Imagination and Pedagogy:

Reclaiming the Educational in Further Education

Tony Caffrey

Submitted in accordance with the requirements for the degree of
Doctor of Philosophy in Education

The University of Leeds

Leeds Trinity University

Institute of Childhood and Education

September 2023

Intellectual Property and Publication

The candidate confirms that the work submitted is their own and that appropriate credit has been given where reference has been made to the work of others.

Acknowledgements

Professor Amanda Fulford

It is difficult to do justice to the help I have received from Professor Fulford without appearing to gush, which in this context might appear unseemly and stylistically misplaced. Notwithstanding this reservation, it cannot be overemphasised how her encouragement, diligence, and practical help from my M.A. (Education) onwards has helped me to achieve a level of work to which I could not have aspired without her guidance.

Professor Denis Kobzev

Professor Kobzev's academic background is in medicine and management. A thesis based on philosophy, therefore, seemingly lacking empirical data or evidence, was initially alien to him. It was very gratifying to me how readily he adapted to my themes with warmth and interest, and his contributions became valuable partly for their pertinence, but also for the very different perspective they brought to my habitual way of thinking.

Professor Rosemary Mitchell

Professor Mitchell was a noted historian of the Victorian period which coincided with my own need for a contextual chapter. Endlessly friendly and approachable, she nonetheless coaxed increasing attention to the detail of my writing such that Chapter 1 here is, in fact, the thirteenth re-write of my first draft. She sadly died unexpectedly early after leaving Leeds Trinity University to follow her subsequent vocation into the ministry of the church.

In connection with the above, my thanks go to Derek Gillard for providing access to source material for the contextual chapter, and his help, when asked, in providing previous versions of his on-line *History of England*.

It is probably a fair observation that no Post Graduate Researcher could survive without help as needed from the library staff (and in my case the IT staff also). To them, therefore, I express my thanks, not least since they were probably unaware of just how crucial they were to my research.

Not least, I owe a debt to Dr Claire Skea and Dr John McCall, Mr David Locke and Mr Richard Fulford for their invaluable help in reading my thesis.

Abstract

Students leaving school at 16 years of age, and who move into general Further Education (FE) to commence vocational training, very often have the least successful academic qualifications of their cohort and except where they have not yet achieved a pass in GCSE English and maths, and continue with these subjects, they have effectively completed their formal education, whilst others in their cohort continue in formal education in school, in a specialist branch of FE or in an apprenticeship. Those in general FE therefore, compared with their peers, are educationally disadvantaged. This research argues that this limits their opportunities, but that there are ways in which this state of affairs can, and should be, countered.

The measures suggested to effect this are rooted in what I call an extension of vocational training through the use of imagination. This is used as a means of enhancing the existing educational value of that training (as propounded by Christopher Winch in 1995), and of providing these students with a greater range of personal attributes and breadth of outlook than is currently at their disposal. If implemented, this would stand them in good stead for their future personal, civic, and occupational lives.

The educational philosophy on which the arguments are based is founded on the work of the American philosopher and educational theorist, John Dewey whose work, I argue, is still relevant today. Imagination is posited as a positive form of thinking which enables extensions to be made to many cognitive processes. I develop this line of argument through attention to the concept of 'categories' as elaborated by the American cognitive scientist, Douglas Hofstadter. Bringing the work of these two scholars together, I argue, furnishes a comprehensive platform for the extension of the students' knowledge and understanding.

This thesis will argue that such an innovation amounts to what I identify as a 'Pedagogy of the Imagination'. The responsibility will initially fall to the tutor to implement this, but practice over time will make students increasingly independent of external prompts, broaden their view of any situation, and form beneficial life-long habits which will cumulatively enhance the value of their education.

Table of Contents

Contents

‘Unless we do more than simply learn the trade of our time, we are but apprentices, and not yet masters of the art of life,’ (Thoreau, 1873, p.134).

Preface: My Education, and My Students' Education

When I look at the education that my students have received on entry to Further Education (FE), and compare it with my own, the difference is marked. Mine was extensive, hugely diverse, and immensely enjoyable. Theirs appears (at least to me) very limited, to have offered few opportunities for expansion; it is seemingly not recalled with great enthusiasm.

I can know little of their lives outside college, but changes to social conditions alone would curtail much of the freedom I enjoyed. My clear impression, however, is that in FE, for many, their continued education is dominated by a restricted approach to learning via vocational training, where my experiences were invariably, and continue to be, broad-based with substantial opportunity for expansion. The underlying key to the difference is, as I see it, the active role of imagination which has throughout featured in so many of my activities. Two examples will begin to illustrate this.

In (what was then called) junior school, for example, I was allowed to sit in the corner for a whole morning using my father's rat-tailed file to turn a long narrow piece of slate into a facsimile of a stone-age saw. I knew they had stone tools, but to cut wood (a much more readily workable and available material) you needed a saw. I was immersed in this activity and the teacher allowed me to indulge this enthusiasm whilst he and the rest of the class continued with the routine lesson. I was not a boy making a replica stone-age saw – I imagined that I was a stone-age boy making a real and useful tool.

A second example: my father and his brothers were all musicians, so I was brought up with a background of music and learned early to improvise. In those days everyone whistled. Together we would whistle a well-known tune. I would say to him, 'Which part are you whistling?' He would say, 'The trumpet'. Later he would say, 'What are you whistling?' I would say, 'I'm making up a trombone part'. Neither of us was actually whistling the main theme, but you could still 'hear' the melody. We imagined variations which were appropriate. Later, as an adolescent, I also began to learn to play a musical instrument. This continues today, but in an orchestral context.

Music without imagination is merely sound. The composer first imagines it, or it evolves through the imagination in the process of being written. There is an immersion in how one imagines what the composer intended (guided by the conductor who also imagines this and adjusts the orchestra accordingly) and the players attempt to reproduce this via their instrument. The written notes are not the music; the music comes from how closely your technique can turn these into the music which your, or the conductor's, imagination tells you is intended. Later, during performance, there is an identification with the audience when you try to persuade them to imagine the programme along similar lines. They respond to this fusion of the composer, the conductor and the players and compare, semi-consciously, what they hear with what they themselves imagined to be the ideal interpretation. Music-making without imagination would be little more than the mechanical reproduction of sounds. The meaning makes the music. The imagination makes the meaning.

During my childhood and youth, many of my activities that were driven by my imagination took place outside schooling; however, many were within a more formal structure of schooling. But it was thanks to the breadth of view of my teachers that the common interface was imagination. It is not self-evident that my current students in FE had such an extensive range of opportunities as myself, but at least their vocational training in college is within my own influence, and could benefit from the deliberate injection of imagination as an adjunct to the formal acquisition of occupational skills and knowledge.

It will be the aim of this thesis, then, to show how the immersion in imagination, which has permeated so much of my thinking, persuades me of benefits which my students could share and profit from, and expand the educational dimension of their vocational training. To situate this ambition more precisely within education, it should be made apparent that, as a teacher in schools over fourteen years, I taught in Early Years and Key Stages 1 and 2 settings followed by Key Stages 3 and 4 at secondary level. Imagination was frequently the motive force of propositional learning with its capacity to bring subjects to life, engage the children's and students' interest and enthusiasm, and extend their capacity to absorb and often extend material in ways unforeseen by me, but valuable to them and their development. This was not only an intellectual activity, but could also incorporate more affective, spiritual, social, and aesthetic aspects. My experience of teaching and learning on moving into vocational

training in Further Education brought into stark contrast the vibrancy of schools compared to what I often saw as the lifeless acquisition of knowledge. Such cases triggered my belief that vocational training was missing a huge opportunity for educative expansion through the deliberate incorporation of imagination.

Against this background, I shall show in this thesis how John Dewey's philosophy remains relevant to education, and to this particular topic of the imagination. On a personal level, I was first introduced to him when originally training as a teacher. His views accorded wonderfully with the emerging post-war flourishing of individuality at all levels. As students we took wholeheartedly to him (often, it must be confessed, displaying more enthusiasm than understanding) and translated what we believed to be his precepts into the classroom. That his philosophy of education has stood the test of time I believe to be indisputable, and his influence on practice now so much a part of everyday orthodoxy as to be effectively invisible. This foundation, combined with imagination, will be two of the major arguments voiced in what follows.

***

Introduction

The Problem

I find the problem from which this thesis starts to be twofold: first, many 16 to 19 year-old vocational training students in FE have achieved the least through formal schooling; second, that at in FE, the often highly reductive forms of vocational training that this group receives has squeezed out much of the potential for a broader education (as I shall show as part of Chapter 1). Students who thrived in forms of traditional schooling tend to continue with it. Those who do not, tend to move into vocational training. But as I will argue, education and training cannot be definitively separated. This leads to a need to offer some practical ways forward for addressing the current state of affairs where schooling continues to be characterised by predominantly 'educative' forms of learning, and where training is strictly subsidiary. FE, for its part, continues to be dominated by particular forms of narrowly conceived training, where education and opportunities for learning through invoking the imagination, are necessarily very limited. These very prescribed forms of training also tend to overlook the value placed on personal experience. As the Preface outlined, my own education, personal experience permeated all my educational activities; however, for students in vocational training, personal experiences are often subordinated to privilege the performance of skill and the end goal of employability.

The 16 to 19-year cohort in FE are typically engaged in vocational training in general FE. Many study vocational training, but are also enrolled on GCSE[1] English and maths (where they have not yet passed the examinations at the required level). The students' experience might well appear limited, arguably impoverished because of the issued I raised above, notably in the Preface. Their experience is also probably the shortest of their cohort, and they are in the main of lower average, or below average, attainment in maths and English. They chose to pursue their

[1] GCSE (General Certificate of Secondary Education) comprises single subjects (normally between 6 and 10) each currently graded low to high as 1-9 with a 4 being regarded as a Pass. The former marking system, and still in common parlance, graded each subject low to high from F to A*, with a C being regarded as a Pass. These examinations are generally taken at the age of 16 in England and Wales.

education through vocational training, but the government also insists on their continuing with English and maths. In the main, they struggle with these GCSE programmes, having spent several years in school failing to achieve a ‘pass’. My previous Master’s research (Caffrey, 2016) suggested that they have learned very clearly to dislike that form of study; that the subjects are difficult, often beyond their capacity, and certainly of little practical use in terms of the majority of the syllabus. Many left school to avoid such programmes of study and are dismayed to find them continue in FE (Education and Training Foundation [ETF], 2014; Norris, 2022). Whilst I accept that these are generalised views based on personal experience and personal research, and may unintentionally appear derogatory, they are in no way intended to be; rather they are based on fourteen years in schools as a class teacher, and over twenty years in adult training and general FE.

So, when I look at the education that my students have received on entry to FE, and compare it with my own, the difference is marked. Mine was extensive, hugely diverse and immensely enjoyable. Theirs appears very limited, to have offered few opportunities for expansion and seemingly is not recalled with great enthusiasm. The discrepancy is not equitable in an age of universal education. But setting aside questions of social justice or ethics, it stands in contrast to how the lives of those who thrived under formal schooling are likely to have been much enriched by the education they had the good fortune to receive and, importantly, by those opportunities which made it memorable, and led to further opportunities. Furthermore, my own reflections have prompted some conclusions about the deep significance of the 1992 Further and Higher Education Act. First and foremost, it represented a stranglehold on colleges. Presented as a life-giving opportunity for enterprise (whilst ensuring that selected external influences were excluded as influential partners), it, in reality, determined that the lifeline of funding remained primarily in the gift of the government. Whilst ostensibly it was to determine how colleges were run, one almost subliminal consequence was the power to shape what students would receive, and in time what they would come to expect, with a recipe for employability at the core, and personal education reduced to a by-product of vocational training. Over successive generations, it seems that students have been insidiously conditioned to accept this as the norm, such that students in FE now expect no other, whilst those in HE increasingly appear to demand no other.

Institutions now ‘sell’ training - as is legitimate - but education as a deliberate adjunct to personal development is losing its potency, submerged in the dogma of a neo-liberal economy. The institution of FE, from top to bottom, has been imperceptibly manipulated into an unconscious collusive acceptance of government policy. Movement, therefore, must come from individuals willing to engineer a modest subversion of the *status quo*. And I make no apologies for that.

By way of initial summary, then, the ‘educational’ dimension of these students’ time in FE could therefore be regarded as under-developed. I use the term ‘educational’ here heuristically (but only provisionally), which includes a view that it equates loosely with vocational training (Winch, 2000). However, it could be expressed as those who have already achieved the least continue to receive the least or, phrased differently, those in most need of a top-up, signally fail to receive it. More directly expressed: whatever broad spectrum of general education these students achieved in school, that is all they are going to get. In FE they will be training for a job, that is, gaining skill acquisition and technical knowledge and understanding aimed at employability. A traditional view of education as a personal quantum of learning (achieved for its own sake as intrinsically valuable and devoid of immediate functional application), ends for these students when they leave school.[2] More explicitly, education is commonly seen to be the value attributed to learning over and above any advance in skill or propositional knowledge - although intrinsic to it (Winch, 1995). On this basis, the thesis will argue that what education includes is almost a by-product, closer to a sense of satisfaction, than to the material learned, (though not to the activity of learning which itself can be satisfying). This can endure e**v**en when the learning content has been forgotten or superseded, and it is the purpose of this thesis to suggest one way in which education and training can be further combined to the advantage of the student, and effect a more balanced equilibrium between the two concepts.

[2] As will become clear in succeeding chapters, this trenchant summary is dramatically overstated to emphasise the distinction between the two terms ‘education’ and ‘training’, and the two sectors: school and FE. The reality is somewhat less stark, but rarely to the point where the distinction becomes invisible.

This gap (between the typical learner in FE, and the learner who continues in mainstream education) is not equitable in an age of universal education. But setting aside questions of social justice or ethics, it stands in contrast to how the lives of those who thrived under formal schooling are likely to have been much enriched by the education they had the good fortune to receive and, importantly, by those opportunities which made it memorable, and led to further opportunities. It seems reasonable – 'decent' would be a now dated way of describing it – to look for a way of offering students in FE at least a fraction of the satisfaction, sense of achievement, and happy memories that education entails for some people, including myself.[3] I see imagination as key to this. Imagination has always been important in both my working and personal life. My working life was divided between teaching and building maintenance, including the refurbishment of three of my own houses (impossible to undertake without the conjunction of imagination and practical skills). My personal life experience extends from the bedtime stories my father invented, through long years of playing in a local symphony orchestra, and time spent on those arts and humanities courses which I have pursued throughout my adult life for no better reason than personal gratification.

Thinking again of those 16 to 19 year-olds who continue into FE, and those who progress further through mainstream schooling into further academic routes, the latter will, in the main, enjoy benefits which students in FE may not share. This difference is the starting point from which this research proceeds, and the key is, as I will show, imagination. I shall argue that imagination may differ from the common view of it, but that it underpins much learning, and is integral to it. When used productively, it can accelerate learning and broaden any knowledge base. It is one of the tenets of this thesis that increasing government preoccupation with performativity has privileged technical expertise over other valid educational aspirations, and this has excluded many opportunities to harness imagination as an aid to learning, including vocational learning.

[3] It needs to be made clear at the outset, however, that whilst what I describe as a contrast between my students' education, and my own, served as an initial stimulus for this research, the aim is not an attempt to graft a copy of my experience on to theirs. It is rather to attempt an expansion of educational opportunity relevant to their lives, using their vocational training as a springboard.

If the ideas proposed in this thesis around imagination prove to have substance, they could become a way of reclaiming the educational in FE in both theoretical and practical ways as tailored to the individual students. This is important bearing in mind that the English model is not the only approach to vocational training, as demonstrated by a number of overseas systems, but is the one that is strongly entrenched in practice.[4]

The place of the imagination in education and training is, as I will argue, central to preparing young people for life beyond the educational institution. My focus here is, in particular, with a specific and large group of 16 to19 year-old students, nationally numbering 699,000 (Association of Colleges [AoC], 2019, p. 5), for whom FE provides basic occupational training, the value of which has been questioned in terms of future employment (Winch and Hyland, 2007). By highlighting the possibilities of the imagination for these students, I aim to re-imagine the educative role of vocational training, and add to the body of literature that points to the transformative potential of Further Education (Duckworth & Smith, 2019).

Towards a Solution

Given the imbalance that I have begun to outline, I will argue in this thesis that for those in vocational training in FE, the current amalgam of education and training can, and should, be tailored to make the 'educational' a greater proportion of the whole. This is a way of re-envisioning the role of the educative, and of imagination, in current iterations of vocational training in FE. This might be construed as the broad aim of this thesis. Since it is a thesis that is situated in the broad field of philosophy of education, it does not have aims, objectives and research questions in the same way as might be typical in empirical work (this will be developed later in Part I). However, this broad aim is legitimate within its own terms of reference, and provides the structure for what follows. This is not merely an academic exercise, but drawing on the philosophical work of John Dewey and Douglas Hofstadter, it will argue for, and lay out, a very practical way forward through what I will come to describe as a 'pedagogy of the imagination' (in Part III). This 'solution' which I will propose,

[4] The best known of European ideas is the German *Bildung*. Whilst this includes vocational training, this is extended to include a broader range of knowledge and understanding which cumulatively leads to a greater grasp of one's culture and one's place in, and potential contribution to, it. That is, *Bildung* suggests an 'education' or 'formation' which enables the individual to develop culturally and personally.

therefore, is to suggest ways to enhance the educational value of vocational students' time in FE by starting with the work they already do in vocational training, and via imagination, extend this into related realms which emphasise the educational, as well as the training components. Imagination is one of the keys to this process: the basic vocational curricula, driven by the needs of government and industry via employers and the Awarding Bodies, cannot be changed; but imagination could expand this, through graded activities, to encompass the 'value' which we associate with education through schooling. I will show that how this is conceived will depend on the role of imagination instigated largely by the tutor, but subsequently cultivated in the students as a habitual adjunct to their 'normal' everyday thinking. If this expansion is successful, it could lead to benefits in later years in some parallel to that which I and others of their cohort enjoyed.

