressive contrast to the participation rates of students in tutor-led small group work, summarised in Chapter One. They become even more of a contrast if we note three additional and important features of collaborative learning. The first is to remember that the collaborative section(s) of observed sessions were entirely (that is 100%) devoted to student-managed talk (and action). Secondly, the percentages gained from observations grossly over-estimate the involvement of tutors overall in that the observations include only one of the many examples included in the data where students worked throughout sessions entirely alone without any sections at all with the tutor present. All of the projects for Archaeology Tutor A, Computer Science Tutors

G and H, Psychology Tutor X for Computer Science, History Tutors Q and R, much or all of the work for Education Tutors J and L, Language Tutor T and Music Tutor U were conducted independently by students working alone. The observation of the students reporting back for Biology Tutor C also was not typical as it was an observation of group work at the reporting back stage - previously these students had worked in their groups quite separately from the tutor. The same applies to the observed report-back session for Psychology Tutor X. In other words this is where Rob Walker's comment cited on p 133 in Chapter Three ("the classes I had studied needed to be balanced by equally penetrating studies of locations I hadn't studied") comes into its own!

However, although most of the sessions where students worked alone were not directly observed (with the exception of the Medieval Studies students), the data from interviews with the students (examined in detail later in this chapter) corroborates the tutors' accounts (already examined in Chapters Four and Five and summarised in Appendix 8) which indicate a substantial body of group work where students worked entirely independently of the tutor, or independently with occasional brief student-initiated consultations with the tutor. The frequency of meetings at which 90% of the time or even 100% of the time was devoted to student talk, as reported by students and tutors, provides its own quantitative gloss on the extent of the difference between collaborative learning sessions and tutor-led teaching sessions. During the collaborative section of observed sessions, student talk occupied 100% of the time.

The third feature to note concerns the role of the tutor voice. We have just seen that the amount of time allotted to tutor monologue in these sessions was small. In the observed sessions, in addition to these small sections of tutor monologue and the (much larger) sections of students talking in one or more groups without the tutor's voice being raised, there were also occasional sections of whole class discussion in which the tutor joined. (Clearly this did not apply to the group learning sessions that were conducted by

(continued on page 282)

Figure 57

Quantitative Analysis of Observations

	students alone	tutor monologue	tutor-led discussion	tutor shares in discussion or serves student-led discussion
	%	%	%	%
Biology Tutor C	99	1	0	0
Biology Tutor D	87	13	0	0
Chemistry Tutor E (A)	74	10	16	0
(B)	57	23	0	20
Comp. Sc. Tutor F	97	3	0	0
Education Tutor I	30	11	0	59
Education Tutor M	53	12	0	35
Education Tutor N	38	12	0	50
Politics Tutor V	94	3	0	3
Politics Tutor W	58	11	0	31
Psychology/Comp.Sc. Tutor X	55	25	10	10
Medieval Studies Students	100	0	0	0
Average:	70	10.3	2.1	17.3
Average excluding Medieval Studies Students:	67.4	11.2	2.3	18.9

Note: These figures exclude coffee breaks and explanations of their presence by this and/or other observers.

students working independently of the tutor). As shown in Figure 57, on only two occasions were these sections of whole class discussion classified as tutor-led (in the sense that the tutor not only talked most but also managed turn-taking, sequencing of topic and so on). The sections where this did occur occupied a small percentage of these two observed learning sessions overall, at only 10% and 16%.

By contrast the greater number of occasions where the tutor joined in the full class discussion could not be classified as tutor-led, partly because of the small number of utterances from the tutor and partly because of the nature of these utterances. In these sections of observed sessions tutors shared in discussion in a role that was marked by non-assumption of the pre-allocated rights and responsibilities that usually cohere around the tutor role. For instance, in these sections, tutors were silent for lengthy spells, listening to one or more students reporting back along with the rest of the class. On several occasions tutors served as secretaries to the group, that is, they summarised what students said on the board, overhead projector screen or flip chart. What was noteworthy on these occasions was that the tutors put up the summary without comment or selection, that is, they captured what the students said as fully and as accurately as possible and let the students' own words stand without correction or evaluation. Several times tutors who took on this 'secretarial' role checked with students that they were happy with the summary and altered it where required. Among these stretches of full-class discussion were sections in which tutors joined at the express invitation of one or more members of the class. The tutors were brought in by a student's direct question (which named them and asked for information or for an opinion) or on other occasions by a student referring back to a point which the tutor had made in another session. These instances were interesting because they reversed the usual order of things whereby tutors nominate students to join in a discussion.

In concluding this section, then, we can note that the sound of collaborative learning is the sound of student voices. Collaborative learning is almost exclusively free of the tutor-monologue that characterises other teaching methods. Where short stretches of

monologue do occur (as where a student reports back on some work) it is monologue that occurs by consent - it arises out of a job of work done at the request of the group and the content of these short spells of student monologue is used for the furtherance of the group's collective purposes. Monologue thus takes on a different social meaning from tutor monologue in tutor-led sessions because it occurs by consent between equals and is the subject of local management on the spot, not prior-allocated to one specific role holder. A similar 'sea-change' applies to the tutor's voice on those occasions where it is heard not leading but joining in the full class discussion also on principles of local management on the spot, not by prior allocation of a specific role. The tutor's role in collaborative learning, then, is either to be out of the social scene altogether or, where socially involved, to play a retrusive, non-didactic and facilitative role. This non-intrusive role is not solely made up of interactional features. It is intimately connected also to the physical placing of the tutor. This is the subject of the next sub-section.

Position of the Tutor

The collaborative learning sessions that were observed were atypical, as noted above, in that these were sessions where the tutor was physically present at some point if only for the short space of time needed to introduce the observer. The student interview and questionnaire data show that the collaborative learning tasks used in this institution during the period of the study included substantial periods where students worked in their groups in physical separation from the tutor. In these cases the tutor was not in the room(s) where the students worked except upon occasions, by arrangement, for report-back and/or consultation sessions. Or the tutor would be available in his/her own office at stated times if the students wanted to call in for advice or information. The tutors did not abandon the students. Often they would be there at the start and end of a session and also join the students at their tea-break. But

where students had a job they had to do independently - they went off and did it. These arrangements make the position of the tutor during the greater part of the collaborative group work easy to describe - quite simply, the tutor was not there.

The position during the observed tasks was rather different. Where these were report-back sessions, the tutor was present to hear the report like any other member of the collaborative community. At each of the observations, by virtue of the fact that there was an observer to introduce, the tutor was there at the start of the session to introduce the observer. The observed sessions also included several with tutors who used spells of collaborative work interspersed with full class discussion - and here the tutor was physically present in these sessions all the time, but played no part in the collaborative section.

The tutor's position could thus be categorised as falling into one of three conditions. In one the tutor was physically absent from the whole of the session involving collaborative learning. In another the tutor was physically absent from the collaborative learning session but was present for short periods of time before and afterwards (or at the beginning alone). In the third condition the tutor was physically present for all of the session but did not take part at all in the collaborative section of it.

The first of these three conditions provides the strongest contrast to tutor-led teaching. Voicing belongs entirely to the students in such a condition. The second condition provides only a small dilution to this principle for in between the short visits of the tutor at opening and closing of the session as a whole the management of the collaborative learning and of the conversation(s) through which it is conducted is in the hands of the students alone.

The third condition provides fascinating insight into the extent to which a collaborative stance influences tutors' and students' behaviours even when the teacher is present. One might have expected that the presence of tutors would shift the conversational rules back to operation on the basis of prior role allocation and away from local management. However, as we have seen in the previous section this happened on only two of the observed

occasions where tutors were present in a full discussion. The previous section also noted that two ways in which tutors preserved this non-intrusive role were by saying little and by altering qualitative features of the contributions they did make away from management and evaluation and towards encouragement and acceptance.

But tutors who were physically present in classrooms also used physical positioning to maintain a non-intrusive stance. Notes on observations show that while students were working collaboratively tutors sat off to one side of the classroom or in a corner, not facing the students but presenting a side profile to them or a rear view. During some sessions a tutor might be called on for consultation by a group, physically joining that group. In no instances did a tutor sit in what in tutor-led teaching would otherwise be thought of as the tutor's place - facing the students close to the blackboard. Some tutors managed to "disappear" so well that even the observer did not notice where they were. Notes on one observation end with the comment "Question - what was the tutor doing during the forty five minutes while we were all working in groups? I didn't notice - too involved." Another observation comments that the tutor's presence in a classroom after a coffee break was not immediately noticed by the observer as the tutor was (briefly) working with a group on a calculation problem - five heads in a huddle instead of four.

Tutors who acted as scribes for a report-back session did physically place themselves in front of and close to the blackboard. However, where groups re-convened for full class discussion it was only in the two instances described as 'tutor-led' that the tutors took up seats that were at the front (or at the end of one of the arms of an open circle). Rather tutors took seats that were in the open circle; those who acted as scribes got up from their seats to carry out this task and then returned to them.

It seems clear from these observations that the tutors in the study who had adopted collaborative learning had extended their concern for student participation to an awareness of those features of spatial positioning of the tutor which discourage such participation. One strategy they adopted to encourage student

participation and avoid tutor dominance was physically to withdraw from collaborative learning. But even where collaborative learning was conducted in the classroom in the tutor's presence, by not taking up the physical position which the design of teaching spaces allots to the tutor, tutors gave students a message that their presence should not be construed as a bid to take on the familiar tutor role. This undoubtedly reinforced the other messages given by the tutors' silence and by their interactional style when they did participate.

Movement

In terms of movement, the collaborative classroom was to the tutor-led classroom as a Jewish wedding is to an Anglican one. Once again, the point must be made that a number of the collaborative tasks in the study as a whole took students out and about not only on the campus but also beyond it. Students walked around the city looking at churches, paid visits to schools in the locality or travelled the country to visit the commissioners of a piece of project work. So the collaborative classroom could be "elsewhere" - quite simply, wherever the students needed to be to carry out elements of their task.

But movement was also a marked feature of the classroom-based collaborative work that was observed in action. Whole groups came and went to the computer terminal, to the library, to a room close by where other groups were working, to pay a brief visit to the tutor for purposes of consultation, to a coffee break and back again. Groups sent individual emissaries off to carry out a specific necessary sub-task, to seek materials from a technician, to give material to another group, to inquire about something from another group.

Students also moved about within the classroom occupying different spaces when they worked in pairs, from when they grouped into fours, and again when they re-convened for whole class discussion. Where tutors were present for some or all of the time they also were part of this pattern of movement. They came into the

classroom, left it, returned some time later. They moved to join groups on request, moved to the blackboard to act as a scribe, moved away again to blend into the group, dropped in to see how other groups were getting on in an adjoining room.

This movement was neither random nor pre-arranged but task oriented. People moved as was needed by the stage their collaborative work had reached. As with the positioning of the tutor, one could see with regard to movement that the tutors had given up to the students the right to organise and manage their own movement. Management of movement, like management of the conversation, was local management not management achieved through prior role allocation. But we should not forget that the outcome of the tutor's management of movement in tutor-led classrooms is most commonly student stillness, students sitting in one place for the whole of a teaching session. Student management of movement produced - movement.

Noise

Neither talking nor movement by a number of people can be accomplished without noise. In fact noise levels varied greatly both between collaborative sessions and also within them. Some groups carried out their operations fairly quietly; others generated a much higher noise level with louder voices, gales of laughter and the sounds of moving feet and chairs. The type of furnishings in the teaching room influenced the noise produced by movement. Rooms with hard floors and little or no soft furnishings produced a noise level associated with movement and other voices which students commented on as posing a problem (tutors also noted this difficulty). This applied on occasions in two of the sessions which were observed but not throughout these sessions. In rooms with one or more of carpeting, curtains and upholstered armchairs students seemed to have no difficulty in concentrating on the conversations in their own groups and screening out the rest.

Overall noise levels in classrooms where several collaborative

groups were working at once also varied. The two loudest groups were the teams working on the project for Computer Science Tutor F (an all male class on this occasion, very relaxed and good-humoured talking quite loudly and sometimes exchanging banter between groups) and the students playing the Baffa Baffa game for Education Tutor M. This was carried out in party game atmosphere - my notes comment on the extent to which these young post-graduates were willing to enter so enthusiastically into the 'play' aspect of this task which they did wholeheartedly and unselfconsciously.

The quietest of the observed classrooms was that of Chemistry Tutor E. With two tutors and one observer present it is perhaps not surprising that the six students working in pairs in this class talked in very low voices. They seemed so subdued in the first observation that this class was observed on two subsequent occasions in an attempt to check if the observer's presence was proving inhibiting and in case this effect might wear off with familiarity. This did seem to be in part the case but it also seemed, paradoxically, that the good acoustics in this room were part of the problem. The tutors and observer could hear everything that the students said; students commented in a subsequent interview that they were aware of this and would have preferred to feel they could talk without being overheard. So it seems possible that a certain noise level - the background hum provided by other students' voices and movement - can be helpful rather than an obstacle to collaborative groups as it provides an aural screen for their privacy.

Another interesting aspect of noise levels was that these collaborative sessions also included silences. Some of the occasions when groups fell silent were when they had reached a section of their task that required individual working - for instance, individual members of the pairs in Chemistry Tutor E's session doing long strings of calculations or, in Computer Science Tutor F's sessions, group members sitting and checking through computer print out they had just been and collected. On other occasions groups were temporarily silent while they observed something, for instance, Biology Tutor C's students watching what was happening in a test tube

with bated breath before breaking out into comments of surprise and disbelief. There were also silences following on from something that had been said of a thought-provoking nature. For instance, some of the personal revelations made in the Preferred and Probable Futures exercise for Education Tutor N were followed by lengthy silences (ultimately broken by a student) and this was also a feature of the discussion of the wholly student-directed Medieval Studies discussion group. I did not note signs of discomfort in these silences (such as evasive eye gaze, fidgeting, coughing, throat-clearing). They seemed to have a companionable character, spaces for reflection which nobody needed to rush to fill.

Neither the noises nor the silences impeded collaborative learning. Rather they arose from it and were an intrinsic part of its operation.

Activities

Students observed in these sessions were engaged in a variety of activities. It should be borne in mind that the range of activities that were observed was only a slice of the full range of activities which students carried out collaboratively. Students in sessions that were not observed, as already noted, visited schools, travelled the country by rail in the course of project work, visited churches, led each other blindfold around the campus, worked at computer terminals and so on. Several of the observed sessions were report-back sessions so what was observed was students giving an account of activities they had previously undertaken - for instance, carrying out a psychological experiment. Appendix 8 is the most comprehensive summary of activities in the data-set as a whole. Nevertheless the observations provided direct evidence of some of the activities associated with collaborative learning. Given below is a list of the main types of activities observed:

TALKING

- conversing in a pair
- conversing in a small group (of four or five)
- presenting a report to the class
- presenting a report to a pair or group
- consulting a tutor

WRITING

- summaries of group work on blackboard or flip chart for other group members
- notes during a discussion
- notes on a report presented by a student colleague
- notes from materials being consulted in the course of a task
- notes on the progress of an activity in progress (e.g. an experiment or a game)
- roughing out part of a group product (e.g. the design of an experiment, a computer programme)

CALCULATING

- results of an experiment
- results of a simulation

READING

- materials supplied by a tutor
- materials collected by the group
- materials produced within the group
- computer print out
- summary of group work on the blackboard, overhead projector or flip chart

MOVING

- around the room
- to a room close by
- to a coffee break
- to library, computer terminal or another setting on campus

- returning from other settings
- re-arranging furniture to suit group working

LISTENING

- to a presentation by another student
- to other students in a discussion
- to the tutor
- to the observer

DRAWING AND PLOTTING

- results on a graph or chart
- a conceptual schema (e.g. the horizontal Y in the 'Futures' task for Education Tutor N)
- results on the blackboard for other students to see (e.g. a graph)

Arrangement of the Furniture

It was noted on p 270 that if one arrived in any one of these classrooms prior to a collaborative session the layout of blackboard, seating, etc., would be just the same as for any other type of session. This was not the case during collaborative sessions. Whilst black or white boards are usually fixed to one wall and the availability of power points usually dictates to some degree the positioning of overhead projector and screen, chairs and tables can be and were moved around to suit collaborative working. Interior designers sometimes suggest temporarily placing lightweight furniture prior to installing the fixed or heavier pieces intended for long term use, to allow users of the space themselves to find the most comfortable relationships for seating or for through-routes. Such 'desire lines' could be read off from the positioning of moveable furniture during collaborative sessions.

Furniture was moved and arranged so as to facilitate interaction within each small collaborative unit - and also so as to block out, to a degree, distraction from activities in other groups.

Thus, during working sessions involving several groups, chairs were moved into groups corresponding to the number of members in a group, chairs facing inwards in huddles so that occupants had their backs to other groups. In the one laboratory session that was observed students used more stools than there were group members. Some of the time they sat facing each other two on either side of a bench in groups of four, but they also moved around the bench to form two linear pairs to perform certain operations and sometimes a group sat as a row of four facing the bench watching a reaction in a test tube.

In the report-back sessions observed students moved the chairs to form circles or open horse-shoe arrangements. These arrangements were also used during sessions when the class re-gathered as a whole to hear what a group had to say - prior to this and sometimes after it, chairs were arranged into small groups again. In two observed sessions students used the (carpeted) floor for seating for part of the time (by choice not for lack of chairs). Thus by the end of a session involving collaborative learning the furniture in the classroom had been re-arranged, sometimes several times, to serve the needs of the learners. Most features of the architecture of these learning spaces were fixed but those that were not were moved to provide a communal re-designing of the learning space.

In summary, these observations have shown that the collaborative classroom was one where many voices were heard and these voices were primarily the voices of students. These voices were engaged in conversations on the basis of 'talk between equals' and several conversations might be going on at the same time. The tutor's voice was little heard. There were some short bursts of tutor monologue at the start or end of sessions and there were stretches of discussion in which tutors participated minimally and at the nomination of students. There were only two short instances of discussion which were tutor-led in the sense of the tutor's managing the interplay of interaction and topic. Nor was it the case, in the main, that students took on a surrogate teacher role; rather, these discussions were managed collectively, on the spot, by all participants on an equal basis. Tutors were unobtrusive in the collaborative classroom, either not present or positioned so as not

to intrude upon the working of the groups. The hum of several conversations, the coming and going of students at will, the casual and ad hoc arrangement and re-arrangement of furniture, the occasional comfortable silences, each made their own contribution to the context for learning in the collaborative classroom. Spatial organisation (of the tutor, of students, of the furniture) therefore reinforced a distinctive social organisation which placed decision making firmly in the students' hands. One may wonder what they thought of this experience - and this is explored in the subsequent sections.

STUDENTS' PERCEPTIONS OF TUTORS' PURPOSES FOR COLLABORATIVE LEARNING

"I think the aim was to allow us the chance to plan our own experiments, firstly working along standard lines (i.e. methods used to investigate other enzymes we had previously studied) and secondly, working along our own lines in the light of initial results."

Student 6, Biology Tutor C

"He's trying to make us think. The more you think for yourself the deeper it goes."

Student 2, Chemistry Tutor E

The data examined for this and the subsequent sections of this chapter were the group interviews and individual questionnaires summarised in the initial section. The collection of data direct from students in these two different forms provided contrasting and complementary means of access to students' experiences: on the one hand through the face to face sociability and interplay of views in the group interviews; on the other through the personal, written responses of individuals in the questionnaires. The former setting gave access to the social style of different groups and enabled the researcher directly to probe viewpoints and crosscheck details. The latter gave access to more considered views, fixed in writing, conveying individual styles and responses. The collection of these two different types of data taken together with the observations of

collaborative work in progress, was used as a means of triangulation, to increase the reliability of the data collection and analysis. Individual sections in this chapter tell their own story in detail but it is worth noting here that there was a high degree of consistency over the range and variety of student views across these different types of data.

What was done? Consonance or Dissonance between Students and Tutors

As set out in Chapter Five, tutors were offered four main rationales for their use of collaborative learning (a fifth 'other' category contained a mix of additional responses) and gave replies categorised into seven main categories of aims and objectives for tasks (again with an additional 'other' category).

Tutors also supplied a wealth of detail on precisely what they asked students to do and when. This is summarised in Appendix 8 and was analysed in Chapter Four to give a picture of the place of collaborative learning in institutional life.

An early task in the analysis of the data from students was to cross-refer between those details supplied by tutors and those in the students' accounts. The aim was to establish whether students' perceptions of what tutors asked them to do for collaborative learning were consonant or dissonant with tutors' perceptions of what they asked students to do. These two accounts of what was done were compared, where student data was available, to be categorised as 'consonant' or 'dissonant' with each other. There is, in the event, no merit in presenting these data in tabular form as the results can be summarised succinctly in words. There were no instances of dissonance; that is to say, students and tutors were in agreement about what students had been asked to do and about what they had done in these collaborative learning tasks. There were thus frameworks of shared understanding between tutors and students, with regard to what collaborative learning had consisted of in practice.

Students' Prior Experience of Collaborative Learning

A surprisingly high proportion of the students interviewed or returning questionnaires had had prior experience of working in collaborative groups. There was not a single class in the data set of those interviewed in groups or returning questionnaires that did not include someone who had worked in collaborative groups before. Overall around three quarters of these students had worked in collaborative groups at school or further education college, at work, in the course of community or voluntary activities, in courses at other higher education institutions and at the case study institution either with the same or with other tutors. A small number of these students were former teachers undertaking re-training and had used collaborative methods in their own teaching.

It may be that the extent of this prior experience contributed to the consonance noted above between tutors' and students' perceptions of what was done, in that it provided for a significant proportion of the students a framework of understanding for the experience of working collaboratively. Another contributing factor that can be posited was the extent of the use of tutor-led small group teaching methods in this institution. Chapter Four (p 150) noted evidence that tutor-led small group teaching methods were common and suggested that this may have provided a facilitative springboard from which the tutors in this study could make the creative leap to the use of collaborative methods. In the same way, students' prior experience of working in tutor-led small groups within the institution may have provided a degree of preparation which made collaborative learning more readily comprehensible, even to those students who had not previously worked in collaborative groups at school, at work and so on.

Additionally, one cannot ignore, as an explanatory factor, the nature of the social relationships between tutor and students built up in the course of collaborative learning. The first section of this chapter provided evidence from observations of the subtle adjustments which tutors made to their enactment of the tutor role - adjustments which were all in the direction of enhancing the scope

for student decision-making and of abdicating from tutors' prior rights by given role over the management of discourse. This allowed students to interrogate tutors about their intentions ("You'd like us to do X?") and also to negotiate with tutors over what they were going to do ("We're going to do Y"). What students did was forged in the course of conversations between students and between students and tutors. It is perhaps not surprising that 'talk between equals' should result in shared perceptions and understandings of the purpose and nature of the tasks whereas discourse that is based on the greater power of one partner may be more open to distortion. In this sense, the consonance of perceptions over what was done may be construed as indicating the degree of ownership over the tasks which students were able to establish and the extent of two way communication between students and tutors. Students were clear about what they had done because the tasks became their own tasks. Tutors knew what students had done because they heard from students what they had done or were going to do rather than tutors having dictated unnegotiable and unalterable tasks in advance.

Students' Perceptions of Tutors' Rationales for Collaborative Learning

What was done or what would be done was highlighted regularly during the course of any one collaborative task from the starting point, where students and tutors agreed what would be done, to the end, when students reported back to each other, to the tutor and/or to other groups. Between these two points, deciding what was to be done was an iterative (and reflective) process. It was a regular theme in the conversations within groups as they planned the next stages of their work; and between groups and tutors (by the accounts of both parties) at points where groups paused in their collaborative work to report to or consult with tutors.

Why students were working in this way - which in essence meant why tutors had invited students to work in this way - was not a theme that was regularly discussed among students or between students and

tutors in the course of collaborative learning. What was done or to be done was highlighted. Why learning was being carried on in this way was much more tacit. This is not to say that tutors did not give any explanation or account to students of why they were inviting them to work collaboratively: most of them did. But this was not a theme that was regularly worked or re-worked in the course of a task. Even where tutors negotiated specific tasks so as to help design them more effectively as a means of satisfying objectives which students specified (Education Tutor I negotiated all tasks in this way) the tutors' rationales for using collaborative learning and the aims and objectives which they had for it were not regularly or explicitly expressed. Nevertheless, actions speak as well as words. What did the students read off as the tutors' purposes in using collaborative learning?

In the questionnaires and group interviews students were asked why they thought their tutor used collaborative methods. The same four overall rationales were offered by the question as were offered to the tutors in their interviews (see Appendix 4) giving choices between "because their use promotes students' understanding of the subject", "because their use enables students to practise skills they will need in employment", "because their use prepares students to carry on learning throughout their lives" and a fifth, open option of "for some other reason", for which details were requested. Figure 58 below summarises students' perceptions of tutors' overall rationales.

The data on students do not cover all of the tutors so one cannot make direct comparisons between Figure 41 in Chapter Five (p 213) giving tutors' overall rationales and students' perceptions of these rationales. Additionally, one cannot properly add the numbers of individual students expressing a view to the number of groups in which a similar view was expressed. With these provisos in mind, a comparison of Figures 41 and 58 shows that these students perceived correctly that the promotion of understanding of the subject was tutors' primary rationale, that they are very close to their tutors in placing the development of social skills and preparation for work as the next two rationales, and agree with their tutors in placing

(continued on page 299)

Figure 58

Students' Perceptions of Tutors' Rationales for the Use of Collaborative Learning

<p>To Promote Students' Understanding of the Subject</p>	<p>Students of Tutors: C D E F X(for Comp. Sc.) I J V X(for Psychology) Y</p> <p>TOTALS: 15 Individual students 6 Groups (consensus) 9 Tutors (pertaining to)</p>
<p>To Develop Students' Social Skills</p>	<p>Students of Tutors: E F G P X(for Comp. Sc.) I V X(for Psychology)</p> <p>TOTALS: 7 Individual students 4 Groups (consensus) 7 Tutors (pertaining to)</p>
<p>To Prepare Students for Work</p>	<p>Students of Tutors: C F G H X(for Comp. Sc.) I</p> <p>TOTALS: 15 Individual students 0 Groups 6 Tutors (pertaining to)</p>
<p>To help Students become Autonomous Learners throughout their Lives</p>	<p>Students of Tutors: X(for Comp.Sc.) I</p> <p>TOTALS: 4 Individual students 0 Groups 2 Tutors (pertaining to)</p>
<p>Other Reasons</p>	<p>(1) To make students think more (1 student of Tutor X for Psychology)</p> <p>(2) Because there isn't enough equipment for all students to do practicals individually (1 student of Tutor X for Psychology)</p>

the autonomous lifelong learning orientation last. The main difference between students and tutors is that substantially more tutors agreed with this latter rationale than were perceived to do so by students. Perhaps it is not surprising that students in higher education are not taking such a long-term view of the learning process as are their tutors.

Students Perceptions of Tutors' Aims and Objectives for Specific Tasks

Turning from these overall rationales to specific aims for specific tasks the questionnaires and group interviews provided information on what students perceived as their tutors' aims and objectives for specific tasks. These were categorised into the eight main categories which were applied to the tutors' direct expression of their own aims and objectives, namely:

- to enable students to work in groups
- to orient students towards the production of knowledge rather than its consumption
- to increase students' autonomy
- to give students a voice
- to provide direct experience (e.g. of a problem, a case)
- to encourage critical reflexivity in students towards the self and others
- to prepare for future professional and personal life
- to increase enjoyment and variety and to enable students to get to know each other

Figure 59 shows the overall distribution of students' perceptions within these eight categories.

Figure 59

Students' Perceptions of Tutors' Aims and Objectives

To Enable Students to Work in Groups	<p>Students of Tutors: A C D H X(for Comp. Sc.) I J V X(for Psychology)</p> <p>TOTALS: 8 individual students and 4 groups for 6 tutors</p>
To Orient Students to Knowledge Production rather than Consumption	<p>Students of Tutors: C D</p> <p>TOTALS: 1 individual student and 1 group for 2 tutors</p>
To Increase Student Autonomy	<p>Students of Tutors: E V X(for Psychology)</p> <p>TOTALS: 1 individual student and 2 groups for 3 tutors</p>
To Give Students a Voice	<p>Students of Tutors: A C I P</p> <p>TOTALS: 3 individual students and 2 groups for 4 tutors</p>
To Provide Direct Experience of a Problem or Case	<p>Students of Tutors: A C E G X(for Comp. Sc.) I J V X(for Psychology)</p> <p>TOTALS: 15 individual students and 6 groups for 7 tutors</p>
To Encourage Critical Reflexivity	<p>Students of Tutors: C E I X(for Psychology)</p> <p>TOTALS: 6 individual students and 1 group for 4 tutors</p>
To Prepare for Future Professional and Working Life	<p>Students of Tutors: G H X(for Comp. Sc.) I</p> <p>TOTALS: 6 individual students for 4 tutors</p>

(Figure 59 is continued on the next page)

Figure 59 (continued)

<p>To Increase Enjoyment and Variety and to enable Students to get to know each other</p>	<p>Students of Tutors: D P TOTAL: 1 group for 2 tutors</p>
<p>Other: Timetabling and Resources</p>	<p>1 group for Sociology Tutor Y</p>

Examples of what students said under each of these categories will now be given in turn.

To Enable Students to Work in Groups

"The primary objective was to work in a team and communicate with other members of the team"

Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

"An ice-breaker - essential for early group dynamism as the course was discussion and activity based"

Student 2/5, Education Tutor I

To Orient Students to Knowledge Production rather than Consumption

"The emphasis was not on a finished system. But the supervising tutor was interested in having a working project at the end of the day"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"The aims were to introduce us to methods and ways of thinking needed to investigate properties of an unknown enzyme. It was hoped to begin to teach investigative techniques"

Student 1/6, Biology Tutor C

"The research aspects. We didn't know what the results should be and so it taught us to interpret the results we got"

Student 5/6, Biology Tutor C

"In lectures, etc., the objective was to impart practical information. In this case the objective was an exercise in large-scale problem solving"

Student 2/4, Computer Science Tutor H

To Increase Student Autonomy

"You understand things better if you do it yourself. Working in pairs means there is less time spent on just number-bashing because you share the work load"

Student Group, Chemistry Tutor E

"We would use our own ideas and imagination. And we would learn to think for ourselves, overcome our own problems"

Student 2/4, Psychology/Computer Science Tutor X

"The aim was surely to explore all aspects of any issue before the tutor gave his/her opinion or background knowledge"

Student 3/5, Education Tutor I

To Give Students a Voice

"Ensuring all members actively involved at a personal level"

Student 1/5, Education Tutor I

"To share the different experiences of everyone in the group"

Student 3/5, Education Tutor I

"Because we're all contributing it's intellectually more stimulating - and it narrows down the work. It's about communication and exchange and articulation"

Student Group, English Tutor P

To Provide Direct Experience of a Problem or Case

- "1) to acquaint us with what a profile looks like
- 2) to acquaint us with what differing forms it may take
- 3) to allow us to draw our own inferences from format"

Student 5/5, Education Tutor I

"Help us see what was involved in thinking up and carrying out an experiment. Working in a group at that stage would help when it came to carry out our 3rd year projects on our own"

Student 2/4, Psychology/Computer Science Tutor X
(for Psychology)

"Exposure to real world problems and working in a team"

Student 1/4, Computer Science Tutor H

To Encourage Critical Reflexivity

"Seeing things from the pupil's point of view"

Student 1/5, Education Tutor I

"He's trying to make us think. The more you think for yourself the deeper it goes. We've spent twelve hours on 'Oil Strike' workshops. Even if it had been six hours of lectures and six hours of tutorials we wouldn't have done so much. In collaborative learning you make a gaffe, you don't repeat it. You have to stand up and defend what you say. It needs confidence but it also develops confidence"

One student in the group for Chemistry Tutor E
(others assented)

To Prepare for Future Professional and Working Life

"Producing sketches of different kinds of possible schools and school systems"

Student 1/5, Education Tutor I

"To give team members experience of the problems of team design work - meeting deadlines, etc."

Student 3/4, Computer Science Tutor G

"It was to practise within a simulated 'real life' environment"

Student 2/4, Computer Science Tutor H

To Increase Enjoyment and Variety and Enable Students to Get to Know Each Other

"To have a chance to argue about what we're doing outside the seminar - it encourages us to meet up"

Student Group for English Tutor P

"It makes a nice change. It's nice to choose what subject we're interested in and not to talk about facts all the time but ideas and applications"

Student Group for Biology Tutor D

It is significant that students had much less to say than their tutors about tutors' aims and objectives. The examples cited above show broad overall consonance with the kinds of aims and objectives expressed in the quotations from tutors (see Chapter Five pp 215-231) - that is, tutors and students are operating in the same universe. However, in the group interviews, the question about tutors' aims and objectives came as something of a surprise to some groups and they had to think before they could answer it. It is not surprising that those with overall responsibility for the design of educational experiences, that is, tutors, should be those who had given it the most thought. The aims and objectives belonged to them, in the first instance and were part of their practice.

Difference from Tutors' Aims for Other Methods?

Students were also asked if they thought that their tutors' aims and objectives for collaborative learning episodes were similar to or different from the purposes they hoped to achieve in other types of teaching methods. Two individual students of Biology Tutor C and two for Psychology/Computer Science Tutor X (one student for the teaching in each department) thought that their tutor's aims for

collaborative learning were similar to those for tutorials (but different from seminars). The three groups of students of Archaeology Tutor A and individual students of Education Tutors I, J and L confirmed the impression given by these tutors in interviews that collaborative approaches were their habitual teaching method - therefore questions about 'difference' were not applicable.