It will be shown subsequently in the text that part of a solution as I see it will be in the adoption of a much greater role for imagination in vocational training than currently occurs, and which formed so many of the events and circumstances of my life (which I am content to call 'educational'). Based on this, I have no reservations about proposing this more broadly for the development of my students.

The problem that I have identified leads me to the central question driving this research: 'How can we use imagination to improve the educational value of vocational training for 16 to19 year-olds in general FE?' I am less concerned here to address the question of what the imagination is (this would require a thesis in its own right and is a question that has a long history of debate in a variety of disciplinary fields). I am rather concerned with how the imagination might be used to enhance the educational experience of vocational students in FE. My aim is not to answer this question through collecting and analysing empirical data to make a series of recommendations for policy in the sector. Rather, I will explore the possibilities for the imagination through a close analysis of the philosophical writings of John Dewey and Douglas Hofstadter. This will lead to my making an original contribution to knowledge through the articulation of what I will call a 'Pedagogy of the Imagination'. It is through this that I see the possibilities for re-imagining the place of the educational in vocational education and training. In what follows, I present a case for change in the FE sector which draws on important philosophical literature in support of the developments for which I argue. The combination of these could make FE a

richer experience for the students, whilst avoiding the need for large scale structural change or modification to existing frameworks. It is a realistic and achievable vision for the re-imagining of the possibilities for a sector that is often still regarded as the 'Cinderella' sector, and largely unexplored by academic research.

This conceptual study, using a philosophical approach, will offer an original and much needed pathway to improving the educational experience of the 'other half' both at college and beyond. In what follows, I begin to lay this out, together with the structure of the thesis, beginning in Part I, Chapter 1.

Part I

Introduction to Part I

Type of Approach Adopted for the Study

Before I come to the question of how I carried out this research, I need to establish that the central proposition about the place of the imagination has merit. I draw here explicitly on my own experience as a starting point, with a series of claims that are then more thoroughly established through engagement with the philosophical literature (of John Dewey and Douglas Hofstadter) in Part II. From my own educational experience, the use of the imagination:

- Improves the practice of examining problems;
- Can lead to more disciplined thinking as an analytical tool;
- Frees up thinking to lead to the suggestion of different potential outcomes to problems;
- Allows for closer examination of potential outcomes;
- Can facilitate better collaborative working and dialogue through discussions;
- Facilitates a move away from the restraints of only 'sensible' thinking leading to possible original solutions.

If these benefits are nurtured and established more widely in contemporary FE, I argue that there will be a broadening of students' thinking processes which I consider educationally advantageous given the narrow focus of the vocational training itself. An open mind, and a receptivity to differing perspectives, must surely lead to greater opportunities for mental growth (and what else is education?) rather than an exclusively restricted diet of received knowledge, and the habit of rejecting the unfamiliar (a closed mind). By a useful co-incidence, these attributes, in large measure, echo the 'soft skills' claimed by employers to be important qualities in employees.

In later sections of the thesis, I will outline in more detail some of the key thinking in relation to the education/training 'divide'. For now, I simply suggest that propositional knowledge by itself (gained through training in different vocational areas) is not necessarily education. Education implies some understanding of the nature and

implication of the propositional knowledge, and I will argue that imagination has a key role to play in this process. If I have established that the central proposition about the imagination has merit, this then opens a second line of enquiry: 'How can we use imagination to improve the educational value of vocational training with16 to 19 year-olds in general FE? In Part III I move to address this question explicitly through the development of the 'Pedagogy of the Imagination'.

The thesis, then, addresses itself to two main aims: first, to offer a persuasive account of the need for the imagination in vocational training in FE; second, to offer practical ways for lecturers to nurture students' imaginations through the Pedagogy of the Imagination'. I now turn to how the thesis has approached these aims methodologically.

The Problem of Approach

The original title of this section was 'Empirical versus Philosophical' but this cast quite the wrong implications over the debate: the two are not in opposition, they are different. Empirical evidence generally needs to be collected as data (Newby, 2014; Robson and McCartan, 2016), and can be quantitative or qualitative. Both may provide generalised 'answers' to questions inferred or real. Both may lend themselves to prompt changes in behaviour or opinion, and depend on findings external to the researcher (with the exception of, for example, forms of autoethnography and self-study). Philosophical analysis and theoretical forms of research have different starting points. There is of course, information, opinion, belief, conclusions and so on resulting from the analysis, but the main procedure is often to examine concepts with a view to greater understanding, or if appropriate, to review, reject, expand, correct, or replace the content, argument or conclusions (Fulford and Hodgson, 2016). Whether or not the results are used subsequently will probably be a secondary issue, not the primary function. Philosophy, therefore, does not necessarily (unless you include reference to other thinkers which may or not happen) depend on external empirical data. Further, the concept of 'method' or 'methodology' is often difficult to apply to theoretical work in the same way as it is for empirical forms of research as this implies a largely predetermined approach and associated set of methods (Fulford and Hodgson,

2016). In light of this, I prefer to use the term ‘approach’ in relation to the way I have conducted this research.

I argue that a philosophical approach is most relevant to this study given the central concern with the concept of imagination in this thesis. There would be functional problems with attempting an empirical methodology (such as the realistic framing of questions which could be usefully answered; the number of respondents needed for statistical viability, and the problems associated with critical analysis). For a philosophical enquiry, the focus is rather based on the nature of the conceptual analysis, the reasoning of an argument made in relation to existing philosophical or theoretical literature, and of the judgements made that lead to new or original conclusions.

Given that my interest is in imagination, (more precisely, imagination as it could improve the education of students undergoing vocational training in general Further Education), the more important issues relate to questions to do with the concept of imagination, and how this might be taken up in FE, or the value of imagination to the students. The nature of these topics: concept, value, justification, lend themselves to philosophical enquiry (Smith, 2016; Standish, 2010). Problems associated with an understanding of imagination will be assessed subsequently; suffice it to say at this stage that is both contested, and likely to defy precise definition. However, imagination also has a practical purpose here which may have a post hoc potential for empirical investigation. No dogmatic stance on my part therefore is implied. Empirical research, to be valid and reliable, may depend on a substantial measure of precision in analysis. But so then does philosophy, but of a different type.

We need to be clear about some fundamentals of philosophy. Philosophy is not a method, rather an academic discipline, which tends to focus on what we read, thinkers we study, and writers we consider. It is a way of thinking and arguing logically about a particular issue (Ruitenberg, 2009; Smith, 2016). I propose that these activities, taken in conjunction with the schemata above, will coalesce to take forward supporting arguments. In relation to an approach, what I propose is not simply abstract; it will ultimately purport to suggest pragmatic intervention. For Standish (2011), philosophy of education is not abstract, for, as underlying questions

are posed, practical implications emerge. These are integral, emerging from why certain ideas are pursued and implemented. Here the topic is education, and the approach is philosophy: the two are contiguous. Any discussion of approach without reference to the subject matter is likely to be general, and not advance the matter. For example, it may appear clear from the outset that a generally accepted purpose of FE is employability via vocational training, but I am keen to re-examine and strengthen the 'educational' element. To do this means to embrace questions as to the nature and function of education, whilst selecting such tools from philosophy as are most likely to serve our purpose.

This type of philosophical analysis frequently starts with existing work which serves as a pointer (English, 2016; Pirrie, 2016). In education, it will come as no surprise that there is a considerable amount of literature. One major writer and philosopher of education here will be John Dewey (1859-1952) to whom a significant section will be devoted. His appeal lies in his interest in imagination, in his refusal to isolate academic from practical activities, and in his concern for what he refers to as democracy.

John Dewey's work will feature as one of the two main sources which I shall use to develop my argument. Not only am I sympathetic to his general views, but he established a philosophy of education which has stood the test of time, and led to changes in educational practice which are today largely taken for granted. The other source revolves around Douglas Hofstadter's work on 'categories' which provides a clear and flexible model for relating concepts to each other and allows new configurations to be formed. This model underpins the relationship between networks of knowledge which can readily be applied to vocational training *and* education. An 'alliance' between a writer and thinker on education based in part on his experience with school children, and a physicist and cognitive scientist, may initially appear unexpected. But Part II will resolve any initial misgivings and show how together their union provides a valuable and coherent foundation for the primary purpose of this thesis. Both writers will have chapters in this thesis devoted to relevant parts of their work, and I shall show how their thinking can be seen as contributing to a structure for the development of a greater role for imagination in the practical and theoretical work of students.

Chapter 1

Introduction

In order to understand how FE has come to be a significant sector of the educational system, it will help to sketch in how it has evolved, and how the emphasis has moved from a combination of education and training to a preoccupation with training, skills, and employability. Although training for work has probably always existed in some form or another, a systematised approach has come into being only in a piecemeal fashion and has not been without challenges. It also should be made clear that the concepts of education and training, although for a long period conceived as separate, came to be inter-dependent as the need, desire and benefits of formal education increased. It will be seen that as educational demand increased, so it became organised, but without overall structure. From this (eventually and largely after the intervention of government), secondary education emerged, and in parallel, training took on a more systematic form from which ultimately FE became a distinctive branch of the educational system.

Setting the Scene Historically and Politically

Further Education is now so accepted as a sector in education that why and how it arose, and the form it assumes, we now take for granted. It is, however, the result of an untidy history which resulted from the accumulation, and attempts to co-ordinate, numerous factors. Some of these were personal aspiration, some philanthropic, some religious, some determined by the needs of industry, some shaped by overseas comparisons, some instigated by the state and were increasingly led by state intervention reflecting what – in context – were seen as philosophical, social or economic forces. What follows is an overview of some of the most relevant landmarks.

This chapter identifies the pre-cursors of FE. Given the length of the period in question, (from about the beginning of the nineteenth century to the middle of the twentieth century), and important though it is to the system we now have, what follows can be little more than a sketch. These pre-cursors, for the most part, developed independently of each other, although there were overlaps and

associations. What will become clear is that what we now know of as FE is not the result of a coherent plan of development, nor did it develop as a unified sector. Further, beliefs about the purposes of education and training go back millennia and are still both evident and unresolved. What does emerge increasingly for this sector is the preoccupation with training, with the sometimes-deleterious effect this had on general education for perhaps that half of the 16 to 19 year-old cohort which finds itself in the FE sector. The loss of much general education, and the rise to dominance of more reductive forms of training, has, I argue, repercussions on the development of imagination as a valuable attribute in life, and in education. It is my purpose in this thesis to argue for ways in which it might be positively re-introduced to enhance the educational experience of the students. What follows, therefore, is only a thumbnail sketch of a very large picture as the focus here is on vocational training, and government involvement only became significant from around the end of the nineteenth century. This involvement, however, could not have been possible without the work of numerous bodies and individual initiatives throughout the nineteenth century.

During the nineteenth century it became clear that as technical developments took place, and that the status, competence and competitiveness of British industry came under increasing pressure, further developments in technical training were severely inhibited by an inability to advance technically, due to a lack of basic education. Initially, the only available model of education was the classical, liberal one followed by the more affluent. Alternative versions arose through the goodwill of philanthropists, the influence of the various religious groups, through the social conscience of the more fortunate, the rise in political awareness, and the development of teaching as a profession. However, these separate strands came together as technical needs intervened. In this way elementary education became linked, and essential to, national prosperity. The motivations, which drove early elementary education for the majority of the public, coincided with economic necessity.

A few landmarks of education and training may help set the topic in context. The Industrial Revolution began around the middle of the eighteenth century during a period of population growth (Gillard, 2011), and in due course, led to concentrations of people in towns and cities. The educational landscape was set against other

background influences. One was a very palpable public enthusiasm during the eighteenth century for scientific and technical (and in some circles, political) developments. These generated considerable interest and excitement. The link between this thirst for knowledge and the desire for education is clear. Before the state intervened, individuals made efforts to educate themselves. What began on a near solitary basis gained momentum and spread, fuelled by the spirit of self-reliance, group solidarity and expanded by well-intentioned intervention into a movement broadly named 'self-help' (Kelly, 1962). Whilst it is accepted that literacy levels were low amongst the Victorian working classes, an interest in reading material was widespread (Rose, 2001).

Although not a major figure in education *per se*, Charles Knight[5] (Gray, 2006) deserves mention for his substantial contribution to publishing. This encouraged the advancement of education through access to good, cost-effective, and illustrated reading via Knight's association with the Society for the Diffusion of Useful Knowledge (founded by Henry Brougham in 1826), which came to provide a broad range of useful reading matter across society. Knight came in due course to recognise the need for state intervention as representing the best route to a trained body of teachers, and a coherent standardised programme of education.

Personal education, although at the time viewed as purely that, and in some cases not without ulterior motives (as seen by the differing religious denominations), would lead to a greater increase in literacy and general knowledge, both of which would later become important for access to technical material. An outline follows of one successful venture – the Mechanics' Institutes, instituted for the benefit of industrial workers which spread rapidly, and which, at its height, catered for the educational appetite of very significant numbers of both men and women.

Mechanics' Institutes

In respect of technical education, successive governments largely left this to industry. This led in part to the foundation of the Mechanics' Institutes, where, several Mechanics' Institutes opened in the mid-1820s, and by 1850 there were 610

[5] Commissioner and member of the Poor Law Board from 1818 for over thirty years, Knight had knowledge of the poor and their needs. A summary of Knight's output is recorded by in Gray (2006, p. 59) and gives an indication of the range of his work which cannot be listed here.

such Institutes in England and 12 in Wales, with a total membership of over 600,000 (Gillard, 2018). The purpose was to educate and inform those working primarily in technical trades, and were organised locally, frequently reflecting the needs of local industrial operations. However, they also had a wider brief, that of enabling those who so wished to broaden their personal education through the provision of lectures and libraries. Fairly quickly it became clear that the aspiration of the Institutes was to develop scientific understanding as an aid to vocational training. This was vital for working people who could not progress without at least sufficient basic education to make the knowledge and understanding accessible (Kelly, 1962). This led to the dominance of the Institutes by the clerical classes around the mid nineteenth century as working people found themselves increasingly alienated and unable to benefit from the training on offer.

University Extension Movement and the Workers' Association

A further strand of the pre-cursors of FE was the University Extension Movement. From around the middle of the nineteenth century onwards, the universities of Oxford and Cambridge opened up a significant strand of educational opportunities by making available educational advancement to working men and women. This was viewed as essential if they were to integrate into a democratic society and contribute to it (Goldman, 1995). It can be seen that this philanthropic movement saw education as a social and political, not merely an occupational, asset.

Later, emerging from this movement and the Adult Schools Movement, was An Association to Promote the Higher Education of Working Men, founded in 1903 by Albert and Frances Mansbridge. In 1905 this was renamed the Workers' Educational Association (WEA). In addition to its influence over the 1902 Education Act, the WEA was also instrumental in prompting the 1918 Education Act which made full-time education compulsory and raised the leaving age to 14. The organisation continues to this day. A further enterprise, but limited to London, was prompted by a combination of political, religious, and social motives whose adherents founded the Working Men's College (Harrison, 1954).

It will be clear by now that several strands of educational provision for working people were underway by the middle to the late nineteenth century, but equally, they were mainly for general education rather than vocational training. Whilst the above

examples have mainly been institutional, some individuals had a marked influence on the expansion of provision. One such was Henry Cole to whose contribution we now turn.

Schools of Design

Amongst pre-cursors of 'modern' education were Schools of Design. One influential figure, Henry Cole (Alexander,1996), was a key organiser of the Great Exhibition of 1851 (the Great Exhibition of the Industry of All Nations). The exhibition was a commercial and public success, though later observers would see the weaknesses in British industrial design and techniques which foreign comparisons made apparent. Following the Great Exhibition of 1851, a Times leader wrote:

> We must effect a radical change on our educational system – then we must substitute a living science for dead literature and distribute the honours and rewards … where they may fructify to the use of the commonwealth instead of being limited to the learned professions (Argles, 1964, pp. 1-2).

The profits were used to finance the building in South Kensington of the Department of Science and Art, and Cole comprehensively and successfully re-organised the existing Schools of Design.[6] In conjunction with this spread of provision, the need for tangible and credible qualifications arose for those participants who required accreditation for occupational purposes as distinct from personal gratification. A number of organisations emerged to fill this need, many of which continue into the present as will be recognised below.

Professionalism and Qualifications

In parallel with these developments was the burgeoning recognition of the importance of recognised qualifications.[7] Gillard summarises: 'By the 1850s, then, the curriculum – in both private and endowed schools – was changing, partly because of parental pressure and partly in response to demand' (2011, no pagination). This led to examinations such as the examinations for the Indian Civil Service (first held in 1855), the Oxford Local Examinations (from 1857), the

[6] In addition to these schools of design, Cole, as funds were made available, developed museums on the South Kensington site whilst other enterprises included, from Alexander, (1996, p.156) 'The Royal Horticultural Society Garden (1861-1876); Memorial to the Exhibition of 1851 (1861); Huxley Building (1864) for a School of Naval Architecture and later schools of science and Mines; Royal Albert Hall (1871); National Training School for Music (1876), and National Training School for Cookery (1876)'. All point to an increasing need for training.
[7] For further detail see https://www.thersa.org/about-us/archive-and-history.

Cambridge Local Examinations (from 1858), and the Examinations of the College of Preceptors, which was established in 1846 for the promotion of middle-class education, and for the training and certification of teachers but not, generally, for manual workers, became available. By 1857 the Department of Science and Art offered examinations that were nationally recognised. The Society of Arts (RSA) (Royal as from 1908) was founded during the Enlightenment by William Shipley in 1754 but did not limit its coverage to non-technical subjects.

Then, as now, scientific advances tended to be specialised; examples include the Royal College of Chemistry (1845) and the School of Mines (1851) (Alexander, 1996). Those which offered education and training included the University College (non-sectarian) and the King's College (Church of England). In general, however, dissemination of technical knowledge tended to be 'trickle down' and was hampered by insufficient general education to profit from the lessons available (Kelly, 1962). Industrial concerns were also often geographically isolated, had a parochial outlook, and were secretive, fearing piracy of their 'intellectual property' and techniques (Green, 2005). Importantly, the institutions mentioned above were not attended by people such as engineers whose achievements would contribute so much to British industry and its (at least initial) success. Therefore, although such foundations reflected intellectual developments of the age, they bear little on the main focus of this research, that is, the artisan class which now dominates FE and how this provision developed.[8] By the mid-nineteenth century, in essence, industry was dominated by manual workers and training proceeded along craft traditions. The increasingly urgent awareness of the need for improvements prompted the Royal Commission of Scientific Instruction and the Advancement of Science to produce eight reports between 1870 and 1875 covering a range of important topics under the Duke of Devonshire.

[8] Current FE qualification levels are mainly Entry or Craft levels (Levels 1 and 2). There is some Level 3 training (industry standard) largely limited to employed apprentices. Technician level and above would equate with Higher National Certificate [HNC], Higher National Diploma [HND] (both topics discussed in the thesis) or degree, normally taught in Higher Education rather than FE. Examples of the manual trades would include, engineering, brickwork, joinery, motor vehicle maintenance and so on. Those designated Service Professionals would include hairdressing and travel and tourism. Childcare plus health and social work are also well represented.

Vocational Training and Overseas Competition

The Great Exhibition[9] had exposed clear deficiencies in British industry when compared with overseas competitors. Studies of these included scrutiny of, and comparison with, overseas competitors, as awareness of these had been increasingly felt for some time, and decreasingly to the advantage of British manufacturing. Commercially significant, and a further variable to the already complex picture, was vocational training in Britain compared with Europe and the USA. Walker (2012) identifies competition from foreign manufacturers whose workforces appear to have been significantly more technically competent than their British rivals. These disparities, highlighted by the Great Exhibition of 1851, and further confirmed by the international exhibitions of 1855 (Paris), 1862 (London) and again Paris in 1867, made clear how seriously these were viewed and provided an impetus to develop education and technology for industry.

Roderick and Stevens (1972) note that as the nineteenth century progressed, Germany became increasingly more efficient and its established practice of integrating science, technology and industrial development paid dividends. As a measure of the differences between Britain and Germany, they point out that by 1900 Germany was producing five times more technically trained personnel than Britain, particularly noticeable for chemistry. Only in 1902 did Britain show serious intent regarding links between educational and industrial needs on a national scale. A Canadian (Macgregor, 1882, p. 13), comparing his home state with Europe, noted the strengths and weaknesses he found. Regarding Britain, he states quite blatantly that 'The United Kingdom is far behind the rest of Europe in respect of technical education'. Conspicuous amongst Britain's failings was the lack of training for foremen and managers. This also echoes an ultimate serious shortcoming of the Mechanics' Institutes. However, significant figures in government were not oblivious to the need but until 'whiskey money' became available following the Local Taxation (Customs and Excise) Act 1890 (Hansard,1891) funding was not sufficiently available to make a major difference. All of the above (and more) played their part in the spread of what ultimately would become universal schooling, but an underlying and very significant force for education throughout this whole period (and arguably

[9] The Great Exhibition of the Works of Industry of All Nations was an international exhibition which took place in Hyde Park, London, from 1 May to 15 October 1851.

continuing until its resolution in 1944), was religion. In a largely secular age, the influence of this can easily, but wrongly, be under-appreciated, and it to this that we now turn.

The Role of Religion

During the eighteenth and nineteenth centuries, religious influences on education dominated so much provision that they must be sketched in as determinants of subsequent development. They were also the cause of much friction (Armytage, 1965) as for example in relation to the passing and perceived consequences of the Elementary Education Act 1870. The three main groups of church interests were the Church of England, Non-conformists, and Catholics. The major non-conformist groups comprised Methodists, Presbyterians and Baptists, plus other minority groups including the Quakers. Judaism also featured as a small independent group.

As education spread, and pressure for coherence gained, Robert Raikes founded the Sunday School Society in 1785 which rapidly grew into a thriving provider of religious and basic education. This was not entirely neutral as its main purpose was to permit access to (reading) the Scriptures for the benefit of the individual's soul, rather than for vocational or occupational advantage which at the time was considered entirely the responsibility of industry. The dominance of religion in the individual, social and political lives of people in former centuries was much more significant than is currently the case for much of contemporary English society. It also prompted much dissention and was an important influence in many reforms. These will be considered subsequently as part of this development of FE. Equally, those interested in social and political participation wanted literacy to allow greater access to political tracts and publications. Equally, as education spread, and pressure for coherence gained adherents, so eventually government (albeit in piecemeal fashion over a century and not without resistance, particularly in financial terms) could no longer escape major responsibility for the educational programme of the state. The following sections attempt to give a flavour of this expansion.

State Intervention: Education Acts and the Development of Technical Education

Government ultimately yielded to the accumulation of pressures described so far, and once involved, the educational system began to assume a national character

whilst administration became more uniform. From 1833 onwards funds became increasingly available for approved purposes (Gillard, 2018). When W.E. Forster sponsored the 1870 Elementary Education Act, with the creation of School Boards, he reanimated the hostility of the non-conformists, and a series of compromises were required to pass the bill. This hostility was again evident when in 1891 schools became free for both state and voluntary sectors, again a compromise between expediency and partisan support, the one against fraudulent practice, the other against subsidising sectarian schools. The unequal balance (at the time voluntary schools were three times as numerous as the Board Schools which filled local gaps in provision but were funded by the rates) continued until the Education Act 1944 claimed to have resolved the matter through new funding arrangements in exchange for varying degrees of control.

In terms of vocational training, however, some progress was being made. The Technical Instruction Act 1889 following the Royal Commission reports by Samuelson, allowed the proceeds of the Local Taxation (Customs and Excise) Act, 1890 (‘whiskey money’) to supplement the authorised rate levied by County Councils. This enabled numbers of technical colleges to be built. Workshop experience might or might not have been considered relevant for management roles, but it was generally believed that theory without practice was not applauded by employers for manual workers. The Technical Instruction Act 1889 made provision for a generalised (if not specific) amalgam of the two. Further, relaxation of the old rigid curricula of evening classes under the Education Code Act 1890 and the Evening School Code 1893 (Hansard HC Deb. Evening School Code, 1893) triggered a huge expansion in evening classes which provided a broadened (albeit still often basic) range of topics. The 1902 Education Act co-ordinated national education under 328 new Local Education Areas (LEAs) and brought much needed coherence to a now (if imperfect) at least unified local system. Post-World War One, adult education boomed. Under the new LEAs, even with the Working Men’s College (WMC) the Workers’ Education Association (WEA) and the university contributions, it became clear that the desire for literary and cultural topics remained, and perhaps we can see in this general mood the latent impulse for the subsequent development of extensive cultural, ‘leisure’ and personal opportunities and pursuits that, until 1992, many evening classes in FE made readily available. Nonetheless, equally

clear was the fact that considerable numbers of people still had little or no education beyond the age of thirteen or fourteen, a situation that needed to be addressed.

Accepting the confusion that education and training reflected by the end of the nineteenth century, it is dangerous to simplify the reasons why technical education did not thrive. Allowing for this over-simplification, the influence of Robert Morant cannot be ignored (Curtis and Boultwood, 1960). In the decade or more before his appointment as Permanent Secretary to the Board of Education in 1902, significant steps had been taken to develop secondary education across the country. This included the development of higher-grade schools, a response to the clear need for a more advanced and broader education to enable more able children to go on to more demanding occupations. The curriculum had been widened, science expanded, a non-specific but transferable range of vocationally oriented subjects introduced, and practical lessons were available. Morant, however, viewing these as uncoordinated, *ad hoc* and as local initiatives (whilst they cumulatively recognised the economic demands of the nation) forged a plan to demolish most of these over his period in office. Anything resembling technical education, in the majority of cases, was eliminated, regardless of the achievements these schools had made, or the value their proponents invested in them. Bailey (1990) records a long list of casualties of which the consequences for technical education were long-lasting and far-reaching.

Despite Morant, thanks to the Secondary Schools Regulation of 1904 (Evans, 2009), gradually day technical classes could receive grant aid if students had completed their elementary education. The bulk of these developed in London, but others were to be found in the north of England. There were two types: the 'trade school' and pre-apprenticeship schools preparing for specific trades. In retrospect, it can be seen in these initiatives evidence of increasing governmental influence facilitating what would, in due course, become established as vocational training. In 1926 Junior Commercial Schools were recognised. The comparatively restricted conditions for operating these schools remained until the Secondary School Regulations of 1945[10]

[10] These regulations ensured that Technical Schools were not to be confused with Secondary Schools, and their curricula was to remain distinct. Social class and occupational aspirations underpinned the selection process. An attempt to rationalise the entire system in 1926 proved difficult (80% of 14-year-olds went into work). Statistics appropriate to older plans were now out-dated and no longer applicable. Some advocates wanted continuing education to continue part-time, some to increase the school leaving age, whilst the Junior

as re-written in summary form in ‘The New Secondary Education’ (Ministry of Education, 1947).

It would rather seem, therefore, that between the two world wars, technical education lost momentum. Although the Thompson Report, 1918, (Lloyd George, 1918) proposed a revision of technical education with more scholarships and better training (and salaries) for teaching staff, the Education (Fisher) Act, 1918 lapsed due to the demands of post- war reconstruction. The Hadow Report, 1926, (Board of Education, 1926) drew attention to how restricted secondary education remained. The Spens Report, 1938 (Board of Education, 1938) lamented the continuing small provision for vocational education. Then again war intervened during which the USA demonstrated the huge advances that that country had made (compared with Britain) in the advances and efficiency of its heavy and manufacturing industries.

Of great importance was the introduction of National Certificates and National Diplomas from 1920 onwards. These were progressively expanded over the generation to a broad swathe of important industries (Argles, 1964). Evening schools thrived in general, and some were grouped for greater efficiency. However, a preponderance of the teaching in evening schools remained at elementary level and financial help from central government was initially negligible, and even when later available was unevenly taken up (Green, 2005). The Malcolm Committee 1926-28 (Rolf, 1981) found that industry preferred general (these days ‘transferable’) skills to specific training, that evening classes were understandably draining after a day’s work and that there was little co-ordination between elementary, secondary, or evening education. Until the Nationals became firmly established, both employers and employed remained largely indifferent to technical training, whilst research and development, as it had done for most of the nineteenth century (Green, 2005) held little attraction for many companies and hence to little recruitment of highly qualified technical staff. The twentieth century, however, heralded enormous changes in the lives of people and countries alike. Times of crisis tended to underline weaknesses, many of which were economic in nature, whilst others spotlighted oversights or complacency. These crises, once passed, tended to precipitate forward planning.

Technical Schools who selected at 13 posed problems of progression. Endless debate over years ensued, culminating in the Spens Report of 1938. More urgent priorities then intervened.

For education, as is about to be demonstrated, this was not a straightforward matter.

The Second World War to the Present: Education or Training?

The Second World War made Britain's technical and industrial shortcomings conspicuous without any clear way forward. Nor was a consensus on solutions to emerge. Neither the Percy (Percy Report, 1945) nor the Barlow (Lord President of the Council, 1946) Reports resolved the matter. A National Advisory Council took up the challenge. There appeared to be broad agreement for expansion (Germany was expanding university provision rapidly despite its losses). The stumbling block was 'of what' and 'at what level'? Technical colleges were providing more trained personnel than the universities, but universities were protective of their degrees, and other qualifications could not match their caché. The Treasury wanted more three-year apprenticeships and criticised the promotion of graduates to executive level in industry without a practical background. A startling proportion of the debate appears to revolve around qualifications as distinct from national economic and industrial needs. Ironically, as Summerfield and Evans point out (1990, p. 133) 'after six years of debate a grudging basis for a new policy had been won. But the defeat of the Labour government (1951) threw policy into flux' although technical colleges were granted a national qualification in 1956. However, overall, the residing impression of the early decades following the Second World War regarding improved provision for the development of technology suggests more a scrummage between sectoral interests than a concerted push for national advantage.

By the second half of the twentieth century the situation regarding vocational education had, in some regards, moved on, although the concept of the liberal education survived. Armitage *et al.* (2007, p. 25) record that 'In Britain, the traditional or "narrow" view of vocationalism, [*sic*] that is, vocational education as "training for a job" was mostly rejected by educational reformers'. R.H. Tawney (1922) is one writer and activist who had proposed a good general education for all. He combined religious principles with socialist politics and was influential across a range of educational endeavours. Armitage continues: 'Vocational training was held to be entirely a matter for employers … According to this view, there is simply no connection between "education" and "training"' (Armitage *et al*., 2007, p. 25). By the

1960s the situation had evolved further: technical colleges provided training and employers were bound to the day-release of their apprentices following the Industrial Training Act, 1964. So, 'When Harold Wilson spoke to the 1962 Labour Party conference of the "white heat of the technological revolution" there was no conception in anyone's mind but real training for real jobs' (Armitage et al., 2007, p. 25).

By the 1970s the economic climate had deteriorated, the government had more involvement with training, a number of job-related schemes were developed, for example the Youth Training Scheme [YTS], which were often greeted with hostility and 'vocationalism' implied less emphasis on day-release and more on pre-vocational training (Armitage et al., 2007). Hodgson and Spours (1997) present a list of initiatives. However, on the topic of 'new vocationalism' Hager and Hyland observe that it:

> has not, however, been prompted by educational considerations linked to the need to reconcile or create parity of esteem between the academic and the vocational, but by the changing nature of the global economy and labor [*sic*] markets (Hager and Hyland, 2002, pp. 279-80).

In the 1980s the view developed that 'a job for life' no longer applied, that training and periods of unemployment were becoming increasingly a normal pattern, and this appeared to be accepted without widespread protest. For a few, under the spirit of Thatcherism, a major force in the development of a market force economy and the virtues of enterprise, financial success for some became a realism to a greater degree than hitherto. Blake et al. (2003) writing about Thatcher's view of the market, argue that:

> Social policies do not operate in a historical vacuum, nor are we looking at the creation of an educational market from nothing. In most contexts market principles have been applied against a background of an established public education service managed in some way through the apparatus of the state (Blake *et al*., 2003, p. 127).

Essentially, they mean that the striking changes wrought under the Thatcher government towards a more conspicuous internationally competitive market economy were accepted by subsequent governments – including Labour

governments under Tony Blair as Prime Minister (1997-2007) – and the general public, to become the ‘new’ model for Britain.

The three-tiered system of Primary, Secondary and Technical Education (the last of which could not be more than scantily funded in post-war Britain, and which has partially evolved into FE) which had arguably begun in 1902, and was enshrined in the 1944 Education Act, appeared immutable. It should be made clear, however, that the Act did not specify which training was be provided, or to whom, merely that appropriate post-secondary provision be made. However, it did use the term ’Further Education’ as the formal designation for that diaspora of secondary establishments which had evolved over the decades, and this appears to be the first use of Further Education as the recognised nomenclature for the sector in official publications.

Within FE, the apprenticeship model young people were employed as apprentices and undertook a range of tasks as the foreman directed. Much of the trade was learned ‘on the job’ working alongside a qualified workman who part-taught, part-supervised his or her work. This was supplemented by ‘day release’ or night school at the local college to acquire the necessary technical knowledge in a systematic manner which might not arise in a day-to-day work situation where the predominant activity was practical application. Both the practical and the assessment models have changed over time, and debate continues over the relative value of the learning gained from working alongside skilled workmates and the restricted assessment regime of the National Vocational Qualification [NVQ][11] system. In this system, the performance of narrowly defined skills, demonstrated as functional competence, is the key feature of assessment, leaving little space for peripheral but useful knowledge and experience, however valuable this may be in a real-life setting.

This is effectively the situation which continues to this day with some modifications. There can be no doubt, however, that the topic of apprenticeships is hugely complex, subject initially to fluctuations in the economic climate of the period under review. There is considerable variation across regions of the UK, within and across different

[11] The National Vocational Qualification (NVQ) is a work-based qualification that recognises the skills and knowledge a person needs to do a job.

sectors of industry, and distortion by such variations in the birth rate and faith in the future economic situation.

Apprenticeships, notwithstanding these debates, may be one of the oldest organised systems of training in the country, dating back long before the Statute of Artificers from 1562 imposed legal controls and which, according to Armitage et al. (2007, p. 245) 'remained the dominant form of work-related training up to the 1960s when the Industrial Training Act 1964 was passed'. The public profile of apprenticeships remains high, and popular with parents who like the implied stability for their children. Amongst observers, however, a continuing grievance is the reluctance of employers to engage meaningfully with training, whilst H.M. Government (2020) reports that availability and up-take of apprenticeships in England remain low compared with comparable countries at 15%.