Quotations below exemplify these views:

"[Collaborative learning] and seminars are the same. But it's like an extended family here. You're all on first name terms and you can say what you think, partly because it's a new department. There's no old tradition to conform to. The academics here aren't red in tooth and claw. They all like each other"

First year student group, Archaeology Tutor A

"This exercise was typical of the usual style adopted for this course. The emphasis on the experiential aspect reflected the nature of the subject skills - guidance and counselling"

Student 2/5, Education Tutor I

"We didn't have lectures on this course"

Student 3/5, Education Tutor I

"Similar to other classes by the same tutor.
Much more self-discovery than most others"

Student 5/5, Education Tutor I

"The different methods have different purposes. Even in tutor-led work in this department they want us to use our initiative and do things together. This is an unusual department because it's quite small and informal. The main point was for us to practise giving a presentation"

Third year student group, Archaeology Tutor A

"Different from [other teaching methods] since appropriate information had to be sought rather than provided"

Student 1/4, Computer Science Tutor G

"Different as these group projects were not concerned primarily with the assimilation of 'hard facts' as the rest of the course had been"

Student 2/4, Computer Science Tutor G

"No knowledge of other classes. I don't think [Education Tutor I] is keen on using non-collaborative methods"

Student 1/5, Education Tutor I

"I think it was different from other teaching methods. Because this type of group work is practical, lectures and tutorials tend to be informative and explanatory"

Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

"Lectures are just to get information across"

Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

These quotations provide confirmation direct from students of the shifts in tutors' enactments of their role that were documented from observations in the first section of this chapter. They also extend the point made earlier in this section about the consonance between tutors and students over what was done. Not only was there shared understanding between tutors and students over what was done - but there was also shared understanding of what collaborative learning permitted that was made difficult or excluded by other teaching methods. In Chapter Five the point was made that tutors saw their well-articulated aims and objectives for collaborative learning as intrinsic to collaborative methods. Students may not have given so much prior thought to tutors' aims and objectives, but they were substantially in tune with what their tutors hoped to achieve through the use of collaborative approaches and were aware of tutors' different objectives in tutor-led methods.

These quotations also provide an important perspective on the discussion in Chapters Four and Five of the idea of visible, invisible and partially visible pedagogies. Whatever the limitations posed to the use of collaborative learning by colleagues' attitudes and by institutional practices on assessment, which may be thought of as limiting the territory within which collaborative learning could flourish and as rendering it only partially visible to central management in the institution, these quotations above leave no room for doubt that the pedagogy of collaborative learning was visible to

the students. They were fully aware what it was that they were engaged in and they were aware of the ways in which this diverged from other teaching methods. They were also aware why their tutors were diverging from common higher education practice in this way - although here students' views were not worked out in so much detail as those of their tutors.

Students' perceptions of why tutors were using collaborative learning, then, were cogent and substantially in tune with the views which tutors expressed. What of students' own reactions to collaborative learning? This is the subject of the next section.

STUDENTS' OWN VIEWS OF COLLABORATIVE LEARNING

Having been asked to state their perceptions of their tutors' purposes for collaborative learning, students were also asked directly about their own views. Question 10.2.1 in the questionnaire asked for the students' own opinions about the statements proffered as overall rationales for the use of collaborative learning. Figure 60 on the next page shows the extent of students' agreement with these statements. It shows slightly stronger tendencies by students themselves - as compared with their perceptions of tutors' rationales - to link collaborative learning with the development of social skills and with practising skills that act as preparation for working life. However, qualitative data of this nature cannot support any stronger comparative statement and do not lend themselves to statistical analysis. What is clear is that there are no startling divergences between tutors and students.

The questionnaires and group interviews sought to clarify the students' reactions to the experience of learning collaboratively via a question about which of the alternatives "useful or useless", "hard or easy", enjoyable or not enjoyable", "interesting or not interesting" most accurately described collaborative learning for the student(s) in question. A summary of the answers to this question is given in Figure 61 on page 309.

Figure 60

Students' Own Rationales for the Use of Collaborative Learning

<p>To Promote Students' Understanding of the Subject</p>	<p>Students of Tutors: A C G H X(for Comp. Sc.) I X(for Psychology)</p> <p>TOTALS: 20 Individuals 2 Groups (consensus) 6 Tutors (pertaining to)</p>
<p>To Develop Students' Social Skills</p>	<p>Students of Tutors: A C G H X(for Comp. Sc.) I X(for Psychology)</p> <p>TOTALS: 20 Individuals 2 Groups (consensus) 6 Tutors (pertaining to)</p>
<p>To Prepare Students for Work</p>	<p>Students of Tutors: A C G H X(for Comp. Sc.) I X(for Psychology)</p> <p>TOTALS: 22 Individuals 2 Groups 6 Tutors (pertaining to)</p>
<p>To Help Students Become Autonomous Learners throughout their Lives</p>	<p>Students of Tutors: H X(for Psychology) I</p> <p>TOTALS: 6 Individuals 0 Groups 3 Tutors (pertaining to)</p>
<p>Other Reasons</p>	<p>None</p>

Figure 61

Collaborative Learning: Useful, Hard, Enjoyable, Interesting?

Tutor Group	Useful	Useless	Hard	Easy	Enjoyable	Not Enjoyable	Interesting	Not Interesting
Arch A Gp 1	+		+		+		+	
Gp 2	+		+		+		+	
Gp 3	+			+	+		+	
Biol C 1/6	+			+	+		+	
2/6	+		+		+		+	
3/6	+			+	+		+	
4/6	+		+		+		+	
5/6	+			+	+		+	
6/6	+		+		+		+	
Chem E Gp	+			+	+		+	
indiv	+		+		+		+	
Comp Sc F								
Gp	+		+		+		+	
Comp Sc G								
1/4	+				+		+	
2/4	+		+		+		+	
3/4							+	
4/4	+		+		+		+	
Comp Sc H								
1/4		+		+		+		+
2/4		+		+		+		+
3/4	+		+		+		+	
4/4	+		+		+		+	
Psych/Comp								
Sc X 1/3	+		+		+		+	
2/3			+				+	
3/3	+			+	+		+	
Ed I								
1/5	+			+	+		+	
2/5	+		+		+		+	
3/5	+		+		+		+	
4/5	+			+	+		+	
5/5	+			+	+		+	
Psych X								
1/4		+		+		+		+
2/4	+		+		+		+	
3/4	+				+		+	
4/4	+		+			+	+	

As can be seen, out of the 30 individuals or groups that replied to the 'useful/useless' dichotomy, 27 replies indicated that collaborative learning had been useful while three individuals gave a reply of useless. Out of 29 replies on the 'hard/easy' dichotomy, 17 indicated that collaborative learning had been hard and 12 that it had been easy. Out of 30 replies on the 'enjoyable/not enjoyable' choice, 26 indicated that collaborative learning had been enjoyable and 4 replies that it had not been so. Out of 31 replies by individuals or groups on the 'interesting/not interesting' dimension, 29 indicated that collaborative learning had been interesting and 3 that it had not been so. Putting replies to each of these choices together, there were two students for Computer Science Tutor H and one student for Psychology Tutor X (for Psychology) whose pattern of replies was: useless, easy, not enjoyable, not interesting. Such dissatisfaction will be further explored later in this chapter. But the figure shows that whilst students were divided in their opinion of whether they found these varied collaborative tasks hard or easy, for by far the greater number of them the other appropriate descriptors were: useful, enjoyable and interesting. This is something of a vindication for their tutors' decisions to try collaborative learning in the first place.

Students were also asked about their preferences for different types of teaching methods. Four individuals expressed a clear cut preference for tutor-led methods. One commented that tutor-led methods did not require such hard work from students (thought to be a good thing) and one thought that larger-scale project work needed more help from the tutor. 12 replies (including the consensus of one group) expressed a preference for collaborative learning and 11 replies (including the consensus of 5 groups) thought that both types of method were necessary and desirable. Of these, 3 groups of Archaeology students pointed out that their experience and definition of 'tutor-led' methods was rather different from that of students in other departments - it did not include straight lectures, for instance.

Collaborative Learning Compared with Other Teaching Methods

The simple quantifications above, of the 'useful, hard, enjoyable, interesting' choices and of students' overall preferences for different methods of teaching and learning are perhaps best interpreted as straws in the wind rather than as clear cut generalisations. These questions provided students with the opportunity easily to report straightforward dissatisfactions with collaborative learning and we have seen that a small minority took the opportunity to record such dissatisfaction. The general trend is towards seeing a role and purpose for collaborative learning methods and this is amplified in the comments which students made when they were asked to compare collaborative learning with other methods. In reading the quotations that follow it should be borne in mind that these comments express students' own comparisons of collaborative learning with other teaching methods (quotations in the last section gave students' perceptions of what they thought were their tutors' different aims and objectives for different methods).

For many students the differences between collaborative learning and other teaching methods were striking and brought several advantages:

"It's an incentive to get used to using sources that you haven't used before, an incentive to get going"

First year group, Archaeology Tutor A

"This needs a great deal of collaboration. It's good to have this interspersed with the other"

Second year group, Archaeology Tutor A

"Discussion and swapping of ideas amongst the students is much commoner and easier which is good to find out what others are getting out of it"

Student 1/6, Biology Tutor C

"This is different because there's not much opportunity for discussion elsewhere on the course. The subjects don't lend themselves to it, for instance, Genetics, where we don't know enough and there's too much right and wrong involved. Biochemistry is a yes/no subject -

they know it and you don't. But here it's a question of formulating those ideas in different situations in a different way"

Student group, Biology Tutor D

"This was a putting into practice of what we'd learned from other classes"

Student 4/4, Computer Science Tutor G

"In collaborative learning, participation and learning are in your own control and you're more attentive. Your mind goes blank when you're not listening"

Student group, Education Tutor J

"Collaborative task more interesting and allowed me to develop my own particular areas of interest and expertise. However, it was sometimes difficult to obtain necessary information which might have been more freely available with tutor-led methods"

Student 3/3, Computer Science Tutor X

"Generally much more interesting; the work has a personal dimension; one is also learning to work with others - learning awareness within a group.

Student 1/5, Education Tutor I

"There's more group collaboration in the experiment"

Student 6/6, Biology Tutor C

"This type of task is very helpful in developing the ability to conduct a research project.

It has a different aim to the other methods mentioned above"

Student 6/6, Biology Tutor C

"It's good experience for working in industry. Getting to learn to work in groups, and communication and exposure to different ideas. You think up your own ideas like this. It gives you time to think"

Student group, Computer Science Tutor F

"The group process is interesting. What it requires is the communication of sophisticated ideas precisely for other people. This throws up inconsistencies and mistakes that you might have made. So the group experience is better because mistakes come out"

Student group, Computer Science Tutor F

"It was a slower process in that everyone had a chance to express their own opinions but it was a more interesting experience"

Student 3/4, Computer Science Tutor G

"The freedom to develop and discover individually or within a group of peers is appreciated. Didactic lecturing is too passive a medium and often frustrating unless the lecturer is (a) well-prepared and clear (b) willing to encourage questions (c) both. Tutorials and seminars should underlay and inform collaborative work as necessary"

Student 3/4, Computer Science Tutor H
(a former teacher)

"Much more involving and stimulating ... it extracts the best from students who are put under pressure from peers to contribute instead of coasting while the tutor does the work"

Student 5/5, Education Tutor I

"You cover more stuff and relate it together and there's more original thought. You make the argument thicker and better because you're taking more factors into account"

Student group for Politics Tutor V

"It's completely different and a bit of a shock to have to initiate something for a change"

Student 4/4, Psychology Tutor X

"Collaborative [learning] is very different because everything else is in big groups"

Student 1/2, Sociology Tutor Y

Some students made explicit comparisons with other teaching methods:

"Lectures are entirely different [from collaborative learning]. That's putting information across, and then we're more like school children. But our lectures are like other department's seminars, because of the two way communication. Students in other departments describe their formal lectures and we have nothing like that. Students in the [X] department don't even know the professor"

First year student group, Archaeology Tutor A

"Very different. We all had to do work, not like in traditional teaching, and we all worked on totally different topics and from a different chronological period to the one we were doing in the rest of the course. We had to learn things for ourselves and get out and do research"

Second year student group, Archaeology Tutor A

"Tutor-led seminars are a waste of time if there are too many students present - as on our course. Lectures don't usually require much thought but collaborative tasks and tutorials stimulate thought and I think are the most useful methods of teaching"

Student 3/6, Biology Tutor C

"[Lectures and tutor-led seminars] do not encourage much response or thought from the student, especially the lectures"

Student 4/6, Biology Tutor C

"In comparison, we have around 70 people in our core lectures and we have five of these weekly in this course, plus 3-4 tutorials. We would work like this again by choice but would prefer not more than one 3 hour workshop per week"

Student group, Chemistry Tutor E

"This is better than traditional lectures. It's only half as tedious!" (offers researcher a sweet)

Student group, Computer Science Tutor F

"Lectures, unless the lecturer is particularly entertaining, witty or otherwise absorbing, tend to give little more than the perusal of a book or other literature on a given topic"

Student 1/5, Education Tutor I

Some students commented on the conditions under which collaborative learning was more likely to be rewarding:

"It is highly rewarding for those who contribute - it must be the only assignment being carried out at that time, and members of the group must be in close (continuous) contact. I found that goals and tasks changed rapidly during the first part (approx 3 weeks)"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"You tend to learn more, can't rely on a tutor, but only when task is interesting. If not, people don't make any effort - no prompting from tutor possible"

Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

First year Archaeology students thought that there were some educational purposes for which collaborative learning was unsuited:

"At university level it's as valid as any other method but below 'A' level in schools where all they're really doing is getting you to pass an exam, collaborative learning isn't as useful as pages full of notes to pass an exam."

Their third year colleagues emphasised that tutors in their department used a continuum of teaching methods which emphasised participation so that collaborative learning:

"is not so different. It's another way of doing what's done in seminars, because it's such an integrated and informal group."

Some students did not find it fruitful to compare collaborative learning with other teaching methods and emphasised the range of methods that were needed:

"Collaborative learning can be used for certain things but not all. Together with the other methods ... they can be used to teach all aspects of the subject involved. I don't really think you can compare them as separate methods because it is dependent on so many other things"

Student 5/6, Biology Tutor C

"The two cannot be compared so readily as I think their aims are so different"

Student 2/4, Computer Science Tutor G

"Learn more from tutorials, etc., but is a different kind of knowledge. Both are probably necessary"

Student 1/4, Computer Science Tutor H

"Almost impossible to compare. With collaborative methods it is the experience which is important, whereas with tutor-led methods the information (essentially) is important"

Student 4/4, Computer Science Tutor H

"Both types are essential and teach in different ways"

Student 2/4, Psychology/Computer Science TutorX
(for Psychology)

Finally, a handful of students commented adversely on their experience of collaborative learning:

"Collaborative tasks ought to be useful. In the context of this department they are not, partly because the department lacks the initiative and human skills to make them work"

Student 2/4, Computer Science Tutor H

"Tutor-led methods are much more structured and efficient"

Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

"[This was] frustrating - bad communication within the group. We could not function as equal parts of the group. Some members felt the need of continuous guidance"

Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

Having examined students' views of collaborative learning in some detail, the next section takes a wider focus by setting these views in the context of students' views about the purposes of higher education and their views of the ideal roles of tutors and students if these purposes are to be achieved.

STUDENTS' VIEWS OF HIGHER EDUCATION

Tutors were asked what they thought were the aims of higher education and their replies clustered into four main groups. These were: to produce a capacity for problem solving and critical inquiry; to prepare for life and work; to develop intellectual

abilities and analytical skills; and to help students to come to terms with uncertainty. Smaller numbers of tutors also suggested as aims: promoting students' abilities to communicate; providing an opportunity for collaborative reflection; helping to integrate knowing and doing; and widening access (see Chapter Five, p 237).

Students' ideas about the purpose of higher education are substantially in line with those above but with some interesting differences. These headings will now each be examined in turn from the students' perspective.

To Produce a Capacity for Problem Solving and Critical Inquiry

A number of students gave replies which indicated their designation of this as an aim for higher education. Quotations below give examples:

"To develop an inquiring outlook"
Student 1/6, Biology Tutor C

"To encourage questioning and testing"
Student 2/6, Biology Tutor C

"Acquiring methods which can be used generally
and not just within the subject"
Student 5/6, Biology Tutor C

"To increase critical judgement and in the case
of science subjects at least to acquire techniques
to be used later"
Student 6/6, Biology Tutor C

"It should involve being taught to think, not
just in the subject"
Student Group, Chemistry Tutor E

"To encourage 'open' thinking in a disciplined
way and to give people an idea of what is and
what is not a valid argument"
Student 3/4, Computer Science Tutor G

"To teach and promote learning and an 'inquiring
mind'"
Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

In these quotations problem solving and critical inquiry are a matter in part of attitudes but also of possessing the skills to frame an inquiry and its questions.

To Prepare for Life and Work

Quotations under this heading give a strong sense of students' awareness of themselves as poised at a turning point between the world of school and home and the wider world of work. Preparation for something that is not yet known - for work, for personal life, for an as yet unidentified career - is an important part of the purposes of higher education for these students. Getting a degree (and, of course, at the undergraduate stage no-one can be certain that he/she will, however strong the likelihood) looms large as a key element in this preparation, but so also do the opportunities that a degree will bring. (The valency of these elements seemed to shift for Archaeology students as they progressed through their student career.)

"To get a degree!"

First year Group, Archaeology Tutor A

"To get a good degree at the end"

Second year Group, Archaeology Tutor A

"To get a job afterwards"

Third year Group, Archaeology Tutor A

"To teach students to work. Also to 'break in' people for life away from home or school"

Student 1/6, Biology Tutor C

"To prepare the student for things to come. To get a degree to enable you to carry on in whichever direction you choose"

Student 5/6, Biology Tutor C

"To undertake an MSc in a subject which I did not particularly like but considered to be important in order to enhance my career prospects"

Student 2/4, Computer Science Tutor H

"Buffer stage between school and the 'real' world"
Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Not mere assimilation of facts - absorption
of skills they'll need in future employment
and life"
Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

"To equip students with specific skills in one
particular area"
Student 1/5, Education Tutor I

"Hopefully to give student a degree and career!"
Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

To Develop Intellectual Abilities and Analytical Skills

Students saw this aim as important and saw a potential for
generalisation (as had their tutors) beyond the content of the
subject studied to broader aspects of intellectual development.

"Gain a critical grounding in the skills of
Archaeology - and the skills of life"
Third year Group, Archaeology Tutor A

"To teach an in-depth knowledge of a subject
and its application"
Student 1/6, Biology Tutor C

"To encourage finding different approaches to
problems and to make theoretical applications
to practical problems"
Student 2/6, Biology Tutor C

"To teach students to think"
Student 3/6, Biology Tutor C

"To provide a whole knowledge of the subject
studied"
Student 4/6, Biology Tutor C

"To acquire knowledge about the subject studied"
Student 5/6, Biology Tutor B

"To provide a broad education in the chosen discipline within a framework conducive to learning and development"

Student 1/4, Computer Science Tutor G

"To develop the ability to think, to develop intellectual skills. To develop a 'feel' for the chosen subject(s). And also, of course, to transmit a lot of information"

Student 4/4, Computer Science Tutor G

"To learn to think independently"

Student 3/4, Computer Science Tutor H

"To develop intellectual skills"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"To learn how to learn and apply what is learnt"

Student 3/3, Psychology/Computer Science Tutor X
(for Computer Science)

"To develop the ability to learn independently and with others"

Student 1/5, Education Tutor I

One post-graduate student thought that subject areas studied made different contributions to intellectual development:

"Depends on subject. Arts/Social Sciences give analytical skills and a broader perception of life. Sciences do not lead to intellectual development"

Student 1/4, Computer Science Tutor H

To Help Students Come to Terms with Uncertainty

The main difference between students' views on the purposes of higher education and those of their tutors lay in this area. Several tutors attached a good deal of importance to weaning students off the search for one right answer and towards tolerance of uncertainty. No student replies could readily be categorised under this heading.

To Develop Mature Personal Values

However, there were a cluster of quotations which had to do with another type of uncertainty - not in terms of the competing paradigms and uncertainties of academic disciplines but in terms of openness to new ideas and values in becoming a full-rounded and mature person. The kind of person one is, the values one holds, knowing what one thinks about issues and why are all covered here.

"Re-organising daily attitudes about stereotypes and life, not fact-oriented"

One student in the group for Chemistry Tutor E

"To find answers to the questions that that person has in his or her chosen field"

Student 2/4, Computer Science Tutor G

"To become aware of cultural heritage, as one amongst many"

Student 3/4, Computer Science Tutor H

"To develop an awareness of matters covering a much wider area of personal, social and political nature - and to have the opportunity of following these up on a formal or informal basis"

Student 1/5, Education Tutor I

"I regard it as an element in one of the routes to maturity"

Student 2/5, Education Tutor I

"To enhance a person's education, not only from the academic point of view but from all aspects - to make a more rounded tolerant person"

Student 3/5, Education Tutor I

"To develop skills of analysis and criticism in a way that will spill over into all aspects of one's life. To expose one to new ideas, to challenge old ideas"

Student 5/5, Education Tutor I

"To give people confidence in formulating opinions"
Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

Only two of the students quoted above (the first and the last given) are undergraduates - it may be that this concern with maturity and the rounded person with a clear value structure is more readily identifiable in reflection after-the-event rather than claimed as a goal while the whole endeavour (including getting a degree) is still in process.

There were small numbers of replies that fell into none of the above four main categories. One group was similar to one of the tutors' minority sets of replies, which was to promote the ability to communicate. With the students, it comes across as equally concerned with developing the ability to work with others.

"... socialise with others ..."

Student 1/6, Biology Tutor C

"It provides an atmosphere for co-operating with others"

Student 4/6, Biology Tutor C

"To learn to discuss and communicate and to promote interaction with a variety of people and allow for exchange of ideas"

Student 3/4, Computer Science Tutor H

"Social skills"

Student 3/3, Psychology/Computer Science Tutor X
(for Computer Science)

"... and to develop the social skills to put these into effect"

Student 1/5, Education Tutor I

Learning for its Own Sake

A small number of students emphasised the value of learning for its own sake.

"Because you're interested in it and enjoy it"

First year Group, Archaeology Tutor A

"Not, as many people seem to infer, to make one better able to succeed in industry, etc. The pursuit of knowledge by an individual for his or her own personal satisfaction"

Student 2/4, Computer Science Tutor G

"The purpose of a University degree is to a great extent defined by the students themselves. In my own case, for my first degree, the objective was to acquire a broad based education in a subject I liked"

Student 2/4, Computer Science Tutor H

A mature student in the first year Archaeology Tutor A group added

"I always wanted to do it. It's like waking up in heaven"

An Intellectual Resource for Society

Finally, three of the students considered that one of the purposes of higher education was to provide an intellectual resource for society:

"Promote, develop and exploit the mental resources of a society"

Student 4/4, Computer Science Tutor H

"... and more importantly to provide intellectuals"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"To ensure that a certain proportion of the population can be said to have reached a certain academic standard, i.e. when a job advertisement asks for a graduate everyone knows what standard is generally agreed on"

Student 3/3, Psychology/Computer Science Tutor X
(for Computer Science)

Role of University Teacher

As with the tutors in Chapter Five, one can ask of the data on students: if these were what higher education should have for its aims, what should be the role of the higher education tutor?

Tutors' answers to this question were classified into three main categories, namely to facilitate students' learning, to support students' personal and social growth and to be willing to negotiate learning with students. A smaller number of tutors added the suggestion that the tutors' role should be to promote enthusiasm for the subject. As can be seen below, the greater number of student replies under this heading were concerned with the role of the tutor as a facilitator of students' learning. Smaller numbers of replies could be categorised under the other two headings, whilst there was an additional set of replies that were concerned with the tutors' role as a teacher. The different sets of replies will now be given in turn.

To Facilitate Students' Learning

There was resounding agreement from students that the role of the tutor should be to guide and facilitate students' learning:

"To put you on the right lines, to guide you, to point us in the right direction. A more general education, not teaching you just to get you through the degree"

First year Group, Archaeology Tutor A

"They're there to point you in the right direction, give references, help if you ask for assistance but not to make you. To introduce you to various aspects"

Second year group, Archaeology Tutor A

"To be stimulating. Other than that, nothing"

Third year Group, Archaeology Tutor A

"Should be prepared to discuss all aspects of the subject, should direct students along the right lines, show how to use and obtain information but not spoon feed"

Student 1/6, Biology Tutor C

"Stimulate interest. Ask searching questions"

Student 2/6, Biology Tutor C

"Guide the student on what to learn, cultivate special interests and help out with problems encountered during this study"

Student 5/6, Biology Tutor C

"Be accessible - available to answer questions, etc. At this stage in my academic career I suppose I see tutors in a fairly passive role - reacting to my initiatives. On the other hand during the Team Project, when more than one person is involved - the tutor should take a more active role"

Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Tutor should (a) encourage and help student when student is in difficulties; (b) be prepared to see students on a 1 : 1 basis"

Student 3/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Impart knowledge. Stimulate interest. Identify and correct weaknesses"

Student 1/4, Computer Science Tutor G

"To help iron out difficulties on the way"

Student 2/4, Computer Science Tutor G

"To stimulate ideas in a student. To encourage a student and give him/her confidence to pursue his/her lines of inquiry/interest. To be supportive"

Student 3/4, Computer Science Tutor G

"Primarily a guide, pointing the way for the students' study, clearing up confusions, setting appropriate tasks for the knowledge they already have"

Student 4/4, Computer Science Tutor G

"Act as guide and Mentor"

Student 2/4, Computer Science Tutor H

"... encourage, guide, inform, assess"

Student 4/4, Computer Science Tutor H

"Broadly to act as a resource as a means to point the student in the right direction or possible directions in respect of whatever the student wishes to learn ... thus enabling the student to go ahead and do the learning her/himself. ... Also providing suggestions, advice, encouragement!"

Student 1/5, Education Tutor I

"He should be able to direct the student's learning by casting various 'clues' which the student may or may not take up.... He should be there to advise the student"

Student 3/5, Education Tutor I

"To facilitate the above [as in Aims of H.E.] but also to inspire students with the excitement of the unknown"

Student 5/5, Education Tutor I

"They should lead and direct their students on the courses and encourage them"

Student 2/4, Psychology/Computer Science Tutor X
(for Psychology)

The tutors in this study could hardly have asked for a stronger degree of overlap between their own views of the role of the tutor as facilitator rather than as spoon-feeder, and those of the students. There is no way of knowing whether this stance of responsibility for one's own learning was developed by the experience of learning collaboratively or whether its existence was one of the factors which produced students' positive approach to collaborative learning.

To Support Students' Personal and Social Growth

Only a couple of replies from individuals could be categorised under this heading.

"Stimulate thought about various subjects - not just those they are teaching, e.g if teaching science also discuss moral and social aspects"

Student 3/6, Biology Tutor C

"Supervisor looks after welfare. They should also try to have a bit of personal interest in the students, in their lives other than studying"

Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

To Negotiate Learning with Students

The quotes under this heading are as much concerned with the suggestion that tutors should listen to students, as a general stance, as they are with the flexibility over curriculum content which was the main focus of tutors under this heading.

"Most important they should listen carefully to the students"

Student 1/6, Biology Tutor C

"Allow students freedom to follow up these thoughts and answer questions"

Student 3/6, Biology Tutor C

"I think that co-ordination of study and activity related to the course is the main role. He/she should, therefore, prepare a framework as a flexible guide for students and monitor their progress against acceptable limits"

Student 2/5, Education Tutor I

"Be willing to communicate democratically with students; be a good and willing communicator, not condescending; be willing to learn from students, especially about the effectiveness of different learning environments"

Student 3/4, Computer Science Tutor H

"To make learning enjoyable - to allow you to be independent also in learning. Tutor should follow suggestions by students to improve courses etc., where possible"

Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

To Promote Enthusiasm for the Subject

Three replies indicated that the tutor's role should be to promote enthusiasm for the subject:

"Should provide constructive criticism and do best to instil their own enthusiasm (assuming they have it) for the subject"

Student 1/6, Biology Tutor C

"They should try to make it interesting"

Student Group, Sociology Tutor Y

"Show an interest/enthusiasm in trying to help students understand and possibly enjoy the subject!"

Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

To be Committed to Their Role as Teachers

Finally, there was a group of student replies which were concerned with the tutors' role as teacher. These do not seem to be in contradiction to the strong support for the role of the tutor as facilitator of student learning - although they do contrast with that group of replies. Rather they seem to express a view that tutors should have or should seek professional competences as teachers and to express a degree of wistfulness about the effort which tutors put into their research role, which competes for their time with teaching.

"Should also put a reasonable amount of effort into preparing and marking work"

Student 1/6, Biology Tutor C

"... emphasise the need for background reading and ... allow time for this on the timetable. Not show they put their research before their students, even if they do"

Student 3/6, Biology Tutor C

"Their role should be to teach you clearly the principles to be learnt, give references where relevant information can be sought. The tutor should encourage group discussion on the subject taught"

Student 4/6, Biology Tutor C

"Put over information and technique well and stimulate a student to think critically for himself"

Student 6/6, Biology Tutor C

"The ideal is someone who can lecture well and who puts time into teaching as opposed to research"
Student Group, Chemistry Tutor E

"Be a Master-of-Ceremonies rather than an imparter of wisdom; be interested in teaching as much as research; be trained in basic teaching skills and methodologies; recognise that attitudinal problems in students are often a reflection of attitudinal problems in staff!"
Student 3/4, Computer Science Tutor H

"Provide tuition - should understand (fully) the fundamental concepts of the subject. Should spend time (50%) researching problems concerned with methods of teaching/formation of concepts"
Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Promote discussion in tutorials, help with giving references"
Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

"To teach"
Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

"Role = Be ready to explain where there are academic problems, someone who can communicate verbally, reasonably comprehensively!"
Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

Included in this group are replies which emphasise, as part of the teaching role, the promotion of discussion by students as well as good communication by teachers.

Students' Views of the Role of Students

Finally, for this section, students' views were sought about the role of students. What should that be, ideally, given the views already set out about the purposes of higher education and the desired role of the tutor?

The replies of tutors (see Chapter Five) were categorised into three main groups, namely, a commitment to students' own intellectual

and personal development, a commitment to inquiry and a willingness to participate in learning.

Students gave replies in each of these categories, and under additional headings concerned with the role of the post-graduate, providing feedback to tutors - and not forgetting the need for social life.

Commitment to Students' Own Intellectual and Personal Development

Only five replies fell under this heading, one of them capturing the tension between self-development and the fulfilment of coursework requirements.

"Students do very little reading. They find the right bit in a book to prepare for a tutorial but don't read the whole book. We shouldn't be passively accepting information - but a certain amount has to be learnt"

Student Group, Chemistry Tutor E

"Developing intellectual skills"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Make the best possible use of their time"

Student 1/4, Psychology/Computer Science Tutor X
(for Psychology)

"A - get a degree

B - get as involved in as many ventures as poss., as opportunity arises, to develop self and try out as many different activities as possible"

Student 3/4, Psychology/Computer Science Tutor X
(for Psychology)

"Make the most of opportunities - academic or otherwise - presented to them.... To develop as an individual away from family"

Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

A Commitment to Inquiry

Rather more replies mentioned the need for students to question, to inquire, to look at areas beyond their own discipline and to produce new knowledge.

"Learn to think for yourself. Teach yourself to think and to question things"

Third year Group, Archaeology Tutor A

"Be self-motivated. Pursue objectives in their specialised subject. Promote further knowledge and publish results"

Student 1/4, Computer Science Tutor G

"The same as any student - to increase knowledge that they already have and as far as science students are concerned to find out new information that is waiting to be discovered"

Student 2/4, Computer Science Tutor G

"To pursue areas they are interested in and to ask for assistance where needed"

Student 3/4, Computer Science Tutor G

"They should be active in regard to their education, questioning rather than passively absorbing"

Student 4/4, Computer Science Tutor G

"Often an opportunity to look at areas which have been neglected e.g. how many scientists know anything about the 'philosophy of science'?"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Be prepared to become a seeker of information rather than an absorber of second-hand information and knowledge ... knowing where and how to look"

Student 1/5, Education Tutor I

A Willingness to Participate in Learning

A large number of student replies were in this category, indicating a heartening readiness on the part of these students to take responsibility for their own learning.

"To do your own work. You should be bogged down in books. You get off lightly lecture-wise here. So you should be doing more of your own work - it's expected of you but it's left to you, you don't have to. But that's what you're here for"

First year Group, Archaeology Tutor A

"Make the most of it. Follow the leads. But it depends what you want"

Second year Group, Archaeology Tutor A

"Attend most lectures and tutorials/seminars. Be prepared to talk to tutors and other students. Do best to get involved in the subject. Do plenty of reading"

Student 1/6, Biology Tutor C

"Enjoy their subject. Work to pass exams."

Student 2/6, Biology Tutor C

"Make sure they understand one topic before moving on to the next one and feel that they are not wasting a tutor's time by asking stupid questions if they don't understand"

Student 3/6, Biology Tutor C

"Be prepared to be self-motivated, follow up references given"

Student 4/6, Biology Tutor C

"The student should do whatever he/she/it feels necessary to satisfy one's requirements i.e it depends on your own particular reason for going to university"

Student 5/6, Biology Tutor C

"Succeed in acquiring [critical judgement and techniques of science]. In the case of collaborative learning: also the ability to work with others"

Student 6/6, Biology Tutor C

"Working towards getting a degree - needs a general grasp of the subject. Should be doing more original work - but chemistry involves learning a certain amount of facts"

Student Group, Chemistry Tutor E

"Learn, develop, produce. Self-motivated rather than responding to possible penalties"

Student 4/4, Computer Science Tutor G

"To study/train along the lines dictated by his/her own interests and aptitudes to the extent that they fall within defined criteria for the course"

Student 2/5, Education Tutor I

"Role - to learn what they can about their chosen subject. They should follow the coursework and develop their own interests in particular areas"

Student 2/4, Psychology/Computer Science Tutor X
(for Psychology)

"Learn to organise yourself and manage unpleasant difficult matters.... Ask for help with work when needed"

Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

The Role of the Post-Graduate Student

A small number of replies focussed specifically on the role of the post-graduate student; one of these took a contrary view to those expressed above and to the others in this group, suggesting that post-graduate students should be taught.

"It is becoming increasingly obvious that the post-graduate must be taught"

Student 1/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Post-graduate student should learn techniques of research, study"

Student 3/3, Psychology/Computer Science Tutor X
(for Computer Science)

"Get on with their own research - be prepared to back up the department as demonstrators, etc... With a taught course this is not possible. The post-graduate has virtually the same status as an undergraduate"

Student 2/3, Psychology/Computer Science Tutor X
(for Computer Science)

"The post-graduate should be able to process ideas and know his own opinions, yet still be able to appreciate other points of view"

Student 3/5, Education Tutor I

"Work for 5 years before they go to university.
Further employment would be a requirement for
PG work"

Student 5/5, Education Tutor I

Providing Feedback to Tutors

Two individual students emphasised that students must be willing to speak out to provide feedback to tutors.