***

It can be seen, therefore, from this résumé of developing educational endeavour which would cumulatively trigger widespread state intervention and more coherent vocational training, that the forces prompting change were neither integrated nor in many cases systematically developed. What emerged resembles more a patchwork than a plan, and educational provision, despite over a century of state and local legislation and control of finances, remains work-in-progress. Thus far, the evolution of FE has followed a largely chronological sequence. What emerged over the second half of the twentieth century and the beginning of the twenty-first was the change in emphasis, not simply regarding the provisions of the educational system, but increasingly the purposes at which they aimed. This focus is now developed in the following section.

This historical overview has shown how there has been a movement from around the turn of the twentieth century onwards to find a measure of co-ordination between education and training. But equally, the need for a general education has remained dominant in the minds of policy makers. Any disjunction between the two is partially

masked by the fact that technical training in its theoretical mode benefits from general education. Whilst not, therefore, coterminous, there is a convenient coincidence allying the two. The fundamental distinctions, it could be argued, remain, although some harmony has (with arguable success) been attempted through such debates as ‘parity of esteem’, although here the focus has tended to highlight the pathways and outcomes rather than the nature and content of the learning *per se*, whilst education as such appears to implicitly embrace employability without specific indicators of how this is to happen.

As demands have strengthened and standards become more stringent, a division has emerged in the provision of vocational training. Whilst successive governments have espoused both education and training, demands have strengthened, and standards have become more immersed in the provision of vocational training. In broad terms education has become (some might argue that it always has been) the province of the tertiary sector (that is, mainly universities), and vocational training predominantly the responsibility of FE which, nonetheless, remains under-funded and dubiously governed (Orr, 2020). These shortcomings may be true but as noted earlier, only approximately one quarter of apprenticeships occur amongst 16 to 19 year-olds, whilst Higher and Advanced Apprenticeships account for approximately one third and one half respectively of apprenticeship starts (United Kingdom. House of Commons Library, 2023). (It should be noted that statistics here remain broad rather than specific.) There is also a large cohort in vocational training who are not employed as apprentices. There is also the belief that from a certain point of view all graduate qualifications are thinly vocational, and this has been implicit since at least the 1960s. Whatever the division of training, the focus of this thesis remains committed to seeking ways in which the educational component of training across the specified age-range within FE might be ameliorated.

Clearly since political influence on education and training has been significant, and the picture emerging of current vocational training under government funding and regulation in FE is stark, the next section will indicate how government policy has systematically moved towards positioning employability at the centre of economic thinking and competitiveness in an international market economy.

It was claimed in the Preface that governmental preoccupation with vocational training as necessary adjuncts to economic prosperity and global competitiveness has squeezed out much of the potential for a broader education for this group of students in FE[12] and that this has been due at least in part to a preoccupation with employability. This section is designed to show in greater detail how, over the last five decades, this situation has firstly arisen, and then become the norm, in political thinking. Much of the debate and many of the changes highly significant to education during this period cannot be examined here given this focus. Some, however, are so important that they simply cannot be ignored. (An example might be the introduction of England's National Curriculum for schools in 1988). Where this occurs, reference will be skeletal. Comment on the relevance to the theme of this thesis will be made as appropriate.

A starting point for this synopsis as representative of the political rationale behind the dramatic changes which have proved so far to be persistent, became entrenched in the UK under Margaret Thatcher (1925-2013) who replaced Edward Heath as leader of the Conservative Party in 1975. Under her, Conservative politics became more aligned with those on the right. She was elected and became Prime Minister in 1979 and held the post until 1990 when she was replaced by John Major. Her policies proclaimed the virtues of neo-liberalism and led to dramatic changes in industry and the public services. Through legislation neo-liberalism became the management mode imposing market forces on both industry and public service with increasing centralised control. Although she was to initiate major changes in educational policy, the foundations were laid earlier under a Labour government, when its key aspirations relating to vocational training were espoused by James Callahan in his speech at Ruskin College in 1976 which later became known as the Great Debate.

Under the Conservative regime in 1981, the joint White Paper by the Department of Employment (DoE) and the Department for Education and Science (DES) 'A New Training Initiative; a Programme for Action' drew attention to the expanding prevalence of vocational courses. As a consequence, the Technical and Vocational Education Initiative [TVEI] was launched in 1982 as a means of invigorating these

[12] For much of what follows in this section, I am indebted to Derek Gillard who, on request, provided me with a withdrawn version (2011) of one of his works which was very useful to the completion of this part of the thesis.

topics for 14 to 18 year-olds. In the event, the scheme failed after a few years but was one of 25 training schemes, of which 22 were subsequently cancelled, some after only a year or two in existence introduced between 1977 and 1989 (Norris and Adam, 2017).[13] In an attempt to clarify the alleged lack of focus, subsequent developments of curricula moved towards either vocational or academic outcomes as described in the 1985 White Paper 'Better Schools' (Department of Education and Science [DES] and the Welsh Office, 1985). This inevitably led to political disputes over the value of combining 'O' Levels and 'A' Levels and GCSEs[14] with vocational courses. Shown here, therefore, are two movements of political thinking, as yet perhaps less dogmatic than subsequently, but harbingers of later proposals.

In 1988 a report, chaired by Gordon Higginson (DES and the Welsh Office, 1988), stressed the importance of comparability between 'A' Levels and vocational qualifications such as those offered by the Business and Technology Education Council [BTEC]. This attempt to integrate academic and vocational streams was rejected by the government, whilst the endless debate over 'parity of esteem' persisted and 'A' Levels remained inviolate. The government subsequently published a White Paper 'Education and Training for the 21st century' (DES, 1991). The aims include:

> a fully-integrated system of education and training … which allows steady progression from school through to further and higher education, and to training in work. Our policies will promote continuous learning from the age of 5 through education and throughout working life (DES, 1991, 1.4).

In order to achieve these aims, the government stated their intention to centrally fund colleges (DES, 1991, 9.2), thereby ending local government control. This led to the incorporation of colleges as a centralised means of determining how they operated.

[13] That these government interventions failed should not be misconstrued as a defeat of government policy, or that these efforts were misguided. Rather, they were aimed at control rather than improvement. The number and frequency of these attempts to direct what happens clearly signalled a persistent and tenacious determination by government to model the direction, operation, and content of the education system.

[14] 'O' [Ordinary], and 'A' [Advanced] Level examinations were both introduced in 1951. Advanced Subsidiary (A1 or AS) Level is an intermediary making up the three levels of this suite known collectively as the General Certificate of Education [GCE]. The GCSE [General Certificate of Secondary Education] was introduced 1986 as a fusion of 'O' Level and the Certificate of Secondary Education [CSE] (1965-1987). All are national (England and Wales) examinations and available in a range of subjects. 'O' Level and GCSE are generally taken at the age of 16. 'A' Levels are taken at 18 as one route to university.

In a significant blow for the sector, it was also stated that ‘It is not intended that colleges should receive explicit funding from the Councils for courses catering for adults' leisure interests’ (DES, 1991, 9.11) This stripped out of the sector many opportunities for programmes of study offering educational enrichment, shifting the priority to formal (education and) training. During this period, the government also commissioned the Dearing Review in 1994 (Dearing, 1994) which called for ‘the development of three broad educational pathways in post-16 education and training’ (Dearing, 1994, p. 19). These were to be the 'craft' or 'occupational' routes through National Vocational Qualifications [NVQs], the 'vocational' - a midway path between the academic and occupational - leading to General National Vocational Qualifications [GNVQs] and the 'academic', leading to A and AS levels (Dearing 1994, p. 19).

In 1996 the Dearing Review was published under the next minister for education, Gillian Shephard (appointed in 1994). John Major’s government, however, did not accept the recommendations even though the importance of work-based routes and the opportunity for work experience had been stressed by many respondents to the Review as giving ’greater relevance to study for many young people’ (Dearing, 1996:36). The search continued for a resolution to the academic-vocational quandary and the implications for work, and in the Foreword, Gillian Shephard described ‘Learning to Compete: Education and Training for 14 to 19 Year- Olds’ as the ‘first ever White Paper on the education and training of 14 to 19 year-olds in England’ (DfEE, 1996, p. 2).

She added:

> It sets out the Government's vision of the education and training world we shall need to meet the demands of the next century … It establishes a clear entitlement for all 14 to 19 year-olds to high quality learning which helps them make a successful progression into work, whether directly or via Higher Education; encourages further improvement of their skills in the future; and meets employers' needs (DfEE, 1996, p. 2).

When Tony Blair became Labour’s Prime Minister in 1997, he wrote (Labour Party Manifesto, 1997, Foreword): ‘Education will be our number one priority, and we will increase the share of national income spent on education as we decrease it on the bills of economic and social failure’, this was a reiteration of his Ruskin College

Lecture (Blair, 1996). Soon after, Helena Kennedy, Queen's Counsel (QC) chaired a major report as part of the Widening Participation Committee of the Further Education Funding Council [FEFC] 1997. This addressed some of the problems of FE.[15] The committee proposed an 'Agenda for Change', which included a government campaign to create a 'learning nation' and the redistribution of public resources 'towards those with less success in earlier learning' (FEFC, 1997).

An implicit role for FE is seen in the Green Paper 'The Learning Age: A Renaissance for a New Britain' (DfEE, 1998) with a foreword by David Blunkett:

> Learning is the key to prosperity - for each of us as individuals, as well as for the nation … learning throughout life will build human capital by encouraging the acquisition of knowledge and skills and emphasising creativity and imagination. The fostering of an enquiring mind and the love of learning are essential to our future success. To achieve stable and sustainable growth, we will need a well-educated, well-equipped and adaptable labour force … we need the creativity, enterprise and scholarship of all our people (DfEE,1998, Foreword, p.7)**.**

The Green Paper's proposals formed the basis of the White Paper 'Learning to Succeed: a new framework for post 16 learning' (DfEE,1999). This had only indirect implications for FE although real implications for training over a wider range. Amongst other ambitions the following claims might be noted: that learning is the key to prosperity both for the individual and the nation, and that investment in human

[15] As expressed in this extended extract: 'Further education is everything that does not happen in schools or universities. This was the throwaway definition I was given when, as a member of the widening participation committee. Defining further education exhaustively would be God's own challenge because it is such a large and fertile section of the education world. Yet, despite the formidable role played by further education, it is the least understood and celebrated part of the learning tapestry. Further education suffers because of prevailing British attitudes. Not only does there remain a very carefully calibrated hierarchy of worthwhile achievement, which has clearly established routes and which privileges academic success well above any other accomplishment, but there is also an appalling ignorance amongst decision-makers and opinion-formers about what goes on in further education. It is so alien to their experience. Over a five-year period, there was a profound shift in the control of education from local to central government. These developments went hand-in-hand with a growing recognition by employers and trade unions that a quantum leap was needed in Britain's performance in education and training. Britain was sliding inexorably down the international league tables auguring a low-skill, low-pay economy by the year 2000, unless a skills revolution took place. In an increasingly competitive world, people were recognised as the only source of sustainable competitive advantage; the potential of all our people had to be tapped. For the overwhelming majority of colleges, the driving force for excellence remains the provision of a non-discriminatory service to all sections of the community. The hallmark of a college's success is, as it should be, public trust, satisfaction of the 'stakeholders' and esteem rather than profitability. These colleges do not see their students as 'consumers', or learning merely as 'training'. However, many colleges want to include activities which, although unprofitable in the strict sense, are of value to the community. We are convinced that further education has a unique contribution to make to widening participation in post-16 learning and the creation of a self-perpetuating learning society.'

capital will be the route to success in the knowledge-based global economy of the twenty-first century. An implicit warning follows in the presumed relationship between education and training and employability (DfEE,1999): fail with one, fail with both.

In 2002, the Green Paper '14-19: Extending Opportunities, Raising Standards', was published (Department for Education and Skills [DfES], 2002). Although this primarily focused on Key Stage 4 of the National Curriculum, it also proposed the development of vocational qualifications within schools, and to develop a 'new generation of Modern Apprenticeships will form an important part of a 14-19 vocational pathway' (DfES, 2002, p. 20). A move towards an improved system was published as '14-19: Opportunity and Excellence' (DfES, 2003) and a new working group, chaired by former Chief Inspector Mike Tomlinson, was appointed to appraise 14-19 learning. In their report – the Tomlinson Report – (DfES, 2004), the Working Group for 14-19 Reform identified the low status of vocational courses and qualifications but the government rejected most of Tomlinson's recommendations, and, in its White Paper ('14-19 Education and Skills') published in February 2005, opted to introduce vocational diplomas, but to keep the existing 'gold standard' GCSE and 'A' Level exams (DfES, 2005).

In 2010 a coalition government was formed. However, when Ed Balls was appointed Secretary of State for Children, Schools and Families in June 2007, there was the repeat of a by now familiar message:

> To secure our economic future and promote opportunity for all, we must also do more to improve the post-16 staying-on rate. We will legislate over the coming year to raise the education leaving age to 18, but we also need a 14-to-19 curriculum that is relevant and engages young people in learning, offering them the skills that they need for future study and to succeed in the workplace (Gillard, 2018a, no pagination).

A succession of papers followed, including 'Raising the Bar, Closing the Gap' (Department for Children, Schools, and Families [DCSF], 2007) which set ten

goals to be achieved by 2020.[16] On the proposed 'Apprenticeships, Skills, Children and Learning Act' (2009), Balls said that the Act represented:

> the first overhaul of apprenticeship legislation for nearly 200 years which…will put apprenticeships on a statutory basis and establish the entitlement to an apprenticeship place for every suitably qualified young person who wants one. It will ensure that apprenticeships are of high quality, and that they will benefit young people and employers alike (Gillard, 2018a, no pagination).

Also in 2009, The Nuffield Review 'Education for all: The Future of Education and Training for 14 to 19 year-olds' reported (Pring et al., 2009). This was the largest review of 14-19 education since the Crowther Report, '15 to 18' in 1959 (Ministry of Education, 1959). While its starting point in asking 'What counts as an educated 19 year-old in this day and age?' was laudable (Pring et al., 2009, p. 12), there appears little appetite in governments during this period to legislate for fundamental, rather than merely piecemeal change.

For the general election in May 2010, Labour's manifesto (Labour Party, 2010) promised something for each sector: with every young person being guaranteed education or training until 18, and with 75 per cent going on to higher education, or completing an advanced apprenticeship or technician level training, by the age of 30 (Labour Party, 2010).[17] However, this did little to promote the needs of those in vocational training in general FE, but again reinforced the preoccupation with the primacy of academic achievement; this yet again reflects Kennedy's stark observation (FEFC, 1997, p. 1) that 'there is also an appalling ignorance amongst decision-makers and opinion-formers about what goes on in further education'.

In March 2011, Alison Wolf published her 'Review of Vocational Education', published in March 2011 (DES, 2011). At least 350,000 young people in any given 16 to 19 cohort, she said, were poorly served by the (then) current arrangements, and that:' their programmes and experiences fail to promote progression into either stable, paid employment or higher-level education and training

[16] These included that 'every child ready for secondary school, with at least 90 per cent achieving at or above the expected level in both English and mathematics by age 11; every young person with the skills for adult life and further study, with at least 90 per cent achieving the equivalent of five higher level GCSEs by age 19; and at least 70 per cent achieving the equivalent of two A levels by age 19 [and] employers satisfied with young people's readiness for work' (DCSF 2007, p. 14).

[17] The 50% target set in 1999 of entry into HE was met in 2019: UCAS (2019).

in a consistent or an effective way' (DES, 2011, p. 21). Some major changes which she proposed post 16 included mandatory English and mathematics for those without good GCSEs in these subjects (currently Grade 4 or 'C'); that awarding bodies should be given to develop vocational qualifications for 16 to 19 year-olds, and that 'major efforts should be made to provide greater access to the workplace for 16 to18 year-olds' (DES, 2011, p. 12). She also recommended that more 16 to19 year-olds be given opportunities to spend substantial periods in the workplace, undertaking genuine workplace activities, in order to develop the general skills which the labour market demonstrably values (DES, 2011, p. 12). Wolf's comments have been strongly criticised. The need for practical work experience remains highly desirable, but often difficult to organise. The persistence with English and maths GCSE re-sits presupposes that all that is required is further time spent on the topics for success to be assured. Other criticisms were voiced by the Association for Employment and Learning Providers [AELP], (2018), and the RSA (Chatfield, 2020).

The churn continued. In his final report 'Professionalism in Further Education' (Department for Business, Innovation and Skills [DIBS)], 2012), Lord Lingfield wrote, 'We suggest that the vocational role of FE (at both the further and higher education levels) should be regarded as having primacy' (2012, p. 2). He noted that the proposed reforms for teacher training had been largely ignored, and should be withdrawn, and that the question of professionalism should be left to colleges and employers. In its report 'Sense and Instability', published in October 2014, the City & Guilds Group examined how changing government policies had affected the 'skills landscape' followed by sharp criticism over a number of fronts (City and Guilds Group, 2014, p. 6).

In much more recent developments, the Conservative government of Boris Johnson was elected, at least partially, on the promise of significant financial input by government into education, including FE of a funding boost of £400 million in education for 16 to19 year-olds. This would include further education and sixth form colleges, 'to give our young people the skills they need for well-paid jobs in the modern economy' (Conservative manifesto, 2019). This is rhetoric that, as has been shown, can be traced back through decades of promises by governments of different colours. No mention was made, however, of a fundamental re-thinking of the FE

sector, but it serves to demonstrate the now clear dominance of skills for employment, and its ineluctable link to FE.

***

The muddle which FE often appears to have been becoming during this period is clearly elaborated by City and Guilds (2014), and subsequently summarised by the Institute for Government [IfG] who describe a sector as in ‘churn’:

> Since the early 1980s there have been: 28 major pieces of legislation related to vocational, FE and skills training, six different ministerial departments with overall responsibility for education, 48 secretaries of state with relevant responsibilities, [and] no organisation has survived longer than a decade (Norris and Adam, 2017, p. 3).

They go on to argue that FE has so little status within government circles that ministers are free to meddle without fear of political repercussions. They also list structural weaknesses within government departments which make for ill-considered interventions including ‘poor institutional memory’ (Norris and Adam, 2017, Introduction, p. 3), and conclude: ‘As some commentators have quipped of the resulting landscape of post-compulsory education and training provision: if you are not confused by it, then you have not understood it’ (Norris and Adam, 2017, p. 5).

Summary

The last fifty years has seen important changes to national views and priorities, including a clear relationship between education, training, and work as national priorities. There have been endless initiatives around education, with few real major resulting changes to FE in particular, despite the promises and commissioned reports. There remains unresolved (though currently quiescent) debate over the relative values of different qualifications, and the continuation of a fundamentally bipartite educational and qualification system. While the age of compulsory education and training was raised to 18 years, propelling many into FE, a relative shortage of work for these makes employment a difficult option. These are all important components of current thinking about the functioning of vocational training which could be argued to have little changed compared to the other education sectors.

It is difficult to escape the conclusion that regardless of which well-intentioned amendments are proposed, only those favourable to the then contemporary government thinking go ahead, however seemingly praiseworthy the rhetoric or official pronouncements. The weakness of these lies in the discrepancy between the ostensibly good intentions and the retention of the existing systems.

Significantly, successive modern governments have lost sight of a reality which the Victorians learned only slowly - that good general education is the bedrock of good vocational training, and that the 'knowledge economy' will fail to thrive either nationally or for the individual, and demands for higher standards will fall on reluctant ears, if the education offered has only instrumental value. Furthermore, it will continue to be ineffective within FE until the intrinsic value of education again becomes apparent to governments, teachers, and learners.

This summary should indicate, however, that first, the current focus of FE is the result of a systematic reduction of breadth in favour of occupational depth, dominated by vocational training. Second, that if education is to thrive as a valued personal asset, this situation needs to be leavened by an educative admixture appropriate to the students' backgrounds and aspirations.

What had been developed in this chapter is what was summarised in the Preface: first, that education for 16 to19 year-olds in general FE, in any broad sense of the word (with the continuing but contentious continuation of GCSEs in English and maths where not yet passed), has been reduced to little more than that already achieved in school. Second, that implicit in vocational training through the preciseness of the specifications and the assessment procedures, is a focus almost exclusively on performativity with a view to employability. This apparent view of the main purpose of FE is a requirement of employers who are concerned with the functionality and attitudes of employees, not with the breadth of those employees' education. This breadth of education should, however, seriously concern educators – that is colleges and teachers – since this is their primary function rather than solely furthering the supply of a competent and compliant workforce.

As the educative has been largely squeezed out, so has the opportunity to use imagination since the current regime makes few demands beyond the specifics of the programme. I have argued, and will argue, that it is the opening out of the

imaginative possibilities (here allied to vocational training) which affords the opportunity to significantly develop the educative elements of vocational training through a ready development of the existing material, thus making good some of the shortfall in education which this group has experienced.

Therefore, I claim that the use and cultivation of the imagination is an important part of both the process, and the outcome, of an educationally charged form of vocational training. In terms of what now follows in Part I, I will lay out a chapter which will outline the problematic nature of training, before then considering the problematic nature of imagination in the form of a literature overview. Part II will develop what imagination is, and how it can be integrated into a philosophically sound theory of education, largely reflecting the work of John Dewey. This will then link to a hypothetical structural system mapping the imaginative processes based primarily on Douglas Hofstadter's work on 'Categories'. Part III will outline and develop the concept and role of the Pedagogy of the Imagination, bringing the whole together as a coherent case for change.

Chapter 2

The Problematic Issue of Training

Since a central concept in this research is training, some thought needs to be given to it. As a preliminary, it may be useful to remind the reader of the research problem (in empirical research, we might call this the research question): ‘How can we use imagination to improve the educational value of vocational training in general FE with 16 to19 year-olds?’

The first question therefore might be: ‘Why should we wish to?’, followed by: ‘Why should imagination be relevant to a practical system like vocational training?’ A response to the first question, I argue is implicit in the following description, and expands on what was presented in the Preface.

My students left school at 16 with the weakest qualifications of their cohort and apart from English and maths GCSE their general education is deemed complete. The remainder of the cohort will continue in school to ‘A’ Levels, go to a specialist FE college or a sixth-form college, or into an apprenticeship or part-time work. All will begin the process of specialisation. How then are my students disadvantaged? Let us accept that all learning is educational (even that of which we do not approve, and do not encourage within the formal system). The greater demands of ‘A’ Level or other advanced specialist courses requiring greater learning, will add significantly more to the general stock, and there is an exponential dimension to this, evident in general, and particularly evident in those who continue into higher education. As with the shortfall cited earlier, when entry, rather than exit, points are measured, the cumulative difference can be striking (Plewis and Goldstein, 1998). That individual learning capacity varies seems idle to refute, but this *per se* is not an argument for not attempting such advances as are achievable.

Initially there appear to be three grounds for making good the shortfall in education: social justice, some legal requirements, and the opportunity to enhance a natural human inclination to extend learning, be this no more than the satisfaction of

curiosity. The answer to the second question: ‘Why should imagination be relevant to a practical system like vocational training?’ will become clear in due course, but hinges on what we might take to be generally accepted that imagination pervades all aspects of thinking, and is itself a form of thinking rather than, as often viewed, an attribute that can be added in some random fashion. It can dramatically expand how situations are viewed or understood and provide a greater range of choices for decisions or actions than, say, logic alone. A brief overview of the relationship of education to training will help place the debate in context.

Overview of Education and Training

A good deal has been written about the history of vocational training (Macgregor, 1882; Roderick and Stevens, 1972; Summerfield and Evans, 1990), but less on the relationship of vocational training to education. The historical version would read somewhat as follows: given the academic-vocational divide which has been a feature of British education for as long as some were able to learn for pleasure (whilst others learned in order to earn a living), the former was inevitably seen as advantageous and emulated by those who could afford it and later made available in reduced scope to the population at large. The system enjoyed by the elite was the only esteemed one, and that same elite were those responsible for both perpetuating it, and in some cases, for formulating and implementing the policies needed to expand it to the general population. And the model has in broad measure survived. The acceptance of this paradigm undermines the valuable attributes of training and seems to ignore how this is essential to education, and how learning can readily take place across and between the two areas.

The relationship between education and training has been studied not least by Christopher Winch, who has demonstrated the interconnectedness of the two concepts. He argues, for example (Winch, 1995), that both have suffered through partisanship; that training, as the acquisition of skills and understanding, is essential to much of the learning which is labelled ‘education’; and further, that the term is so extensive in its coverage that it cannot be conceived of as a uniform operation when describing widely varying types of learning. When it is applied to extended and broad learning, he claims that the term ‘vocational education’ would be more appropriate as the boundary between the two is not clearly defined, and that the complexity which

can co-exist with training may not be recognised. Winch is also at pains to distinguish training from the types of conditioning associated with behaviourism in that the range of cognitive functions employed (including interpretation of the task and evaluation of the necessary methods), extends far beyond the unthinking performance of task completion. The two, for him (education and training), may therefore be closely allied, but do not conflict as belonging to different categories. This may provide a clue as to a resolution of the ambiguity described in the following paragraph. James Callaghan (UK Prime Minister, 1976-9) in his famous Ruskin speech (1976) declared:

> The goals of our education, from nursery school through to adult education, are clear enough. They are to equip children to the best of their ability for a lively, constructive place in society, and also to fit them to do a job of work (Gillard, 2010, no pagination).

Others (Blair *et cetera*), have linked education – perhaps more accurately, the education system or schooling – with vocational training without attempting the task of clarifying how they relate to each other, or attempting to unpick this Gordian knot. Indeed, although Callaghan could not have foreseen how this speech would become a landmark in the rhetoric of education, nonetheless the speech will have been carefully considered in construction, and the phrase 'fit them to do' could as easily apply to having the right mindset as to the acquisition of actual work skills. History rather suggests that education and training have always been kept separate, although with the presumption of symbiosis, and largely one-way, with education influencing training rather than *vice versa*, partly through the organisation of material as subject areas (often taught by subject specialists), partly by the belief that the dual system worked adequately. It has only in the post-Thatcher era become so imbalanced in FE that clarification should be attempted so that the balance can be restored. This is unlikely to prove straightforward, but Winch in distinguishing between liberal, vocational and civic education (Winch, 2000), may point to one possible resolution of the traditional separation of areas as alluded to above.

Further, efforts have been made to unravel the two, for example, Peters poses the problem that if education embraces what is 'intrinsically worthwhile,' 'how do we evaluate a school engaged in training technicians for the benefit of industry? Either

the activity is worthwhile of itself or is instrumental in assisting a later activity that is itself worthwhile' (Peters, 1973, p. 19). This of course relates to the extension elaborated by Herbst (1973) who distinguished between work (justified effort) and labour (drudgery) and is possibly applicable to the activities of FE. Winch (2000) more systematically distinguishes classical conditioning from training, and although this phenomenon is well known, he does draw attention to some salient points. For example, the flexible nature of training; the variety of stimuli and the extensive use of language which distinguishes the 'what' from the ''why', and the significance of the trainer. What are the points he makes regarding the difference?: (i) that training is not entirely involuntary, particularly if 'successful rather than merely adequate'; (ii) that the performer shows 'confident and unhesitating mastery'; (iii) that training, unlike conditioning, implies a level of 'autonomy' (Winch, 2000, p. 83); (iv) that unlike conditioning, training requires 'propositional knowledge as well as technique' (Winch, 2000, p.83). These, even in isolation, are useful characteristics of training, however, an inflexible interpretation of conditioning will miss a more subtle view clearly relevant to schooling and general learning, since eventually, with practice, they will lead to over-learning, that is, 'to learn or practise repetitively, to the point of automaticity' (Collins Dictionary, no date) - essential responses for the fluent use of basic and advancing skills.

There remains the question of how well 'education' can be conceptualised, as the topic appears to elude precise definition. On the topic of education, Winch (2000) distinguishes between liberal, vocational, and civic. However, education cannot be neatly defined, but has overlapping attributes that are identifiable. He provisionally accepts the thin definition of education as 'preparation for life' (Winch, 2000, p. 25), but does not automatically equate all learning with education, as some is too trivial to qualify, and also recognises the mis-educative. Winch adopts it as a loose means of bridging several different areas and recognises its shortcomings. Many of his conclusions sound reminiscent of Dewey, but Winch (2000, p. 29) believes Dewey's views to be unclear. He elaborates on each perspective and concludes that: 'vocational education … is one branch that grows out of a common trunk which encompasses liberal and civic, as well as vocational education' (Winch, 2000, p. 37). Having extrapolated different concepts of education, he states his preference for 'liberal vocationalism' which aims to 'develop autonomy, but within the inevitable

constraints of earning a living' (Winch, 2000**,** p. 31). As Winch's views appear to accord in considerable measure with the aspirations of this thesis, they will be examined and evaluated in more detail subsequently, and stand in contrast to the narrowly instrumental view of vocational training in FE which this thesis resists. Such views might enlighten how a further integration of vocational training and education may benefit students, rather than be either irrelevant or inimical to their futures.

Limiting, for convenience, the theme of education from the nineteenth century to the present, ideas concerning its nature have varied considerably. Some views of widely divergent personalities would include those of Mathew Arnold (1822-88) who wished for the idealistic seeking of a cultivated society (Palmer, 2001); John Henry Newman (1801-90), who wrote a series of lectures in the 1850s now known as 'The Idea of a University'. Here, he advocates a liberal tradition as empowering its recipients with both learning and judgment, and a university as a place for the pursuit of all knowledge (although this did not include research) as character building (Anderson, 2010; Newman, 2020). For John Dewey (1859-1952) education concerned the expansion of experience with the proviso against the mis-educative. As Dewey is the subject of greater detail in due course, no further elaboration will be given here. Alfred North Whitehead (1861-1947), in proposing his views had hard things to say about education, some of which resonate with many of today's practices. We might summarise these in a quasi-definitional form as: 'Education is the acquisition of the art of the utilisation of knowledge', and for content: 'There is only one subject matter for education, and that is Life in all its manifestations' (Whitehead, 1932, pp. 6 and 10 respectively).[18]

Richard Henry 'Harry' Tawney (1880-1962), established not least as a historian and for his socialist views and on-going support of the Labour Party, worked for the WEA from 1920-1948 as part of his attempt to democratise adult education across a broad front. He published 'Secondary Education for All' (1922) as a strong political argument for the expansion of secondary education (Simon,1974; Kelly,1962). Alexander Sutherland (A.S.) Neill (1883-1973), best known as the founder of Summerhill, and a major proponent of 'free' education, saw the overall aim of

[18] For Whitehead there was a highly religious underscore which may sit better with contemporary society if interpreted as 'spirituality'. This would attach a moral or ethical view to the phrase 'in all its manifestations'.

Summerhill to be the happiness and well-being of the children whom he believed to be intrinsically good (Bailey, 2013). Richard Stanley Peters (1919-2011) on the subject of educational aims, wrote, 'Education is not a concept for picking out any specific activity, but for laying down criteria to which a family of activities must conform' (Peters, 1973, p. 15). A further view of education would be the transmission of a culture (Oakeshott,1959). Each writer above had beliefs on the subject which were argued credibly, but it would be misleading to suggest that all details accord with the views developed here, or that they are applicable to FE. To these general principles Winch added the combination 'vocational education' and an allusion to 'formation' which has echoes of *Bildung* which was referenced earlier.[19]

The situation overall, therefore, will be seen to be that of interlocking concepts, which whilst not immediately open to clear demarcation, have sufficient features and applicability in common to serve as working models. As a purely personal synthesis of some of the ideas covered here, the following may merit consideration: education is the value one attributes to learning over and above any advance in skill or propositional knowledge. On this basis it is almost a by-product, closer to a sense of satisfaction, than to the material which was learnt, (though not to the activity of learning which itself can be satisfying) which endures even when the learning content has been forgotten or superseded.

It has already been suggested that 'education' and 'training' may overlap but are not interchangeable. An adjunct would be that the concept of being educated implies more than simply the process of attending school, which is now almost universal, nor predominately linked to the pursuit of formal or academic study (which is largely a hang-over from the tradition of a liberal education which continues today in the post-16 vocational-academic divide). The implication that vocational training has little, or no, *educational* content (understood as beyond the acquisition of curricular content or skills), needs to be challenged, or where disproportionately true, changed. There are inevitable links to curriculum. Unfortunately, 'education' is one of those concepts which is more easily recognised than described. Despite this vagueness, it remains highly regarded and broadly aspired to. Certainly, no-one who is ignorant would be

[19] Formation implies a broader concept of initiation into an area of work than simple skill acquisition. The traditional apprenticeship is a clear example of where the work and social mores associated with an occupation are assimilated over a period of time.

described as educated, but knowledge alone is insufficient. Being educated assumes a capacity to link related concepts, and is generally seen as somewhat broader than the specific needs of one's occupation. It is therefore almost impossible to isolate exhaustively which is one reason why I feel free to use my own judgement as a provisional basis.

Training as Skill Acquisition

Training is essential to most education, as providing foundational skills. Learning to write is a clear example: how to hold a pencil, how to form each letter, subsequently how to join one letter to the next and so on. Training may be disagreeable, a chore, perhaps seen as pointless, and so on, but the 'educational' part results from the insight later into the usefulness and satisfaction of achievement. It may be unpredictable that even had the 'trainee' known in advance how to balance the satisfaction against the drudgery, whether or not she might have gone ahead with it. Quite how to categorise satisfaction at a job well done is unclear but might be subsumed under aesthetic appreciation.

Simple practical examples of this would include routine. In my own junior school, I recall spending a quarter of an hour chanting times tables every morning for four years. Consequently, we never forget them. We came to feel a certain pride in being able to do it, superior even, if we were quicker, or more certain, than the pupil in the next desk. Initially we had to learn them, that is memorise them, through repetition. That required attention, concentration, thought and reflection. Eventually, and with practice, responses became automatic; second nature as the phrase goes. The learning had succeeded. We came to understand what the tables meant and how to apply them correctly, and much of this process could be deemed training. Although not conditioning in the classical sense, responses became automatic, that is the question or next line in the chant was elicited eventually without reflection. If the concept of conditioning can be applied here (it may not be applicable since these exercises were undertaken with full awareness), then the training led to a conditioned, or quasi-operant, response, and provided what would become a useful storehouse of tools for maths. However described, the term equates in its outcome with the concept of 'overlearning' from learning theory (Shibata et al., 2017). More importantly it became a very useful mechanism in the learning process. The

contemporary objection to rote learning which lies in its unthinking nature may be over-stated,[20] and we may have been underestimating the usefulness of conditioning in the sense which I have (perhaps improperly) used it here. Whether education is seen as a process, or an outcome will affect one's view.