"To let tutors, etc know what areas in their education are being neglected in order to rectify 'barren' and useless topics/studies. ... To challenge accepted orthodoxy whilst learning the appropriate (a) methods and (b) materials which enable one to do this. This may demand criticism of teaching methods and attitudes in Universities. It should be remembered that a student 'pays' for what he/she gets and is entitled to their money's worth"

Student 3/4, Computer Science Tutor H

"Not afraid to speak up when things are not clear to them"

Student 4/4, Computer Science Tutor G

The Need for a Social Life

Some students noted the need to balance the requirements of academic work with those of a good social life and taking advantage of other opportunities presented by life at university.

"Students must have a reasonable social life with other interests totally different to their subject and spend a reasonable time at them.... Keep up with the work and don't become a workaholic. Have fun!"

Student 1/6, Biology Tutor C

"Should get involved with events outside their course, e.g. sport, etc to develop their personality"

Student 4/6, Biology Tutor C

"Try and keep a balanced outlook about the importance of the work and not over or under stress it"

Student 4/4, Psychology/Computer Science Tutor X
(for Psychology)

Finally, in a rather engaging comment, one student noted the contribution that students make in their turn to university life. This student said that one of the students' roles was

"to instil life and vitality into education"

Student 3/4, Computer Science Tutor G

Collaborative Learning and Students' Views of Higher Education

This concludes the examination of the data on students' views of higher education. There are significant points to draw out from these data.

One is to note the degree of consonance between the views of tutors, discussed in Chapter Five, and the views of students. This is not to say that the views are identical. Tutors gave answers under some headings that are absent or thinly covered in student responses. Similarly, students have called attention to some factors which were important for them but which do not figure or which scarcely figure in the tutors' replies. These differences seem both predictable and understandable and to arise at least in part from the differences in role, in career stage and age between tutors and students. To be a student on a course is not the same as to design and teach one; to be at the threshold of one's career is not the same as to be established in university life; to be in the middle of the unique and new personal experience of being a university student is not the same as to be seeing yet another, younger cohort through a course.

But although not identical tutors' and students' views cluster around similar perspectives on the things that really matter. Tutors do not want to spoonfeed and students do not want to be spoonfed. Tutors want students to participate in learning and students feel they should take responsibility for their own learning. Tutors feel

there is more to higher education than mastery of subject content and students want to use the opportunity to formulate their own questions, to develop themselves personally as well as intellectually and to address issues of values, ethics and their place in society. Tutors want to hear from students and students want to speak and to contribute to the community of the department and the university. Here are young and not so young students seeking to explore an interesting subject, to master the skills of inquiry and knowledge creation, to construct themselves as learners and also to make or find their own place in the world beyond higher education.

Whether these attitudes have been fostered by the experience of learning collaboratively or whether the prior possession of them by students was a factor influencing students' readiness to go along with the collaborative approach, or both, is a moot point. What is clear is that these attitudes and goals are highly consistent with its use. If other higher education students share these views there must be deep unexpressed dissatisfaction amongst the students of teachers who rely exclusively on tutor-led methods directed towards the transmission of information pre-fixed by tutors' decisions about syllabus content. For what these students are seeking is not passively to receive and regurgitate subject content but actively to engage in formulating their own questions, to make their own connections between these questions and those in other areas, to construct their own ways of evaluating and testing answers to their questions and, in the process, to gain not only the necessary degree but also their own more mature selves. This is born out of speaking and doing rather than listening and responding. The opportunities to work collaboratively, devised by these tutors, could hardly have been better designed to respond to the innermost aims and goals held by these students.

So far this chapter has considered collaborative learning as it appeared in action to an observer, has explored students' perceptions of what their tutors were doing and why, has revealed students' own views of collaborative learning and has set these responses and perceptions in comparison to those expressed by tutors and in the context of students' views about higher education and their own and

their tutors' roles within it. The fifth and final section of this chapter reports on students' accounts of what they did in the course of collaborative learning.

WORKING METHODS: MANAGING THE TASKS

The discussion of the data so far has shown the variety of collaborative tasks on which students worked. We have seen that for tutors to invite students to work collaboratively was not the norm for this institution, although it did appear to have quite a strong culture of tutor-led small group work. The students' own views of higher education and of the ideal role of tutors and students within it did, however, manifest themes of independence, self-directed-ness and involvement on the part of students that are consistent with the requirements made of learners by collaborative approaches. The first section of this chapter has demonstrated that the autonomy offered to students by tutors was grasped. That section showed students taking decisions over the management not only of their own interaction, but also over the layout of learning spaces, over their movements within and beyond these spaces, and over the management of their own time and of varied learning resources.

The aim of this section is to supplement that discussion with insiders' (that is, students') accounts of their collective management of their own learning. These are considered in subsections on stages of collaborative tasks, on problems encountered and on structure.

Students' descriptions of what they did ranged from extremely terse summaries to quite detailed accounts. Information about what they did and how was spread over the answers to several questions in the student interview/questionnaire schedule. The discussion throughout this section is based on replies to questions 7.5, 7.13, 7.14, 7.15 and 7.16 in these schedules.

Stages of Collaborative Tasks

Analysis of these data indicate that there were six main stages which students went through in the management of the collaborative tasks on which they worked. In these stages students:

- decided their own purposes and intentions
- planned how to achieve these purposes
- implemented some or all of these plans
- plotted results, collated information
- reviewed the data they had got and where they had arrived at in relation to their initial purposes
- decided further purposes and intentions (perhaps then repeating the cycle again)

Running through these six temporal stages are common activities relating to definition, articulation, negotiation, planning, implementation and review of learners' purposes and activities.

Deciding Their Own Purposes and Intentions

The tasks devised by tutors left considerable scope for students to decide on detailed aspects of what they would do, for themselves. This applied to the shorter tasks conducted in the classroom but was a feature particularly strongly highlighted by the students working on the larger projects. To use a metaphor from architectural design, the tutors offered a "sketch scheme" of the task and left it to the students to detail the plan and specification. The students themselves became designers at this stage but they were also the task construction team - and altered the design as they went along in the time-honoured fashion of site-workers. The metaphor diverges from architecture here, because rather than having a detailed master-design which would be spoiled if those implementing it departed from its requirements, the tutors intended to permit the possibility of the students designing and re-designing their own learning for themselves.

This decision-making required that individual students identify what they personally wanted to do in the collaborative task and that they articulated this in the group. Groups also needed to consider what it was that they thought the tutor wanted them to do - a process of identification and re-articulation. And then they had to negotiate and articulate some jointly agreed definition of purposes which now would become the collaborative task (incorporating some aspects of the purposes of individual members and of tutors, shedding others). This was not a once and for all process but was continually repeated so that task purposes were re-defined in the light of experience and against the background of the remaining budget of time and other resources.

Planning how to achieve these purposes required students to specify sub-tasks, to agree when these sub-tasks needed to be done by and to decide who should do them and to identify what resources would be needed to achieve them. Some groups put greater effort into this stage than others, and the clarity of the articulation of the plan also varied. Within the same group it is possible to find individuals who clearly understood the plan of campaign - who was to do what and by when - and some who did not fully grasp it. Those who contributed most to this planning process seemed to be clearest about what was to be done. Some groups which had a minimal initial plan rushed into unplanned action, and then had to revert to a planning mode having realised that their activities were unfocussed and pulling in different directions.

Implementing some or all of those plans was one of the least taxing aspects of the group tasks, where clear plans had been articulated and jointly agreed. This stage was where students went to look at a church, performed an experiment, made their calculations, observed in classrooms, wrote a computer programme, etc. Sometimes aspects of the implementation were done by sub-groups of two or three or even by individual students. On occasions where individuals wanted to do something different from the rest of the group, this was their opportunity to individualise their work; and

for the one or two students who were not too keen on working in groups, this provided a chance to work alone (and then to bring the fruits of that work back into the groups later).

Plotting results and collating information required that students came back together again (if they had separated to perform sub-tasks) to present and then inter-collate the data, information or viewpoints that they had gained.

In this stage individual students presented oral summaries of work they had done and information they had gained; they circulated photo-copies of excerpts from articles, of computer printout and calculations; they plotted results on graph paper, on the overhead projector or on the blackboard (we have seen that sometimes tutors acted as scribes for this); and they exchanged notes or copies of notes.

Reviewing what they had done and where they had arrived at in relation to their initial purposes was a quick and easy stage for groups which had begun with a clear and well-articulated task and for which their implementation of agreed actions had produced clear and understandable results or products. For other groups this was a time-consuming and difficult stage. The material they had in front of them might be substantial and diverse and capable of starting off several different new lines of thought: which should they follow up or should they attempt to do them all? Or the material might be inadequate to their purposes so they saw with some dejection that they were not progressing towards their goal and deadline quite as well as they had hoped. The material might be totally unexpected and puzzling so that it confounded their prior assumptions or even they could not make sense of it: was their prior goal itself completely wrong and did they need to start again by re-defining the problem completely?

Deciding further purposes and intentions therefore for some groups was a stage in which they effectively ticked off earlier sub-tasks as achieved and moved on to the next on an agreed list. For

others it was a point at which they made adjustments to their initial agreed purposes; and for yet others it could entail complete re-definition of these purposes, in effect re-designing themselves a new task.

This process of decision about further purposes therefore might lead back to the repetition of the whole cycle again; or it might lead to a group decision that they had achieved their purposes (or that they would agree to stop work because time had run out, despite not achieving all of them) and therefore to the end of the collaborative work.

Each collaborative task therefore had multiple existences - not only in the minds of the different students involved and in the initial goals of the tutor, but also at different points in time as it was carried out. Some tasks grew and overflowed the bounds of what could be managed; others became increasingly tightly-defined.

The account in this sub-section is based on a synthesis of the replies of all the students who commented on the management of the tasks. Having summarised them, examples of what students said are quoted next:

"Firstly discussed what we wanted to find out, then how to go about it, then performed the assays, then plotted the results and discussed them and decided whether to move on to another aspect or repeat"

Student 1/6, Biology Tutor C

"First of all discussed what we wanted to achieve, then planned it and carried out the necessary experiments. After this we would get results together and try to interpret"

Student 5/6, Biology Tutor C

" i) Discuss results from previous session
(if not already done)
ii) Plan new experiments in the light of these
iii) Check our reasoning with [Biology Tutor C]
iv) Conduct experiments
v) Plot graphs etc. of results"

Student 6/6, Biology Tutor C

"Discussed progress, objectives, arrangements for obtaining information and the division of the work/reporting "

Student 1/4, Computer Science Tutor G

"We discussed how the project was going and made practical arrangements involving management of the project i.e. who would travel where, etc."

Student 3/4, Computer Science Tutor G

"At our meetings with our tutor we gave him progress reports and outlined future plans. We had many meetings amongst ourselves, of varying degrees of formality where we would hammer out design decisions, general plans, who did what, or just sit and work on ideas together."

Student 4/4, Computer Science Tutor G

"Discussed the project first in general terms, then in more specific terms. Attempted to make decisions"

Student 2/4, Computer Science Tutor H

"Exchanged individual programmes in individual areas of the Task after preliminary meetings had defined Task sufficiently (we thought!)"

Student 3/4, Computer Science Tutor H

"Usually briefing/purpose/sources introduction
Consideration of where to go next
Small group activity
De-briefing"

Student 2/5, Education Tutor I

"Reviewed earlier work and future plans to establish context; usually a combination of information-giving, group work and assessment"

Student 5/5, Education Tutor I

"We've got to decide how to split it up between ourselves for the presentation. Ideally we do some preparation individually then we work together. The advantage then is that we specify the area of work more particularly. We decide on specific questions we want to use the material to tackle. We're not usually as open-ended as we've been today on Morte d'Arthur"

Student Group for English Tutor P

- "1. Discuss and plan
2. Completed experiment
3. Discussed results and presentation"

Student 2/4, Psychology/Computer Science Tutor X
(for Psychology)

"We had some examples that we'd each recorded and some that the tutor gave us. They were all conversations on the topic we'd agreed, which was how people talk about troubles and bad news. We each made notes on the transcripts and then we swapped to read each other's comments. Then we talked them through and maybe listened to the tapes again where we didn't know what to do. We did some work independently and some collaboratively, and we've been sharing ideas so although we'll do individual essays the final products will be quite similar"

Student Group for Sociology Tutor Y

These accounts of what students did came in varied forms - and some of them gave rich information on the process students had gone through as they tackled their tasks. I end this sub-section by drawing attention to four instances that are worth quoting at greater length.

The first of these concerns the group working on the project on the causes of famine for Politics Tutor W. This group gave an extraordinarily lucid and detailed account of their developing framework for the task and the way they had had to redefine it in response to new information. The account below is a composite of a long group interview to which all the students in the group contributed:

"We've been meeting three times each week and we each do research in between. At the beginning we thought it wasn't an efficient way to do it. You're each doing a bit and you can't see how it fits into a framework for ages. Two of us were working on theory and one on Ethiopia and one on Bangladesh. Then we had a four to five hour long discussion on what we'd got and that changed the framework. Now we're producing a theory of the causes of famine.

We're each writing a draft version of a bit and we all go over it. Some bits in the report are more joint than others. For instance the bit on Bangladesh is mainly by a single person - we've all discussed it - and our

theory is mainly joint. When it's completed we'll be able to show where to look for the causes of famine.

Our theory is that different countries in the world are at different levels of development. The causes of famine used to be thought of as natural, but now they're thought of as social and economic. The question is, is famine man-made or natural? Initially in the information we gathered it seemed that the level of development of a society determines the extent to which it can provide social insurance against famine. You'd see famine as an extension of poverty, but natural causes take countries over the brink.

At certain levels of development you'd expect countries to cope with certain levels of disaster, via either technological means, like dams, roads and other infra-structure measures, or via economic means like welfare, soup kitchens, grain distribution, etc.

But we had to revise our theory in the light of what we learned about Bangladesh. We're now looking at regional, national and international levels to see if there is adequate provision at each. There are also U.N. resources but that's a large area in itself, we've had to leave it.

We're now thinking that for every level of development there's an expected level of social insurance. And even at high levels of development, if there's a huge natural disaster, they couldn't cope, so you'd call it a natural cause. But if there's a small disaster, that can bring famine in a low developed country and you wouldn't call that naturally caused. If this was a real project, you'd be predicting and monitoring where the next famine would come - for instance, we think in African countries with a low level of social insurance.

Then there are transitional societies, which used to have certain types of social insurance built into a barter system. But that doesn't hold in a monetary system whilst an NHS-type system, for instance, hasn't been built up.

Sources? We've used embassies, journals, newspapers, books, the town and the [institution] libraries"

Student Group for Politics Tutor W

One of the students from one of the groups working on the enzyme kinetics experiment for Biology Tutor C gave insight into the way in which the group had to change their framework in the light of the totally unexpected results of their first experiments:

"Initially our own (and I think other) groups merely set out to rush through a sequence of standard experiments, regardless of results. Then we were confused at the initial result since it was new to our experience of enzyme kinetics. This was expected by [the tutor]"

Student 6/6, Biology Tutor C

Another student in this class noted that they tried to "discuss the problem thoroughly and think of as many possible solutions as possible before fixing a course of action" (Student 2/6). Other students in this class added that different groups reached "different stages of the experiment at the same time, i.e. some worked faster" (Student 3/6) and stressed the effort put into planning aimed at spreading the workload so that more could be done in the time available (Student 4/6), for instance "one pair could do one assay whilst the other pair did something else" (Student 5/6).

The above comments raise the issue of the relationship between the work of different groups in a class. Students working for Computer Science Tutor F focussed on this feature in their accounts. In this task, different groups worked on sections of one joint task shared between the class as a whole. Thus individual groups had to accommodate the thinking and progress of other groups into their planning and inter-group communication became both essential - and the origin of the need to re-structure frameworks.

Members of one of these groups commented:

"The others are producing the running, working programme - this group is last in the chain. We get a source file with a text of the programme. They [another group] analyse it and write it in the language for the computer. Another group is looking at how many times a command is executed. So our group is producing performance figures to assess how efficient the programme is."

Student Group 1, Computer Science Tutor F

These students went on to add that:

"the group interaction between groups is defined by the spec. of the project as a whole, but it's left to us how it operates. So it will be interesting to see if we have misled each other.

Within the group we've had a bit of a wrangle about the structure we'll use to locate line numbers."

Group 2 were:

"doing the formal spec. to produce a structure table - information about the programme that tells you what the line does, what type of line it is. This goes from us to Group 1, but we also rely on an input from Group 3"

Group 4 had:

"done the development of the diagrammatic spec. Now we're half-way through the formal specification of that. Then we'll have to go to the programme text and then test it. We'll use the same output as Group 2, but we're dependent on Group 3 for chunks of programme. They give us each individual word in the programme and then we instrument it. So we don't get whole new text but manageable chunks. The output will be programmed by three groups - all the bits put together. The sequence goes: input a programme, then the programme, then the instrumented programme."

Another group in this class added that it was better for the work of different groups to be "closely inter-locking" and that their exchange of work with other groups led on to revising their own specifications and then moving on to a new section of work. "This way it's more elegant and faster" (Group 5).

One group of PGCE students spent most of their group interview describing collaborative learning group tasks that they had devised for use in their school teaching practice, as a result of the collaborative work they had done with Education Tutors J and L. They also discussed the group tasks in which they had participated for these tutors. Furthermore, these students had adopted the collaborative rationale so wholeheartedly that they now used the strategy of devising their own collaborative tasks, entirely student-

led, in working on other areas of the course. One pair had worked in their own time to prepare a collaborative task which the rest of the students carried out in small groups in a subsequent (non-timetabled) session. Another pair devised a short buzz group task for their colleagues while another pair devised a simulation exercise for the rest of the group.

Some of the students in this group also took Education Tutor N's module and so had many classroom-based opportunities to develop collaborative working skills. These students commented that both working in collaborative groups themselves on self-defined learning tasks and using collaborative methods in their own teaching were "second nature now".

Problems Encountered

The overall message from students was that the collaborative learning in which they had participated had been a success. Sometimes they recommended modifications to tasks but in all but a few instances they gave an affirmative answer to the question whether tutors should use this collaborative task again. However, overall ratings of success did not mean that students had a trouble-free run at their collaborative work. This sub-section examines some of the problems that were encountered.

Tutors, of course, had also noted some problems. Psychology/Computer Science Tutor X for Computer Science had been disappointed with the outcome of the project team this tutor had supervised. Biology Tutor D was disappointed that only one group had continued their project on the world food situation through to final report stage. Earlier in this chapter, in the section on students' own views of collaborative learning, it was also noted that three students were sufficiently dissatisfied with their experience of collaborative working to rate it "useless, easy, not enjoyable, not interesting" (see Figure 61). What were the causes of such dissatisfaction?

Several students noted that they did not feel they had enough

time to complete their work. For several of these this was disappointing precisely because they found collaborative working worthwhile. One of these would have preferred to work alone (Student 1/4, Psychology/Computer Science Tutor X for Psychology) while another student of the same tutor thought it was the task itself that was "silly and uninteresting" and that there was not enough time for proper joint working. One Group for Biology Tutor C would have liked more time - but also recognised that the more time they had the more they could have generated new ideas for additional experiments - and so on ad infinitum.

Several individual students working on the projects for Computer Science Tutors G and H and for Psychology/Computer Science Tutor X (for Computer Science) experienced some problems. These concerned time (again), problems of working with other individual members of the group, that is, personality clashes, and problems in defining the scope of the task and the sharing of work for the sub-tasks. These were large-scale projects conducted over a whole vacation and students were not always clear about what they should do and in what order to achieve the final product.

Student 2/4, for Computer Science Tutor G thought that the aims of the project were too vague and that the tutor had not offered any logical steps for how it should be achieved. Another student in this team thought that the project was initially unclear but "as time went on things became clearer" (Student 3/4). Student 4/4 gave more details. The group found it difficult to share out the work:

"at first because it was difficult to share out individual tasks. And then later it was realised that some people had been given tasks which were too large or difficult for them to handle, and rather than tell the rest of us they tried to hide the fact"

This student added that:

"our goal was clear, how we got there was completely up to us - there was minimal direction. Resources were completely adequate. However we failed to achieve our goal - the project had to be left unfinished and we were told afterwards that it had not been seriously expected that we would finish. This was very disappointing."

Each of the students replying from this group thought the project had been "quite successful", given the time available to them; two of them thought that the tutor should use this task again, modified by their experience; two thought this task was altogether too ambitious in the time available and that the tutor should design a new collaborative task for future students.

The team working for Computer Science Tutor H experienced problems of the task being too large for the time available. Also:

"The group structured the task itself and divided out the individual tasks. This created problems as the task unfolded:- what seemed a good division of labour initially turned out to be not so good later on. The unknown factors that developed made the initial allocations unrealistic"

Student 2/4, Computer Science Tutor H

Another student in the group commented that sharing out the work had been:

"Pretty difficult - preliminary task analysis is essential, but easier said than done; we wondered on more than one occasion whether we had gone down the right path or not! We concluded we would approach the Task differently with the benefit of hindsight!"

Student 3/4, Computer Science Tutor H

It should be emphasised that just as overall reports of success did not mean that collaborative working was problem-free, so also encountering problems did not necessarily detract from the value of the collaborative experience. Problems were there to be solved; groups got themselves into fixes and (in the main) got themselves out again. The student just quoted above added that "we felt competent to overcome any snags, conceptual difficulties, etc." and that "group determination and interest was good". One of the things this group (and hopefully their tutors) learned was that "the Task as initially defined by the tutor and understood by us was too ambitious".

Nevertheless:

"the experience of group work was useful - both for learning different approaches AND overcoming differences of opinion, personality etc."

Student 3/4, Computer Science Tutor H

There are echoes in these comments direct from students of the problems with large-scale collaborative projects reported in the published literature and discussed in the last section of Chapter Two. Essentially these comments and reported problems lead back to the issue of structure. The last sub-section, below, of this section on managing the tasks takes up this theme.

Structure

It seems clear from the discussion of the way students managed their tasks that task structure was intimately connected with the fruitfulness of collaborative learning. I use the word 'fruitfulness' here rather than, say, 'success' because students could experience immense problems along the way and still feel that their work had been successful; and they could feel that it had been fruitful, in terms of all they had learned and the problems they had solved, even if they had not quite achieved the finished product at the end that they had thought they would at the outset. Learning to frame an achievable goal within the constraints of available time, resources and the competences of the members of the team was thought to be worthwhile. Even if this learning came towards the end of the collaborative task ("we would approach the Task differently with the benefit of hindsight!" Student 3/4, Computer Science Tutor H) it was "an interesting experience" (Student 3/4, Computer Science Tutor G) and the lessons learned would be useful in future, for instance in providing "practice in working with others on a large assignment" (Student 4/4, Computer Science Tutor G) and in trying "the sort of close collaboration demanded in this type of project with people I would not have chosen" - which this same student found interesting to do.

Figure 11 in Chapter Two set out a series of continua, derived from analysis of the literature, which summarised the main features of the potential structures of collaborative tasks. It was suggested there that the combination of high social and procedural demands with low cognitive demands was likely to be a recipe for a not

particularly fruitful collaborative learning experience. This observation from the literature is borne out by the accounts of some of the students working on the largest-scale projects in these data.

However the strongest point to come out of the examination of the way students managed their progress through tasks is that the structure of a task altered as the groups worked through it. That is to say that tutors offered a structure at the outset (which might or might not be capable of holding throughout the task - that is it might be more or less helpful, better or less-well defined for a specific group) but in the course of their working students constructed for themselves their own structure, or, more accurately, successive structures. We have seen that "the task" included many sub-tasks - decided by the students themselves. These little universes of task plus sub-tasks themselves changed through time as the students encountered surprises, problems, found some individuals had not done the work needed of them at a given stage, and so on.

Different groups (whose circumstances were, of course, different) were more or less successful in devising new structures for their work. The PGCE students working for Education Tutors J and L became such dab hands at this that independently devising collaborative tasks for themselves became a habitual way of framing their own learning in any area of their course. In preparation for a tutor-led seminar they devised and carried out their own collaborative task; they did the same as a way of sharing understandings about coursework areas.

The groups working for Biology Tutor C had to restructure their work in response to the unexpected behaviour of the enzyme they were studying. This surprise was built into the task by the tutor, but the courses of action taken by groups in response to these surprising results varied, under their own control. So these groups within a class that had begun by working on the same task very soon found that they were working on different ones - the differences being created by the differing experimental results they obtained and the decisions they then took about what their next steps should be.

The group working on the causes of famine for Politics Tutor W found it took "a four to five hour long meeting" to restructure their

task, an effort that became necessary in the light of data that did not fit their first, developing framework, leading them to create a new theoretical framework which in its turn required a new set of further sub-tasks to be carried out by the students.

This process of "specifying the area of work more particularly" (Student Group of English Tutor P) in which "we would hammer out design decisions, general plans, who did what, or just sit and work on ideas together" (Student 4/4, Computer Science Tutor G) was done in two sorts of meetings, within the student groups and sub-groups and between the groups and their tutors. Students working on the larger-scale projects talk of meeting two or three times a week for periods of eight to twelve weeks. Between these meetings they did work as individuals or as sub-groups. This work (its report, review, synthesis) provided the heart of the agenda for the next group meeting. Sub-groups themselves might meet in between the main group meetings; and in the case of one of the more ambitious team projects, work between main team meetings "involved interviewing and management of all levels. We split up into smaller groups of two or three in order to cover all five B.R. Regions" (Student 3/4, Computer Science Tutor G).

Meetings - their number, their nature, their differentiation as involving part of a team, all the team or the team and the tutor - were both occasions when the structure of the task was defined and redefined and also part of the structure of the task itself. The group working on the British Rail project for Computer Science Tutor G had six meetings with their tutor over the twelve week period in which they worked on their project, in addition to meeting two to three times a week as a team and on innumerable occasions as a sub-group. One group member described this period as one long meeting for the whole of the three months. The other two post-graduate groups working on the Computer Science Team project had only three meetings with their tutors over the whole period in addition to meeting as a team weekly (in a couple of the weeks more frequently than this to deal with problems). These were the two groups which had the most difficulty in devising a satisfactory structure for their work, although the scale of their projects did not look (to an

outside observer) to be greater than those which students for Computer Science Tutor G, Biology Tutor D or Politics Tutor W coped with.

The indication that such meetings are important is a reminder of the importance of dialogue, for the task structure is created (or not) as students talk together. It is also a reminder of the importance of the work that they do between meetings, which provides the practical experience or information whose consideration and reworking leads to new insights, including insights about what they should do next. Action and interaction are the twin bases of collaborative learning. The inter-relationship of these two aspects turns out to be an interesting example of the relationship between theories and practices. Where groups did not meet to talk and plan often enough, the action component of their work ran away with them. Where agreed actions had not been carried out by group members between meetings groups found it difficult to frame their next steps, lacking data, information, viewpoints, etc. to synthesise and review. The successive structuring of the task grew out of this inter-relationship between students' actions and their interaction in the group meetings. The interposing of regular meetings with the tutor into this cycle of student-led activity provided the opportunity for further clarification and re-definition of the structure of the students' work.

In summary, some tasks in this data set were short, clearly structured, with well-understood initial aims communicated from tutors to students and with possibilities for student groups to re-work these tasks and their structures to their own purpose as they went along.

Others were larger-scale and much less clearly structured, and on occasions students were unclear as to whether tutors were more concerned with the process of collaborative working or with its products. Some student groups nevertheless forged their own structure for their work in the course of many meetings. Two groups met less frequently, had less frequent consultation from tutors and allotted group members tasks between meetings which were longer than they could achieve. These groups had a kind of structure for their

work but it was a structure like a baggy suit; they experienced more difficulties and expressed more dissatisfaction with these difficulties, than other groups in the data set.

CONCLUSIONS

This chapter set out to provide access to the students' views of and responses to collaborative learning. It was noted that students' attitudes and responses form part of the context for any tutor's use of collaborative learning and that in the final analysis collaborative learning is made up of what students do and say together.

The examination of these data has shown students as agents in the management of their own learning, disposing of learning resources, taking independent decisions about their movements out of the classroom or beyond the campus and managing their own discourse. The collaborative classroom proved to be a place of movement, of many voices, of comfortable silences and of actions, all orchestrated and decided by the students themselves. The collaborative classroom was also shown to be 'elsewhere', wherever the students went out and about if their tasks took them beyond the campus.

Tutors facilitated this autonomous activity on the part of students by handing over responsibility for the management of learning to the students themselves. When they were present in the collaborative classroom they were unobtrusive, not exercising the rights to spatial position, to discourse management or to direction of activity which adhere usually to the tutor role.

Students had acute understandings of the reasons why their tutors were using collaborative learning and students' and tutors' accounts of their collaborative tasks were in harmony. Students' own views of collaborative learning were generally positive and could be set in the context of views about the purposes of higher education and the roles of tutors and students that were highly consistent with its use. Finally the chapter has shown how the use of collaborative learning provided the chance for students to express and pursue their

own learning intentions as independent agents. From the interplay between their actions and their interactions they forged their own tasks, developed structures for their work and became the managers of their own learning.

CHAPTER SEVEN

KNOWLEDGE, POWER AND COLLABORATION IN LEARNING

"If the method was more widespread it would make it more difficult for us to exercise authority as teachers. We'd need to help and not to tell, to turn ourselves into a resource."

(History Tutor Q)

INTRODUCTION

The Shorter Oxford English Dictionary on Historical Principles traces back the meaning of the verb 'to collaborate' to the late latin verb 'collaborare', formed from the prefix 'col' and the verb 'laborare'. It gives the definition: "to co-operate; esp. in literary, artistic or scientific work. Hence **collaboration**; **collaborator**, one who works in conjunction with another or others."

At the heart of the word are implicit statements about both power and production. For to work in conjunction with (to labour together) is not the same as to work for someone else. Working in conjunction with implies both choice and a relationship of equality. And the product is given as "especially" literary, artistic or technical work: that is, there are intellectual fruits to this joint labouring. Collaboration therefore is more than co-operation; it is to co-operate in the production of intellectual work. Accordingly, any discussion of collaboration in learning needs to encompass both knowledge and power explicitly in its purview.

The tutors in this study were concerned about both these matters. They were very much aware that the tutor's role as allocated in the tutor-led classroom gave them special powers. But these special powers brought with them the special problem, that their exercise hindered the achievement of student participation. The problem went deeper even than this alone for these tutors would

not have been satisfied, for instance, simply by an increased proportion of student utterances in tutor-led sessions. The tutors wanted the students, not just to supply more responses to gaps in tutor monologue, but to use their own voices to engage with each other in learning and in developing understandings. 'Working together' was an end in itself. So also were the production of knowledge, the experience of autonomy, the development of a critical and reflexive stance and direct rather than second-hand experience of solving a problem or dealing with a case.

Thus the idea of using collaboration as a method arose from considerations of power in teaching situations and of the implications of forms of power for forms of knowledge and understanding. These latter considerations applied both to knowledge of the subject matter and to the students' knowledge of themselves. The underlying rationale was transformative - that in experiencing learning collaboratively students would come to view both themselves and what it is to know something differently. And there was a generative purpose, that the transformation would not be a single, isolated incident but would prepare for a lifetime's work, in the fullest sense, both intellectual and personal.

The aim of this chapter is to use the work presented so far in the thesis as the basis for an examination of what the use of collaboration means for knowledge and for power in higher education teaching. This is done in five main sections: a discussion of the link between collaboration and conversation; the extension of this line of thought to the idea of the speaking voice and the dialogic nature of understanding; a discussion of the implications of learners' decisions about the use of space, time and resources; an evaluation of the nature of the tutors' powers in collaborative learning; and a realistic appraisal of the degrees of freedom which tutors and students require to use collaborative learning and which they create in its course.

COLLABORATION AND CONVERSATION

The subject of this thesis has been collaboration in learning. It has sought to examine what collaboration in learning might mean in practice, to establish what tutors are trying to achieve in drawing on this approach, to examine its role in the life of an educational institution and to explore the responses of students to the experience and the uses which they make of it. It has become clear in the course of these discussions that there is an important link between the establishment of collaboration in learning and the existence, in higher education, of certain forms of conversation. Although these conversations have not been in themselves the prime focus of interest of the thesis their presence has been like a running stream in a landscape. Whether one attends or not to the sound it makes, its existence shapes the features in view by supporting particular types of vegetation and through the structure its channel imposes on the terrain. If this same terrain also shapes the stream, (as, for instance the difference between a slow-running chalk stream in a southern downland valley and the peat-fed waters of a mountain waterfall) this is a reminder of the influence of classroom powers upon classroom communication.

Quite simply collaboration cannot be achieved without conversations. To be sure there are other forms of communication which also support it. In the educational settings with which we are concerned these may include writing, the use of mathematical symbols, the models, diagrams and drawings of architecture and engineering and the information processing facilities of the new technologies.

But a learning task which students tackle collaboratively requires that they make educational conversation together in order to achieve that goal. As we have seen in Chapter Six, they have questions to refine, plans to make, agreements to forge, tasks to share, contributions to express and reports to construct. As we also saw, having provided a prior structure the tutors withdrew from these conversations. The plans, the agreements, the tasks, the distribution of work, the contributions, the reports were the students' own joint constructions.

Far from the orchestrated discourse of the tutor-led seminar or tutorial and far from the primary monologue of the lecture, these students had to improvise as they went along. In these conversations no-one else provided a monologue to which students could listen or offered a structured discourse with clearly signalled gaps in which students occasionally could make suitable responses. Until the students opened their mouths the opportunity for collaboration devised by the tutor remained suspended, an invitation offered but not yet accepted. At the moment when they began talking constructively together - however tentatively - about what the task meant, how they should tackle it and what they should do, collaboration in learning also began. The sound of this collaboration was the sound of student voices talking about shared intellectual ends.

However, conversations themselves cannot be achieved without collaboration - about topic, about turn-taking, about commencement and termination, for instance. We saw in the first chapter that such collaboration is so intrinsic to our interactional world that it is manifested even in pre-verbal exchanges between parents and babies. We also noted in Chapter Six that it is a characteristic of conversation that it is 'talk between equals', talk jointly constructed without the prior allocation of fixed roles and responsibilities to any particular participant(s). Whereas students may submit to (or rebel against) the discourse rules of tutor-led teaching, in collaborative learning they construct them - not once and for all but changing in different contexts. Nor is this joint construction ritualistic or for form's sake. The conversations are purposive, the learners' voices are meaningful. In devising a collaborative task the tutor gives to students not only the opportunity to converse but also something to talk about, something to plan, something on which to work together and something to produce. In this way collaboration is intimately linked to conversation and vice versa. The achievement of collaboration in learning requires that students are given and that they take, a voice. "What we are looking for, ideally, is the personal voice" (Music Tutor U).

Light can be shed upon the intimate connection between conversation and collaboration which is documented in the thesis by returning to Vygotsky's theory of the social formation of the mind, already introduced in Chapter One. A basic assumption of Vygotsky's work concerns two different lines of development intrinsic to any general process of development, namely:

"the elementary processes which are of biological origin, on the one hand, and the higher psychological functions, of socio-cultural origin, on the other"

(Vygotsky, 1978, p 46)

Development occurs as a function of transitional systems lying between these two, a process which Vygotsky referred to as "the natural history of the sign" (ibid, p 46).

In this shift from and inter-play between signal and sign the relationship between verbal signs and activity also changes. Whereas initially "speech follows actions, is provoked by and dominated by activity" later "the planning function of speech comes into being" and "now speech guides, determines and dominates the course of action" (Vygotsky, 1978, ibid, p 28).

The social relations in which the individual exists play their own part in the unfolding of this process. Vygotsky suggested the existence of "zones of proximal development" (1978, ibid, p 90) understood as internal developmental processes which operate as a result of interaction and co-operation with peers. Sharing experience and joint action with others helps a learner to "become what he not yet is" (Leont'ev, in conversation, cited Wertsch, 1985, p 67). Wertsch comments (p 77) that Vygotsky incorporated the writings of Marx and Engels into this theory, with their argument that the process of the development of consciousness, and therefore of becoming human, is encouraged by the process of labour. Specifically, for Vygotsky, the development of the individual is in relation to others, through co-production of knowledge; that is, mastery is produced by the use of psychological tools, the strongest of which is speech in social relations.

To say that 'conversation and collaboration are intimately related' is to exemplify a more general statement that action and

meaning are related. In their introduction to Wertsch's book Zinchenko and Davydov comment:

"It may be appropriate to make one suggestion; that is, it is worth paying more attention to Vygotsky's position that 'meaning is the internal structure of a sign operation' (1982, p 160). Zaporozhets expressed this idea much more strongly, calling meaning the crystal of action. The solution to the problem of the external and internal lies in this idea: action and meaning (sense) are two sides of a single coin"

(pp ix-x of Wertsch, 1985)

This is evidenced strongly in the data presented earlier. Meaning was given to the students' actions by virtue of their learning purpose: "integrating knowing and doing" (Music Tutor U). At the same time the actions carried out created new meanings, namely the complex new understandings co-produced during the course of the collaborative group work. As many of the tutors commented, the work produced by the groups was qualitatively different from the work that students produced when working alone. It has become a commonplace of social psychological commentaries on experimental studies of the productivity of small groups to evoke the Gestalt formula that the whole is more than the sum of its parts, in explanation of the common phenomenon that small groups are more productive in problem-solving in experimental settings than the same number of persons working alone. In 'brainstorming' sessions, for instance, six people working in a group produce more ideas than six people working alone.

However, it may be misleading to conceive of the actions and utterances that individuals contribute to collaborative learning groups in live field settings in any way as elements that can be added together - even if this process of addition is thought of as itself bringing an added value to the emerging whole.

The power of collaboration to aid learning (the power of joint action to crystallise new meanings) is better explained by reference to the differences between constituent elements, differences which cannot, in their nature, be added together but which can stand together and can speak to each other. The setting for such inter-play between differences is dialogue; the means of expressing them is by voicing them. The next section expands on this theme and

explores the conditions for and the consequences of the possession by the learner of a "speaking voice" in educational dialogues.

DIALOGUE AND THE SPEAKING VOICE

"You can't fully promote the process of discovery without other people" (Sociology Tutor Z). At first sight this statement cuts across a cluster of everyday beliefs about the lonely inventor and the isolated genius - Newton sitting alone beneath his tree, Pasteur alone with a culture of mould. We have seen that the teaching practices of one department in the case study institution (it may as well be revealed that this was the Economics department) were predicated upon completely the opposite notion, namely that only work which students produced independently could be accepted as proper academic work. Co-operation was viewed there as a matter for disciplinary action. But the tutors and the students in the study, with a few qualifications, were in agreement with Sociology Tutor Z. Even where they found working with other group members difficult they found it a profitable experience to find ways of coping with these difficulties. But more than this, as Chapter Six showed, students found working with their peers a setting in which they generated new ideas and had the freedom to develop them for themselves. "It extracts the best from students" (Student 5/5, Education Tutor J).

What is it that is offered by "other people" to the process of discovery? Chapter One discussed this with reference to the interplay of viewpoints that may be expressed in educational conversations; and with reference to the requirement which speech for others brings that a learner formulate more precisely what otherwise might be left as hazy hints in inner speech for oneself. These two themes (attributed there largely to Piaget and Vygotsky) can be strengthened by widening the frame of reference to include Bakhtin's conception of "the speaking voice" (Bakhtin, 1981) and his theory of the part played by dialogue and monologue in the social fabric of life and art.

Bakhtin's work on the 'dialogic imagination', conducted in the

early period of his life (Clark and Holquist, 1984) has been applied, in recent years in Western Europe, almost exclusively to the study of literature. The originality of his analysis of 'polyphony' in the novels of Dostoevsky and Dickens, and his use of the idea of 'voice' to explore what characterises a novel and what characterises poetry makes it unsurprising, once available in translation, that these ideas should have been seized on in current European and American literary criticism. In its own country and at another time, they were also an influence on the work of Vygotsky, initially on his work on the psychology of art but subsequently also drawn on in his formulation of the idea of inner speech. Bakhtin outlived Vygotsky by forty one years but the difficulties for intellectuals of the periods of Soviet history which he survived (not unscathed), the possibility that he may have had work published under the names of friends in his circle and the slowness with which this work has been translated mean that the shape and full scope of his work is only just becoming apparent to non-russian readers. I am indebted to James Wertsch's succinct summary (Wertsch, *ibid*, 1985, pp 226-230) for having sent me off on a fruitful exploration of Bakhtin's notion of dialogue.

The concept of "dialogicality" is essential to Bakhtin's work. This concept of dialogue was predicated upon a view of all discourse as situated in and mediated by context. But instead of an oppositional, that is, dialectical, relationship between the views that inhere to different positions within a context, Bakhtin suggests that they combine in dialogue: "not the dialectic either/or, but a dialogic both/and" (Clark and Holquist, 1984, *ibid*, p 7).

Bakhtin based this underlying relativism on the observations that speakers, at the point of speaking, occupy a unique and unreplicable position in relation to other speakers both spatially and temporally. Therefore the words of each speaker bring with them assumptions and meanings tied to the moment and to the position from which they are spoken, creating in their turn aspects of a new context for the words of the next speaker. What is more, words can be used to "comment on themselves" in contrast to "mute objects, brute things" (Bakhtin, 1981, p 35) thus creating the possibility of

metalinguistics.

The words which voices speak therefore come to a listener carrying as baggage the position from which the speaker speaks, the speaker's intentions, the speaker's history and the nuances of the immediate past of the discourse.

"The word [...] exists in other people's mouths, in other people's contexts, serving other people's intentions [...] Language is not a neutral medium that passes freely and easily into the private property of the speaker's intentions; it is populated - over-populated - with the intentions of others."

(Bakhtin, 1981, *ibid*, pp 293-294)

Coming to know the words of others is achieved through dialogue in which knowledge of the relationship between the self and the speaker is crucial. A "dialogic penetration into the word ... opens up fresh aspects in the word" (p 352). This occurs through interaction which brings more and more features of the other's word into understanding and into a position where it can be related to the listener's own words and so create new discourse. Bakhtin describes this process with metaphors of struggle, slowness and difficulty - the difficulty being that of not taking over other's words wholesale but rather of "interanimating" them with other themes that derive from one's own internal discourses:

"One's own discourse is gradually and slowly wrought out of others' words that have been acknowledged and assimilated and the boundaries between the two are at first scarcely perceptible ... It is not so much interpreted by us as it is further, that is freely, developed, applied to new material, new conditions; it enters into interanimating relationships with new contexts. More than that it enters into an intense interaction, a struggle with other internally persuasive discourses."

(Bakhtin, 1981, *ibid*, p 345)

Bakhtin argues that the significance of the speaking voice and its words for ethical, religious and legal discourse is great. "An independent, responsible and active discourse is the fundamental indicator of an ethical, legal and political human being" (p 349). Challenges, provocations, interpretations and assessments of the

discourses of speaking voices make up the fabric of ethical, legal and political life. To be a human being in the fullest sense is to have a speaking voice, an active discourse in these domains.

To be the possessor of a speaking voice does not mean simply to take one's turn among others who speak. It means that speakers become engaged in a reciprocal process of "selectively assimilating the words of others" (ibid, p 341); Bakhtin calls this process 'interanimation' while Todorov (1981), commenting on Bakhtin's work, characterises its product as "inter-textuelle", creating "la compréhension répondante" (pp 7-8). To possess a speaking voice entails that one's own voice must be heard, for dialogue consists of the inter-play between the words of different speakers.

Bakhtin applied these ideas initially to studies of the novel, characterising prose art as, quintessentially, a form which captures and provides for the interweaving of speaking voices. Nor do these voices speak only in the elements given as utterances. Bakhtin analyses the prose of Dostoevsky and Dickens to show how the novelist uses narrative to carry different voices (1981, ibid, p 306), achieving this through hybrid constructions which syntactically may appear to belong to a single speaker but which are in fact double-voiced, containing "two utterances, two speech manners, two styles, two 'languages', two semantic and axiological belief systems" (1981, ibid, p 304). This analysis produces the idea of the polyphonic novel, best exemplified in the work of Dostoevsky. By contrast, the task of the poet is to shed completely the properties of words that are associated with another's meanings, with another's intentions or with another's history in order to construct a discourse that is the poet's own. Poetry can thus be characterised as monologic - but here the term monologue takes on a special meaning over and above that in its everyday use (which is the way it has been used in the thesis so far) as indicating only chunks of speech from a single speaker. For within Bakhtin's framework as we have seen, what at first sight looks like authorial monologue (Dickens' narrative in Little Dorrit, for instance) may incorporate several voices and be intrinsically dialogic. In order to make a monologue, in this specialist sense, one must "take the word and make it one's own" (1981, ibid, p 293).

This implies that the construction of monologue, in the artistic and in the social sense, grows out of the experience of speaking in dialogue. Vygotsky drew on the work of the Formalists (see Wertsch, 1985, pp 81-88) to argue that "monologue is a higher, more complicated form of speech, and of later historical development than dialogue" (Vygotsky, 1934a, p 299, cited by Wertsch, 1985, p 87, direct from the Russian). Poetry is a specific form of monologue, which is a text produced by one person without reference to another; whereas dialogue is a text that is jointly produced by speakers who refer to each other. The novel is the product of raising this inter-reference to an art form. The novelist's art lies in imaginatively constructing the voices of others, the poet's in excluding them. One can extend this idea to suggest that in social rather than artistic life the task for each individual is to maintain a balance between the construction by the poet in us all of a personal voice that has shed the words of others; and the construction of the self as a social being actively participating as a speaking voice (which means as a listener to others' words) in social discourse.

There is one final aspect of Bakhtin's thought that should be set out before considering the way these ideas can be extended to the discourse of collaborative learning. Bakhtin makes an important distinction between what he calls "authoritative discourse" and "internally persuasive discourse". The distinction between the two exemplifies the significance of the relationship between speakers. Authoritative discourse does not merge with other discourses; it comes as a given; and its meaning is accordingly difficult to alter or develop since it is not available for 'inter-animation' with others' words or other discourses.

"It [i.e. the authoritative discourse] enters our verbal consciousness as a compact and indivisible mass; one must either totally affirm it, or totally reject it. It is indissolubly fused with its authority - with political power, an institution, a person - and it stands or falls together with that authority"

(1981, *ibid*, p 343)

This is contrasted with internally persuasive discourse which is "as it is affirmed through assimilation, highly interwoven with 'one's own word'." (1981, *ibid*, p 345). Speakers are able to interpret and freely develop internally persuasive discourse and to apply it to new material.

"More than that, it enters into an intense interaction, a struggle with other internally persuasive discourses. Our ideological development is just such an intense struggle within us for hegemony amongst various available verbal and ideological points of view."

(1981, *ibid*, p 346)

Because of this capacity an internally persuasive discourse is open in ways that an authoritative discourse is not: "this discourse has the capacity to reveal even newer ways to mean" (p 346).

These key features of Bakhtin's thought can be summarised as the following: the idea of the speaking voice; the dialogical nature of the development of consciousness; the distinction between the dialogic and multi-voiced imagination of the novel (polyphony) and the monologic nature of poetry; the concepts of authoritative discourse and internally persuasive discourse, which themselves highlight the importance of the relations between speakers for the possibility to construct a new joint text carrying new meanings. I now want to apply these ideas to a context not considered by Bakhtin (although glancingly referred to by members of his circle) namely educational discourse and more specifically the discourse of collaborative learning in higher education .

The types of educational conversations which the research discussed in the first three sections of Chapter One suggests as typical of the tutor-led seminar or tutorial can now be seen as examples of the authoritative discourse of higher education. The meaning of that discourse comes "compact and inert"; we might use the word "pre-packaged" as a metaphor from our time. It is not available for the student to re-work because it is already complete. The learner may accept it whole or reject it but cannot develop it freely. Its authority cannot be separated from the authority of the institution (which constitutes classrooms as places where tutors

speak authoritative discourse) nor from the tutor him- or herself. When Chemistry Tutor E in response to a separate questionnaire for another researcher, said, of students in tutorials, "it's my job to dominate them", this was a terse but realistic summary of the powers conferred on the authority that speaks in the authoritative discourse of the tutor-led small group.

When tutors pause in authoritative discourse to seek responses from students this is an inappropriate thing to do in this context. Students can accept or reject but they are not in a position to re-work, develop or forge new meanings. They are not, at that point in a relationship to the (authoritative) speaker which permits this. They are not themselves speaking voices which can shape the discourse because the discourse is not structured in a way that would permit them to be heard as voices. That would require that they could challenge, provoke, interpret, assess, establish boundaries to the discourse, establish its form, shape its activity. The chance to respond which is proffered by the tutor in tutor-led seminars and tutorials is not the chance of "inter-animation" but is to be animated by the tutor. Tutors may believe indeed that they are offering students an opportunity to use a speaking voice; whereas what they are offering in reality is a bit part in an authoritative discourse, a pre-fixed contribution to a text that is not open to change in its structure and purposes. The tutor quoted in Chapter One as noting that "my manner discourages it although my words encourage it" (p 42) has captured this contradiction. From within this framework one would not expect that tutor-led seminars and tutorials would ever produce the hum of the learner's speaking voice. The search for the social psychological or technical fix (maintain eye contact, sit in a circle, tolerate silences) will not result in more than marginal quantitative alterations. The underlying structure of the discourse is not changed by such techniques.

The lecture does not set out to provide a gap for the learner's voice to fill. It is understood by its performers as a monologue - in the everyday sense of a long stretch of unbroken speech by one person. It too is clearly authoritative discourse, with its advantages deemed by its advocates precisely to be that it transmits

something whole for the learners to carry away. Lecturers, however, can be judged upon occasion to be novelistic in the sense that the inspired and inspiring lecturer juxtaposes many voices which interanimate each other, using similar prose devices to those which Bakhtin characterises as producing heteroglossia in the novel, that is, carrying another's speech - double voicing - perhaps in another's language - double languaged representations.

Other lecturers may be thought of as aspiring to poetry, honing and refining their own single concentrated voice, stripped of all meaning that belongs to others. Personal reflection suggests that one is most likely to do this when lecturing to successive years of students on a topic of deep personal interest, perhaps pertaining to one's own research. Over the years one polishes, comes to terms with and incorporates new work, one's own and others, and out of this inner dialogic process for oneself produces the masterwork, one's own unique word on the matter - a word which is now so individualised that it offers no purchase to the questioning of others and no longer has any capacity to adapt itself to them. Jane Abercrombie's point (pp 30-31 of Chapter One) about lecturers overestimating what students gain from something which the lecturer "worked so hard at, organised so clearly and delivered with such precision, punch and charm" takes on a new significance here. The course of a successful academic career is in some ways the progressive refinement of this single voice (Bourdieu, 1984).

The construction of a poem is the task of an individual. It requires a process of exclusion of all the meanings that are brought to the individual by the voices of others; it is a search, amidst heteroglossia, for the sound of the individual's own authentic voice. The task for learners is somewhat different; their need is to seek out and interact with - struggle with - other voices; to speak; to hear; to be heard; and in reflecting on and assimilating some of what is said, to speak again. This process requires other voices; not authoritative voices which either must be accepted or else transgressed as if breaking a taboo; but voices which are mutually engaged in a similar process of inquiry and construction.

The tutors in this study provided in their use of collaborative

learning a context in which the voices of learners could engage, dialogically, with each other. They provided a context which gave the students a speaking voice, where in the course of exploring each other's words they could construct "newer ways to mean". The structure of this discourse was not fixed, but open. By removing themselves as the authoritative voice tutors opened up the discourse between students to the multiple viewpoints, directions and values which characterise internally persuasive discourse. They created an arena in which individuals could pose and juxtapose their own words with those of others. Nor were the voices in these polyphonic classrooms solely those of the students as individuals. Tasks devised by the tutors brought in other voices, other questions and views not just in the task questions (although certainly here) but also voices that spoke in the settings where students carried out field work (for instance, the voices in school classrooms which students observed) and in the documents which students were offered or were asked to collect as materials for joint study and reflection.

Bakhtin's work on the speaking voice gives a new significance to the conscious decisions by several tutors to share out task materials in such a way as to provide each student in a group with a unique point of view, with something to speak about - (see pp 222-223 of Chapter Five and Appendix 8). No one of these student speaking voices had any prior claims to the right to shape the discourse or to be heard in any way differently from the others. The students could speak, could hear, could be heard, could speak again, could cite other voices. The outcomes of this process were described in Chapter Six (see Figure 56) as prolonged shared conversations but may now better be described as texts co-produced by the students. The circumstances for their co-production come close to satisfying in an educational setting the conditions which Habermas (1974) set out for the achievement of the 'ideal speech situation' (truth or validity as the object of discussion; no force exercised other than the force of the better argument; all motives excluded other than the motive to discover the best argument for what may be called valid and true; and all participants having the same right to initiate and perpetrate discourse, and all to have the same right to organise it through

expressions of attitudes, feelings, etc.. McCarthy, 1973, p xvii). Habermas's formulation also emphasises a feature which the examination of these data has shown to be crucial. This is the role in dialogue of action, already hinted at earlier in this chapter by the brief discussion of meaning as the crystal of action. The next section considers in more depth the significance of the learners' actions for the learners' powers.

EXERCISING THE LEARNERS' POWERS

Ira Shor has suggested that it is an "irony of consciousness" that makes liberating education possible. "By studying our lack of freedom we can learn how to become free" (Freire and Shor, 1987, p 14). But the different message from the work carried out for this thesis is that there is another route to educational liberation, namely the exercise of the learners' powers. The fact that these powers may be exercised over small matters make them no less significant for the creation of educational freedoms. As Inglis has commented,

"stepping off the world stage on to the smaller, friendlier platforms of everyday necessity, it is perfectly possible to speak on these of goodwill and some appropriate knowledge of human mutuality, of the justice, loving-kindness, equal freedoms and duties, prevention of avoidable want and resistance to cruelty which are its material definitions"

(Inglis, 1985, p 12)

Upon the smaller platforms of everyday educational necessities, collaborative learning offers the possibility of human mutuality, of equal freedoms and duties, of justice and, I would argue, of an appropriate measure of loving-kindness. These possibilities arise through the exercise of the powers of learners - not as sovereign and competitive individuals but as co-producers of knowledge.

In a succinct but penetrating study of freedom, Zygmunt Bauman (1988) has argued freedom is a social and historical creation pertaining to the difference between individuals and as an opposite

to some other condition. Freedom is a social relation ("For one to be free there must be at least two" - p 9) expressed by differential statuses which designate some individuals as free - or more free - than others, such designation making its own contribution to the further reproduction of differentiation and thus acting as an intrinsic mechanism of the stable working of a social system. Bauman further argues that the prime form in which freedom is expressed in western society is in the freedom to consume; and to consume not only goods in the market but also to possess symbols of difference which mark out an infinitely self-extending ladder of covetable social positions.

To be poor and in need of welfare is to become a failed citizen, a "flawed consumer", whilst successful consumers are "patterns of the good life" (p 93). Bauman suggests that the strength of the consumer-based social system is that it has rendered invisible all alternatives except the bureaucratic oppression of communist states, which offer citizens neither 'exit' in the form of the freedom to buy commodities or not, nor 'voice' in the form of freedom to be active in political and civic life.

The choice between the seductive draw of the chimerae of consumerism (in which the desired object is no sooner attained than it is replaced by another desire) and the bureaucratic exercise of power over minutiae of individual life and thought is a poor arena for the exercise of the potential powers of a would-be active citizen. The citizens of educational systems are not exempt from the values and mechanisms of control of the wider society; and what has been described as transmission teaching has the consumption of knowledge as its dutiful response.

To create an alternative form of freedom would be to backtrack from the consumer freedom of 'exit' (itself a form of spiritual impoverishment) and to strengthen the political freedom of 'voice'. This is also to shift from competitive individualism to co-operative self-management, from private to public life, to "freedom again understood as fully-fledged and universal participation in public affairs", and to "individual autonomy pursued through communal co-operation and grounded in communal self-rule" (Bauman, *ibid*, p 95).

In educational terms, the criticisms of the lecture expressed by students (cited in the second section of Chapter One) can be seen as the metaphoric use of the consumer's right of 'exit', that is the exercise of some control over the market-place by not 'buying' some of the goods in it. (The literal exercise of this right of exit is also, of course, a fact of higher educational life.) Consumption and refusal to consume is a seductive but poor substitute for the autonomy offered by the experience of production. Collaborative learning offers, in the educational arena, something which Bauman thinks of as a rarity elsewhere in social life, the possibility for "communal co-operation and self-management" (p 97) in the co-production of knowledge.

Production requires capital. The co-production of knowledge requires that its producers have access to relevant resources and are in a position to decide how to utilise them. Chapter Six documented the experience of learners who find themselves in just such a position of mastery over resources whose disposition in tutor-led settings is at the behest of the tutor.

The resources available to students in the study were varied. First and foremost they had each other as collaborators and co-workers, each individual member of a group bringing different viewpoints and approaches. Secondly they had each other's intellectual labour - jobs could be shared out between meetings or at meetings to maximise the amount of ground the group(s) could cover. Thirdly they had time, perhaps twenty or forty five minutes, perhaps a week, perhaps a whole vacation, and this time was at their disposal to decide how to use it, not pre-allocated in chunks to different sub-tasks by a tutor. Fourthly they had a range of material resources including laboratory equipment, chemicals, computers and computer time, books and magazine articles, simulation and case study materials, games, examples of school children's work, tape, cassette or video recorders, teaching materials as varied as a packet of jelly or a piece of equipment demonstrating a perceptual illusion, musical scores, musical instruments and practice rooms in which to play them, the use of a minibus and a rail travel budget. Fifthly they had privileged access to a number of settings, access which had already

been negotiated for them by the tutors. This included access to schools, churches, railway booking clerks' offices, other groups of students, specialist document collections and libraries. Sixthly, they had teaching facilities in which they worked - rooms to meet in with appropriate furniture and equipment - and could decide how to use these learning spaces to suit their own purposes. Seventhly, they had access to a consultancy service from the tutor, who could be called in when necessary to help solve a problem. Tutors also occasionally offered themselves as a surrogate resource, for instance, being the subject of a practice counselling interview.

These are by no means insignificant resources on which to be able to call. To be able to make decisions about them, to have them at a group's disposal, to have the right to direct and re-direct them as necessary made the students agents in the management of communally-held resources used for the furthering of a joint intellectual effort. This process of management (it may be remembered that one of the tutors referred to the 'project management' side of collaborative learning) required that the students forge agreed plans about how these resources should be used and then that they adjusted and re-adjusted these plans in the light of circumstances and progress. Student groups - even those working on fairly short collaborative tasks within the classroom - therefore made many decisions during the course of their collaborative work. Whilst tutors were available for consultation the essence of these decision-making processes was that the decisions were the students' own. In a significant body of the tasks, students ranged about the world beyond the campus and perforce took their decisions without reference to the tutor because the tutor was not there. Tutors were told about these decisions and their outcomes in retrospect on the students' return to home-base or even were not aware of them until the final report-back stage. At this point many of the false starts or wrong turnings which student groups had made had become the stuff of self-deprecatory stories woven into accounts of successful work done. If we take the notion of 'voice' in Bauman's sense as the full and active participation in public political life and the self-management of communal affairs then what we see here are students

exercising this voice in the everyday politics of educational life.

Ira Shor and Paulo Freire (1987, *ibid*, p 13) question whether all pedagogies

"have a form and a content that relate to power in society, that construct one kind of society or another, and [they] all have social relations in the classroom that confirm or challenge domination?"

and conclude that they do. This is to assume that domination can only be confirmed or challenged; it is to assume that domination is necessarily present in classrooms. The collaborative pedagogy (if pedagogy be the right word) constructs a context in which domination has no domain, does not have what Bourdieu calls a "habitus" (Bourdieu, 1977). The collaborative pedagogy constructs this domination-free zone by handing over to the learners significant powers which they can exercise and by providing them with objects for the exercise of this power.

Not the least of these objects is the experience of themselves as self-directing subjects. It should not be forgotten that students came and went from these classrooms at their own deciding; that they spoke and kept silence as it seemed appropriate to them; that they arranged themselves, their resources and the furniture into spatial configurations that supported a multiplicity of social groupings. The social architecture of collaborative learning is revealed as a community architecture within which students exercise the autonomy of production rather than the false freedom of consumption.

The speaking voices within this domain of internally persuasive discourse had more to address than the interpretation and selective assimilation of each others' words, their divination and assessment, their mutual engagement in the struggle to inter-relate them and to forge new meanings. They had concrete objects to dispose of and to use; they had resources to manage; they had direct experiences from other settings of live problems and real cases. So that meanings were crystallised from action in other domains as well as in and through social interaction. The students were able to do this because they could exercise power in these domains. But these powers were, at least in part (in origin, entirely) a gift from the tutors.

The next section considers the ways tutors interpreted and exercised their powers in collaborative learning.

THE TUTOR'S POWERS IN COLLABORATIVE LEARNING

"It seems best to remove myself so as not to dominate the students"

(Politics Tutor V)

The tutors' powers, in this study of collaborative learning, can be divided into three main manifestations. These were: the powers that tutors had and used; the powers that they had but which they gave up to the students; and the powers they did not have, but which they wished for. These three forms of powers demarcate the domain in which collaborative learning flourished and also mark out the limits to its territory.

It would be misleading to conclude from the discussion in the previous section that the important and substantial areas of activity over which learners could exercise powers left no arena for the exercise of power by the tutors. The care which tutors put into designing and structuring collaborative learning is its own indicator that these tutors were not abdicating from their tutorial responsibilities nor allowing "licence instead of deliberate freedom" (Freire and Shor, 1987, *ibid*, p 79). The invitation which tutors extended to students was one which entailed in its acceptance the hard work and rigorous thinking that goes with making new understandings rather than swallowing them.

We have already seen that the initial decision to use collaborative learning belonged to the tutors. Unless each of the tutors had made this decision there would only be one example of collaborative learning in the data set for there was only the one instance of students organising their own collaborative learning. However, as we also saw, tutors' decisions to try collaborative learning grew out of reflections on their teaching and on what they hoped to achieve in this teaching together with just perceptions of

students' responses. The decision grew out of practice and in this sense was dialogic; it grew out of hearing and responding to messages given out by learners (including themselves as learners).

Taking the decision to try collaborative learning in some form was to take an ordinary object of tutor-decision-making and use it to provide an extraordinary outcome. In this institution what tutors did within the four walls of their classrooms, that is, how they chose to teach, was largely deemed to be their own affair. This sovereignty within the classroom was normal, taken-for-granted, owned by all of the tutors in the case study institution. A minority of around one in ten of the tutors at different times and having arrived at the decision through varying routes made the decision to use collaborative learning in their classrooms - and then did so. The umbrella of tutor sovereignty held over this minority and aberrant practice as it held over the more familiar practices of the surrounding tutor-led classrooms. In choosing to use collaborative learning in their teaching, tutors took an existing power and applied it to new ends.

Having decided to use collaborative learning tutors exercised their powers in originating, designing and structuring collaborative group tasks. Chapter Four and Appendix 8 document a wealth of design decisions made by tutors. The collaborative tasks used varied enormously but all share this single feature that their differing structures were the result of deliberate design decisions by tutors. None of the tutors said to the students, "O.K. Now talk among yourselves in whatever way you like," and left the room. They designed tasks that they judged were achievable by groups working alone and which were linked coherently to the aims and content of the course which students were following. The tasks were tailored to the tutors' perceptions of the students' level of understanding and capacities, and structures were often used which allowed more difficult and lengthy tasks to unfold out of preparatory scene-setting work or to be changed as they went along through consultation between students and tutor (see, for example, the first three tasks summarised in Appendix 8 which are not a-typical). There are also, of course, several examples in Appendix 8 of tasks whose content and

structure arose entirely from student-tutor negotiations. Chapter Two concluded with a figure which set out (based on an analysis of published work) a summary of the social, procedural, task and cognitive demands of the potential structures of collaborative group work. Tutors in this study exercised authority in each of these areas but were authoritarian in none of them. Their responsiveness to their intuitions about what students needed to do to extend themselves, what they could not be expected to cope with without advice and what they could execute competently working as a team but not alone marks the exercise of this power over task structuring as dialogic in an extremely practical sense. Therein lay its strength. These powers were applied not to students as objects, but (with the students' consent) to outline plans for the students' action.

Chapter Six makes clear that the students found these to be helpful outline plans and were happy to adopt them. The outline plans left considerable scope for students to go on to make operational plans in much greater detail. By the time groups came to report back or to hand in projects tutors were hearing **news**, that is to say groups had gone off and done things, within the framework of the outline plan, which the tutor had not thought of. More, they produced new understandings which the tutor could not predict. Tutors did not know, beyond an informed hunch, what the students would say in their project portfolios or in their reports to the class. Nor did the students at the outset. It was in a sense 'news' to them that they could do this unrolling of cognitive roads in front of themselves ("'You can do it', is what I'm saying" - Sociology Tutor Z). So the powers that tutors exercised over the structuring of tasks and the fact that they were exercised through a process of dialogue seem to be crucial for the success of collaborative learning as an educational endeavour, for it was the provision of these advance structures which enabled the students to work competently and confidently towards productive outcomes rather than floundering in confusion or being unable to bring the work to conclusion. Tutors used their powers to devise structures within which students could act as independent agents - and from this process of agency students went on to develop new structures for their subsequent work.

The third main area where tutors exercised their powers was in the matter of resources which the groups needed to carry on their tasks. It was striking that the greater part of these tasks were designed to include operational elements and could not be fulfilled by talk alone. Whether it was a data set, a packet of jelly, a minibus, a classroom full of school children, an "entertaining enzyme", a flip chart and sets of coloured pens or a budget of main-frame computer time (to give just a few examples) it was the tutors who ensured that the appropriate materials, equipment and rights of easement were available to the students as and when they needed to use them. This is a nice twist to Freire's notion of 'banking education' (see Chapter One) in which students 'pay' attention and tutors pour facts into students like monies into deposit accounts. Here the tutors acted as investors who gave, or gave the use of, capital resources to students who utilised them for purposes of joint intellectual production. Upon occasion what the tutors gave to students was the idea that they might use in a new way resources which already belonged to the students but which are usually required to conform to the conventions of the tutor-led classroom. For instance, Education Tutor M suggested that students might use their own bodies as components for an imaginary walking machine and also suggested that they might take these self-same bodies (in pairs, one of them blindfolded) out for a walk around the campus. Outside classroom conventions, arranging one's body in any way one wishes and promenading wherever one likes are habitual freedoms unworthy of comment. That tutors using collaborative learning should restore these freedoms to learners is its own comment on the extent to which tutor-led classrooms, liberal in spirit though a tutor may be, require learners to accede to conventions which express docility more than they express autonomy.

The second significant feature of the tutors' powers was that they handed over important elements of them to students. The earlier section on the exercise of the powers by learners in collaborative learning has drawn attention to what these powers were. It was not the case that students obtained these powers by a process of opposition, or by resistance to dictatorship, domination or wrongful

sequestration on the part of the tutors. Quite simply, the tutors of their own volition gave them away. When students got up and walked out of the classroom, tutors who were working in a corner paid no attention to their departure. When students re-arranged furniture into new groupings and sat with their backs to the tutor this was a matter of no moment. When students went out and about to libraries, schools, churches, computer terminals or to settings where data for projects was to be collected they went without the tutor and organised their activities for themselves. The tutor was amongst the last people to hear what they had done. Even within the shortest spells of collaborative work conducted entirely inside the classroom the moment when the students began working in their groups signalled a handing over by the tutor to the students of control over what was said and done, over the emphasis given to different topics, over the ordering and inter-relationship of ideas and over the interpolation of new ones or the shift to follow new lines of thought. When students reported back to the class or when tutors dropped in on groups for a visit (or vice versa) tutors found out what had been done by students as they exercised these powers. During the process of collaborative learning, then, the exercise of the learners' powers was made possible because tutors handed powers over to students: "Autonomy, structuring the whole thing themselves and with others" (Archaeology Tutor A). "The students are now running their own exercises and aware that the process of managing this is what they are supposed to be learning" (Education Tutor I). Autonomy cannot exist in a vacuum and by the provision of resources which were placed at the students' disposal tutors gave the opportunity to take action in non-trivial arenas. Practical manipulations, immediately relevant problems, interpretations that mattered because they governed the next step in problem-solution, "lifting a stone to see what crawled out" (see Figure 46 in Chapter Five) were all aspects of an experience of agency on the part of the students that was essentially the gift of the tutors.

Chapters Four, Five and Six demonstrate that there were also aspects of educational life which impinged upon collaborative learning but which were not within the tutors' powers to alter. Some

of these were minor irritations rather than major obstacles. Tutors and students complained about being allocated rooms with fixed seating or with hard surfaces which made multiple conversations difficult, or without the carpets necessary for group tasks which required students to use the floor.