Similarly, some training may take the form of quasi-conditioning, for example, basic training in the armed forces where the primary aim is for the recruits to do as ordered without thought, almost as a reflex. Some reflection on the part of the recruit is acknowledged, including an attention to the details of the drill, thumbs on the seam of the trousers, rifle at just such an angle and so on, and to that extent this is training although the routine comes closer to reflex or conditioning in its speed of unreflective response, where the training gives rise to the proper execution of the detail or precision. An interesting question would be, does the soldier finally derive satisfaction from performing well, and if so, is this response closer to the concept of 'education'? Where does 'satisfaction' fit into the concept of being educated? There appears to be an ill-defined hinterland beyond knowledge and understanding which embraces satisfaction, aesthetics, emotional responses, social relationships, civic duty and so on, which would probably be considered as inseparable parts of being 'educated'. As suggested above, Winch partially resolves these questions with his sub-divisions of liberal, vocational and civic (Winch, 2000).

Vocational Training

One distinction may prove less provocative: that vocational training has always been more clearly defined than education as its purpose is agreed in advance: the acquisition of a specific set of skills for a specific purpose; invariably in order to successfully undertake a set of tasks associated with employment. As such, what needs to be learned can be established in advance, and the success or otherwise of the training assessed through practical demonstration or other reliable evidence. Education has no such teleological formulation, although traditional practice has identified broad expectations. As training evolved, so the need for knowledge and understanding increased, and these are now integral to the training itself.[21] The basic skills which traditionally have been associated with schooling are essential to current

[20] The learning of poetry by heart was never seen as contra-educational.

[21] For a succinct, but informed, summary of the academic-vocational divide, see Winch & Hyland (2007).

training, and since schooling and education are largely considered synonymous, some confusion arises regarding demarcation of the terms, not least since education itself in a developed society also assumes competence in these. For our purposes we need not consider the education received in primitive societies, comprehensive though this may be in terms of the needs and mores of that society. We may, however, need to consider a lack of schooling compensated for by broad life experience as 'educational' in a developed society. It will immediately be clear that no ready definitions are likely to emerge. Not for the first time, the existence of words to identify concepts (education, training,) can imply assumptions of clarity of the demarcation of meaning which, in fact, prove illusory. In some contexts, we have learned to accept this, and have coined new words to apply to the fused concepts, thus: orange, pink, grey, turquoise. The nouns 'Formation' and '*Bildung'* have solved the problem for French and German[22]. Likewise, Winch, in his term 'Vocational Education', has attempted a similar 'solution'. Presuming on his intention, the term is not intended to imply a mixture of education and training, but an integrated fusion, or development, of the interplay between the two without any implication that they are separable. Although the relevance of Dewey to this research is to be considered later in some depth, it should be noted that, as with Winch, education and training are *not* seen as intrinsically separable. It will be clear, therefore, that blurring between concepts is inescapable and is a product of at least one function of language: as a heuristic shorthand. Although taken from the specialist area of linguistics, the following observation is not without relevance here:

> A meaning is not a thing in itself, but only a set of contrastive relations. There is no way to determine a meaning apart from comparisons and contrasts with other meanings within the same semantic area (Nida, 1975, p. 151).

The implications, even within this limited area of usage, would suggest that a single interpretation cannot be made meaningful in isolation, but only as part of matrix of associated meanings.

[22] The best known of European examples are the German *Bildung* and the French *formation.* Whilst these include vocational training, they are extended to include a broader range of knowledge and understanding which cumulatively lead to a wider grasp of one's culture and occupation, and of one's potential contribution to both.

Employers and Training

It might be supposed that employers, in their capacity as education and training stakeholders, would find common ground with colleges as the notional purpose of vocational training is to provide useful employees. However, as suggested above, the priorities of each section differ from those of the others. What might, in theory, be an integrated exercise is, in reality, an untidy assemblage of vested interests. It may come as little surprise, therefore, that common ground between employers and colleges is less firm than might be supposed, with each having only partially met expectations of the other and neither, apparently, sufficiently disturbed by the mismatch to take the initiative in healing the breach. A working accommodation appears to have resolved undue inconvenience through the intervention of private providers. The situation is not new, however, and may be endemic to Britain, perhaps even inevitable. The following brief overview will summarise this mismatch in historical terms.

As the foregoing sections have demonstrated, for much of the nineteenth century, vocational training was not believed by industry to involve the government. It was purely in internal matter for industry: in essence, industry should resist government 'interference' as a principle. A practical matter for an isolationist stance included the need to protect industrial processes at a time when patent and copyright were underdeveloped as protective measures. Since many of these processes were developed in-house, the economic benefits could be significant, but the risk of 'piracy' a genuine threat (Green, 2005). In Germany, by contrast, there was an established relationship between the universities who provided the research and industry which could exploit these advances technically and economically (Roderick and Stevens, 1972). In addition, there developed the concept (and practice) of *Bildung*, and their educational system led to a broader concept of vocational training than seen in England. Although understood and generally applauded, there appears to be little evidence that this system was ever seriously considered for adoption by the UK. (In modern terms, the practical problems of implementation hardly need to be elaborated). Because of the individualised nature of industrial training in the nineteenth century, little real knowledge exists as to how it was conducted, beyond demonstration by experienced artisans and close observation by those learning. The USA, stimulated by the Civil War, sought a different method: that

of designing and building machines capable of only one procedure such that an unskilled workforce could produce the needed huge quantity of armaments (what later became known as the ‘production line’ and applied to large-scale manufacturing generally). Machine tool development and manufacture, particularly in the USA, became a huge industry.

The relationship of employers to training, therefore, is an imprecise one. At one level, the constant government exhortation for greater links between industry and training providers continues unheard. At another, FE provides the bulk of lower level vocational training (Levels 1 and 2) for the majority of 16 to 19 year-olds. The apparent implication of this is that employers do not train. In reality, they do - selectively as shown by the Employers’ Skills Survey (Department for Education [DfE], 2019). It is less clear how much training is undertaken at more senior management levels. A century ago, the lack of training amongst supervisors was a shortcoming for industrial organisation as already detailed (Macgregor, 1882). Since here, however, the focus is on the training of the students, rather than the relationship between their potential employers and the colleges, this interesting aspect cannot be developed more fully here.

Sites of Vocational Training

The imperfect alliance between colleges and employers can be most readily seen by contrasting the capacities and needs of each, and by identifying the strengths and weaknesses involved. That colleges have strengths cannot be disputed, not least since students are taught by vocational practitioners who themselves are qualified and experienced in the relevant subject areas. Further, training is efficient at least in that significant group sizes can be organised. In addition, where training can be offered, colleges can generally offer the full range in a number of different subjects, from Entry (complete beginners) to industry standard (Level 3). Finally, essential further teaching including English, maths and IT (where demanded) can be undertaken again by specialist lecturers.

Against these strengths must be set college weaknesses. One is that financial priorities require group, rather than individual, tuition of numbers of learners. A second, allied to this, is that not all the training needs of industry or commerce can be met. What can realistically be offered is limited, sometimes through availability of

suitably qualified staff in niche areas of the curriculum, sometimes through cost which can appear disproportionate to employers, thus largely eliminating much potential niche training or short-term courses. A third weakness, but difficult to quantify, is the impact of minimal opportunities for staff industrial up-dating combined with the absence of mandatory Continuing Professional Development (CPD). Finally, a purist might fault the low-level of skills acquired by Level 1 and 2 students, and the frequent lack of industrial work experience available to students. (For Childcare, and Health and Social Care students, and some of the professional courses, placements satisfy this need.)

The overall misalliance which results creates a void which is filled by private providers. They do not normally have the overheads (for example, buildings) which colleges cannot escape; they have panels of tutors available to take short and specialised courses; and, importantly, actively forge links with employers to exploit this gap in the market driven by economic urgency. In this way, the system maintains a precarious equilibrium where the private providers represent the 'glue' which provides the three parties (each with its vested interests uppermost) with a *modus vivendi*.

A system has developed which reflects the realities of the training environment both for FE colleges and private training providers. The system reflects the needs of each given that both are driven by financial constraints, the demands of internal organisation, and the timing of provision. An ad hoc system has therefore arisen which effectively divides parties into one position or the other. In the neo-liberal market, private providers both offer courses in competition with colleges, and fill the gaps. It should be noted that broadly, private providers are dependent on securing training contracts for their survival, whereas FE accesses public funds for mass schemes. The driving forces behind these two groups, therefore, are different, and dominate their priorities and capacities. Allowing that the system remains imperfect from everyone's point of view, there are no conspicuous gaps waiting to be filled, and no rapid means to integration. But that is a further dimension. Another would be the claim by many current graduates that they are over-qualified, (that is by inference, over specialised, for the positions they hold). Hence government exhortation for greater liaison between FE and industry, whilst ostensibly sounding worthy, in reality, is vague. It assumes benefits that are not readily apparent,

presupposes a route to national prosperity and international competitiveness, and is more a mantra than a reflection of the current situation and, crucially, as clear from the brief discussion below, ignores (or is unaware of) the mismatch between industry and FE. Education, training, creativity, flexibility and so on, therefore, become direct routes to national prosperity and international competition, without much regard for either what the terms mean in practice or how they are to be achieved.

Tensions of Vocational Training

In this section, some of the tensions within vocational training in FE which have been hinted at in what has come before, are laid out. Among these, the vexed question of the extent to which FE achieves its purposes of preparation for employment is foremost. This cannot be presented in simple terms of how many students leave college to go into work. Foundation students[23] progress as far as college can prepare them for the future, but only a proportion will be conventionally employable. Access to HE students will mostly achieve entry to university and can be a wonderful example of transformative learning. For those pursuing GCSE either for advancement at work or for personal satisfaction, initial employment is rarely a goal. Apprentices will generally qualify with or without the full framework of NVQ, Technical Certificate and Functional Skills, but are already employed. The contingent of 14 years from schools cannot be represented here. It cannot readily be established which colleges, if any, keep destination records of former students. The outcome appears to be that direct entry to work via the training that FE provides is at best arguable. One of its main roles for many has been identified as ‘warehousing’ (Cornish, 2018), ungracious though this sounds. This is consistent with the amorphous nature of FE, which in itself stands in tension with the drive to link FE with the development of vocational skills for direct routes into employment. That being the case, a significant question arises: what real purpose does vocational training serve in contemporary FE? It would be difficult to argue that FE offers no benefit. A large measure of vocational education is practical, and so develops skills of enduring potential. Equally, it is clear that many students are caught in situations determined by government, employers and colleges, which can reduce potential achievement in vocational terms. This, if true as suggested, makes the case for the

[23] Foundation students are those with physical disabilities, learning difficulties, or other significant physical or mental health issues.

additional educational value proposed, where achievable, more necessary, and for current cohorts, all the more urgent.

It seems clear, then, that there are some inconsistencies and contradictions in understanding the role of FE, despite the fact that a basic mandate for the sector could simplistically be put as: ‘Remain solvent. Provide education and training’. Even the briefest of background sketches shows that British politics moved increasingly towards marketisation under Conservative governments, with Margaret Thatcher elected as Prime Minister in 1979, a post she held until 1990, having heavily influenced party politics which would endure under her successor John Major (1990-1997). In 1992 the Further and Higher Education Act was passed enforcing incorporation on Further Education colleges from 1993. This new status was expected to impose a business structure on the sector, with the attendant characteristics of sound financial control, competition, and a responsiveness to market forces. The Act, by removing local education authorities from control of the sector, effectively centralised control, and funding from Whitehall. This sense of blurred functions and business and fiscal prudence, can, then, open out on to two further issues that present themselves: first, the posturing of colleges as businesses; second, the disjunction of central and local influence. The first is clear. The adoption of business jargon does not make a largely state-funded (or state-underwritten, as in the case of student loans), organisation a business, even when conditions and achievement targets are added. ‘Colleges are not real capitalist organisations’ (Page, 2015, p. 127). Nor does a management team from a public sector background miraculously acquire the outlook, experience or acumen of entrepreneurs or professional industrial managers. The second issue has been politically problematic for nearly forty years, demonstrating on the one hand the increased centralisation of power and influence, reinforced by a suspicion of local incompetence, whilst proclaiming on the other, the virtues of local knowledge particularly over industry, employment, and training - topics of great interest to the FE sector. Industry, on whose behalf much energy is expended, has exacerbated the issue, content to reiterate ritual complaints about low standards, whilst steadfastly eschewing real involvement in training, choosing to delegate their views to trade organisations. A neo-liberal governmental attitude is reluctant to impose, preferring

to coax for closer ties, whilst publishing targets for educational achievement drawn up without the involvement of industry or, indeed, seemingly, anyone else.

Similar fractures appear in the assumption that the economy will thrive if educational standards are driven up. A more precise relationship between the economy and these standards demonstrating this link has yet to be elaborated. In addition, there is the stigma of performing badly internationally in terms of league tables, for example the Programme for International Student Assessment (PISA) sponsored by the Organisation for Economic Co-operation and Development (OECD, 2018); or the Trends in International Mathematics and Science Study (TIMMS, 2019). These are further spurs to enhance the British image regardless of the needs of the students who are required to achieve this. Education has to serve many ends, some arbitrary, some coherent, yet few integrated. The overriding current end is work which, whilst retaining the ethos of a largely liberal educational diet up to the age of 16, is then broadly split into specialist study of a mainly academic nature or vocational training.

There is a further tension that merits mention here. This relates to how FE has become fragmented as a sector. FE is now hugely diverse in terms of its make-up of the current 212 colleges:

General further education colleges	163
Sixth Form Colleges	47
Adult institutes of Learning	10
Art, Design and Performing Art Colleges	2

(The Association of Colleges [AoC], 2021-2022)

The picture, however, is further complicated since at one small local college alone,[24] the portfolio offer includes:

Vocational training from Entry to Level 3 (Industry Standard) for:

- Engineering

[24] Name withheld for confidentiality.

- Welding and Fabrication
- Plumbing and Electrical Installation
- Construction
- Brickwork
- Carpentry and Joinery
- Motor Vehicle group: light vehicles and vehicle maintenance

Professional services

- Early Years: Nursery Nursing
- Health and Social Care
- Hair, Beauty, Make-up, Nails

Commercial careers including:

- Travel and Tourism
- Sport
- Computing
- Business

Apprenticeships

Pre-vocational (e.g. Public Services)

Pupil Referral Unit (PRU) equivalent

Foundation Stage (Learning Difficulties and Disabilities)

Adult ESOL, Numeracy and Literacy for employability

GCSE English and Mathematics

Access to Higher Education

14-16 school links.

(Source: [name withheld] College Handbook)

It is obvious therefore that the term ‘Further Education’ signals a whole range of programmes and modes of delivery, and this has implications for funding, objectives,

and internal organisation. FE is essentially any state teaching institution that is neither School, University, employer, or community or private training provider. In terms of education or training, the only thing many parts share is the building and the sector title. FE is highly heterogenous.

An important question, therefore, is '[Why] is training problematic?' A summary of reasons would include (not exhaustively) the following: central government's assumption that training and skills will transform the economy, with little precise idea on what type of training, (or who should receive it,) available to achieve this end. Serious concerns over the value of lower-level qualifications in FE not alleviated by active engagement with local (or other) employers. There is the difficulty of providing 'niche' training to small numbers of learners in specialist occupations. The possibility that currently many tutors cannot evidence contemporary industrial knowledge due to lack of industrial up-dating, and a variable attitude to continuing professional development (CPD), is problematic.[25] A failure to recognise that much of the national workforce operates in low-skill, low-impact jobs (Sissons, 2020), including sections of the service economy (Millward, 2008) for which there is imprecise training and often informal routes, and therefore variable levels of proficiency. There is an issue that a major sector of the economy, finance and associated activities (for example, insurance), are generally ill-catered for within formal training regimes as banks and other financial institutions often out-source their training (Reed, no date) specific to the needs of the industry.

For FE students, the answer is that what might be termed their personal, in the sense of 'formal' as 'deliberately enhanced', education, has been relegated to the fringes of their training, and comprises mainly mandatory English and maths until passed. This limiting in both breadth and depth is detrimental to their futures. Effort, therefore, should be made to moderate the deficiencies resulting from this. This research is an attempt to suggest a better way forward.

There is a further tension in the sector related to the fact that so much of vocational training is limited to the essential requirements laid down by the National Awarding

[25] Mandatory qualifications were abandoned in 2013 following the Lingfield Report (DIBS, 2012), and mandatory CPD abandoned with the dissolution of the Institute for Learning (IfL) in 2014.

Bodies.[26] This is because given the multiplicity of pressures operating within FE, there is little ostensible need to focus on one particular aspect of FE training rather than another. A major preoccupation is student retention and achievement, since these are tied to income. This is not unexpected since teachers intuitively want their students to do well. The college statistics benefit, as does income, but this need for certification as distinct from real achievement means that students (as employers constantly bewail) are less competent than their paper qualifications would imply (Webber, 2022). A further consequence which needs to be managed is that 'success' at one level automatically admits the student to study at the next level, in effect knowingly, in marginal cases, setting him or her up for failure from the outset. Students, however, experience the tensions in the sector in different ways, particularly for those affected by the mandatory continuation of GCSE English and maths. Student interest lies in what they perceive to be (vocationally) useful to them, in conjunction with what is educationally valuable to them. Researchers suggest, however, that GCSE for many students meets neither condition (Ryan, 2019). The system of indefinite GCSE re-sits has also been strongly criticised by the Chief Executive of the Association of Colleges [AoC] (2019); FE Week (Offord, 2020); and contributors to FE News 2021.

***

It is clear, then, that matters in FE are complicated. First comes the tenuous relationship between vocational training and education, of which formal components of the latter are reduced to compulsory English and maths where not yet passed without reference to occupational need. Then comes the preoccupation with skill acquisition with a view to employability, and the manner in which this dominates not only the curriculum, but also the narrow and formalised assessment criteria. Internal tensions compound the situation with an admix of managerial priorities including financial surveillance, with teaching staff having to take account of student retention and achievement levels. All of these pressures distract from what in one sense is at

[26] Trade associations representing the collective interests of the UK's qualifications and assessments industry.

the heart of FE: student learning, and it is around the aspiration to improve the quality of this that my proposals for change are based on the cultivation of a more fully developed imaginative dimension revolve. How this is to be achieved will be developed in the following chapters.