Others were more significant. All of these students possessed the power not to participate in collaborative learning. We have seen that only a handful of students withdrew from collaborative classes or insisted on working individually. When this occurred there was little the tutor could do about it. Since, in practice, all the tutors thought that participation in collaborative learning was not something that could or should be imposed, tutors accepted such refusal to collaborate in each instance. This highlights again the consumer's right of exit. In educational terms, learners may or may not consent to join in knowledge production. Tutors had the power to extend this invitation. Learners had the power to accept the invitation or not and thereby could limit the tutors' powers.

Tutors were also aware of the limitations to their sovereignty in their own classrooms. Chapter Five reports some critical or hostile reactions from colleagues where a tutor's use of collaborative learning surfaced for discussion in departments where such an approach to teaching was not in line with the educational philosophy of colleagues.

Assessment clearly formed the most powerful limitation on its use. The politics of assessment made some tutors aware that their use of collaborative learning was tolerated only so long as it was not used to contribute to formal assessment: "there would be active opposition if we said we wanted this to stand instead of an exam" (History Tutor R). Most tutors either had to restrict their use of collaborative learning to unassessed courses or had to put up with the fact that individual assessment at some point fractured the communal politic upon which the process of collaborative learning was based. Individual assessment at the end of collaborative work was a "great impediment" (Computer Science Tutor H) which tutors' powers were unable (with one exception and then as "the hardest thing to get through the institution" - Politics Tutor W) to remove. The

"institution", of course, means Boards of Studies or their equivalent in the first instance, followed by committees of the institution, followed (usually) by a rubber-stamping mechanism from council or governors. So the limits to this aspect of the tutors' powers were close at hand and local in the form of colleagues who would allow collaborative learning to go so far but no further.

The powers of the tutors in collaborative learning were paradoxical. The powers which the tutors had and used were what made collaborative learning possible. They used their acknowledged sovereignty within their own classrooms to enable it to happen. They extended these powers to the design of facilitative structures which could support students' independent work and they ensured that students had the necessary resources and rights of access to provoke questions, insight and dialogue and to locate their work in action and experience rather than in fantasy untempered by reality. The exercise of these powers by the tutor provided a protective umbrella under which the students could work. The resources, privileges and structures which they used derived directly from the exercise of the tutors' powers on their behalf.

But the empowerment of learners by the tutors also lay in the significant powers which tutors handed over to students. By removing themselves (exercising a power over their presence which students could only do through resistance or by exercising the consumer's right of exit) they removed the need for students either to struggle to accept or struggle to reject the tutors' authoritative discourse. With the auto-removal of the tutor, the possibility for other types of discourse and for the students to speak in dialogue as voices came into play. The possibility existed that students would refuse this invitation but only a tiny number of them did. The majority accepted it and went on to speak together, to carry out joint actions and to exercise in novel and unpredictable ways their new-found powers. The paradox is that the tutors' strength lay in their capacity to give their powers away to learners whilst at the same time using their powers to protect the area in which students were experiencing sovereignty. Sadly, but inevitably, these powers were limited and assessment proved a key area where tutors were unable to carry

through their educational vision in the face of the different philosophies and practices of their colleagues.

DEGREES OF FREEDOM

"There is no way, none, in which a human being could possibly master that [symbolic] world without the aid and assistance of others for, in fact, that world is others"

(Bruner, 1985, p 32)

There is no necessity that a learner should become (to re-cap the words of Leont'ev cited on page 360 of this chapter) what she or he is not yet. That is to say life and learning may give glimpses of possibilities that are not realised subsequently. Circumstances may encourage certain lines of development but cut off others. This is evidenced very strongly in studies of the developmental psychology of the child and adolescent, maturing into certain possibilities at pretty much of a pre-fixed rate but subject within that framework to shocks, limits and enhancements that derive from the circumstances of individual life histories in their social settings. Such possibilities are offered or snatched away within the social world of the developing individual and it is in that world that they must also be mastered - if they are to be incorporated into and change the individual's forward growth.

At this point I want to return to Vygotsky's idea of the "zone of proximal development" and examine more closely its relevance to an appreciation of the role of collaborative learning. I shall be arguing that the idea of a zone of proximal development has relevance to the collaborative learning carried out by young adults in higher educational settings; and particularly so if the concept is re-united with its roots in Bakhtin's idea of the speaking voice (work which in its early form proved an inspiration to Vygotsky but which he did not live to know fully).

Learning in Advance of Development

Vygotsky defines the zone of proximal development as:

"the distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers."

(Vygotsky, 1978, p 86)

Later in the same discussion he amplifies this formulation with the statement that "Human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them" (Vygotsky, 1978, *ibid*, p 88). And, later still, "the notion of proximal development enables us to propound a new formula, namely that the only 'good learning' is that which is in advance of development" (*ibid*, p 89).

Commentators on Vygotsky's work and those who have continued it (see, for example, Wertsch 1985a and 1985b) are in agreement that Vygotsky's aim was to formulate a comprehensive theory of the role of culture and communication in cognition, not limited to the consideration of the development of children, for which he is best known. I want to accept this broad hint, first by summarising the idea of the zone of proximal development within the framework in which it was developed and then by extending it to collaborative learning in higher education.

In a terse but illuminative commentary Jerome Bruner (1985) seeks to resolve the apparent contradiction inherent in taking Vygotsky's "new formula" literally, namely that the zone of proximal development enables the achievement of consciousness and control - when logically one would assume that these come after the mastery of a function. How, he asks, is it possible for 'good learning' to be in advance of development - which logically would mean in advance of consciousness and mastery?

Research carried out with children by Bruner and other colleagues (Wood, Bruner and Ross, 1976; Bruner, Jolly and Sylva, 1976; Tizard, Griffiths and Atkinson, 1980) suggests that in the case of the child a tutor or a more competent peer "serves the

learner as a vicarious form of consciousness until such time as the learner is able to master his own action through his own consciousness and control" (Bruner, 1985, *ibid*, p 24). At this point the new function or conceptual system is available for the child to use independently; and, of course, its use will give rise to further learning.

Bruner suggests that the function which the tutor performs (whether a teacher or a more able peer) is that of "scaffolding" a learning task - providing a cognitive prop which allows the learner's cognition to extend itself upwards. Critical to this scaffolding is the provision of structure. Bruner notes that in the well-studied context of language learning this structure is clear in the fine-tuning with which care-givers tailor their speech to a child's developing competences, allowing the child to do what the child can do and providing a "filler" (or a part of the scaffold in the interaction) for what the child cannot, gradually increasing the demand level as the child learns. "Once the child is willing to try, the tutor's general task is that of scaffolding - reducing the number of degrees of freedom that the child must manage in the task. She does it by segmenting the task and ritualising it: creating a format" (Bruner, *ibid*, p 29). Bruner adds that the child who has mastered dialogue can then share with an adult the discourse device of taking certain shared and known understandings for granted and going on to comment on them - in a topic-comment structure. This highlighting of what is new against a groundwork of what is shared in existing tacit understandings helps the learner to go "beyond the information given" precisely because of having identified what is "problematic, new and uncertain." Bruner cross-refers this to Vygotsky's claims that inner speech is essentially predicative, that is, that it comments on the new and skates over the given (precisely because it is given) acting, in Bruner's words, as "an ideal navigational instrument for operating in the zone of proximal development, beyond the information given" (*ibid*, p 32).

Bruner's discussion here tacitly assumes the one to one relationship (either between adult and child learner or between child learner and more capable peer) that is standard in the research

methodology devised by Vygotsky and carried on by subsequent researchers in this area. Forman and Cazden (1985) report from a Vygotskian perspective on studies designed to examine the role of peer collaboration in the cognitive development of young children. They conclude that it is the discrepancy which Vygotsky identified between solitary and social problem solving (i.e. the zone of proximal development) that explains the more sophisticated problem solving strategies which children working as collaborators display as compared with those shown by the same children working alone. They note that one child in a collaborative dyad may perform an observing, guiding and correcting role while the other performs the procedures required by the task. They identify this assistance as being similar to the scaffolding provided by an adult or more capable peer. Thus, "peers could perform tasks together before they could perform them alone" (ibid, p 343).

It is worth noting Forman and Cazdan's comment that research on peer collaboration has been sparse. Their work and that which they discuss is very much within the Genevan (Piagetian) methodological tradition, using experiments to examine the effects of peer collaboration on the subsequent logical reasoning skills of the individuals involved. They do not, in fact, refer to any of the work discussed in Chapter One which considers peer learning in field settings. Michael Cole, in the same volume (Cole, 1985), discussing the idea of the zone of proximal development from an anthropological and cross-cultural perspective, makes a plea for "the real activities of real people" as the starting point for analysis, thus inter-relating as one unity "both the systems of social relations and of (internal) cognitive activity" (p 159). From this perspective (which, of course, brings adults into the field of study) it is clearer that a concept originally based on research methodologies appropriate for clinical, diagnostic and testing work can be extended to a "general conception as the structure of joint activity in any context where there are participants who exercise differential responsibility by virtue of differential expertise" (Cole, 1985, ibid, p 155). Cole's comments remind us that if we consider intelligent behaviour as a social matter there is a certain irony in

seeking to identify the effects of social collaboration within the domain of individual problem-solving. If the powerful world of symbol is, in effect, other people, then it is in the social world also that we must seek evidence of 'good learning'.

The Real Activities of Real People: Social Relations, Cognition and the Zone of Proximal Development

As Cole's work suggests the concept of the zone of proximal development can be generalised without distortion to consideration of social aspects of cognition in adults. The study of the discrepancy between solitary and assisted problem solving has been so strongly situated in studies of the developing child that before attempting this it is worth recapitulating the very different abilities and competences of adults. In Piagetian terms the young adults whose collaborative learning is considered in this study must be assumed to have achieved the rational reasoning powers of formal operations; in standard intelligence testing terms they could be expected to be in the upper quartile of the adult population; and in terms of educational attainments they were all, by virtue of having gained a place at an institution with high average 'A' level grades at admission, high achievers. These young adults had attained the levels of language use towards which studies of young children mark only the first steps. Moreover, at the time of the study, all had achieved at least an induction into the concepts, methodology and frame of reference of their chosen subject. Final year and post-graduate students (this group also included mid-career professionals) were well down the line of advanced study in their field, and some of them were themselves experienced teachers or preparing for this role. Any generalisation of the idea of the zone of proximal development to this group must take account of this adult level of ability and the very different concerns of learners in higher education from those of young children.

If we look at the tasks faced by the collaborative learners in this study they are clearly worlds apart from the discrete,

manipulative and well-defined problems which young subjects of research in the Vygotskian tradition have faced. Apart from obvious and necessary differences in level there is the important difference that the problems proffered to children in these experimental and clinical studies are (for methodological reasons) well-defined. However, for the collaborative learners in this study an early part of the task was problem definition and clarification. To apply a phrase familiar from Schön's (1983) work on professional practitioners the problem was to find the problem - and then to specify it with sufficient clarity to plan a set of procedures for solving it. Another important feature of these collaborative tasks was that there were no right answers which tutors were looking to groups to produce. Tutors were interested to hear from the groups the new accounts which they developed out of their work and wanted students to have the experience of working collaboratively and autonomously on live cases or real issues. These were open learning structures set up to tempt and encourage students into new ways of working. In a sense, therefore, collaborative learning was both a method of approaching the task and the task itself.

The word 'proximal' is a key part of the term 'zone of proximal development'. It implies moving into an area of development only just ahead of or away from where a learner is already. At early ages where development proceeds normally, it includes development with assistance into mastery of functions which would in any case be achieved later on - an acceleration aid, therefore. But once normal development to mature thinking is achieved this implicit metaphor of linear progression has less relevance than a spatial metaphor which might lead us to conceive of potential zones (in the plural) of proximal development, set up both by the learner's own intents through individually initiated and managed learning projects (Tough 1979) and also through socially-mediated challenges and opportunities. For a tutor to proffer the chance to learn collaboratively is in this sense to open up a special type of zone of proximal development for students to move into.

However, the idea of proximal development, as seen in earlier discussion, carries more than the notion of proximity. It implies

what Bruner (1985, *ibid*, p 25) has called the transactional nature of learning which entails close tuning to the learner's own existing understandings. What is already known and understood can be taken for granted and put in the background while doubts, uncertainties and problematic areas can be highlighted as the areas to be scaffolded through the contributions of others: then the learner climbs up (or along) the scaffolding and work starts on erecting the next section. In one to one teaching between an adult and a child or between a child and a more capable peer working on a discrete problem it is fairly easy for a sensitive, more capable partner to identify those gaps which need scaffolding; those gaps which could not be crossed even with scaffolding (and which therefore the more capable partner will fill in); and the areas which can be taken for granted as entirely within the learner's competence.

I should like to return to Bruner's resolution of the apparent paradox in Vygotsky's "new formula". Bruner suggests that the tutor or more competent peer enables a child learner to advance by serving as a vicarious form of consciousness until the learner can bring an action under his or her own consciousness and control. It is significant that this vicarious form of consciousness speaks. It comments upon the problem at hand and comments moreover in a way that is attuned through dialogue to identifying where the child learner needs a formulation that spotlights that which is as yet unmastered but just attainable. In Bakhtin's terms it is a speaking voice (as also is that of the child learner) engaged in the internally persuasive discourse through which new symbolic worlds are constructed.

In choosing to use collaborative learning I would suggest that the tutor is providing the opportunity for students to pace the bounds and then to develop into self-defined zones of proximal development. These zones may operate at different levels and in different arenas for the different students in each collaborative group. One such zone of development is clearly social collaboration in learning itself, a zone which cannot be made available in tutor-led teaching with its vertical student teacher communication patterns. Another series of zones are provided by the topics of the

individual tasks. We know that some of these topics focussed on disciplinary subject contents. Others focussed much more on the achievement of approaches deemed to be the prime goal of higher education - asking critical questions, being willing to forego one right answer, coping with uncertainty, framing useful questions, specifying what a valid answer should look like and what methods might be used to make such answers. A further set of zones was provided by the settings and resources to which tutors provided access - the experience of dealing with live settings at first hand and of having learning resources available to manage and use for learning in action. Finally there was a zone pertaining to individual students and their understanding of themselves - what Education Tutor N called "understanding our personhood in dialogue with ourselves" - through the experiences provided in collaborative learning.

Of these four broad potential areas the only one that tutor-led teaching attempts to address is that concerning discipline subject contents and methods albeit as we have seen through monologic rather than dialogic means.

However tutor-led teaching of groups cannot support such fine tuning as to identify and then provide scaffolding across each learner's zones of proximal development. The tutor's discourse is authoritative discourse. It comes pre-honed with an authority that derives from the tutor's position. We saw in Chapter One that the gaps that it leaves for student voices are insignificant in quantitative terms but as importantly are not dialogic in character. The overall structure of the tutor's discourse is not modified by what she or he hears in the gaps left for students' responses - and the voice of one tutor cannot attune to areas where scaffolding is needed for each individual student in a group.

Remembering that zones of proximal development pertain to individuals and are uniquely specifiable to them there are four important ways in which collaborative learning can be said to help set up zones of proximal development for learners in higher education and to provide opportunities to build scaffolding to cross them. These relate to the provision of an opportunity for learners to use a

speaking voice; the provision of an opportunity for learners to engage in self-directed activity; the provision of a task structure for the collaborative work; and running through all of these, the provision of an opportunity to engage in dialogue.

To take these in turn, I would suggest that the provision of an opportunity for learners to use a speaking voice (in Bakhtin's sense) can stand for learners in higher education in the same place as the vicarious consciousness provided by the adult's commentary for the child. Young adults can speak for themselves, can give an account of their own understandings, can comment on the state they are at and can identify what to work on next. To do this they need the opportunity to speak. Speech with others provides both the possibility of establishing tacit knowledge - the background of the given - and of identifying the new and the problematical which lies beyond the information given. The significance of doing this as a speaking voice is that speaking voices are heard and that they manage and pace their own discourse. This local conversational management permits learners to fine-tune their own discourse to their own existing state of understandings - performing for themselves jointly the function which a tutor provides in one to one dialogue with a young child. The responses of other speaking voices - questioning, challenging, evaluating, accepting - provide the highlighting of problematic areas, identifying the zone(s) of proximal development present within the group. Given that the speaking voices also offer each other formulations and solutions, the voices of peers provide scaffolding to help colleagues cross these cognitive voids. Differential levels of capacity (as where an adult or more competent peer tutors a child) may well be brought to bear by different voices, but more important for groups of roughly homogeneous, intelligent young adults, is the different perspective of each speaking voice (as identified by Bakhtin) relative to each other. The mingling of four or five different perspectives in the course of a group discussion can provide for peers the highlighting of what cannot be assumed as given, as the adult's voice does for the child.

Bakhtin's account of the speaking voice gives a primary role to inter-personal aspects of dialogue and to the way in which different

art forms capture or exclude personal voices from other perspectives. He suggests that the "speaking person and his discourse" is not treated in scientific thought because "the entire methodological apparatus of the mathematical and natural sciences is directed toward mastery over mute objects, brute things that do not reveal themselves in words, that do not comment on themselves (1981, *ibid*, p 35).

However, from a developmental psychological standpoint action is crucial for development. Vygotsky's studies which gave rise to the idea of the zone of proximal development demonstrate the combination of the learner's action upon objects with the tutor's finely-tuned commentary as the essential pre-requisite for learning in advance of development. Whilst objects do not comment upon themselves, learners' voices can comment on what has been done with objects and on the surprises that these actions have brought. A striking example in the data is the puzzlement of Biology Tutor C's students at the unexpected results obtained from their 'entertaining' enzyme. The students' actions upon the mute objects of test-tube, enzyme, bunsen burner, solution, graph plot of results, and so on, provoked a series of comments from the students which led to the framing of further new questions which guided further action designed to test ever more tightly focussed hypotheses. The body of data as a whole testifies to the intrinsic role of action in collaborative learning. I would suggest that these possibilities for action in such a wide range of areas (remembering that the decisions about action were made by the learners themselves) acted for these higher education learners as an important element of their setting up of zones of proximal development for themselves.

The provision of initial task structures by the tutors and their further specification by learners also seems important. The tutors were not physically present or did not take part in collaborative learning episodes, as we have seen. However the task structures which they devised were there and I would suggest that they acted at the outset of the task in some of the same ways in which the tutor's or more capable peer's voice acts in Vygotskian studies of the zone of proximal development in the child. These structures provided an initial degree of 'tuning' to the state of the

learners' existing understandings, based on the tutor's knowledge of the students and others like them. As we have seen, the structure of tasks was open to alteration via negotiation between tutor and students. But more than that the initial structure offered by the tutor was subsequently re-worked by students, independently of the tutor, as they worked their way through the tasks. Bruner talks of the task of adult tutors in the proximal zone as "reducing the number of degrees of freedom that the child must manage in the task" (Bruner, 1985, *ibid*, p 29). The task structures offered by tutors served the same purpose - but in collaborative learning in higher education the students had the opportunity to adjust their own degrees of freedom either by specifying the task more tightly and by focussing more on one element than another, or to work with wider tolerances if they felt drawn to do so, that is to over-flow into exploration beyond the bounds of the task as originally set. The observations of Chemistry Tutor E's students showed examples of the former strategy, where some student groups used consultation with the tutor between collaborative episodes to clarify what exactly was required or implied by task documentation as the next step and used the information gained from the tutor to frame their next moves more tightly. By contrast students of Education Tutor I on two occasions took the opportunity to widen out a task suggested by the tutor into tasks with considerably more degrees of freedom which required students to construct their own structure (and thus tolerate more uncertainty in the process). These tasks were those on the production of a guide for students about schools and of a guide for the education department on the preparation of students for teaching practice.

The possession of a speaking voice; the opportunity to engage in self-directed activity; the use of task structure to provide manageable (and negotiated) degrees of freedom; each of these is enacted through dialogue and in turn produces the occasion for dialogue. By virtue of this dialogue, intrinsic both to the joint conversations and to the joint activities of collaborative learning, students could provide for themselves the scaffolding that dialogue with a guiding adult provides for younger learners.

Degrees of Freedom and Collaborative Learning

The use of collaborative learning opens up the possibility for learning as a social transaction providing a domain in which real people can share learning activities to their mutual benefit. The extent to which collaborative learning's possibilities for intellectual and personal growth are realised seems to depend upon four main factors. These are (1) the extent to which the (newly-constructed) social order within this domain can be protected by the tutor; (2) the extent to which the tutor allows and encourages local management of internally persuasive discourse by the students - the protection of their speaking voices - or reverts to the tutor-owned text of authoritative discourse; (3) the extent to which the structure of each task provides (or can be shaped to provide) appropriate tolerances for the exercise of powers by collaborative learners and (4) the extent to which students do or do not grasp and exercise these powers.

We have seen that limitations may apply or be applied to any one of these factors - therefore one must speak of degrees of freedom provided by collaborative learning not of absolute freedom itself. However, the process of collaborative learning also creates a new set of (albeit limited) freedoms. Learners can define and redefine their own learning agendas, can manage their own discourse collectively, can arrange their own learning spaces, can plan and manage their own activities and use of resources. But these new freedoms are exercised jointly, adjusted to peers, unlike a consumption-based approach to knowledge where the consumer owns and defends his or her own intellectual property. So the paradox is that collaborative learning which is subject to curtailments of degrees of freedom, creates the opportunity for learners and tutors to create new degrees of freedom, but these new freedoms themselves must be qualified, through adjustment to others. The thesis began from the observation that the allocation of power affects how people take part in the

formulation of knowledge. In a similar vein of thought, Inglis has argued that

"nationalising knowledge, drastically altering the way it is portioned out and withheld, ensuring that its production was co-operative and its benefits equally shared, such a revolution in social relations would be as great as the equivalent revolution needed to change the control of capital itself"

(Inglis, 1985, *ibid*, pp 10-11)

A revolution is such a singular event that perhaps one need not worry about its size. This study has provided evidence of a series of revolutions in the classrooms of higher education, revolutions rooted in the social relations required for and provided by the use of collaborative learning and the degrees of freedom over new learning engendered thereby.

CONCLUSIONS

"In collaborative learning, participation
and learning are in your own control"

(Student Group for Education Tutor J)

"The more you think for yourself the deeper
it goes"

(Student from Group for Chemistry Tutor E)

One of the starting points for this study was the end of a previous one. Barnes and Todd (1977, *ibid*) concluded by positing the idea that the allocation of power in educational settings affects how people take part in the formulation of knowledge and therefore that what is learnt in discussion among peers will be different in kind as well as content from what is learnt from teachers.

Two other starting points were the experiences of conducting action research on the use of collaborative learning methods in higher education; and that of carrying out associated study of the literature on teaching methods in higher education.

Each of these activities provided their own insights but equally raised many new questions. The idea about the influence of power and its distribution in educational settings was forged in the course of a study whose focus was the relationship between communication and learning. This study and others like it had been conducted in the context of interest in the role of talk in school classrooms. The insight it gave into the importance of learners' powers in knowledge-making suggested looking beyond communication and learning, with its necessary focus on what is said, to pay equally detailed attention to what is done - and why - in collaborative learning. It seemed useful to examine the extent to which such ideas had permeated the teaching practices of tutors in higher education. It also seemed that a contribution could be made by examining the naturally-occurring life of collaborative learning (if indeed it had one) rather than its use in the conditions required to provide a

corpus of learning talk for detailed analysis.

The action research previously undertaken and the existing literature had been much concerned with the practicalities of how to do not collaborative learning but one or other of a cluster of teaching techniques that seemed potentially closely-related but which were not necessarily considered as such in the literature. Were these techniques merely useful technical fixes for some of the uncomfortable silences in higher education's monologues? Or did they hint at the possibility of constructing a more generalisable overarching concept? Were these approaches used by anyone other than the tutors who wrote articles about their use - and did their use make more than a marginal difference to the parameters of everyday teaching life in higher education?

The thesis has sought to answer such questions through a case study of the use of collaborative learning in a single institution of higher education, combined with a desk-based consideration of the frameworks of understanding that can be brought to bear upon its use. Out of the interaction between these two dimensions of the study, the thesis has developed the concept of collaborative learning as a unified approach which can be realised in several different ways but which is informed by a common philosophy. It has been shown to be an approach with transformative capacities for the roles of tutors and students alike - and for this reason perhaps best used by both parties knowingly and willingly or not at all.

The thesis has been a study of the real learning activities of real people (to paraphrase Michael Cole, cited in Chapter Seven) where the learning is collaborative learning and the people are students and tutors in higher education. It has shown that despite being used by a minority of tutors, collaborative learning played a regular part in the teaching practices of the case study institution. More than simply occurring, collaborative learning was implemented in a rich variety of forms. The tutors using it were a heterogeneous group, from a range of subject disciplines and the collaborative tasks which they initiated and which are documented here (none of them devised especially for the research) proved to be of extraordinary variety and scope.

The focus of the thesis has been not on what was said in collaborative discussions - which is the aspect we probably understand best already (although there is much more work to be done) - but on gaining an understanding of what collaborative learning means to all its participants (students and tutors alike) in its context of use. We have seen that tutors' use of collaborative learning grew out of their desire to enhance student participation in learning and a corresponding realisation that they needed to devise some situation in which control of learning could be handed to students. Tutors also realised that they needed to withdraw themselves from the immediate scene if this handing over of power was to be more than a token gesture. Their use of collaborative learning arose from clearly articulated philosophies about the nature of knowledge and the purposes of higher education. They wanted to give students the chance to be, not only talkers, but also co-operative designers, implementers, producers, managers of learning - to be the joint agents of their own development. Tutors had other ends in mind as well, to do with understanding of the subject and with seeing tasks through to some viable or quasi-viable product (a report, a considered observation, a plan, a computer programme, a synthesis of views) but there is no doubt that learning to collaborate with others, participating both in discussion and in joint working, framing questions, solving problems, evaluating answers, all these were key aspects of what tutors hoped collaborative learning would help students to achieve. They turned to the collaborative approach because they did not find tutor-led methods appropriate to such aims.

One outcome of the naturalistic stance of the thesis has been that it has been possible to show the part which collaborative learning has played in the institution's life. This analysis has shown that collaborative learning flourished where it was covered by the "gentleman's agreement" which defined the teaching methods of individual tutors as their own private affair. However, where its use became known outside the bounds of implicitly-agreed tutor autonomy tutors could encounter problems. Accordingly, tutors in departments with an unsympathetic surrounding culture followed solutions such as not drawing colleagues' attention to its use - or

else found they had some arguments or adverse comment to face. Even in departments with an educational culture sympathetic to the use of collaborative learning, its use remained outside - in all save one case - standard assessment procedures. Tutors either used it on non-assessed courses or terminated the collaboration prior to individual assessments. The evidence from the tutors and students who sought official recognition of joint assessment of collaborative work (only one tutor was successful in this) provides a revealing gloss on the extent to which higher education's assessment procedures are predicated on individualism and on competition.

The invitation which tutors in the study extended to students proved to be an invitation to structure and manage their own learning. The phrase 'proved to be' is advised since it was not always clear to students at the outset just how great would be the scope for them to work independently of the tutor. As some of them commented, "it's a bit of a shock to have to initiate something for a change" instead of "coasting while the tutor does the work". Nevertheless, students accepted the invitation to "become a seeker of information" and to "learn, develop, produce". They found the experience "highly rewarding for those who contribute" and appreciated "the freedom to develop and discover individually or within a group of peers" which collaborative learning made possible.

Without this matching response between students and tutors, tutors offering the chance and students seeking to work independently, the attempts at collaborative learning within this institution might well have foundered. However, students and tutors had remarkably similar views about the purposes of higher education and what the roles of tutors and students should be within it. These shared views provided a supportive background for the collaborative pedagogy and despite some problems - sometimes precisely because of experiencing problems but also solving them - students expressed views about the benefits of the collaborative approach which were highly consistent with those of their tutors.

The analysis of data gathered for the thesis reinforces the importance of communication in learning but it has put it in a new light which reveals also the importance of agency over learning, and

of the social relations within which learning communication takes place. To return to the theme of the quotation which prefaced the Introduction, the thesis has been able to show, in some detail, in what ways the allocation of power affects the formulation of knowledge and what the differences in kind as well as content, referred to there, might be. We have seen that powers must not only be allocated to students (this allocation was presumed in that earlier quotation to be by the teacher or tutor, not by the institution, and so it has proved in this study) but also that students must grasp and exercise these powers for collaborative learning to have any existence. Tutors willingly gave up some aspects of their powers to students, but they retained important others. They used these to provide collaborative learning with the protective umbrella of their autonomy within the privacy of their own teaching; and also to ensure students had access to the resources they needed to accomplish their joint work.

Out of this new social order the thesis has shown learners exercising their newly-acquired powers to produce a new educational order. Collaborative learners have been shown to define their own intentions, to develop their own structures for their work, to produce and implement their own plans, to manage their own use of learning resources and to organise the inter-relationship of their own activities. The thesis has shown an intimate link between conversation and collaboration forged from the joint planning of activities and the joint management of resources to result in the co-production of knowledge. The construction of new meanings has arisen in the context of joint action within a supportive task structure. Action, structure and agency have been intimately related here as in the production of other forms of social reality.

The thesis has suggested that collaborative learning puts students in possession of a "speaking voice" (in Bakhtin's sense) and that this implies more than having a chance to interpolate in the tutor's discourse. Tutor-led discourse is led by tutors' intentions; the discourse of collaborative learning is led by learners' intentions. The opportunity to interpose in tutor-led discourse is no more than the chance to fill a gap in a text which belongs to the

tutor; collaborative learning provides a setting in which students' different viewpoints, different levels of information and understanding and different intentions can, in Bakhtin's metaphor, "struggle" with each other, or "inter-animate" each other in a process that enables learners to construct their own joint educational text. The learners' possession and use of the voices that speak in the polyphony of collaborative learning has been shown to rest on learners leading an active civic and political life. Their knowledge co-operatives were capitalised by access to a multiplicity of resources; by the possession of decision-making powers in defining their own questions; and by the freedom to frame activities and task structures to explore these questions. The questions in collaborative learning became, if they were not at the start, the students' own. Precisely because of this, collaborative learning can be said to have provided, for these learners in higher education, zones of proximal development, supporting them in the learning ahead of development that Vygotsky characterised as the only good learning.

Collaborative learning, therefore, has been shown to be not just a summary term for a set of more sociable teaching techniques. The issue of power in educational settings is central to its use. Its implementation - where tutors willingly abdicate from certain of the powers allocated to them by right and where students willingly seize and exercise the new powers offered to them - has the capacity to "dissolve" (in Inglis's term, cited p 85) the traditional bases of authority in education.

A study of this nature cannot but raise new questions as it goes along, questions that cannot be answered within the compass of the thesis but which seem to warrant further investigation. There is an interesting link across to Habermas's idea of praxis, concerning the relationship between theory and practice in collaborative learning. The thesis has brought to light the existence of two important areas of educational praxis in the way in which tutors and students alike, in different domains, each constructed links between theory and practice. For the teachers these were the links between their ideas about what teaching and learning should be and their

reflections on their own and their students' experiences of teaching and learning, resulting in the decision to use collaborative learning. For the students these were the links between the initial ideas with which they approached a task and the new data, information, viewpoints which they came up against in the course of their work and which required them to rethink what they were doing and how. Collaborative learning can be seen and explored as the matching of these two areas of praxis: the praxis of the teacher and the praxis of the learner.

The application of the idea of zone(s) of proximal development in higher education and in adult learning has greater potential than it has been possible to develop here. The concepts of the speaking voice and of the dialogic nature of understanding, already well-championed by researchers in the USA and the USSR, has the potential to revolutionise our conception of what learning and education are - and of what they could be. They could, indeed, revolutionise our notion of what intelligence is. Dialogic engagement with other viewpoints (the opposite of dogmatism and closed-mindedness) with the possibility this affords for learners (construed in the broadest sense) continually to construct for themselves new zones of proximal development may be the key feature of cognitive and emotional development in maturity. A well-specified dialogic model of intelligence could explain the intellectual and emotional gains which many adults make from adolescence to old age despite the well-documented decrements in certain areas of performance which seem to accompany ageing. It may well be that social intelligence could sensibly be thought of as limited or capable of development by the extent to which an individual is exposed to other speaking voices and admits them into inner speech as well as engaging with them in dialogue carried on socially.

It would be alluminative to pursue any of these issues in further research and to do so beyond the frame of reference of developmental psychology alone. For example, each of these potential areas of research has application to the continuing education of professionals.

Finally, there is one other feature of the thesis to which I

should like to draw attention. Bakhtin (1981, *ibid*) has argued that everyday discourse is naturally oriented towards dialogue because it cannot help but be oriented towards what has already been uttered or is already known. The novelist elevates this everyday social heteroglossia to an art form, capturing the voices of his or her time and using them to create a necessary background without which the nuances of the prose-writer's own voice could not sound.

An academic thesis is not a work of prose art. Nevertheless, this thesis has served, intentionally, as a way of capturing "a living mix of varied and opposing voices" (Holdquist, 1981, p xxviii) speaking about collaborative learning. Capturing these voices and making them available for others to hear has been one of the main contributions of the thesis. Entering into dialogue with them is to join in an important debate about the power relations enacted in higher education.

APPENDIX 1

LETTER TO POTENTIAL SUBJECTS

9 April 1984

COLLABORATIVE LEARNING METHODS IN HIGHER EDUCATION

I am carrying out a study of the use of collaborative learning methods in higher education (to be submitted for the degree of DPhil) and should like to seek your help in establishing the extent to which such methods are used at

For the purposes of this study, collaborative learning methods consist of periods of peer or student-led small group work. (This is in contrast to tutor-led small group work which formed one of the foci of interest of the questionnaire distributed by the Teaching Workshops Committee at the beginning of this academic year.)

During such periods of peer discussion the tutor may remain in the classroom occupied with work of his or her own, or the tutor might leave the room, or student groups may work outside the classroom for a while to re-convene later.

Terms used in the literature to describe such groups include student-directed learning groups, autonomous groups, syndicates and leaderless groups. The essential feature of such collaborative learning groups is that small groups of students talk and work without the tutor for some period of time, often on a learning task devised by the tutor, and perhaps "visited" by the tutor during the course of this work.

Within this general framework there are several variations, as for instance:

- spells of "buzz" group discussion (which may even be as short as two minutes) incorporated into a lecture,
- the use of dyads, eg the "Learning Cell", "snowball" groups or other methods incorporating one to one working,
- the use of student-led or syndicate groups of perhaps 3-10 members to spend a session discussing written materials or numerical data, to consider case studies, to carry out practical work, or to attempt to solve a set problem,
- longer running project work where groups of students collaborate over a period of time and through several meetings to produce a practical outcome, eg a design solution in plan

form, a prototype design, a report with recommendations, a piece of research.

I am interested in any examples of collaborative working - from the two minute "buzz" group during a lecture to the project of several weeks' duration.

In the first instance I should be extremely grateful if you would circulate the enclosed copies* of this letter to all members of your department who do under or post-graduate teaching at _____ and if you would ask them to contact me (subject to your approval) if they use any teaching methods which they think might fit into the area of interest here defined.

Depending on the response to this letter, I would then hope to work with selected teachers to document their use of collaborative methods in more detail during the academic year 1984-85.

This further study would, I think, prove interesting rather than onerous to the teachers involved and the outcomes of the research would be of practical relevance for University teaching. Confidentiality, would, of course, be maintained.

If you have any queries arising from this letter I should be happy to answer them. I am most grateful for your help.

Yours sincerely

(Mrs) Frankie Todd
Research Fellow

(*more copies available if required)

If you use any collaborative methods in your teaching please tear off this slip and return it to Mrs Frankie Todd,

Name Department

Tel ext no

Any comments

.....
.....
.....

APPENDIX 2

TIMETABLE OF DATA COLLECTION

Date	Department	Observation	Tutor Interview	Student Interview	Student Questionnaire (incomplete record)
17.05.84	Chemistry	*			
21.05.84	Biology		*		
	Biology		*		
17.05.84	Computer Science		*		
	Chemistry	*			
25.05.84	Chemistry	*			
06.06.84	Chemistry	*		*	
07.06.84	Computer Science	*		*	
19.06.84	Education	*			
22.06.84	Biology			*	
03.07.84	Chemistry		*		
29.10.84	Mediaeval Studies	*			
05.11.84	Computer Science		*		
12.11.84	Education		*		
07.12.84	Archaeology		*		
10.12.84	Archaeology			*	
11.12.84	Psychology		*		
13.12.84	Archaeology			*	
11.01.85	Computer Science		*		
14.01.85	Politics		*		
18.01.85	Computer Science		*		
07.02.85	Language		*		
07.02.85	Language		*		
12.02.85	Education		*		
13.02.85	Archaeology			*	
24.02.85	Computer Science				*
04.03.85	Politics	*			

(continued)

Appendix 2 continued

Date	Department	Observation	Tutor Interview	Student Interview	Student Questionnaire (incomplete record)
08.03.85	Politics			*	
14.03.85	Psychology	*			
29.03.85	Economics		*		
29.03.85	Education		*		
19.04.85	Biology		*		
19.04.85	Education		*		
09.05.85	Biology	*			
21.05.85	Education		*		
28.05.85	Education	*			
31.05.85	Mediaeval Studies	*			
31.05.85	Biology				*
31.05.85	Psychology				*
18.06.85	Education	*			
18.06.85	Education	*			
26.06.85	Biology				*
July 1985	Education				*
17.09.85	Careers Service		*		
02.10.85	Careers Service	*		*	
12.10.85	Education	*		*	
22.10.85	Education		*		
04.11.85	History		*		
07.11.85	Music		*		
08.11.85	History		*		
12.11.85	Politics		*		
12.11.85	History		*	*	
19.11.95	History		*		
04.12.85	Politics	*			
12.12.85	Education			*	

(continued)

Appendix 2 continued

Date	Department	Observation	Tutor Interview	Student Interview	Student Questionnaire (incomplete record)
12.12.85	Politics				*
16.01.86	Education		*		
16.01.86	Social Policy		*		
27.02.86	Sociology		*		
02.86	English			*	
03.03.86	English		*		
20.03.86	Sociology			*	
29.03.87	Sociology		*		

APPENDIX 3

TUTOR INTERVIEW SCHEDULE

STUDY ON COLLABORATIVE LEARNING IN HIGHER EDUCATION

TUTOR INTERVIEW SCHEDULE

Preamble

As you know, I am carrying out a study of the use of collaborative learning in higher education. This research is being carried out for a D.Phil degree part-time, registered with the Education Department.

The substantive work of this thesis consists of a case study of the use of collaborative methods at one institution, namely .
I am interviewing staff and students, collecting documentation of group tasks used, and sitting in on groups in action.

In this interview I shall be asking you questions about five main areas: background information; the collaborative task; the students; the institutional context; and some questions about yourself, as a tutor.

Full confidentiality will be maintained with respect to the information given me, and when I write it up I will change circumstantial details to prevent identification of staff or students.

1: BACKGROUND INFORMATION

TUTORS' NAME:

TODAY'S DATE:

VENUE FOR INTERVIEW:

DEGREE COURSE (Full title):

NAME OF THIS OPTION/MODULE/COURSE UNIT:

NUMBER OF STUDENTS IN THE CLASS:

STUDENTS ARE IN YEAR: 1 2 3 4 PG1 PG2 PG3

2: THE TASK

2.1 How many students are there in each small group?

2.2 Is the group membership as a self-choice basis (tick for yes) ___

OR do you as the tutor constitute the groups? (tick for yes) ___

OR do you use either method as you feel appropriate?
(tick for yes) ___

2.3 If you constitute the groups please say what principles you follow in composing the groups:

2.4 Were you satisfied with the group composition for this task or not?

2.5 Please describe what the students are required to do in the group task:

2.6 TO INTERVIEWER: Please note any supporting or exemplary documentation supplied by the tutor

- 2.7 How long is allotted for the students to complete the group task,
- (a) in total?
 - (b) each meeting?
 - (c) if more than one meeting please state how many:
- 2.8 What were your prior aims and objectives for the group task? What did you hope it would achieve?
- 2.9 Is this similar to or different from what you hope to achieve in other classes where you do not call on collaborative methods, eg. in lectures, tutor-led seminars and tutorials?
- 2.10 Do you draw on collaborative methods:
- in this course unit only? —
 - in other course units? —
- 2.11 Do you make any attempt to teach students how to work in collaborative groups?
- NO —
- YES —
- If yes, please specify:
- 2.12 Earlier you stated your aims and objectives of this collaborative task. How successful was the task in these terms?

2.13 Was the group work or its outcomes assessed in any way? Please give details.

2.14 Were students required to do any work in their own time as an adjunct to the collaborative task?

NO —

YES —

(Please give details)

2.15 Were the students confused by anything in the task's requirements?

2.16 Will you use this collaborative task again:

(a) as it stands (please tick) —

(b) with modifications (please tick) —
and give details.

3: THE STUDENTS

3.1 Do any of the students, to your knowledge, have prior experience of working in collaborative groups?

(a) with yourself (please tick) —

(b) with other tutors (please tick) —

Please give details:

(c) at school or elsewhere (please tick) —

Please give details:

- 3.2 What was the students' response to the collaborative group work?
- 3.3 Did their response change through the course of the task?
- 3.4 Did any students resist working collaboratively, or refuse outright?

4: INSTITUTIONAL CONTEXT

- 4.1 Are your colleagues: supportive or hostile to your collaborative methods? (Please tick one)
- 4.2 Is your Head of Department supportive or hostile to your use of collaborative methods? (Please tick one)
- 4.3 Do you find the formal assessment procedures of your department or school helpful unhelpful to your use of collaborative methods? (Please tick one)
- 4.4 Are there any other features of your department or the [institution] as a whole that either support or impede your use of collaborative methods?

5: THE TUTOR

- 5.1 Which of the following (or which combination) was the origin for your decision to use collaborative methods in your teaching? Please tick as applicable and give details:

- (a) Attendance at a staff development programme
- (b) Articles or books you have read
- (c) The influence and/or example of a colleague

- v -

(continued)

(d) The experience of learning in collaborative groups yourself

—

(e) Your own idea

—

5.2 For which of the following reasons do you use collaborative methods? (Please tick as appropriate)

(a) Because their use promotes students' understanding of the subject

—

(b) Because their use develops students' social skills

—

(c) Because their use prepares the student for work, in the sense of practising skills they will need in employment

—

(d) Because their use prepares students to carry on learning throughout their lives

—

(e) For some other reason (please give details)

—

5.3 What, in your view, are the aims of university education?

5.4 What, in your view, should be the role of the university tutor such as yourself?

5.5 What, in your view, should be the role of the undergraduate or post-graduate student?

5.6 Do you intend to continue to use collaborative methods in your teaching?

5.7 Is there anything else you would like to say?

Thank you very much
END

Frankie Todd
Institute of Advanced Architectural Studies
University of York, October 1984

APPENDIX 4

STUDENT INTERVIEW SCHEDULE

STUDY ON COLLABORATIVE LEARNING IN HIGHER EDUCATION

STUDENT INTERVIEW SCHEDULE

Preamble

I am carrying out a research study of collaborative learning methods in higher education, as work towards the degree of D Phil.

As part of this work I am carrying out a case study of the use of collaborative learning methods at one institution, namely .

I am interviewing staff and students, collecting in documentation of group tasks used, and sitting in on groups in action.

Today I am interested in your comments on, and reactions to, the work on (specify task)

that you did with (specify tutor)

(Specify when the work was carried out)

I shall be asking you questions about four main areas: background information; the collaborative task; some questions about yourselves, as students; and about the tutor.

Full confidentiality will be maintained with respect to the information given me, except that, with your permission, the tutor would find it helpful if I summarise any general points you make about the task, and how useful you found it.

6: BACKGROUND INFORMATION

TODAY'S DATE:

STUDENTS' NAMES AND/OR NUMBERS PRESENT:

VENUE FOR INTERVIEW:

DEGREE COURSE (FULL TITLE):

NAME OF THIS OPTION/MODULE/COURSE UNIT:

NUMBER OF STUDENTS IN THE CLASS:

STUDENTS IN YEAR: 1 2 3 4 PG1 PG2 PG3

or combination (specify)

TUTOR'S NAME:

(See relevant interview)

7: THE TASK

7.1 How many students are there in each small group?

7.2 Is group membership on a self-choice basis?

tick for yes

—

OR does the tutor decide who is grouped together?

tick for yes

—

OR does the tutor use a combination of these methods?

tick for yes

—

7.3 If the tutor decides who is grouped together, please say what principles you think the tutor follows in doing this:

7.4 Were you satisfied with the groupings for this task, or not?

- 7.5 Please describe what you had to do in the group task:
- 7.6 TO INTERVIEWER: Please note any examples of students' work supplied:
- 7.7 How long did you have to complete the group task:
- (a) in total
 - (b) each meeting
 - (c) if more than one meeting, please say how many:
- 7.8 What do you think were the tutors' aims and objectives for this collaborative task? What do you think s/he hoped it would achieve?
- 7.9 Is this similar to or different from what you think the tutor hopes to achieve in other classes taught via methods such as lectures, tutor-led seminars, or tutorials?
- 7.10 Does your tutor (name) use collaborative methods with you or other students
- (a) in this course unit only?
 - (b) in other parts of the course?
- 7.11 Does your tutor (name) make any attempt to teach you how to work in collaborative groups?
- NO YES
- If yes, please specify:

7.12 How successful do you think this group task was in achieving the tutor's aims and objectives?

7.13 Do you feel the work you did for this group task was assessed fairly? (if assessed)

7.14 Do you have any comments about the structure of the task?

Prompts: Was it clear?

Were there logical steps to follow?

Were necessary materials and resources available?

Was adequate time allowed for the work?

7.15 Were you confused about anything in the group task?

7.16 In your opinion, should the tutor use this collaborative task again with other students?

7.17 What did you do at each meeting?

7.18 Did you find it easy or difficult to share out the work?

8: THE STUDENTS

8.1 Do you have prior experience of working in collaborative groups (ie. groups not led by a tutor or teacher)?

(a) at school (state number of students)
INTERVIEWER: Probe for details of subjects, teachers, etc. —

(b) with other tutors (please tick) —

(c) elsewhere (please tick)
INTERVIEWER: Ask for details —

8.2 Which of the following alternatives most accurately describe collaborative learning methods for you?

INTERVIEWER: State numbers for each alternative

—	useful	useless	—
—	hard	easy	—
—	enjoyable	not enjoyable	—
—	interesting	boring	—

8.3 How does working on a collaborative task like this compare with other teaching methods such as lectures, tutor-led seminars and tutorials?

8.4 Which do you prefer?

INTERVIEWER: Give numbers

Collaborative methods — Tutor-led methods —

10: THE TUTOR

10.1 Why do you think your tutor (name) uses collaborative methods?
INTERVIEWER: Please tick and give numbers as appropriate

- (a) Because their use promotes students' understanding of the subject? —
- (b) Because their use develops students' social skills? —
- (c) Because their use enables students to practise skills they will need in employment? —
- (d) Because their use prepares students to carry on learning throughout their lives? —
- (e) For some other reason?
(Probe for details) —

10.2 Turning now to your own opinions, do you agree or disagree with the following statements about collaborative learning methods?
INTERVIEWER: Give numbers

- (a) Their use promotes students' understanding of the subject
 - Agree —
 - Disagree —
- (b) Their use develops students' social skills
 - Agree —
 - Disagree —
- (c) Their use enables students to practise skills they will need in employment
 - Agree —
 - Disagree —
- (d) Their use prepares students to carry on learning throughout their lives
 - Agree —
 - Disagree —

(e) Can you suggest any other reasons to use collaborative methods?

10.3 In your view, what is the purpose of a [institution deleted] education?

10.4 In your view, what is the role of a good [institution deleted] tutor? What should he or she do?

10.5 In your view, what is the role of the undergraduate (or post-graduate) student? What should they do?

10.6 Is there anything else you would like to say?

Thank you very much
END

Frankie Todd
Institute of Advanced Architectural Studies
University of York, January 1985

- viii -

APPENDIX 5

STUDENT QUESTIONNAIRE

STUDY ON COLLABORATIVE LEARNING IN HIGHER EDUCATION

I am seeking your help with a research study I am carrying out on collaborative learning methods in higher education, as work towards the degree of DPhil.

As part of this work I am carrying out a case study of the use of collaborative learning methods at one institution, namely .
(The term 'collaborative learning methods' refers to occasions where a small group of students work together independently of the tutor, on a learning task related to their course).

I am interviewing staff and students, collecting in documentation of the group tasks used, and sitting in on groups in action. I hope the outcomes of this research will help to improve the quality of university teaching.

I have been talking to you did last term for work. about the group projects that as part of your second year work.

I should be most interested in your comments on, and reactions to, this work, and would be grateful if you would fill in the attached questionnaire schedule and return it to me at the Institute of Advanced Architectural Studies.

Full confidentiality will be maintained with respect to the information given me, except that, with your permission the tutor would find it helpful if I summarise (without naming the source) any general points made about the task, and how useful students found it.

I am extremely grateful for your help, and look forward to receiving your completed questionnaire.

Yours sincerely

(Mrs) Frankie Todd

Enc

6: BACKGROUND INFORMATION

YOUR NAME:

DEGREE COURSE:

NAME OF THIS COURSE UNIT:

NUMBER OF STUDENTS IN THE CLASS:

STUDENTS IN YEAR: 1 2 3 4 PG1 PG2 PG3
or combination (specify)

TUTOR'S NAME:

TODAY'S DATE:

7: THE TASK

7.1 How many students were there in each small group?

7.2 Was the group membership on a self-choice basis?
tick for yes

—

OR did the tutor decide who is grouped together?
tick for yes

—

OR did the tutor use a combination of these methods?
tick for yes

—

7.3 If the tutor decided who was grouped together, please say what principles you think the tutor followed in doing this:

7.4 Were you satisfied with the groupings for this task, or not?

- 7.5 Please describe what you had to do in the group task:
- 7.6 How long did you have to complete the group task?
- (a) in total
- (b) each meeting
- (c) if more than one meeting, please say how many
- 7.7 What did you think were the tutors' aims and objectives for this collaborative task? What do you think s/he hoped it would achieve?
- 7.8 Was this similar to or different from what you think the tutor hoped to achieve in other classes taught via methods such as lectures, tutor-led seminars, or tutorials?
- 7.9 Did _____ use collaborative methods with you or other students
- (a) in this course unit only? _____
- (b) in other parts of the course? _____
- 7.10 Did _____ make any attempt to teach you how to work in collaborative groups?
- No _____ Yes _____
- If yes, please specify:

- 7.11 How successful do you think this group task was in achieving the tutor's aims and objectives?
- 7.12 Did you feel the work you did for this group was assessed fairly? (If assessed)
- 7.13 Did you have any comments about the structure of the task? (For instance: Was it clear? Were there logical steps to follow? Were necessary materials and resources available? Was adequate time allowed for the work?)
- 7.14 Were you confused by anything in the group task?
- 7.15 In your opinion, should the tutor use this collaborative task again with other students?
- 7.16 What did you do at each meeting?
- 7.17 Did you find it easy or difficult to share out the work?

8: THE STUDENTS

8.1 Had you had any prior experience of working in collaborative groups (ie groups not led by a tutor or teacher)?

- (a) at school (please tick for yes) _____
- (b) with other _____ tutors (tick for yes) _____
- (c) elsewhere (please tick for yes) _____
(please give details) _____

8.2 Which of the following alternatives most accurately describe collaborative learning methods for you? Please tick as appropriate.

- ___ useful _____ or _____ useless _____
- ___ hard _____ or _____ easy _____
- ___ enjoyable _____ or _____ not enjoyable _____
- ___ interesting _____ or _____ boring _____

8.3 How does working on a collaborative task like this compare with tutor-led teaching methods such as lectures, tutor-led seminars and tutorials?

8.4 Which do you prefer? (Please tick as appropriate)

Collaborative methods ___ or Tutor-led methods ___

10: THE TUTOR

- 10.1 Why do you think _____ uses collaborative methods?
(Please tick as appropriate)
- (a) Because their use promotes student understanding of the subject _____
 - (b) Because their use develops students' social skills _____
 - (c) Because their use enables students to practise skills they will need in employment _____
 - (d) Because their use prepares students to carry on learning throughout their lives _____
 - (e) For some other reason (Please give details) _____

- 10.2 Turning now to your own opinions, do you agree or disagree with the following statements about collaborative learning methods?
(Please tick as appropriate)
- (a) Their use promotes students' understanding of the subject
Agree _____
Disagree _____
 - (b) Their use develops students' social skills
Agree _____
Disagree _____
 - (c) Their use enables students to practise skills they will need in employment
Agree _____
Disagree _____
 - (d) Their use prepares students to carry on learning throughout their lives
Agree _____
Disagree _____

(e) Can you suggest any other reasons for using collaborative methods?

10.3 In your view, what is the purpose of a [institution deleted] education?

10.4 In your view, what is the role of a good tutor?
What should he or she do?

10.5 In your view, what is the role of the post-graduate student?
What should they do?

10.6 Is there anything else you would like to say about this group work?

11 Your tutors have asked me to take this opportunity to check whether you have found a job, and if not, what are you doing now. Please would you give details in the space below.

THANK YOU VERY MUCH
END

Frankie Todd
Institute of Advanced Architectural Studies
University of York, January 1985

- viii -

APPENDIX 6

SAMPLE NOTES FROM FIELD OBSERVATION

Introduction

These are the notes made on an observation of PGCE students working with Education Tutor N. The task was "Preferred and Possible Futures" (see Appendix 8) and carried out between 2.00pm to 4.00pm on a summer term afternoon. The notes made are reproduced here verbatim. I was asked to participate in the group work and so left some gaps on the sheet which were filled in immediately after the group work finished. Specific timings during the report back session were on a separate sheet and are not included here.

Notes

"2.00 : Tutor introduces exercise. Activity - pairs - draw on large sheets of paper a huge sideways Y. Use horizontal stem to represent time from birth to present. Negotiate with partner what to put down along this line (one side of line per partner): key personal, global or professional events. Use different coloured pens for each partner/different types of events as pairs wish.

When reach where the lines divide, use one arm to show probable future (each partner uses a different side of the line again) and one to show preferred future (same treatment). Take 15 mins. Pay particular attention to the two stems branching out.

Tutor explains this exercise has been used mainly in primary schools, e.g. with ten year olds in Oxfordshire.

Tutor circulates paper which shows examples of ten year olds' preferred and probable futures. Preferred futures include "peace" and "enough food for everyone" as well as entries like "toys" or "twenty guinea pigs".

Impressed by the way the tutor introduces the exercise. Very gentle tone of voice. Emphasises opting out possible. But no-one does. Tutor asks me to participate (had mentioned this to me before the session started). Tutor explains that the group welcomes participants but not observers. Nods of agreement from students. Tutor also introduces a school teacher who is sitting in today. As well as us there are nine students, one colleague (team tutor) plus the tutor present. I form a pair with the team tutor (TT). School teacher pairs with a student.

2.15 : TT and I and all other pairs start working on the exercise.

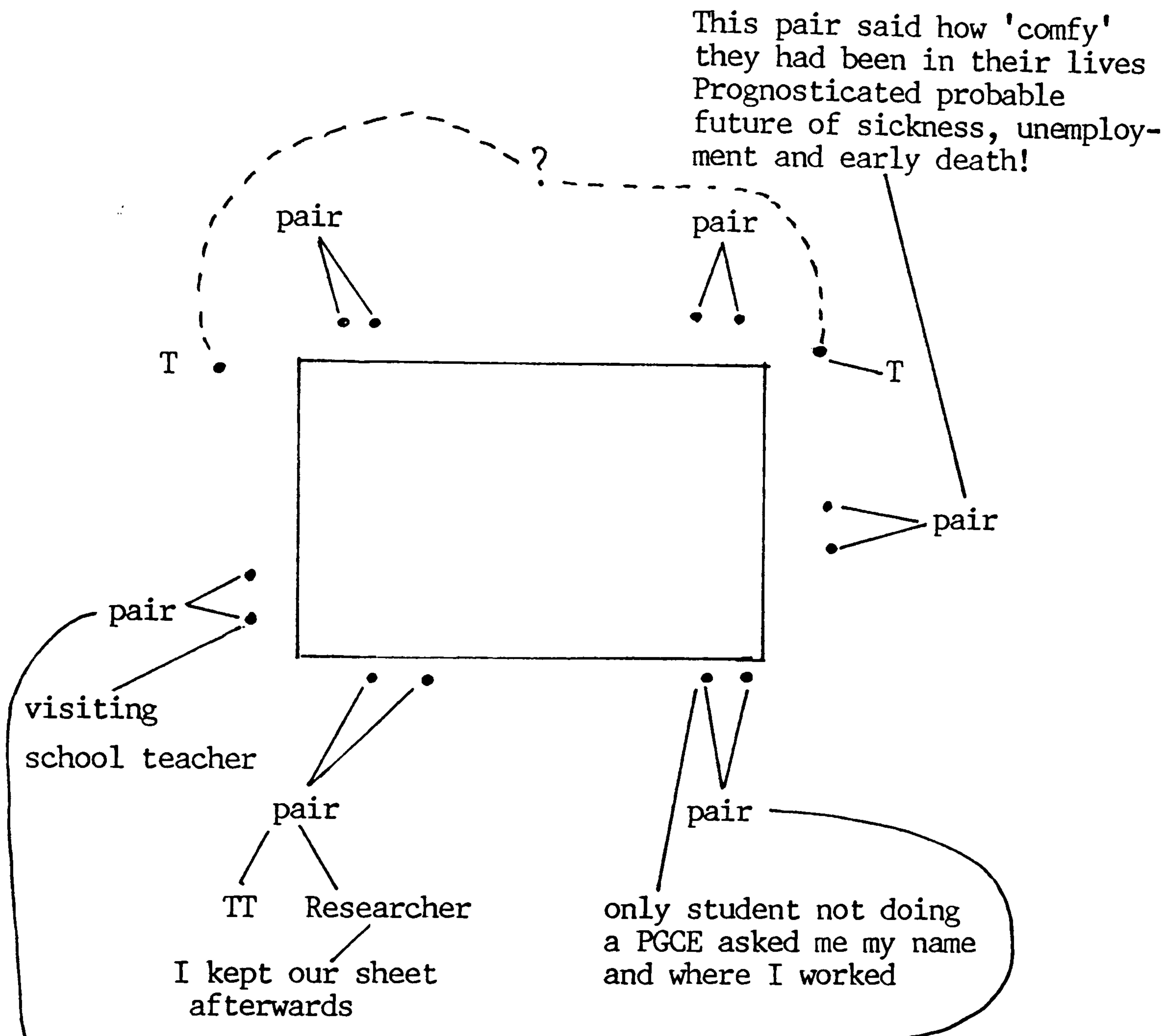
We all spend ages on it. Tutor had suggested 15 mins at the beginning. We took 45 minutes. Tutor left us until we were finished.

TT and I, plus other pairs, all working with many coloured pens on a large sheet of paper.

[DIAGRAM SHOWING PAIRS AND THEIR ARRANGEMENT

FOLLOWS ON THE NEXT PAGE]

Pairs and arrangement as follows:



This pair said how 'comfy' they had been in their lives Prognosticated probable future of sickness, unemployment and early death!

This pair did the longest report back. They said they had rejected dates and locating personal events like 'marriage' because people attach the wrong significance to them! Instead they talked more deeply and in very personal terms about themselves. Helen commented on having been protected by her parents. They also raised the question of whether you should 'accept less than you would prefer' in teaching. Anna not too unhappy to do this, Helen more so. Anna talked about what she can achieve in her primary school. This is a lot of what she wants to achieve. She thinks there is no point worrying too much about what she can't.

This pair did big blodges and circles all over the paper and didn't use the Y much. One student kept their sheet afterwards

3.00 : Report back from each pair in turn starting with two Canadians. All took it seriously as work and as ideas of worth. Partners paid attention to ensuring that what their partner had said was included in the discussion - rather 'courtly' this care for the other. Second pair hadn't really gone far down the two stems of the Y. They expressed a strong dislike for Freud.

When it came to us I didn't want to grab the spotlight and so tossed off our report quickly so as not to take much airtime away from the others and intrude. Then I felt I hadn't treated TT's and my work seriously enough and realised this was a mistake.

Group friendly and trusting atmosphere with each other. Tone is quiet, relaxed, non-emphatic. No larking about, no acting up. Comfortable silences.

'Probable' futures much the same for all pairs, with violence, war and nuclear disaster scenarios - difference of degree of pessimism but all pessimistic.

'Preferred' futures also similar: for peace, eradication of hunger, political goals generally shared.

Also included some personal elements, e.g. wistful hopes for teaching jobs. Students thought they had a high chance of being unemployed or of being forced to work outside teaching. Wistful hopes for better teacher pay. Some hopes for good holidays; and to work abroad. Tutor commented on the overall similarities between these adult preferences and those expressed by children.

3.40 : The theme that arose strongly in the plenary discussion after all the pairs reported back was whether it was necessary to 'accept less' in professional work as a teacher. This theme was picked up from Helen and Anna's report back. Students were quite pessimistic about this power to change things. "You can't do things like this exercise as a junior teacher" and "By the time we are in senior positions we will have been corrupted. We'll be different people then."

Terrific atmosphere of trust but not unchallenging. I said, in

the 'accept less' discussion: choose your arena; you can win some battles in some professional areas if you choose your ground to stand on, even though you have to 'accept less' outside these areas. Said in other areas of life, e.g. personal, it should be possible not to accept less, or not much less, even though one may have to at work.

I was asked to explain how I had not 'accepted less' in my personal life 'because you haven't really told us that.' This led on to general discussion of dual career families and conflict between work and child care. I gave an open, personal account that I wouldn't have at all in other situations. The group divided into those who thought one would have to 'accept less' in personal life as well as in professional life, and those who thought in professional but not personal. This discussion frank and open by all. Tutor didn't input as tutor. Came in by invitation.

3.55 : Tutor said group would go on next week to look at how teachers use this exercise in the classroom and what work they do with children after it. Anna and I invited to that session (I can't join it) were thanked for our contributions and made our thanks in return. I apologised for not being able to continue next time. Doesn't seem right in the context of such open sharing to drop out part way through.

4.00 : Session ended. Very friendly atmosphere, all students continuing talking, going off for coffee together.

This was a most involving and challenging session that made me think for a long time afterwards.

Question: What was the tutor doing and where did the tutor go during the forty five minutes we were all working in our pairs? I didn't notice - too involved.

APPENDIX 7

EXAMPLE OF DOCUMENTATION OF A TASK PROVIDED BY A TUTOR

For this exercise PGCE students were given four documents: a set of source materials given to school children for them to use in work on Roman pigs of lead; the questions given to the children for them to discuss in small groups; examples of the children's written answers; and a task sheet for the students to work on (reproduced below).

1st SMALL GROUP SESSION

LEAD PIGS TEST

Please appoint a spokesperson and a recorder

1. Give each answer a mark out of 10.
2. Discuss and be ready to report your comments/reflections on:
 - (a). the criteria on which you base your mark.
 - (b). the assumptions pupils appear to have made about the sort of answer required.
 - (c). the expectation the teacher appears to have had in setting the work.
 - (d). the level of thinking displayed in the answers.
 - (e). any ways in which the answers fall short of fully satisfactory.

APPENDIX 8 : SYNOPSIS OF COLLABORATIVE TASKS IN THE DATA SET

(For purposes of clarity and to aid cross-referencing, the tutors are grouped as in Figures 18 to 34 on the timing of collaborative learning.)

I SINGLE COURSE, SINGLE TASK TUTORS

Archaeology Tutor A:

Topic: Prepare and deliver a talk on a York Church

Background: Pairs of students are allocated a particular church and given a general idea of the task and relevant background reading and specific guidance on documentary sources. They work on these together to prepare a guided tour of the church for the whole group and a talk giving an explanation of features of the church.

Time Taken: The work is done in the students' own time spread over three to four weeks.

Students: are in the first term of their first year, following an Introduction to Archaeology course.

Biology Tutor B:

Topic: Practical on the use of radio-active isotopes as tools to answer questions

Background: Handout given out one week before practical. Students read it and get together in groups of four to design an experiment in detail (using the handout). Then they sign up to see the tutor who goes through their experimental design with them to check for faults that will make it an absolute disaster. Next day the groups do the experiment.

Time Taken: Four and a quarter hours on one afternoon.

Students: are in the first year, third term. There are eighty four of them divided into three weekly groups of twenty eight who are all in the lab at the same time - in seven groups of four or thereabouts

Biology Tutor C:

Topic: Investigation of the properties of a crude enzyme extract

Background: The first two to three hours consist of closely defined exercises to establish the method, for instance, getting the students to use books in which they can look up various methods to try, familiarisation with the tool with which they will make the measurement (dyes) and other necessary practical techniques. The next stage is their own experimental design but this is interactive and students evaluate it in the light of results and re-design their experiment as they go along, plotting data and repeating parts of the experiment. The enzyme provided is "quite an entertaining enzyme" in that the rate of production of the product increases with the square of the time. The students have to explain this unexpected curved rate of generation.

Time Taken: Eighteen hours over three weeks. Usually all of one day in each of three weeks, but may go up to five meetings depending on the timetable.

Students: are in Year Two (sixth term). Around twenty in the class, working in small groups of four.

Biology Tutor D:

Topic: The World Food Situation

Background: The students prepare in groups to give a seminar on the world food situation. Each group nominates one or more spokespersons to report on their work in a seminar. There are three categories to discuss: (a) biological aspects of food and starvation; (b) food production and agricultural aspects; (c) socio-economic factors. References are given and the students decide which group should work on particular references or sections of those references.

Time Taken: Briefing in the first week of term, deadline is to report in week 8. Students work mainly in 'own'

time as part of the course work for this option, but some timetabled time also made available for group working and for consultation with tutor.

Students: Thirty odd in the class, ten or so in each group. Students have chosen to do this option.

Chemistry Tutor E:

Topic: Oil Strike

Background: The students work in pairs on a series of four linked assignments. The first, after seeing a film and visiting a poster display, is to answer a set of twelve short questions about the problems and techniques of North Sea oil production, and to compare answers with those of other groups. The second is to estimate the amount of hydro-carbon in a given field and the amount of oil which may be recovered from it, and to assess the uncertainties in these estimates. Data from British Petroleum's Forties Field are used for this. The third is to examine different strategies for siting platforms in the Forties Field, including factors affecting well and reservoir performance, the assessment of production potential and the change in production rate over time. The fourth is to carry out a financial evaluation of exploitation strategies involving different numbers of production platforms.

Each of these assignments is given in the form of a handout giving a structured series of sub-tasks and including relevant information, tables to be filled in, charts to be plotted, calculations to be performed.

Time Taken: Four three hour sessions over four weeks.

Students: are in the third term of their second year following an optional course on resources and the environment of which this group exercise is a compulsory part. Six in the class on this occasion but there have been more.

Computer Science Tutor F:

Topic: Software Engineering

Background: The task for the groups is to specify, design, implement and test a programme to assist in the task of testing programmes in the Pascal or SWENGE programming languages. For the purposes of the project, quantitative measures of programme quality and test effectiveness are used, divided into two parts: (a) static analysis of the source text to determine programme structure and (b) dynamic analysis to determine run time behaviour of the programme and the effectiveness of programme test data. The project is to develop tools to perform simple static and dynamic analyses of the Pascal or SWENGE programmes.

Technical material that can be drawn on to help this project is taught in a companion course on System Specification. A handout is provided which breaks the project down into the stages of reserved word analysis, simple lexical analysis, the structure table and trace analysis and which lists a series of six tasks to be performed by one of the six groups in the team. These sub-tasks are lexical analysis of the source programme, instrumentation of the source programme, production of the structure table, production of the execution count source profile, and production of the dynamic execution profile. Each group produces a report on the project.

Time Taken: Eight three hour sessions

Students: are in their second year, twelve of them working in groups of three.

Computer Science Tutor G:

Topic: Enhanced Information System for British Rail

Background: This is a team project being carried out for British Rail. The brief is to make proposals for the enhancement of an existing information system for station booking clerks, and its integration with existing Prestel

services.

Time Taken: The team project is carried out over the summer vacation, so up to twelve weeks are available to complete the task.

Students: are in the summer vacation at the end of a one year MSc in Information Processing specialising in the Man-Machine Interface. There are seven in the group supervised by this tutor.

Computer Science Tutor H:

Topic: Design and construction of a database management system

Background: This is a team project being carried out to produce a system that can be used in teaching under-graduate information processing students. The desired outcome is a program or collection of programs (a teaching database) to form a management structure and/or a management system for the course, drawing on their own past experience to work out what is needed in teaching these under-graduate students.

Time Taken: The team project is carried out over the summer vacation so up to twelve weeks are available to complete the task.