Chapter 3

Imagination: A Brief Overview of the Literature

The conventional purpose of many literature reviews is to establish what is already known about a topic and perhaps, from this, to identify gaps in the subject under investigation to generate a critique and leave space for further research (Institute for Academic Development, 2023). The purpose of this literature review differs slightly from this. It is true that a gap is identified later in the thesis, which is further developed, but the point here is that imagination, as generally understood, is undisputed and universal (although it may differ substantially from society to society). It has been established as a *bona fide* cognitive process. It occurs both deliberately and spontaneously in virtually all aspects of life in a range of guises, each with a descriptor to identify the concept in use, for example, daydreaming, empathy, fantasy, role-play, visualising and so on, displaying characteristics pertinent to, or restricted by, the situation or discipline. The aim here is to show that, since I believe its universality to be indisputable, the literature is a showcase for it in its range, diversity, and applicability to a broad canvas of subjects and situations. My aim is here to ask, 'If this attribute is so ubiquitous, why does there appear to be a marked decline in its application in formal schooling at secondary level or beyond for general Further Education, since not only is imagination endemic, but applauded almost unreservedly as a valuable extension to thought and to creativity, innovation and problem-solving?' In this chapter, I argue that this gap – not in the literature (although scant for Further Education) – but in practice, and in particular for those in vocational training, can and should be rectified as a means of improving the educational value of vocational training. The contention of this thesis, therefore, is that this benefit should be extended to this large, but seemingly overlooked, group of 16 to19 year-olds and, with the literature as support, will suggest ways in which this might be accomplished. As a literature review, therefore, it will demonstrate breadth rather than depth, benefits rather than reservations, and application almost without limitations, and draw attention to critique such as it exists.

Themes in the Literature

The concept of imagination is central to this thesis. It has been much discussed in general, and also with reference to education.[27] Although the main focus of this work is not in the literature on vocational training in general FE, I propose to consider some of the literature of imagination and education across the whole range of educational sectors. But, given that imagination is a complex notion, I shall first briefly consider the related topic of creativity before considering how imagination is seen by specific disciplines.

Creativity

In any discussion of imagination, it is rarely long before the matter of creativity emerges. This is, at least, partially, because of the close relationship between the concepts. To imagine is, in many senses, to be creative with one's thinking. Imagination and creativity are ineluctably related. The inclusion of the idea of creativity here is also, in part, due to the repeated pleas from industry, commerce and government for a greater awareness of the role and urgent need for creativity in work as a means of problem-solving, product design and development, and greater competitiveness. Creativity is a correlate of imagination, where, as will be argued later, imagination is a way of thinking freed from the demands of reality (but able to embrace them where appropriate). Creativity appears to comprise using forms of imaginative thinking to produce something; the something in question having a potential for, but not limited to, a practical outcome.

In the literature, creativity appears to have two main foci of interest: education and commerce, and industry (Cropley, 2001; Sternberg,1999). Creativity in schooling is so readily accepted by teaching and ancillary staff, family members and so on, as to need little further justification (Sutton-Smith,1988; Trotman, 2008; Robinson, 2001) although observations relating to education are included below. Within education, however, whilst imagination and creativity are not seen as entirely synonymous: the

[27] An interesting point was that when using an electronic search of databases for journals using the terms: Imagination AND [followed by the age group] the number of entries are as follows: Early Years: 2,968, Primary Education: 1,578, Secondary Education: 1,606, Further Education: 1,118, and Higher Education: 2,963. Searches of course depend on the precise wording and the variations can be numerous. Notwithstanding this, 'Imagination and creativity in childhood' only returns 555 entries, whilst 'Imagination and creativity in adolescence' returns a mere 35 entries. Whilst not definitive, these might suggest a measure of academic writing on the sectors, with FE around two-thirds of either Primary or Secondary education, and both Early Years and HE with each more than the combined schools' entries.

former is generally considered essential to the latter when related to an artefact, not least since creativity is the more readily inferred when associated with some observable output.[28]

Definitions are frequently a way of encapsulating the essence of a concept. For creativity, as with imagination, this is elusive, varying amongst practitioners according to their needs and the uses to which it is put (Saracho, 2012b). Government and business (Confederation of British Industry [CBI], 2019) having extolled the virtues of creativity, thereafter, appear to lose interest faced with the day-to-day pressure of running a business. Work, as it largely relates to the student body relevant here, is one outlet considered, but perhaps only one of a huge range of creative industries largely unremarked and completely taken for granted by the general public, from the design of clothes pegs to lunar modules, with only perhaps high profile participants including successful actors, musicians, film directors, and fine artists gaining everyday prominence. The total number of employed in the UK (according to whom is included) ranges from 2.2 to 3.2 million persons (National Statistics on the Creative Industries, 2022). However:

> Although not everyone considers it possible to articulate clear objective criteria for identifying creative products, novelty is often cited as one of their distinctive characteristics, and some form of utility, usefulness, appropriateness or social value, as another (Nickerson, 1999, p. 392).

Further, in this context, creativity tends to presuppose functionality: 'Creativity is the ability to produce work that is both novel and appropriate' (Sternberg and Lubart, 1999, p. 3) Whilst it would be gratifying for work that is novel and appropriate to emerge amongst 16 to 19 year-old students, the main thrust of argument proposed here is that FE should pursue the cultivation of the imagination as a habitual adjunct to everyday activities, and with particular reference to vocational training in FE where Little 'c' creativity (Craft, 2000; Saracho, 2012a) may be more relevant. Little 'c'

[28] This distinction is probably arbitrary as convenient for the observer, since, for example, in dance or painting the two are not separable; the child does not generally think, 'Now I will move in this way,' or 'Next comes my representation of the sun in yellow', whilst improvisations in music are frequently thought of as spontaneous or deliberately unplanned although dependent on existing knowledge and experience. Thought and action are concurrent.

creativity,[29] as distinct from High Creativity[30] means the ability to function in modern society, to problem solve and meet the demands of everyday life rather than produce the paradigm-changing creative output of the 'elite'. It may be that creativity cannot be detached from the phenomenon with which it is associated: it may not be a separable, identifiable capacity, a unitary function, (Saracho, 2012a) any more than can imagination, which may prove to be a way of thinking (or for Dewey a stage in the development of knowledge). 'It' therefore cannot be trained in the abstract as separable from a product or even existing as an attribute, being more, perhaps, a function of the imagination.

What appears from the literature to be increasing in strength is the belief that creativity is largely domain-based, and transfer across domains very limited (Saracho, 2012a); where it does occur may be either positive or negative (Craft *et al*., 2001). This would reflect variation in individual academic strengths, and perhaps account for difficulties of transfer. Given this disparity, it may be difficult to make generalised assertions, but it is recognised that the domain is the context of creativity (Baer, 2012). It may also reflect the differences in thinking required by the taxonomy of cognitive styles (Green, 1985.) It also suggests that the greater the knowledge of a domain, the more easily creativity can emerge, having a broader range of information and understanding with which to work. This point is emphasised and argued cogently by Skillicorn (2014) who insisted that ideas, which are commonplace and occur all the time, must be used to be creative, or they are simply forgotten. If his view of the relevance of knowledge is accepted, it may reinforce the case for a broader, rather than narrower, approach to implementation at classroom level.

Shorthose and Maycroft (2017) undertook a study to explore the associated complexities of creativity beyond the mind-brain focus to include social, political and economic factors, and elaborate practical interventions. From their work, we can conclude that there may be no limits to creativity's application which may extend to such values as empathy. It would be improper for us to exclude such extensions,

[29] What we might think of as everyday creativity able to be performed by the majority.
[30] What we might think of as world-renowned creativity by noted exponents (e.g. Mozart).

given not only the symbiotic nature of imagination and creativity, but also the deeper aims here of developing further educative capacities in vocational students.

Having sketched the concept of creativity, I turn now to a consideration of imagination. Given the extent of the literature on imagination, some initial explanation seems appropriate to explain why so broad a range of uses have been covered. It seems that the academic disciplines appear more concerned with what imagination *is*, (or more precisely those aspects which each discipline opts to accept), whereas education focuses more on its *use*. This (admittedly simplistic) perceived difference is important here. First, this thesis is concerned with its use in education. Second, there will be some attempt to suggest practical ways forward in Part III. Third, if imagination is a way of thinking rather than an independent attribute (as intelligence or persistence are often thought to be), then imagination becomes intrinsic rather than extrinsic, the former implying the implicit and therefore readily available, the latter an optional extra to be co-opted at will. Imagination, it will be argued, is universal rather than selectively bestowed. This matters when considering how imagination may be enhanced: thinking differently (that is, here, imaginatively) is not the same as adding imagination to an existing cognitive structure. It can be part of the structure, not just a decorative adjunct.

We might, therefore, first pose the question: 'What use is imagination?' Since, as a way of thinking, the question loses meaning, let us use the everyday understanding of imagination. Synonyms may offer a starting point. Roget's Thesaurus (1980, section 515) offers a basic list of 'originality, invention, fancy, inspiration, verve, [and] empathy'. These merit some comment. 'Originality' and 'invention' are often interpreted as the attributes of talent rather than everyday occurrences. This shift in language usage is understandable as highlighting a special quality but, for our purposes, masks the reality that to some extent a capacity for imaginative productivity is universal. The philosopher John Dewey, for example, used the word 'fancy' to mean unrealistic or fantastic. As such it did not lend itself to the clear analysis of, say, problem-solving.[31] 'Inspiration' might be seen (as will be discussed later in this thesis) as the sudden unconscious apperception of associated concepts.

[31] A purely personal speculation is that this is why Dewey left 'fancy' aside; it had no readily apparent purpose. It should also be remembered that Dewey was a pragmatist.

‘Verve’ has an indirect connection implying, energy, an act of courage, of fearlessness, of risk-taking. ‘Empathy’ we relate to the ability to engage with an other’s feelings and respond emotionally in concert with them. Everyday usage of the word ‘imagination’ would probably include daydreaming and musing, suggesting non-productive activity which is presumed to lack focus, serve little apparent purpose and have no greater function than agreeable but aimless time-wasting. For Dewey, a major feature of imagination was its application to problem-solving, but here he considers not the cognitive process, but the purpose to which it is put, and the outcomes as factors of experience.

By way of introduction, it may now help to review imagination as it tends to be seen in a range of disciplines.

Imagination in the Disciplines

From the viewpoint of psychology and psychotherapy, Luca Tateo (2015) suggests, regarding imagination, that it is more related to the development of theoretical hypotheses in contrast to traditional thinking. Imagination is ‘not in opposition with rational thinking and reality, it is a specific form of adaptation and pre-adaptation to environment through a self-regulatory process of production and elaboration of meaning’ (Tateo, 2015, p. 1). For Tateo, imagination is a higher, not a subordinate, mental function. For some, imagination is central to understanding psychology itself.

The American psychologist, James Hillman, believed that the soul was at work in imagination, and Hillman was a key proponent of an image-based psychology (Hillman, 2019). However, Abraham and Bubic (2015, p. 1) identify some limitations of current research on imagination, where little co-ordination between researchers in different branches of psychology and psychotherapy (mental imagery, creativity and so on) means that, ‘In reality … the impetus in each of the sub-domains may be skewed to the pursuit of hypotheses that are not particularly viable in terms of understanding imagination as a whole’.

Some disciplines, and in particular sociology, embrace the value of imagination as relevant to their work. One such is the concept of ‘sociological imagination’, developed originally by Wright Mills (1959) to postulate that personal experience is contextually embedded in society. Imagination is important to sociology because it

allows us to better identify, and question, various aspects of society, as opposed to passively living within them. Needless to say, this has variants and extensions including a view of one's own biography as part of cultural history, and the development of empathy towards other groups and values.

But beyond psychology and sociology, imagination also has a place in theology, particularly Christian thought, and mysticism. In 'God and the Creative Imagination', Paul Avis argues that, 'It's primarily through the imagination that the genres typically created by the imagination (metaphor, symbol and myth) bring us into living contact with … God' (Avis, 1999, p. 1). He concludes that, 'Christianity lives from the imagination … a premise that God is appropriately likened to an artist or poet and that the greatest truths are expressed in imaginative form' and that 'The mystery of imagination points to and reflects the mystery of God.' This idea is not new; some time after 1872, the American philosopher, essayist, and one of the founding members of the Transcendentalist movement, Ralph Waldo Emerson wrote, 'God himself does not speak prose, but communicates with us by hints, omens, inferences and dark resemblances in objects lying all around us' (1883, p. 17). Moreover, Christianity is ineluctably linked to the imaginative (though many Christians would be keen to point out that this does not mean the imaginary). The Bible invites us to imagine the world in different ways, and this is evoked through poetry (for example the Psalms), through wisdom literature (for example, the Old Testament book of Ecclesiastes) and through allegory (seen, for example, in the Gospel parables). Christian theology, through its belief that man (sic) is made in the image of God (Bible, Genesis 1: 26-27), demonstrates that humans are different from the animals in that we are imaginative creatures: we continually create (stories, poems, songs, art *et cetera*). The very fact of Adam's naming of the animals in the Garden of Eden (Bible, Genesis 2: 19-20) was a way of making meaning – an imaginative act.

Imagination has, over a very long period, played an important role in the discipline of philosophy. The concept has been addressed in the works of major philosophical figures from Aristotle (who distinguished it from perception) to Descartes who saw it as 'a special way of thinking for material things' (Lyons,1999, p. 303), and from Hume to Kant. In the field of philosophy of mind, imagination is important as it relates to important discussions about our ability to know (to imagine) others' minds and to understand the mental states of others. In such work, imagination has been

considered as part of thinking about beliefs and desires. But it is not only in philosophy of mind that imagination has played a role, but also in the developing field of aesthetics. Philosophers' interest in imagination has arisen because of its role in our engagement with works of art: with music, dance, and literature, and indeed, with the making of works of art themselves (Kieran and Lopes, 2012). The use of imagination in philosophy and aesthetics is a reminder that to treat the topic of imagination without any allusion to literature would be unthinkable, since, far from attempting to classify it, literature uses it so extensively. The philosopher Mary Warnock's allusion to the English Lakeland poets develops this idea: 'There is in all human beings a capacity to go beyond what is immediately in front of their noses. Indeed, there is an absolute necessity for them to do so' (Warnock, 1976, p. 201). She continues: 'If the continuity of function for which I have argued exists, then one must recognise the universality of the imaginative function both in that it belongs to everyone and in that it is exercised by each over all of his experience'. Further, Emerson, in his reflections (on language and poetry) writes: 'Nothing so marks a man as imaginative expression. A figurative statement arrests attention and is remembered and repeated' (1883, p. 17).

Writings on imagination are further nuanced by individual views, some of which do not necessarily accord with our own experience of imagination (Panchi, no date). This is not a new phenomenon, however. As early as 1906, Angell would write of 'the probable difficulty of establishing an absolute line of demarcation between processes of perception, and those which, in common untechnical language, we call memory and imagination' (p. 161). Further, many studies are (necessarily) specific, for example, Zalipour (2008) on poetic imagery. Whilst studies such as these offer useful pointers (here, metaphors), there are no generalised assumptions. Indeed, the idea of 'definition' is proving highly elusive. Two popular writers on imagination and education, Mihaly Csikszentmihaly and Sir Ken Robinson, both comment adversely on the loss of imagination in schooling. The first writes, 'It is quite strange how little effect school – even high school – seems to have on the lives of creative people. Often one senses that, if anything, school threatened to extinguish the interest and curiosity that the child had discovered outside its walls' (1996, p. 173). The second has written a range of books and given talks on this same theme both in this country and in the USA, an example of which would be Robinson (2001).

Restrictions on the education system implied by the first, and spelled out by the second, are fairly reflected in post-school vocational training in FE.

It will be clear therefore that whilst the existence of imagination is not disputed; its nature and purpose are variously considered across multiple disciplines. In what follows, I will now focus attention back on imagination in the educational system.

Imagination in the Early Years (Foundation Stage)

In the handbook for the Early Years Foundation Stage Profile, 2018, (Standards and Testing Agency, 2017), the related concepts of imagination and creativity, are barely distinguished, and little is made of imagination as an overall component of learning. However, the section of the early learning goal in Expressive Arts and Design includes as Early Learning Goal [ELG] 17:

> Being imaginative: • Children use what they have learnt about media and original ways, thinking about uses and purposes • They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories (Standards and Testing Agency, 2017, p. 33).[32]

The literature from a range of mainly English speaking countries clearly suggests a number of things: that those working in early years have no doubt as to the value of imagination and creativity; that creativity and imagination should and can be expanded if teachers engage more closely with the imaginative life of the children (Mendelowitz, 2014; Fleer, 2011), and that benefits accrue from a widening of the activities brought to the children (Handa, 2015; Phillips, 2017). Whilst it cannot be asserted how much natural levels of creativity and imagination influence pre-school play or learning, or subsequent adolescent or adult imagination, it would appear that at whatever level these exist, they can be expanded and there is no obvious *prima facie* case for assuming that this expansion could not be directed towards other school subjects than those discussed here.

[32] A case is also made for the explicit cultivation of the imagination in the Literacy section of the National Curriculum, where 'Reading also feeds pupils' imagination and opens up a treasure-house of wonder and joy for curious young minds' (DfE, 2013b, p. 14).