Students: are in the summer vacation at the end of a one year MSc in Information Processing. There are five in the group supervised by this tutor.

Politics Tutor W:

Topic: The Politics of Rural Development

Background: Three groups of students each work on a specific aspect of this topic. This year the groups' topics are: (a) famine and the question of whether it has common causes across societies and cultures; (b) the trade off between rapid development and human rights and (c) a comparison of strategies towards development taken by different countries which are chosen to illustrate

both capitalist and communist routes.

This group project forms the course - which is optional.

Time Taken: The project runs over the two terms allotted to this option. There are five hours weekly timetabled for the course over the two terms, but students also work in their own time.

Students: are in their third and final year of a BA Hons in Politics or in the same year of a course which combines Politics with another subject, e.g. Economics, Sociology, History, Economic History.

II SINGLE COURSE, MULTIPLE TASK TUTORS

Education Tutor J:

Topic 1: School-visiting 1

Background: Students prepare for visits to schools to observe classes and to discuss what they observe with subject teachers, heads of department and deputy heads. They prepare by looking at the file for the school they will visit and thinking about the sorts of questions they will want to interrogate the teachers about. The schools on the list are meant to represent different traditions in secondary schools. In the classrooms the students observe different aspects of life in the classroom, e.g. the use of language in the classroom, or teaching for social and life skills.

Time Taken: Up to the students

Students: are the Social Studies group in their first term of a Post Graduate Certificate in Education (fourteen in the group). They prepare in twos and will observe classes in twos.

Topic 2: School-visiting 2

Background: Students also attend schools one day a week

for Teaching Method course. They plan for this in small groups determined by the students' subject and prepare for reflection on the teaching that takes place formally with the subject teacher at the end of the day. The students are observing, not yet on teaching practice.

Time Taken: Up to the students

Students: are the Social Studies group in their first term of a Post Graduate Certificate in Education (fourteen in the group). The size of these groups depends on the number of students doing, e.g. History.

Topic 3: Research Project

Background: Students work in teams of two or three to carry out a small scale piece of classroom research, i.e. to collect data of different types and to produce a report (which goes to the school as well as to the tutors). The aim is to help students develop vigorous powers of observation and analysis. Co-supervised by Tutor J and a colleague.

Time Taken: Timetabled sessions of two hours a week for the term plus work in the students' own time.

Students: are the Social Studies group in their third term of a Post Graduate Certificate in Education (fourteen in the group).

Topic 4: Roman Lead Pigs and Navy Letter

Background: This is a small group assignment about children learning in small groups! Students are given documents comprising (a) evidence given to school children for them to use in work on Roman pigs of lead; (b) the questions given to the children for them to discuss in small groups; (c) examples of children's written work produced after their small group discussion.

The student groups then appoint a spokesperson and a recorder and work together to discuss and mark the children's written work and then report back to the large

group and reflect on how their own and the teacher's marks were arrived at.

Later the student groups are given transcripts of the children's small group discussion to analyse.

Later the same day the students are given similar materials relating to a teacher-centred discussion on a letter from a navy and are asked to go through the same procedures as for the children's independent discussion on the Roman lead pigs.

Time Taken: A whole day timetabled from 10.00 a.m. to 4.00 p.m. (but the students stayed until 5.30 p.m.).

Students: are the Social Studies group (fourteen of them) in the Induction Week of their Post Graduate Certificate in Education.

Topic 5: Workshop Programme

Background: The group is timetabled each week between 11.15 a.m. - 4.00 p.m.. The first hour will be allocated for discussion of some topic, then there will be supervisions, then the afternoon session (1.15 - 4.00) will include practical exercises carried out in small groups. These varied small group exercises take up 10-20% of this timetabled day. The "Roman lead pigs" and "navy letter" exercises are a specific example used in the induction week.

Students: are the Social Studies group (fourteen of them) throughout the first and third terms of their Post Graduate Certificate in Education. (The second term they are out on teaching practice).

Education Tutor 0:

Topic 1: To look at the differences between qualitative and quantitative approaches in educational research

Background: For the first third of a session the tutor went through three articles, one on each of survey techniques, ethnographic methods and experimental

methods.

Then the students split into three groups, each one devising a study on gender equality in schooling using one of these three broad research methods. They have to discuss the advantages and disadvantages of the method. Then each group reports back, then there is full class discussion.

Topic 2: To look at the differences between qualitative and quantitative approaches in educational research

Background: Students read (a) an extract from examples of qualitative and quantitative approaches to classroom research. Then they discuss the strengths and weaknesses of each approach in the circumstances in which it was used. They then report back on their group work and move to general class discussion.

Other Topics: throughout the course are treated in the same way.

Time Taken: about twenty minutes for the group discussion followed by about twenty minutes report back from groups and about twenty minutes full class discussion.

Students: are part-time students, qualified and experienced teachers, following a one term course, in the autumn term, on research methods in education as part of a part-time MA in Applied Educational Studies. There are seventeen in the class, this is a compulsory course and they work in three groups of five or six, different groupings on different occasions.

Language Tutor T:

Topic 1: How questions are formed in Cantonese

Topic 2: Where time and place and adjuncts go in Cantonese sentences

Topic 3: Compare English gloss with Cantonese sentences, e.g. work out how to say 'not' in Cantonese and say how

you did it

Topic 4: Divide strings into sentences and justify these decisions

Background: This work is for a course in Descriptive Linguistics. The students are specialising in either French or German as part of a BA in language but Cantonese is used in this class as a corpus of data for linguistic analysis. In the first meeting the tutor gives an introduction to the way they will work collaboratively and gives a preliminary background on syntax (on which they are also receiving lectures from a colleague). The task involves new vocabulary each session.

Time Taken: Four one hour meetings once a fortnight through the one term course, plus unspecified and unknown amounts of work in the students' own time (one timetabled hour per topic).

Students: are in their first year, second term of a BA in Language. They work in pairs.

Politics Tutor V:

Topic 1: Making the Political Directorate

Topic 2: Ministerial Responsibility

Topic 3: The Parliamentary Commissioner for Administration

Topic 4: Parliamentary Questions

Topic 5: Legislating

Topic 6: The use of Committees to scrutinise or assist in policy making

Topic 7: Representation, Taxation and Public Expenditure

Topic 8: Limiting the Power of a House of Commons

Majority

Background: At the first meeting of this one term course on Government and Parliament the working method is introduced and forward topics listed. The course is made up of eight seminars on different aspects of

parliamentary government or on parliament. For each seminar the tutor produces a list of readings and a 'kit' (a box) containing journal articles, copies of books, White Papers, reports of parliamentary debates, select committee reports, etc.. (Where it is not possible to get copyright permission the materials are put on reserve in the library.) These items are all listed in the 'kit'.

Then one student in turn takes the 'kit' for a topic for a fortnight. The turn-taking is allocated and 'kits' given out at the introductory session. In the first week of the fortnight the student has the 'kit' to him/herself to browse through, trying to work out areas to be covered and issues to be raised.

After one week's possession of the box s/he distributes different parts of the kit to different members of the group (all the students receive a list of the full contents of the 'kit'). All the students then have the next week to work on their part of the 'kit'. At the next meeting, the student-holder of the box chairs a collaborative group discussion on that topic - all group members will have done different reading and the student chair can pass questions to the student who read appropriate materials. This is done on purpose to ensure everyone has something unique to say.

Having chaired the seminar, the student chair then submits for the following week an essay on the seminar topic. The tutor provides a cassette recorder so the student can use the recording as an aide-memoire.

Time Taken: a fortnight available for preparation for student chair, a week for the rest. Two hours each week for the seminar.

Students: are in term four or term seven (autumn term, mix of second and third years) of a BA Hons in Politics or of a joint degree in Politics and e.g. Economics, History, Statistics or Education.

III MULTIPLE TASK, MULTIPLE COURSE TUTORS

Education Tutor I:

Courses One and Two

Topic 1: Ice-breaking exercise

Background: Students work in pairs to find out about each other and then introduce each other to the rest of the group.

Topic 2: Negotiating curriculum

Background: Pairs of students combine with other pairs to discuss in fours what they hope to get out of the course, what they want to learn and the idea of a learning contract.

Topic 3: The subject matter of guidance and counselling

Background: Students work in (different) groups of four to define what the subject area, guidance and counselling, is about, using their own career decisions plus some teacher input as a jumping off point.

Topic 4: Unemployment

Background: Pamphlets are given out and the students use these for group work (new groups) on unemployment.

Topic 5: Counselling skills

Background: Students do an exercise in threes on relationship skills.

Topic 6: Exploring and clarifying

Background: After tutor input the students work in threes, using role play, on questioning techniques.

Topic 7: Stages of an interview

Background: Students work in fours in a drama studio carrying out a long continuous interview of the tutor,

one person picking up questioning where another left off. The groups have the option to video-record this exercise and then work on the video-tape, which is subsequently wiped clean.

Topic 8: Simulation

Background: Students who had been to watch some simulations in action reported back and then ran short stretches of simulations with groups.

Topic 9: Role Play

Background: Students work in pairs to do role plays based on a pupil they had taught (PGCE students only)

Topics 10 and 11: Production of guides

Background: Students worked in groups to compile (a) a guide for the school they had been in on how to receive students on teaching practice and (b) for the University's Education Department on how to prepare students for teaching practice.

Topic 12: Choosing materials

Background: Brainstorming session, using a packet of Rowntree's jelly. Problem: what could you teach using this as material?

Topic 13: Trust exercises

Background: Students wanted to try out trust exercises, e.g. partners in turn leading each other blindfold, being carried by group, allowing self to 'fall' and being caught by partner.

Topic 14: Role of form teacher

Background: Worked in groups on series of decision-making exercises, basically 'in-basket' material that a form teacher might have to deal with on a typical day.

Topic 15: Linking industry and the community

Background: First students compose a letter to a firm asking for something they need to help something they would like to do in their teaching. Then students work in groups in the role of the managers who have received these letters to decide on their response.

Topic 16: Syllabus review

Background: Students worked in groups to review what they had said they wanted to do and what they had actually done and how they had done it. This was then taken up in the whole class with reports back and loose ends tied up by the tutor.

Topic 17: Profiling systems

Background: Students work in small groups to consider and evaluate three different profiling systems designed and used by three different schools.

Time Taken: varies from task to task. It may be as little as ten minutes for the ice-breaking exercise; others take about twenty minutes to half an hour (e.g. Topic 16 on profiling systems); others take the greater part of a two hour session (e.g. Topic 14 on industry and the community). The most extensive was the production of the guide for schools on the receipt of teaching practice students and the guide for the department on the preparation of students for teaching practice. This work, done at the students' own request, took three weeks, including their own and timetabled time. The weekly timetabled meetings are of two hours.

Students: are either Post-Graduate Certificate of Education students in terms one and three of their year, undertaking an optional 'Introduction to Guidance and Counselling' or are a mix of years one, two and three on the BA Hons in Education (the group may include students

combining Education with another subject, e.g. Politics, Psychology, Sociology, Music, English, History) following a two term option on Guidance and Counselling.

The size of these classes ranges between 12-27 for the PGCE and 3-20 for the undergraduate option.

Note: The tasks listed as Topics 1-17 are exemplars of the tasks used and not the complete list. They or others are used responsively to the learning contract the students on the two courses may have negotiated and to interests raised by students as the course goes along (e.g. Topics 10, 11 and 12).

Education Tutor L:

Course One

Topic 1: Research Project

Background: Students work in small teams to carry out a small scale piece of classroom research, i.e. to collect data of different types and to produce a report (which goes to the school as well as to the tutors). The aim is to help students develop rigorous powers of observation and analysis. Co-supervised with Education Tutor J.

Time Taken: Timetabled sessions of two hours a week for the term plus work in the students' own time.

Students: are the Social Studies group (fourteen of them) in their third term of a Post-Graduate Certificate of Education.

Topic 2: As Topic 1 for Education Tutor J

Topic 3: As Topic 2 for Education Tutor J

Topic 4: As Topic 5 for Education Tutor J

Co-supervised with Education Tutor J.

Time Taken: As for Topics 1, 2 and 5, Education Tutor J

Students: Ditto

Course Two

Topic 1: Analysis of a School Brochure

Topic 2: Carry out and analyse a small piece of classroom observation

Topic 3: Analysis of space and the use of space in a school

Background: These tasks are examples of a number of small scale exercises used in a course on research methods in education taught in the first term of a part-time MA in Applied Educational Studies. They are preparatory work for a larger scale research task to be carried out by individual teachers working in school-based teams on related topics.

Course Three

Topics 1 - ?: This tutor also uses a variety of small group exercises in short in-service courses for teachers.

Education Tutor M:

Course One

Topic 1: Avoiding

Topic 2: Introductions

Background: An ice-breaking game. Students first walk around in silence avoiding each other, including not looking at each other, then introduce themselves to each other in a series of pairs

Topic 3: Posters Game

Background: Whimsical posters are stuck up all around the room. Students select the two they like best, then turn to other students to make a foursome of those who like the same two, then to make an eightsome of those who like the same two.

Topic 4: Attributes

Background: These same eightsomes, formed in the group

work for the Posters Game in Topic 3, are given sets of attributes taken from magazines, and work to select ten attributes which they think characterise a good teacher.

Topic 5: Dimensions

Background: Statements read out in turn, students rush to a spot designated as the spot for 'yes', 'no' or 'don't know' as their response to the statement.

Topic 6: Blind Trust

Background: Students work in pairs, one blindfolded, one not, to follow a designated course around the campus. The rule is that all return safe and sound!

Topic 7: Circle Trust

Background: Group stands in a circle, one student is in the middle, blindfolded and then falls - the rest have to catch him or her.

Topic 8: Shared Lift

Background: One student lies on the floor, face down, arms out in cruciform shape, the others gently lift the student up and then lower him or her back to the ground.

Topic 9: Machine Building

Background: Groups of 10-12 students work together to design a machine of which their bodies are the parts. They have to check that it works and then demonstrate it in action to the rest of the class.

Course Two

Topic 10: Countries

Background: Students divided into four groups, each given a different country, indicated by a card they are given on which they can choose to draw a river or a mountain. Each country is given different economic

strengths and resources, e.g. of iron and steel. Groups (countries) have to engage in diplomatic activity with other countries.

Topic 11: Baffa Baffa

Background: Two groups of students are set up into two different imaginary cultures which each operate according to their own set of cultural rules. The exercise is to discover the cultural rules of the opposite group.

Observers go from one group to the other and back to their home group to report and to be briefed for further specific observations. Group members observe the rules of the culture at all times, e.g. when engaging in trading with their group. At the end, each group says what they have discovered about the other group. Then there is a de-briefing session - out of role - about how such a game might be used in schools as a means for developing awareness of and sensitivity towards other cultures.

Time Taken: Varies from a few minutes for a task such as Topics 1 and 2, twenty minutes or so for Topics 3 and 4, up to 3 hours for Topic 11, Baffa Baffa.

Students: are all Post Graduate Certificate in Education students (90-100 in the whole group). Course One is the Induction Week and Topics 1 - 9 form a series of self-affirmative warm up games designed to help produce cohesion and trust in this large group as a preparation for work on curriculum areas.

Course Two is an intensive one week course in Multi-cultural Education. Depending on which warm up games have been used in the induction week, some trust exercises and exercises which encourage openness about the self are used early in the week to support students through later parts of the week which require them to be fairly open about their own beliefs.

Education Tutor N:

Course One

Topic 1: Attitudes

Background: Prior to a research activity, students sit in two concentric circles, facing each other. Students discuss their attitudes (to something relevant to the course) for three minutes with the person facing them, then they move on to the next person in the circle. Then students carry out independent research activity on the topic. On its completion they do the concentric circles exercise again - and reflect on how their attitudes have been changed by the research they have carried out.

Topic 2: Circle Time

Background: Group sits in circle, each person in turn contributes a thought or observation on a topic - or may decide to pass. Everyone who wants a turn gets one, anyone who does not wish to share their thought may decide to pass. The subject of the shared observations is agreed by the group beforehand.

Topic 3: Goal setting

Background: Students work in twos to set goals for their own work in this course or for their work as a trainee teacher. They complete a series of eight statements which begin e.g. "If I could do this things would be better because ..." and end "Exactly what I am going to do is ..."

Topic 4: Feedback

Background: Students work in pairs to give feedback on each other's work. One student describes and explains the work and the ideas behind it, the other listens and may seek clarification before providing feedback. Styles of responding to the work are offered by the teacher as initial models to branch out from e.g. "What gave you the

idea for...?", "One thing I particularly liked was ..."
and "What are you not so happy about?"

Topic 5: Flow Charts

Background: Students work in groups to develop a flow chart, e.g. a wheel chart, as a means of experimenting with ideas and possibilities. In the wheel chart a key idea under consideration is written in a circle in the middle of a large piece of paper and ideas radiate from it like the spokes of a wheel. Different coloured pens may be used to indicate first and later thoughts all the way to final draft.

Topic 6: Listening

Background: A co-counselling technique in which students work in pairs taking it in turns to listen while the other talks. The listener does not speak but uses non-verbal communication to convey involvement.

Topic 7: If I were you

Background: Students work in pairs. One student, for instance, describes an experience to the other. The other then has to describe the same experience in the first person singular. Or the trigger may be a newspaper account of a particular accident which students describe as if they were the person involved.

Topic 8: Brainstorming

Background: Students are asked to brainstorm in small groups or pairs about e.g. their images of a country, or a particular group or nationality of people, or about how they think someone might be feeling in a certain situation. The responses produced by such brainstorming (in which any response, however wild, is accepted) are listed and then discussed and turned into agenda for further work.

Topic 9: Preferred and Probable Futures

Background: Students work in pairs, each pair with coloured pens and a sheet of paper on which they draw a large letter Y. Each partner writes along the side of the stem of the Y a summary of significant features of their life so far. Then one branch is taken as the probable future - again each partner writes along their side of the line what they think will be the future. Along each side of the other branch of the Y they write down what would be their preferred future. Then these charts are all put on display and the whole class discusses the types of future that are seen as probable, the types that are preferred and considers action to turn the probable into the preferred.

Time Taken: May be as little as one minute each on the first occasion the listening exercise is tried (Topic 6) up to fifty minutes for the pairs to work on preferred and probable futures (Topic 9). The time allotted by this tutor for these different exercises varied according to the session in which they were used and was responsive to the students' wishes - if they needed more time to complete something they could have it.

Students: were following a Post Graduate Certificate in Education, taking an option on World Studies taught in the Autumn and Summer terms with teaching practice in between, in the Spring term.

Course Two

Topics 1, 2, 3, 4, 5, 6, 7 and 8 as in Course One used, but with different subject focus appropriate to this course. The Baffa Baffa exercise (as Topic 11 of Education Tutor M) and similar simulations may also be used.

Background: These exercises are used to promote self-awareness and to provide a situation in which the object

for the class is to explore their own attitudes.

Time Taken: Varies from a few minutes up to three hours for Baffa Baffa.

Students: are in the first week of a Post Graduate Certificate in Education, taking a one week block on Education for a Multi-cultural Society. In some years this block is taught jointly with Education Tutor M.

Course Three

Topics 1, 2, 3, 4, 5, 6, 7, 8 and others used with different subject matters as appropriate to the course.

Topic 10: (another example) Guided Fantasies

Background: Students lie on the floor in relaxed position with music playing and permit themselves to fantasise about some desired state. The fantasy is "guided" by prior discussion in groups in which goals are set for states to achieve in schools through professional action. In subsequent co-counselling pairs report to each other what the achieved state 'felt' like (in the fantasy) and develop action agendas for steps to take to achieve this state in reality.

Topic 11: (another example) Blindfolded clay-modelling

Background: Students work in pairs, blindfolded, to mould jointly a pre-agreed shape out of clay, e.g. a fish, a bird.

Time Taken: from a few minutes up to about fifty minutes as appropriate and required.

Students: are experienced and serving teachers on in-service courses in the UK and abroad including, for instance, DES Regional courses of four to six days, two days input on Curriculum and Teaching Methodology into Headship courses, four to five day courses on Global Studies in Education.

Music Tutor U:

Course One

Topic 1: The Symphonies of Gustave Mahler

Topic 2: Orchestral Works of Elgar and Delius

Course Two

Topic 1: Sonata Principles

Topic 2: Parametric Analysis

Course Three

Topic 1: Style, interpretation and performance

Topic 2: Clerical Music

Background: The course consists of a project programme. Students must complete a requisite number of projects chosen from a wide range, each student's individual programme being approved by the Board of Studies. Projects fall into three broad areas: 'A' projects on historical or musicological topics, 'B' projects on written techniques, analysis and composition and 'C' projects on solo and ensemble performance, style and interpretation. A balanced project programme is aimed for overall. Each project includes private preparation and group study and performance followed by a period of individual work. The notion underlying all projects is that they should be collaborative with other people because music is. In virtually every project students are required to perform, necessarily, and this involves group performance, irrespective of the focus of the project. During the project students also prepare seminar papers, often in small groups or pairs. The type of ensembles they form will depend on the music studied and the talents in the group, e.g. it might be two string quartets and a wind ensemble.

Time Taken: Each project lasts a month during which two or three half days each week are taken up by group

activities (with private study and preparation in between). This is followed by a period of individual work over a further four weeks plus the vacation during which the student prepares a folio for assessment.

Prior to the group activity students may be required to book practice rooms and to prepare works together.

Students: can be in any one of years one, two or three, each with ten or so years of musicianship behind them that will have led to different specialisations so brilliant instrumentalists without great written skills may be rubbing shoulders with those who are good at composing but not so good as instrumentalists.

Sociology Tutor Z:

Course One

Topic 1: The relationship between stress and (minor) illnesses

Background: Students work in two groups to design (in outline form) a study to test the hypothesis that there is a relationship between stress and minor illnesses. Groups were given an example close to home - university life - and asked to decide which two periods of a student career are most stressful, potentially (first term, first year and coming up to finals). Then they were asked to work out how they would find out if these were indeed experienced as stressful, and how they would explore a potential relationship between stress and illness, what information would they seek, how would they obtain it?

Time Taken: The first half of a two hour block for the group work, then a coffee break, then the two groups exchanged their ideas and discussed them.

Topic 2: The health needs of an African community

Background: Students work in two groups to design in

outline form a study of the health needs of an African (or other third world) community. Again the task is to decide what information they would need, how they could go about getting it, how they would evaluate it.

Time Taken: As Topic 1.

Topic 3: Perceptions of general practice

Background: Students seek out, prior to the group work, news clippings and reports of studies which are relevant to discussing the way general practitioners are viewed. Students bring all these materials in and display them, then split into groups to discuss the interpretation of this material, its reliability and validity as a source of evidence and whether other information and of what type would be needed to form a judgement.

Time Taken: As Topic 1.

Topic 4: The Wendy Savage Case

Background: One of a series of topical issues chosen for discussion by students. Students seek out relevant news clippings, articles and summarised reports, bring them in and display them, then split into two groups to discuss what this material tells them about the Wendy Savage case.

Topic 5 etc: other issues agreed with students are treated in similar ways.

Students: are following a two term optional course on Medicine in Society, available to second and third years jointly. Numbers vary from year to year - usually not more than ten in the class so groups may be of four or five students.

Course Two

Topic 1: Role Play on being defined as mentally ill

Background: Having run conventional seminars on this course in the past and feeling they didn't help students to understand the experience of being mentally ill, the tutor "took courage in both hands" to follow the example of social work courses where the use of role plays is quite common. Students went off to work in pairs - one in the role of psychiatrist, one in the role of a mentally ill person and then reversing these roles - with the aim of empathising with the experience of having what one says disbelieved yet being convinced oneself that it is right. The pairs then came back to the full class and reported on their work.

Time Taken: First half of a two hour seminar period for the role play, then a coffee break followed by report back and discussion in the full class.

Topic 2: Role play on meeting a friend when coming out of mental hospital

Background: Similar rationale and structure to Topic 1

Time Taken: as Topic 1

Students: are a mixture of second and third years following a one term optional course on the Sociology of Mental Illness.

Course Three

Topic 1: The Müller-Lyer Illusion

Background: Tutor shows the Müller-Lyer Illusion to the whole student group and asks the students why they think it works and what factors would they need to change in order to obtain different perceptual effects upon subjects. Students generate a number of hypotheses, then each of two or three small groups decides which hypothesis their group will test. They plan this between seminars and then come back to discuss feasibility and fine detail of the experimental design, then they carry

out their experiment, then they analyse their results. These are reported back and discussed in a subsequent seminar. During the same period students worked individually on relevant areas of psychological theory or reports of existing empirical work (these were sociology students) needed to inform their own experimental study, summarised them and brought in the work to share with others in the group. This work was used to improve their experimental design and interpretation.

After all the group experiments had been done and discussed the last session of the course tackled general theoretical and methodological issues in experimentation in experimental psychology, this discussion now being based on their own informed practice.

Time Taken: The whole cycle of work from introduction of the Müller-Lyer illusion to the final general discussion spread over nine weekly two hour meetings, with the mainly collaborative work spread over seven weeks. Students also worked in their own time both individually and in groups.

Students: are a mixture of second and third years following an optional one term course entitled "An Introduction to the Theory and Methods of Experimental Psychology". They worked in groups of not more than four or five (usually about eleven students took the course) but could also choose to work in pairs if they wished, and in each year a few took this option.

IV SINGLE TASK, MULTIPLE COURSE TUTORS

Education Tutor K:

Course One

Topic: To conduct a piece of school-based research

Background: Students work in one group (the number of students doing the course) on a research project based on

a real life issue in a school. Examples have included parental attitudes to schools, parents' choice of secondary schools for eleven year olds and views of the curriculum held by third and fourth year primary pupils. A school is the commissioner of the research and allows research access for the students. The tutor puts the problem to the students who over succeeding weeks of the term decide on a research design, construct research instruments, collect data in the school, analyse it and prepare a report for the school.

Time Taken: The project forms the work for a one term course and is conducted in that term both within and outside timetabled meetings of two hours each week for nine weeks.

Students: are first and second years following a one term optional course called "Introduction to Research".

Course Two

Topic: Preparation for conducting a piece of school based research

Background: Serving teachers following an MA course design and conduct a piece of research in their own school. Teachers work in teams on inter-related research topics (they are accepted on the course in groups) although ultimately they will write dissertations individually. The teachers work in these groups to isolate and define their chosen research areas, to decide on research design and discuss construction of research instruments. The amount of co-operation in the research design, data collection and analysis varies according to the degree of over-lap in the research topics of the team members (who are all from the same school).

Time Taken: Part of the first year and the greater part of the second year of a two year course.

Students: are serving teachers following a two year part-time in-service MA in Applied Educational Studies.

English Tutor P:

Course One

Topic: Preparation for seminar work

Background: Students work in groups, between timetabled sessions to prepare for the next seminar. Each group is given different materials - it may be a text, a critical work, biographical material or historical background material. The aim is to "give each group a voice" by giving each group different material so that all the students will have something to say in the seminar.

Group size is dictated in part by students' self-choice, in part by the materials in that the tutor closes a group of volunteers at the point where the materials are exhausted, for instance, because they would not support any more viewpoints. Students' performance in the subsequent seminar (i.e. their oral performance in discussion) is then graded and recorded by the tutor.

Time Taken: is up to the students and so varies from as little as fifteen minutes just before a seminar to one or two longer meetings during the week.

Course Two: identical to Course One

Course Three: identical to Course One

Course Four: identical to Course One

Students: on Course One are first and second years following a course on Victorian Literature; on Course Two are second years following a course on Women's Writing and Women's Roles 1780 - 1850; on Course Three are first years following a course on Middle English Literature; on Course Four are post-graduates following a core course on Victorian Literature as part of an MA in Women's Studies.

History Tutor Q:

Course One

Topic: How independent of dominant social and political trends has popular culture been since the 16th century?

Background: Students break into two groups, one group with the task of arguing that popular culture has been independent of social and political trends, the other that it hasn't. In their groups they are asked each to produce a tape of appropriate length (probably about half an hour) in radio programme format.

Time Taken: One term overall made up of nine weekly timetabled sessions of two hours in addition to other work in the students' own time.

Students: are in the first term of their first year, working in groups of six or seven, following a course on Popular Culture in England, 1500 - present.

Course Two

Topic: "Was the American Revolution a Social Revolution?"

Background: Students have had either to produce a group project (written up by the group as one joint essay) or to produce a tape of four radio programmes on this theme as one joint group project.

Time Taken: As for Course One

Students: are second years in their fifth term, working in groups of three to four, following a course on the American Revolution.

History Tutor R:

Course One

Topic: As History Tutor Q, Course One - taught jointly or in turns when one of the pair of tutors on academic leave.

Course Two

Topic: An assessment of the usefulness of Marxism to the study of History

Background: Students work in one group of about six or seven to produce a single, collaborative written account, which is fairly long, on this topic. They may break the task down into sub-tasks for smaller groups to do - that is their decision.

Time Taken: The group meets for two timetabled sessions per week, each meeting of two to three hours, including a break, over a nine week term. Students also meet and work outside timetabled time.

Students: are in term six (second year) following an optional course on History and Marxism, which is one of several options available that term on the Discipline of History.

Course Three

Topic: Production of a students' guide to nineteenth century Iran

Background: The groups's project is jointly to produce a students' guide to nineteenth century Iran. As with Course Two, the students who take the option (about six or seven) work collaboratively in one group, breaking the project down into sub-tasks as they feel is appropriate.

Time Taken: Two timetabled two-three hour sessions per week, in a nine week term, in addition to work singly and individually in students' own time.

Students: are second years taking a one term (fifth term) option in Iranian History.

Course Four

Topic: Theory and Method in History

Background: This is a more limited smaller scale use of collaborative work than in Courses One to Three. The assignment may be to go away and work in a group to

discuss the relationship between theory and method and history as an intellectual method, using the study of e.g. the condition of women in society at different periods as the trigger for analysis and reflection.

Time Taken: One or more timetabled periods of two-three hours

Students: are third years taking an eighth term course on the comparative study of a general topic (in this case the Condition of Women in Society) in the context of several specific but different historical situations.

History Tutor S:

Course One

Topic: Historical arguments about living standards during the Industrial Revolution

Background: Teams of students opt to address this (or another) topic. Each team then divides into the "optimists" and the "pessimists", or the "pros" and the "cons", and work jointly to develop arguments for that case. The students choose which viewpoint they would like to represent and elect someone to present their collective view at the forthcoming seminar on this topic.

Time Taken: is up to the students. They work in their own time as preparation for the next weekly seminar.

Students: are in the first term of their first year, following an introductory history course on the making of the English Working Class. Students' choice of the 'case' to present determines the composition of and numbers in the teams.

Course Two

Topic: Were the English irreligious people?

Background: As Course One

Time Taken: As Course One

Students: are in their fourth term, second year,

following a one term course on Problems in Modern Social and Political History.

Course Three

Topic: Approaches to Slavery

Background: The group preparation operates in the main as for Courses One and Two, with the slight difference that this is a course on historiography and so shaped around historical arguments. This course is one of the options available under the compulsory term six themes of the Discipline of History. It is a larger group of students and the issues are larger and so it is possible to have more than two teams.

Students: are in their sixth term, second year.

Psychology/Computer Science Tutor X:

Course One

Topic: Writing a User-interface for a statistical package for doing analysis of variance for use by psychology under-graduates

Background: Students are working on a live project for which the tutor is in this case the commissioner as well as the group's supervisor. The tutor is in the Department of Psychology but helping out the Department of Computer Science in this instance.

Time Taken: The whole of the summer vacation. It is up to the students to decide how often to meet, how to organise their time and how to break the project down into sub-tasks.

Students: are on the final vacation of a one year full time MSc on Information Processing. They choose from a range of summer team projects; seven opted to do this one.

Course Two

Topic: Devise and carry out an experiment concerned with

sensory processes

Background: This is a group practical project. Student groups choose their own precise topic for experimentation within this general theme and formulate and test a hypothesis pertaining to this topic, informed by background work on relevant literature.

Time Taken: The practical project is introduced in one session, then groups have two weeks to go away and do the practical, then the whole class comes together in the fourth week for groups to report back on what they did. Groups have to work in their own time to get the task done.

Students: are in their fifth term (second year) following a course on perception. They work in groups of two or three, group composition on a self-choice basis and partly determined by the particular area chosen for investigation.

Sociology Tutor Y:

Course One

Topic: Conversation Analysis

Background: Students don't have to work this way but they can. Where a student has chosen to work on a dissertation topic that cross refers or links to the dissertation topic of another student the tutor will suggest that these two or three students work collaboratively on the data set given for the project. For instance, two or three students may be interested in analysing the Department's data set of taped conversations about "making arrangements" or "telling a story". They are encouraged to work on the data set together.

Time Taken: students' own time, entirely up to the students

Students: are following a two term course on the Social Organisation of Conversation

Course Two

Topic: Analysis of materials related to Language and Culture, e.g. on language and gender or language in the classroom

Background: As Course One

Time Taken: As Course One

Students: are second and third years mixed, following a one term option on Language and Culture.

Course Three

Topic: Courtroom Interaction

Background: As Course One

Time Taken: As Course One

Students: are mixed second and third years following a one term option on Interaction in Courts.

REFERENCES

- Abercrombie, M.L.J., (1960) The Autonomy of Judgement, Penguin, Harmondsworth.
- Abercrombie, M.L.J., (1970) Aims and Techniques of Group Teaching, Society for Research into Higher Education, Guilford.
- Abercrombie, M.L.J., (1974a) Aims and Techniques of Group Teaching, Third Edition, Society for Research into Higher Education, Guilford.
- Abercrombie, M.L.J., (1974b) 'Improving the Education of Architects', in K.G. Collier (ed) Innovation in Higher education, NFER Publishing Company Ltd, Windsor.
- Abercrombie, M.L.J., (1979) Aims and Techniques of Group Teaching, Fourth Edition, Society for Research into Higher Education, Guilford
- Abercrombie, M.L.J., (1981) 'Changing Basic Assumptions about Teaching and Learning' in David Boud (ed) Developing Student Autonomy in Learning, Kogan Page, London.
- Abercrombie, M.L.J., Forrest, A.J. and Terry, P.M., (1970) 'Diploma Project 1968-9', Architectural Research and Teaching, I, pp 6-12.
- Abercrombie, M.L.J. and Terry, P.M., (1973) 'Students' attitudes to professionalism', Univ. Quart., Autumn, pp 465-74.
- Abercrombie, M.L.J. and Terry, P.M., (1978) Talking to Learn: improving teaching and learning in small groups, Society for Research into Higher Education, Guildford.
- Abercrombie, M.L.J., (1983) 'The State of Play', in Gerald Collier (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, Society for Research into Higher Education, University of Surrey, Guildford.
- Alexander, Robin J., (1984) 'Innovation and Continuity in the Initial Teacher Education Curriculum', in Robin J. Alexander, Maurice Craft and James Lynch (eds) Change in Teacher Education. Context and Provision since Robbins, Holt, Rinehart and Winston, London.

- Argyris, Chris and Schon, Donald A., (1975) Theory in Practice: Increasing Professional Effectiveness, Jossey Bass, San Francisco.
- Bakhtin, M.M., (1981) The Dialogic Imagination, University of Texas Press, Austin. (edited by Michael Holquist)
- Barnes, D., Britton, J., Rosen, H. and the LATE, (1971) Language, the Learner and the School, Penguin, Harmondsworth.
- Barnes, D., Britton, J. and Torbe, M., (1986) Language the Learner and the School, Third (revised) Edition, Penguin, Harmondsworth.
- Barnes, D., (1976) From Communication to Curriculum, Penguin, Harmondsworth.
- Barnes, D. and Todd, F., (1977) Communication and Learning in Small Groups, Routledge and Kegan Paul, London.
- Barnes, Dorothy, Brown, J. and Dixon, J., (1978a) Exploring a new A level Communication Studies, English 16-19 Project, Discussion Booklet 4, Schools Council.
- Barnes, Dorothy, Brown, J. and Dixon, J., (1978b) New Directions in General and Communication Studies, English 16-19 Project, Discussion Booklet 6, Schools Council.
- Bartlett, F.C., (1932) Remembering: A Study in Experimental and Social Psychology, Cambridge University Press, Cambridge.
- Bauman, Zygmunt, (1988) Freedom, Open University Press, Milton Keynes.
- Beach, L.R., (1960) 'Sociability and Academic Achievement in Various Types of Learning Situations', Jnl Educ. Psychol., 51, pp 208-212.
- Beach, L.R., (1968a) 'The Learning Process in Self-Directed Groups', Improving College and University Teaching, 16, pp 93-95.
- Beach, L.R., (1968b) 'Learning and Student Interaction in Small Self-Directed College Groups', Final Report, Project No. 7-E-020, U.S. Office of Education.
- Beach, L.R., (1974) 'Self-Directed Student Groups and College Learning', Higher Education, 3, pp 187-200.

- Beard, R.M., (1976) Teaching and Learning in Higher Education, Third Edition, Penguin, Harmondsworth.
- Beard, Ruth and Hartley, James, (1984) Teaching and Learning in Higher Education, Fourth Edition, Harper and Row, London.
- Bearison, David, J., (1982) 'New Directions in Studies of Social Interaction and Cognitive Growth' in Serafica, (ed) (1982), pp 199-221.
- Beattie, G.W., (1982) 'The Dynamics of University Tutorial Groups', Bulletin of the British Psychological Society, 35, April, pp 147-150.
- Beattie, Nicholas, (1974) 'Aims and Methods in the Introductory Teaching of Comparative Education : An Application of Syndicate Methods', Compare, Vol 4, No 2, July.
- Berman, A., (1972) 'Media-Activated Learning Groups in the Computer Systems Course at the Technical University, Denmark', in Eggleston, S., (ed) Paedagogia Europaea Braunschweig, Westerman.
- Bernstein, B., (1977) Class, Codes and Control, Vol 3, Towards a Theory of Educational Transmissions, Routledge and Kegan Paul, London.
- Bernstein, B., (1982) 'Codes, modalities and the process of cultural reproduction: a model' in Apple, M.W. (ed) Cultural and Economic Reproduction in Education, Routledge and Kegan Paul, London.
- Beyer, K., (1977) 'Project-organised Study at Roskilde University Centre' in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Bhaskar, R., (1979) The Possibility of Naturalism, Harvester Press, Brighton.
- Bligh, Donald A., (1972) What's the Use of Lectures?, Penguin, Harmondsworth.
- Bligh, Donald, Ebrahim, G.J., Jaques, David and Warren-Piper, D., (1975) Teaching Students, Exeter University Teaching Services, Devon.

- Bloom, B.S. (ed), (1956) Taxonomy of Educational Objectives I: Cognitive Domain, David McKay, New York.
- Bloom, B.S., Krathwohl, D.R and Masia, B.B., (1956) Taxonomy of Educational Objectives II: Affective Domain, David McKay, New York.
- Blumer, H., (1940) 'The Problem of the Concept in Social Psychology', American Jnl of Sociology, pp 707-719.
- Botkin, J.W., Elmanjdra, M. and Malitza, M., (1979) No Limits to Learning. Bridging the Human Gap, Pergamon Press, Oxford.
- Boulter, M., (1977) 'Independent Study at North East London Polytechnic', in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Bourdieu, P., (1977) Outline of a Theory of Practice, Cambridge University Press, Cambridge.
- Bourdieu, P., (1984) Homo Academicus, Les Editions de Minuit, Paris.
- Bowlby, John, (1965) Child Care and the Growth of Love, Penguin, Harmondsworth.
- Bowlby, John, (1981) Attachment and Loss, vol 2: Separation, anxiety and anger, Penguin, Harmondsworth.
- Bowlby, John, (1982) Attachment and Loss vol: Attachment, 2nd Edition, The Hogarth Press and the Institute of Psychoanalysis, London.
- Britton, J., (1970) Language and Learning, Allen Lane, Penguin London.
- Brown, G.A., (1978) Lecturing and Explaining, Methuen, London.
- Brown, G.A. and Atkins, M.J., (1986) 'Academic staff training in British Universities: results of a national survey', Studies in Higher Education, No 11, pp 29-42.
- Brown, George and Bakhtar, Mali, (1988) 'Styles of Lecturing: a study and its implications', Research Papers in Education, June, Vol 3, No 2, pp 131-153.
- Brown, R., (1977) 'Short Duration Industrial Projects of Second Year Engineering Students' in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Oriented in Higher

- Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Bruner, J.S., (1964) 'The Course of Cognitive Growth', Am. Psych., 19, pp 1-15.
- Bruner, J.S., Jolly, A. and Sylva, K. (eds), (1976) Play : Its Role in Evolution and Development, Penguin, London.
- Bruner, J.S. (1985) 'Vygotsky : an Historical and Conceptual Perspective' in James V. Wertsch (ed) Culture, Communication and Cognition : Vygotskian Perspectives, Cambridge University Press, Cambridge.
- Bryant, Peter, (1974) Perception and understanding in young children: an experimental approach, Methuen, London.
- Bryant, Peter, (1982) Piaget: issues and experiments, British Psychological Society, Leicester. (originally pub. Br. Jul. 4. Vol 73, No 2, 1982 pp 165-316)
- Buber, Martin, (1958) I and Thou, Second Edition, Charles Scribner's Sons, New York.
- Burns, Robert B., (1982) Self-Concept Development and Education, Holt, Rinehart and Winston, London.
- Carmichael, W. (1977) 'Group Technical Projects in Architectural Science' in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Chambers, P., (1973) 'Inter-Collegiate Co-operation in a Scheme to Use Syndicate Teaching Methods with Students Following a Course in the Sociology of Education', Occasional Papers in Sociology and Education, (mimeo) ATCDE.
- Chambers, P., (1983) 'The Six College Project' in Gerald Collier (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, Society for Research into Higher Education, University of Surrey, Guildford.
- Cicourel, A.V., (1964) Method and Measurement in Sociology, Free Press, New York.

- Clark, K. and Holquist, M., (1984) Mikhail Bakhtin, Harvard University Press, Cambridge, Mass.
- Cockburn, Barbara and Ross, Alec, (1977a) A Kind of Learning, Teaching in Higher Education Series, School of Education, University of Lancaster.
- Cockburn, Barbara and Ross, Alec, (1977b) Participatory Discussion, Teaching in Higher Education Series, School of Education, University of Lancaster.
- Cockburn, Barbara and Ross, Alec, (1977c) Patterns and Procedures, Teaching in Higher Education Series, School of Education, University of Lancaster.
- Cockburn, Barbara and Ross, Alec, (1977d) Working Together, Teaching in Higher Education Series, School of Education, University of Lancaster.
- Cohen, L. and Manion, L., (1980) Research Methods in Education, Croom Helm, London.
- Cole, M., (1985) 'The Zone of Proximal Development : Where Culture and Cognition Create Each Other', in James V. Wertsch (ed) Culture, Communication and Cognition : Vygotskian Perspectives, Cambridge University Press, Cambridge.
- Collier, K.G., (1966) 'An Experiment in University Teaching', Universities Quarterly, 20, pp 336-348.
- Collier, K.G., (1968) New Dimensions in Higher Education, Longmans Green, London.
- Collier, K.G., (1969) 'Syndicate Methods : Further Evidence and Comment', Universities Quarterly, 23, pp 431-436.
- Collier, K.G., (1972), 'Experiments in Moral Education at College Level', Journal of Moral Education, Vol 2, No 1, pp 45-51.
- Collier, K.G., (1980) 'Peer-Group Learning in Higher Education : the Development of Higher Order Skills', Studies in Higher Education, Vol 5, No 1, pp 55-62.
- Collier, Gerald, (1983a), 'Syndicate Methods Placed in Context', in Gerald Collier (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, Society for Research into Higher Education, University of Surrey, Guildford.

- Collier, Gerald, (1983b), (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, Society for Research into Higher Education, University of Surrey, Guildford.
- Collier, Gerald, (1983c), 'Experiments in College Teaching', Chapter 2 in Collier, Gerald, (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, SRHE, Guildford.
- Collier, Gerald, (1983d), 'Experiments in the Exploration of Values', in Collier, Gerald (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, SRHE, Guildford.
- Coombs, C.H., (1964), A Theory of Data, John Wiley, New York.
- Cornwall, Malcolm, Schmithals, Friedemann and Jaques, David (eds), (1977) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Cornwall Education Committee, (1980), Language and Learning. An In-Service Document, Cornwall Education Authority, Truro.
- Costin, F., (1972) 'Lecturing versus other methods of teaching: a review of research', British Journal of Educational Technology, No 3, pp 4-31.
- Cox, M.V., (1980) (ed) Are Young Children Ego-centric?, Batsford, London.
- Cropley, A.J., (1981) 'Lifelong Learning: a rationale for teacher training', Journal of Education for Teaching, Vol 7, No 1, pp 57-69.
- Cropley, A.J. and Knapper, C.K., (1983) 'Higher Education and the Promotion of Lifelong Learning', Studies in Higher Education, Vol 8, No 1, pp 15-21
- Cross, K.P., (1978) 'The Adult Learner', Current Issues in Higher Education, American Association for Higher Education, Washington. Cited McIntosh, N., (1979).
- Crossley, Michael and Vulliamy, Graham, (1984) 'Case Study Methods and Comparative Education', Comparative Education, Vol 20, No 2 pp 193-207.
- Delamont, S., (1983) Interaction in the Classroom, Second Edition,

- Methuen, London.
- Delorme, C., (1977) 'Realisations' in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Orientation in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Denzin, N.K., (1970) The Research Act in Sociology : A Theoretical Introduction to Sociological Methods, The Butterworth Group, London.
- Department of Education and Science, (1975) A Language for Life, (Report of the Bullock Committee), HMSO, London.
- Department of Education and Science, (1979) Aspects of Secondary Education in England. A Survey by H.M.I., HMSO, London.
- Department of Education and Science, (1985) Education for All: Report of a Committee of Inquiry into the Education of Children from Ethnic Minority Groups. Chaired by Lord Swann ("The Swann Report"), HMSO, London.
- De Vries, D. and Slavin, R., (1978) 'Team games - tournaments: a research review', Journal of Research Development in Education, No 12, pp 28-38.
- Donaldson, M., (1978) Children's Minds, Fontana/Collins, Glasgow.
- Douglas, Mary, (1970) Purity and Danger: analysis of concepts of pollution and taboo, Penguin, Harmondsworth.
- Dubin, R. and Taveggia, T.C., (1968) The Teaching-Learning Paradox : A Comparative Analysis of College Teaching Methods, Centre for the Advanced Study of Educational Administration, Eugene, Oregon.
- Du Boulay, B. and O'Shea, T., (1981) 'Teaching Novices Programming' in M.J. Coombs and J.L. Alty (eds), Computing Skills and the User Interface, Academic Press.
- Edwards, A.D., (1976) Language in Culture and Class, Heinemann, London.
- Edwards, A.D. and Furlong, V.J., (1978) The Language of Teaching, Heinemann, London.
- Edwards, A.D. and Westgate, D.P.G., (1987) Investigating Classroom Talk, Falmer Press, Barcombe, Lewes.

- Eggins, G., et al, (1979) Learning Through Talking 11-16, Schools Council Working Paper 64. (The Report of the Schools Council/Avon Education Authority Language Development Project based at Weston Teachers' Centre, 1975-77), Evans/Methuen Educational, London.
- Emler, Nicholas and Heather, Nick, (1980) 'Intelligence: an Ideological Bias of Conventional Psychology' in Salmon, Phillida, (ed) Coming to Know, pp 135-151, Routledge and Kegan Paul Direct Edition, London.
- Erikson, Erik, (1958) 'The Nature of Clinical Evidence' in Lerner, Daniel, (ed) Evidence and Inference, The Free Press of Glencoe, Illinois.
- Erikson, E., (1963) Childhood and Society, Norton, New York.
- Erikson, I., (1978) 'Soft-data sociology', Acta Sociologica, No 21 pp 103-124.
- Evans, Colin, (1980) 'The Use of Student-led Groups or Syndicates in French Literature Courses', British Journal of Educational Technology, Vol 11, No 3, pp 185-200.
- Evans, R.I. and Leppman, P.K., (1968) Resistance to innovation in higher education: a social psychological exploration focussed on television and the establishment, Jossey Bass, San Francisco.
- Fanon, F., (1968) The Wretched of the Earth, Penguin, Harmondsworth.
- Fawcett-Hill, William, (1962) Learning Thru Discussion, Sage Publications, London.
- Ferrier, B., Marrin, M. and Seidman, J., (1981) 'Student autonomy in learning medicine: some participants' experiences' in Boud, D. (ed), Developing student autonomy in learning, Kogan Page, London.
- Fineman, S. and Hamblin, A.C., (1978) 'Teaching Organisational Behaviour through Discussion Groups', Studies in Higher Education, 3, pp 45-62.
- Flanders, N.E., (1967) 'Intent, Action and Feedback: A Preparation for Teaching' in Amidon, E.J. and Hough, J.B. (eds), (1967) Interaction Analysis: Theory, Research and Application,

- Addison Wesley, Reading, Mass..
- Fleming, W.G., (1978) 'The Shared Understanding of Human Action: a more appropriate goal for Educational Technology?' in Brook, D. and Race, P. (eds), Aspects of Educational Technology Vol XII, Educational Technology in a Changing World, pp 361-366, Kogan Page, London.
- Fontana, D., (1981) Psychology for Teachers, Macmillan, London.
- Forman, Ellice A. and Cazden, Courtney, B., (1985) 'Exploring Vygotskian Perspectives in Education : the Cognitive Value of Peer Interaction' in James W. Wertsch (ed) Culture, Communication and Cognition : Vygotskian Perspectives, Cambridge University Press, Cambridge.
- Foucault, M., (1977) Discipline and Punish : The Birth of the Prison, Allen Lane/Penguin, London.
- Freire, P., (1972) Pedagogy of the Oppressed, Penguin, Harmondsworth.
- Freire, P. and Shor, I., (1987) A Pedagogy for Liberation : Dialogues on Transforming Education, Macmillan, London.
- Fransson, A., (1976) 'Group-centred Instruction : Intentions and Outcomes' in Entwistle, N., (ed) Strategies for Research and Development in Higher Education, pp 44-61, Swets and Zeitlinger, Amsterdam.
- Furth, Hans G., (1966) Thinking Without Language: Psychological Implications of Deafness, Free Press, New York.
- Garfinfel, H., (1967) Studies in Ethnomethodology, Prentice Hall, Englewood Cliffs, New Jersey.
- Glaser, B., (1978) Theoretical Sensitivity: Advances in the Methodology of Grounded Theory, Sociology Press, Mill Valley, California.
- Glaser, B. and Strauss, A.. (1968) The Discovery of Grounded Theory: Strategies for Qualitative Research, Weidenfeld and Nicolson, London.
- Glew, Peter, (1983) 'Kinesiology : Academic Aspects of Physical Education' in Collier, G., (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, SRHE, Guildford, pp 442-447.

- Goldschmid, M.L., (1971) 'The Learning Cell : an Instructional Innovation', Learning and Development, Vol 5, No 2, pp 1-6.
- Goldschmid, B and Goldschmid, M.L., (1976) 'Peer Teaching in Higher Education : A Review', Higher Education, No 5, pp 9-33.
- Gregory, Ivan and White, Donald, (1977) 'A Small Group Approach for Micro-teaching Programmes', British Journal of Teacher Education, Vol 3, No 3, October 1977.
- Gruber, H.E. and Weitman, M.,(1962) Self-Directed Study : Experiments in Higher Education, University of Colorado Behaviour Research Laboratory Report No 19 (April) (cited Beach, 1974).
- Habermas, J., (1973) Legitimation Crisis, Heinemann Educational Books, London.
- Habermas, J., (1974) Theory and Practice, Heinemann, London.
- Hamilton, D. and Parlett, M., (1977) 'Evaluation as Illumination' in Hamilton, D. et al (eds) Beyond the Numbers Game, Macmillan, London.
- Holdquist, M., (1981) 'Introduction' to Bakhtin, M.M., The Dialogic Imagination, University of Texas Press, Austin.
- Hovey, D.E., Gruber, H.E. and Terrell, G., (1963) 'Effects of Self-Directed Study on Course Achievement, Retention and Curiosity', Jnl Educ. Res., No 56, pp 346-351.
- Hoyles, Celia, (1985) 'What is the point of Group Discussion in Mathematics?' Educational Studies in Mathematics, No 2, May, pp 205-214.
- Humphrey, N.K., (1976) 'The Social Psychology of the Intellect' in Bateson, P.P.G. and Hinde, R.A. (eds) Growing Points in Ethology, Cambridge University Press, Cambridge.
- Inglis, F., (1985) The Management of Ignorance, Basil Blackwell, Oxford.
- Inner London Education Authority, (1979) How Talking is Learning : Report of the Oracy Project 1971-77, edited by Rachael Farrar and John Richmond. Inner London Education Authority Learning Materials Service, London.

- James, D.W., Johnson, M.L. and Venning, P., (1965) 'Testing for learnt skill in observation and evaluation of evidence', Lancet, No ii, pp 379-385.
- Johnson, D. and Johnson, R., (1980) 'The instructional use of co-operative, competitive and individualistic goal structures' in Walbert, H. (ed) Educational Environments and Effects, McCuthchan, Berkeley, California.
- Kennedy, G.J., (1982) 'Process and Product in Higher Education : Student-Directed Learning', Journal of Further and Higher Education, Vol 2, No 3, Autumn.
- Kerszman, G., (1977) 'What is a Project?' in Malcolm Cornwall, Friedemann Schmithals and David Jaques, (eds) Project-Orientation in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Knapper, G.K. and Cropley, A.J., (1985) Lifelong Learning and Higher Education, Croom Helm, London.
- Kozma, R.B., Belle, L.W. and Williams, G.W., (1978) Instructional Techniques in Higher Education, Educational Technology, Englewood Cliffs, New Jersey.
- Lawrence, G., (1972) 'The syndicate method', Varieties of Group Discussion in University Teaching, London University Teaching Methods Unit.
- Leftwich, Adrian, (1981) 'The Politics of Case Study : Problems of Innovation in University Education', Higher Education Review, Spring, Vol 13, No 2.
- Leuba, C., (1964) 'Using Groups in Independent Study', Improving College and University Teaching, No 12, pp 26-30.
- Lindquist, J., (ed), (1978a) Designing Teaching Improvement Programs, Pacific Soundings Press, Berkeley, California
- Lindquist, J., (1978b) Strategies for Change, Pacific Soundings Press, Berkley, California.
- Lloyd Jones, D.E., (1977) Letter to Dr R. Hoggart, Chairman, Advisory Council for Adult and Continuing Education: Notes of amplification of Terms of Reference (DES), 14 October. (Cited McIntosh, N., 1979).

- Lomax, Pamela and McLeman, Pauline, (1984) 'The Uses and Abuses of Nominal Group Technique in Polytechnic Course Evaluation', Studies in Higher Education, Vol 9, No 2, pp 183-190.
- Luria, A.R., (1961) The Role of Speech in the Regulation of Normal and Abnormal Behaviour, Pergamon, New York.
- Luria, A.R., (1976) Cognitive Development: Its Cultural and Social Foundations, Harvard University Press, Cambridge, Mass..
- McCarthy, T., (1973) Translator's Introduction to Habermas, J., Legitimation Crisis, Heinemann Educational Books, London.
- Mackenzie, N., Eraut, M. and Jones, H.C., (1970) Teaching and Learning: An Introduction to New Methods and Resources in Higher Education, UNESCO and International Association of Universities, Paris.
- McIntosh, N., (1979) 'To Make Continuing Education a Reality', Oxford Review of Education, Vol 5, No 2, pp 169-182.
- McLeish, J., (1968) The Lecture Method, Cambridge Institute of Education, Cambridge.
- McLeish, J., (1976) 'Learning in Groups: Facilitation and Inhibition Processes', Bulletin of the British Psychology Society, No 29, pp 7-15.
- Magin, D.J., (1982) 'Collaborative Peer Learning in the Laboratory', Studies in Higher Education, Vol 7, No 2, pp 105-117.
- Magin, D.J. and Reizes, J.A., (1979) 'Teaching Experimental Engineering in the Laboratory : an Outline and Evaluation of a Course at the University of New South Wales', International Journal of Mechanical and Engineering Education, 7, pp 49-54.
- Magin, J., Reizes, J.A. and Sivyler, P.H., (1979) 'Fostering Student Initiative in the Laboratory', Proceedings of the National Conference on Engineering Education, Publication 76/8, pp 43-47, Institution of Engineering, Sydney.
- Malinowski, Bronislaw, (1926) Crime and Custom in Savage Society, Harcourt, Brace and World, Inc., New York.
- Marris, P., (1964) The Experience of Higher Education, Routledge and Kegan Paul, London.
- Mason, Edwin, (1970) Collaborative Learning, Ward Lock Educational, London.

- Mead, G.H., (1934) Mind, Self and Society, University of Chicago Press, Chicago.
- Meredith, P., (1976) Instruments of Communication : an Essay on Scientific Writing, Pergamon Press, Oxford.
- Meredith, P., (1976) Personal Communication.
- Miller, G.A., (1956) 'The magical number 7, plus or minus 2: some limits on our capacity for processing information', Psychol. Rev., Vol 63, pp 81-97.
- Mitchell, C., (1983) 'The logic of the analysis of social situations and cases', Sociological Review.
- Moss, G.D. and McMillen, D., (1980) 'A Strategy for Developing Problem-solving Skills in Large Undergraduate Classes', Studies in Higher Education, Vol 5, No 2.
- Noack, C. and Schmithals, F., (1977) 'Project-Oriented at the University of Bremen : The Development of Courses of Study in Science' in Malcolm Cornwall, Friedemann Schmithals and David Jaques, (eds), Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Northedge, A., (1975) 'Learning through Discussion in the Open University', Teaching at a Distance, 2, pp 10-19.
- Nyberg, David, (1981) Power over Power, Cornell University Press, Ithaca.
- Ogborn, J.M. and Black, P.J., (1973) 'The Higher Education Learning Project - Physics', Physics Education, No 8.
- Ogborn, J. (ed) (1977) Small Group Teaching in Undergraduate Science, Heinemann Educational Books, London.
- Oléron, P., (1978) 'The development of cognitive skills', in Lesgold, A.M. (ed), Cognitive Psychology and Instructions, Plenum, New York.
- Owen, Glyn, (1983) 'The Tutor's Role' in Collier, Gerald, (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, Society for Research into Higher Education, University of Surrey, Guildford.

- Patton, J.A., (1955) A Study of the Effects of Student Acceptance of Responsibility and Motivation on Course Behaviour, Doctor's Thesis, University of Michigan, Ann Arbor, (cited Beach, 1974).
- Patton, Michael Quinn, (1980) Qualitative Evaluation Methods, Sage Publications, London.
- Patton, Michael Quinn, (1982) Practical Evaluation, Sage, Beverly Hills, California.
- Perret-Clermont, A., 'Social interaction and cognitive development in children', European Monographs in Social Psychology, Vol 19, Academic Press, London.
- Piaget, J., (1926) The Language and Thought of the Child, Routledge and Kegan Paul, London.
- Piaget, Jean, (1932) (transl. Gabain, Marjorie) The Moral Judgement of the Child, Routledge and Kegan Paul, London.
- Piaget, Jean, (1963) The Psychology of Intelligence, Littlefield, Adams, Patterson, New Jersey.
- Potts, D., (1981) 'One to One Learning' in David Boud (ed) Developing Student Autonomy in Learning, Kogan Page, London.
- Powell, J.P., (1973) 'Small Group Teaching Methods in Higher Education', Educational Research, 16, pp 163-171.
- Powell, J.P., (1981) 'Moving Towards Independent Learning', in Boud, David (ed) Developing Student Autonomy in Learning, Kogan Page, London.
- Projektgruppe Praktische Mathematik, (1977) 'Project-Orientated Work in Small Groups for the Education of Engineers in Numerical Analysis', in Malcolm Cornwall, Friedemann Schmithals and David Jaques (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Raaheim, Kjell and Wańkowski, Janek, (1981) Helping Students to Learn at University, Sigma Forlag, A/S, Bergen.
- Rackham, N., Honey, P. and Colbert, M., (1971) Developing Interactive Skills, Wellens Publishing, Northampton.
- Reizes, J.A. and Magin, D.J., (1978) 'An Evaluation of a Re-organised Course in Experimental Engineering', Proceedings of the National Conference on Engineering Education, Publication 78/6,

- pp 86-89, Institution of Engineers, Sydney.
- Richards, M. and Light, P., (1986) Children of Social Worlds. Development in a Social Context, Polity Press, Cambridge, in association with Basil Blackwell, Oxford.
- Riley, Matilda White, (1963) Sociological Research, Volume I, A Case Approach, Harcourt, Brace and World Inc., New York.
- Ripple, R.E. and Rockcastle, V.N., (1964) (eds) Piaget Rediscovered, School of Education, Cornell University, Ithaca, New York.
- Rodger, I., (1983) 'The Influence of Examinations', in Collier, Gerald (ed) The Management of Peer Group Learning : Syndicate Methods in Higher Education, University of Surrey, Guildford.
- Rowntree, D., (1977) Assessing Students. How Shall We Know Them?, Harper and Row, London.
- Ruddock, Jean, (1978a) 'Interaction in Small Group Work', Studies in Higher Education, Vol 3, No 1.
- Ruddock, Jean, (1978b) Learning Through Small Group Discussion: a study of seminar work in higher education, Society for Research into Higher Education, Guilford.
- Ruddock, Jean, (1984) 'A Study in the Dissemination of Action Research', in Burgess, Robert G. (ed) The Research Process in Educational Settings, pp 187-210, Falmer Press, Lewes.
- Salmon, Phillida, (ed) (1980) Coming to Know, Routledge and Kegan Paul Direct Edition, London.
- Salmon, P. and Claire, H., (1984) Classroom Collaboration, Routledge and Kegan Paul, London.
- Sandven, J., (1979) 'Conditions for self-realisation. A Theoretical Discussion', Scandinavian Journal of Educational Research, No 23.
- Schaffer, Heinz Rudolph, (1979) The Growth of Sociability, Penguin, Harmondsworth.
- Schön, D.A., (1983) The Reflective Practitioner, Maurice Temple Smith, London.
- Scott, S., (1984) 'The Personable and the Powerful: gender and status in sociological research' in Bell, Colin and Roberts, Helen (eds) Social Researching. Politics, Problems, Practice,

- Routledge and Kegan Paul, London.
- Serafica, Felicissima, (ed) (1982) Social-Cognitive Development in Context, Methuen, London.
- Shaw, K.E., (1984) 'Exeter: From College of Education to University' in Alexander, R.J., Croft, Maurice and Lynch, James (eds), Change in Teacher Education. Context and Provision Since Robbins, Holt, Rinehart and Winston, London.
- Shorter Oxford English Dictionary on Historical Principles, (1983), Third Edition, Book Club Associates, London.
- Silverman, David, (1985) Qualitative Methodology and Sociology. Describing the Social World, Gower, Aldershot.
- Smart, G., (1977) 'A Student's View of Project-Based Higher Education', in Malcolm Cornwell, Friedemann Schmithals and David Jaques, (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Smith, G. and Todd, F., (1978) 'Inter-relating Nursing Care and the Social Sciences : Specialist Disciplines in an Applied Course', International Journal of Nursing Studies, Vol 15, pp 143-151.
- Smith, P.H.K., (1974) Design of Learning Spaces, Council of Educational Technology, London.
- Smith, P.H.K., (1979) Upgrading Lecture Rooms, Research Paper, University of York Institute of Advanced Architectural Studies, York.
- Startup, Richard, (1977) 'Staff Experience of Lectures and Tutorials', Studies in Higher Education, Vol 2, No 2.
- Stavert, G.S. and Wingate, T.H., (1966) 'Nelson's Navy Needed None But ...', Tutor Age, pp 17-27.
- Stenhouse, Lawrence, (1985) 'A Note on Case Study and Educational Practice' in Burgess, Robert G. (ed), Field Methods in the Study of Education, Falmer Press, Barcombe, Lewes.
- Stubbs, M., (1983) Language, Schools and Classrooms, Second Edition, Methuen, London.
- Tachoire, H., (1977) 'Plea for a Changed Method in the Teaching of

- Science at Universities', in Malcolm Cornwall, Friedemann Schmihals and David Jaques, (eds) Project-Oriented in Higher Education, Brighton Polytechnic, Brighton and University Teaching Methods Unit, University of London Institute of Education, London.
- Tighe, M.J., (1971) 'Creative Dialogue : Teaching Students to Teach Themselves', Directions in Teaching, Vol 2, No 4
- Timasheff, Nicholas B., (1957) Sociological Theory: Its Nature and Growth, Random House Inc., New York.
- Tizard, B., Griffiths, B. and Atkinson, M., (1980) 'Children's Questions and Parents' Answers'. Paper presented at the Annual Meeting of the Psychology Section, British Association, Salcombe, England.
- Todd, F., (1978) Some notes on learning in small groups, Typescript, School of Humanities and Contemporary Studies, Leeds Polytechnic.
- Todd, F. and Todd, R.C., (1979) 'Talking and Learning: towards the effective structuring of student-directed learning groups', Journal of Further and Higher Education, Vol 3, No 2, Summer 1979.
- Todd, R. and Todd F., (1981) 'Defining, Structuring and Consolidating Work in Syndicate Groups', (unpublished paper).
- Todd, F., (1981) 'Developing Teaching Skills for Collaborative Learning', Studies in Higher Education, Vol 6, No 1, pp 91-96.
- Todd, F., (1983) 'Learning and Work: Directions for Continuing Professional and Vocational Education', International Journal of Lifelong Education, Vol 3, No 2, pp 89-104.
- Todd, F., (ed) (1987) Planning Continuing Professional Development, Croom Helm, Beckenham.
- Todorov, Tzvetan, (1981) Mikhail Bakhtine, le Principe Dialogique : Suivi d'Ecrits du Cercle de Bakhtine, Editions du Seuil, Paris.
- Tough, Allen, (1979) The Adult's Learning Projects, Second Edition, Department of Adult Education, Ontario Institute for Studies in Education, Totonto.
- Turner, Barry A., (1981) 'Some Practical Aspects of Qualitative Data

- Analysis: one way of organising the cognitive processes associated with the generation of grounded theory', Quality and Quantity, Vol 15, No 3, pp 225-247.
- University Grants Committee (The Hale Committee), (1964) Report on University Teaching Methods, HMSO, London.
- Vygotsky, L.S., (1934a) Myshlenie i rech' : Psikhologicheskie issledovaniya, [Thinking and Speech : Psychological Investigations], Gosudarstvennoe sotsial'no-Ekonomicheskoe Isdatel'stvo, Moscow and Leningrad.
- Vygotsky, L.S., (1962) Thought and Language, M.I.T., Cambridge, Mass./J.Wiley, New York.
- Vygotsky, L.S., (1978) Mind in Society, Harvard University Press, Cambridge, Mass..
- Walker, R., (1983) 'Three Good Reasons for not doing Case Studies in Curriculum Research', Journal of Curriculum Studies, Vol 15, No 2, pp 155-165.
- Watson, J. and Potter, R.J., (1962) 'An Analytic Unit for the Study of Interaction', Human Relations, Vol 15, No 2.
- Webb, N.J. and Grib, T.F., (1967) Teaching Process as a Learning Experience : the Experimental Use of Student-led Discussion Groups, St Norbert College, West De Pere, Wisconsin.
- Wells, G., (1985) Language, Learning and Education, NFER, Nelson, Slough.
- Wells, G. and Nicholls, J., (eds), (1985) Language and Learning : an Interactional Perspective, Falmer Press, Barcombe, Lewes.
- Wertsch, James V., (1985a) Vygotsky and the Social Formation of Mind, Harvard University Press, Cambridge, Mass..
- Wertsch, James V., (1985b), (ed) Culture, Communication and Cognition : Vygotskian Perspectives, Cambridge University Press, Cambridge.
- Whyte, William Foote, (1943) Street Corner Society: The Social Structure of an Italian Slum, University of Chicago Press, Chicago.
- Wood, D, Bruner, J.S. and Ross, G., (1976) 'The Role of Tutoring in Problem-Solving', Journal of Child Psychology and Psychiatry, 17, pp 89-100.

- Woods, P. and Sikes, P.J., (1987) 'The Use of Teacher Biographies in Professional Self-Development', in Todd, F. (ed) Planning Continuing Professional Development, Croom Helm, Beckenham.
- Yeomans, A., (1983) Collaborative Group Work: A Research Review, University of Leicester School of Education.
- Zinchenko, V.P. and Davydov, V.V., (1985) 'Foreword', in Wertsch, J. Vygotsky and the Social Formation of Mind, Harvard University Press, Cambridge Mass..