A related topic, play (and its close relation to the imagination), however, cannot be overlooked, and demands some attention before moving back to the main sequence of this literature overview.

Play and the Imagination

Any discussion about imagination and childhood will inevitably focus on the centrality of play. In Early Years, this is accepted as both a form of activity legitimate in its own right, and also is seen by the teacher as an aid to, or even vehicle for, the learning of some desirable outcome as put forward by the Plowden Report (DES,1967). It would not be unrealistic to believe that, generally, particularly at this age, play is seen as natural, spontaneous and beneficial. Its supposed beneficial attributes are probably those least in dispute as valuable, if imprecisely conceptualised.

The standard definitional sequence for the observed development of play types – unoccupied, solitary, spectator, parallel, associate and co-operative (pathways.org, 1997) – whilst indicative of external responses in children, indicates little of their internal thought processes, and since the interest here is imagination, it is the latter function which is of importance.[33] Once some interpretation of how the child is thinking during play becomes possible, then the carer will be able to enrich the variety of relevant experiences. The supposition may be that akin to motor development, the play stages cannot be accelerated, but that each, if recognised, may be appropriately enhanced. In due course dialogue with the child may offer insight which the adult can use.

Starting with perception linked to curiosity, later furthered by curiosity, concepts begin to develop of the world in which the child lives (Duffy,1998). These are subsequently examined and tested in a variety of ways and, later still, manipulated with a view to some purpose, examined, experimented with, and ultimately used to satisfy the child's internalised plan for some sort of sequence. Initially these plays are probably simply imitation of the known, but then are increasingly freed to embrace a spontaneity of direction. A summary might describe the sequence as a means to perceive, understand, and then manipulate the world (White, 2002). This diversity of cognitive responses is part of the argument, which will be developed

[33] It seems reasonable to suppose, however, that experienced practitioners will be able to infer some activities and types of stimuli which will extend the options available to the child at each phase.

later, that imagination is not a defined attribute, but rather a way of thinking not necessarily constrained by reality. This view erases the differences between, say, problem-solving, experimental innovation or fantasy, and can eliminate conflict over how the multiplicity of internalised endeavours (which we call imagination) are labelled. This multiplicity forms a loose collaboration of cognitive operations underlying play in all its diversity (Bruner, 1986), and reconciled to a degree in its variability if the 'right – left' brain hypothesis is accepted (Olivine, 2023). At heart it is learning and adaptation which because intrinsically motivated yields what we call pleasure, which leads to absorption and invariably prolongs the play leading to greater learning. When satisfaction palls the play can be abandoned or modified (Wilson,1971).

It is important, for this discussion, to consider the relationship between imagination and play. Both Sutton-Smith (1988) and Weininger (1988, p. 142) distinguish between activities involving 'imagination' and 'pretend', where the former is considered akin to the adult process of problem-solving (that is, thinking through a situation or acting out of curiosity to see what happens – 'direct acts of intelligent exploration' (Sutton-Smith, 1988, p. 23), and where the latter is play in the sense of being spontaneous, without prior planning or predictable sequence or thought as to how the play will ultimately evolve. However, play is generally not without an initial theme, with the advantage that innovative ideas can be internally played out without real attendant risk (Cropley, 2001).

A further interesting distinction is that between work and play (Blacker and McKie, 2003), and the distinction is neatly encapsulated as follows:

> The mental attitude determines whether the task is done because of the compulsion of the outcome or the free enjoyment of the activity (Blacker and McKie, 2003, p. 249).

The distinction is, therefore, not clear cut to an external observer, and this indeterminacy may be more closely related to motivation (both intrinsic and extrinsic) than to work (particularly as conceived by adults), in either of its two forms: whether purposive as work, or disagreeable as labour. Judging from the absorption that can attend play, it is almost certainly related to attentiveness. Cropper's view which sounds intuitively plausible that 'a playful approach fosters creativity because play is

not chained to the strict rules of reality' (Cropper, 2001, p. 61), assumes a fluidity between creativity, imagination and play.[34] Nickerson (1999) earlier adopted this view from research material, and also shares the view that playfulness is associated with curiosity, and the child's apparent willingness not to assume that the obvious is the only course open for exploration is in almost direct opposition to an adult search for expert performance through 'deliberate practice', specifically avoiding the random in favour of a methodical procedure (Weisberg, 1999, p. 233).

A further, if anomalous, situation arises if we follow Sutton-Smith's argument that play with props (or, one assumes, toys) only becomes play proper (as distinct from imitation of known applications), when the prop is used in a manner drawn not from existing knowledge, but in an unrelated manner, for example, a bottle as an aeroplane. The problem here is this: does playing with a toy car as though it were a real car not constitute play? This seems unlikely to gain acceptance. No doubt debate is possible, but the question underlines how tangled such concepts as imagination and play can become, not least given the difficulties of assessing precisely what is happening within the child's motivation or understanding from observation of her activities alone. Where there can be undisputed agreement is that, however imagination is framed or analysed, the magical quality that it represents, does exist.

A long-accepted idea (if currently moderated in practice), is the idea of the teacher as *in loco parentis*, as echoed in Egan and Nadamer's (1988, p. 9) joyful summary:

> There is now an abundance of research [which] shows that parents who play exuberantly and foolishly with their infants give us children who love life and go at it with will and intelligence.

Transition from Home to 'School' in Early Years

For many children, the transition to 'school' is both exciting and fraught with anxiety. Anticipation and fear both feature in the child's expectations. For the long-standing problem of managing anxiety in children during transition between home and school (or school and school), drama provides a useful tool where language relates the two environments in a meaningful way (Verriour, 1985). The adaptation of the young child during the transfer between home and the early years setting, which in itself

[34] Although it is not entirely clear that this view is free from a tautological dimension.

requires imagination to accommodate to the changes in the social dynamics, was also encountered by Kudriavtsev and Fattakhova (2015). Their paper from Russia analyses the imagination of the child confronting a new social situation, not least in the interactions between child and adult, and child and other children, and which significantly involves social communication and competence.

Once the transition to the school setting has taken place, the responsible adults can help integrate the child, it is claimed, in a number of ways. One theme in the literature focuses on the interaction of the child with the adult, and Munn (2010) emphasises the importance of the imagination of the adult in organising the setting, whilst Çer (2016) counsels that children's books should reflect their reality (by implication, rather than the adult's). Other research on the Early and Primary Years covers a wide range of topics including where teachers, although acknowledging the value of children's play, including role play (Rogers and Evans, 2007), rarely involve themselves directly in children's play (Devi, Fleer and Li, (2018). Canning (2013) reported on the use of different environments as a means of extending children's play into problem-solving through the use of 'What if' questions to stimulate the imagination. Although the practitioners did not generally enter into the play itself, they used the imaginative play to encourage empathy. Miranda (2015) who based her study on music with children, argued that greater effect could be achieved if the teacher entered the imaginative world of the child. The cultivation of greater empathy - via the activation of the imagination - is viewed as desirable, not least for its role in socialisation of the child within the setting. This development of empathy was found by Waite and Rees, (2014), a quality which McArdle, Knight and Stratigos (2013) also found could be developed through the visual arts. Within a play context, Møller (2015) conducted a study of children and toys and suggested that, since this form of imaginative play was not bounded by reality, 'rules' could be transgressed leading to the exploration of different theoretical situations. More specifically, Chen (2015) studied imagination and dolls' houses, and reported that these often echoed 'real life' situations and enabled the children to resolve issues through experimenting with different scenarios. The association between the arts with imagination in the Early Years has been explored.

The findings of Yu *et al*. (2017) in Singapore – when presenting artwork to young children – were so extensive as to merit quotation in full:

> The findings revealed that children respond to artworks visually, cognitively and somatically, in that they talk about what they see, think and feel. The children's comments featured content, formal art elements, personal connections, creativity and imagination, affect and vocalisms, with personal connections making up two-thirds of their responses (p. 1).

This study concluded that young children gain hugely from the experience of imagination in this context. That visual stimulus is important probably needs little emphasis; however, viewing art in British schools is rare, and Singapore has a stronger record in this pedagogical practice.

Deguara and Nutbrown (2018, p. 1) examine in depth what they refer to as 'the schematic underpinnings in the drawings of a four-year-old girl, Thea', and conclude that, 'Through signs, symbols and personal narratives, Thea used drawing as a meaningful semiotic space where her persistent schematic concerns were manifest'. Clearly, at least in this instance, drawing was more than a simple activity. An interesting observation is made by Coates and Coates (2006) who discuss an often-ignored element of children when they paint: that the commentary made by them provides insights into their imaginative thinking and understanding. A number of other pedagogical approaches related to the arts and the imagination are also recorded in the literature. These include the development of intercultural skills with 8-12 year-olds where Dziedziewicz et al. (2014, Abstract, p. 1) found that:

> The results indicated that the program was highly effective in stimulating creative abilities and moderately effective in developing intercultural skills. These results provide evidence that effective stimulation and development of both creative abilities and intercultural skills is possible.

Other arts subjects also feature in the literature. The development of skills and imagination was demonstrated by Schierholt (1994), where children worked their way through a series of increasingly sophisticated activities: known stories, unknown stories, puppets, a puppet theatre, dressing up. The teacher observed higher learning skills, listening skills and co-operative decision-making. An Australian project effected a collaborative effort by teachers and children to develop dramatic

performances based on the children's experience and input, thereby avoiding the clichés of conventional child performance (Gattenhoh and Radvan, 2009). As indicative of the range of writing on imagination and Early and Primary Years, Rowe, Salo and Rubin (2018), concerned about the supposed loss of creativity in American schooling, found that if young children engaged in theatrical productions (appropriate to their age) that the children's capacity for pretence and co-operation was enhanced.

Inevitably some research is concerned with how imagination and creativity could be expanded or developed. For example, work based on sentence structure using pictographs was found an improvement in memory (imaging) in kindergarten pre-readers (Ryan *et al*., 1987). This applies also to concept formation where Fleer (2011) examines how play and concept development can be aligned given the pressure for child development, and proposes a process which combines the two which she calls 'conceptual play'. In similar vein, concept development and the potential that imagination offers for this is considered by Burnard et al. (2006) where **'**The data arising from this research provide powerful insights into the characteristics of "possibility thinking" which most successfully promote creativity' (p. 1). This theme is developed further by McConnon (2013).

Dowling (2002) concentrates on how to develop gifted children through the cultivation of their imagination. Speculation arises over whether the later effects of encouraging imagination in the Early Years pays dividends in later life, or whether a native capacity was there from the start. Accepting this enigma, research has examined the relationship of children's imaginary companions (or friends) in childhood with adult levels of imagination (Kidd, Rogers and Rogers, 2010, [Australia]; and Firth *et al*. 2015, [USA]). In general, such adults scored more highly on tests of imagination than those who lacked imaginary companions as children. It is not, of course clear that imaginary friends contribute to later imagination; they may be simply symptomatic of imagination generally. Similarly, Mullineaux and Dilalla (2009) suggested that pre-school levels of imagination were later reflected in early adolescence.

It would be folly to suggest that much of the work done in nursery and infant schools does not exploit the natural capacity of children to use their imagination, nor that the extensive use of play, including role play (Vygotsky, 1987; van der Veer and Valsiner, 1994) plus the wide range of creative and practical activities, does not encourage these as is suggested above. The general view would be that imagination can be applied to all aspects of early years settings.

Imagination in Primary Education[35]

Using the National Curriculum (here Key Stages 1 and 2) as the mandatory benchmark, the emphasis remains largely inferential; the word 'imagine' and its derivatives appear but rarely in official documents detailing the requirements (DfE, 2013b). The same is found in the Report 'All Our Futures: Creativity, Culture and Education' (DfEE and DfCMS,1999), prepared for the Department or Education and Employment (DfEE) and the Department for Culture, Media and Sport (DfCMS) in 1999 under the chairmanship of Sir Ken Robinson. The first recommendation in the report, Objective One, is 'To ensure that the importance of cultural education is explicitly recognised and provided for in the schools' policies and in government policy for the National Curriculum' (DfEE and DfCMS, 1999, p. 192.) This report is wide-ranging with implications for teaching practice, the curriculum, institutions and personnel, teacher training, the integration of practising artists into educational activities, and forward planning. Given the brief (the emphasis throughout on culture and creative activities) there is a surprising absence in the Recommendations of either of the words 'imagination' or 'imaginary'. Further thinking in practical terms is supplied by Bernadette Duffy (1998) whose argument is simply that if you want imaginative and creative adults, you need you cultivate imaginative and creative children.

Arts, Literature and the Imagination

To begin broadly, it would be difficult to argue a case against the significance of imagination to the arts. That the arts have much to contribute to education is encapsulated in eight themes by Eisner (2009) in his talk to a US National Art Convention. During his visit to Scotland, Groce (2014) explored the case for more

[35] In the UK Primary Education covers the first two years of compulsory education from 5-7 years (Key Stage 1), and ages 7-11 in Key Stage (2).

integration of the arts with the general curriculum. Hoffman and Hawkins (1980), nearly two generations ago, demonstrated the effectiveness of training on children's picture memory, whilst children's sense of wonder is reported by Phillips (2017) after discussions with a Reggio Emilia[36] teacher. Within the arts, but in relation to play, it was found that immersive play reflected children's capacity for developing stories (Cremin, Chappell and Craft, 2013), whilst play enables empathy to be developed through enactments of differing scenarios (Waite and Rees, 2014). Townshend (2017), however, is uncomfortable with the conflict between truth and believed fantasy (for example, the Tooth Fairy) which occurs frequently in any primary age group, and which is distinct from the suspension of disbelief of traditional stories.

An Australian study found that children asked to imagine their ideal settings produced ideas familiar to those favouring progressive educational methods, and this suggested that these could be valuable to school planners (Bland and Sharma-Brymer, 2012). Some advantages from teaching and learning in an outdoor environment include that, through imagination, children learn to connect with the landscape and attribute cultural value to it (Dillon *et al*., 2006).

Inevitably reading, books and literacy are priorities in primary education. Picture books are often a way into reading, extending storytelling, narrative, verbal commentary, and responses and could be more widely used than they currently are with older children (Serafini, 2014). Even when using text, meaning and hypotheses are constructed, and meaning inferred through children talking together about texts (Maine, 2013). (The next section suggests some possible expansions of these ideas). The role of authors of children's books was believed to be important. Their imagination enabled literature to excite, and make possible imagining, in ways otherwise unavailable to children (Johnson and Giorgis, 2003). In similar sentiment MacClintock wrote:

> The most conspicuous and distinctive fact about literature is … that it passes all this material through the medium of the imagination and returns it to us modified, transformed or rearranged by the influence of the imagination (MacClintock, 1902, p. 87).[37]

[36] Reggio Emilia is a city in Italy that gave its name to a system of child-centred education developed by Loris Malaguzzi for pre-school children after the Second World War.

[37] And concludes, optimistically if poetically, 'But we have a right to our faith that the far-off fruit of our planting will be fair' (MacClintock, 1902, p. 95).

Imagination in Subjects Across the Curriculum

Adams (1968) applauded creative reading for how it prompted young readers, in a type of collaborative partnership with the author, to form inferences and interpret the text in ways that were not explicit. For example, a teacher might ask, 'What do you think happens next?' 'What would you have done in that situation?' Or as a question of ethics, 'What would you think if Goldilocks came into your house when you were out and helped herself?' or 'When Jack climbed the beanstalk, the giant wanted to eat him. Does that make it OK to steal all his things?' A further example would be in theatre improvisation and play development, where primary children developed imaginative responses far beyond the initial expectations of the teacher (Schierholt, 1994). There are therefore the two strands: first, where teachers 'lead' the interpretations or expectations, and second, those situations where the children do so spontaneously.

One aspect of reading easy to overlook is that of the teacher reading aloud to the class. This can stimulate curiosity, discussion, imagination and prompt ideas when children start to write (Serafini and Moses, 2014). Ljungdahl (2010) had already linked reading with the development of writing and found that the former could stimulate the imagination for use in the latter. Children's fiction can, and often has, a moral dimension (Milne, 2008), and this is often linked to religion and spirituality, such that children will generate their own interpretation (Rossiter, 2012). Similarly, in Holland, teachers negotiate a pathway through religious teaching via symbolic language and imaginative role play, as the technical language of many subjects is not appropriate (van den Berg and Fortuin-van der Spek, (2019). Related to ethics is the question of tolerance in a multi-cultural society, particularly where children are in non-diverse school settings. Here, and through literature, children can find a way to increase empathy and understanding of others with whom they may in reality have little direct contact (Lysaker and Sedberry, 2015).

In the teaching of writing, information technology (IT) is becoming a commonplace aid. In a virtual reality experiment to investigate whether virtual reality could stimulate imagination at primary level, investigators identified three necessary sub skills of imaginative writing: 'creative imagination, recalling and structuring what to say, and language skills' (Patera, Draper and Naef, 2008, p. 261). The factors needed for

creative writing in the classroom were also considered by Mendelowitz (2014) with regard to a balance between freedom and structure and the effects of language, whilst play based on a character, Mr. Monkey, was used to stimulate writing (Gordon, 2015). In a series of art classes, based on Alice in Wonderland, the theme of 'big' and 'small' was used to prompt the children to produce their own images of fantastic characters, and then further develop these through IT (National Endowment for the Humanities [NFAH], 2000]. Encouraging parents to help develop their child's artistic capacities is not a new ambition as Karlstad (1986) demonstrates in his pragmatic suggestions for practical layouts and attitudes at home and in the school. Whilst art remains on the curriculum, music in schools is more problematic (Bath *et al*., 2020). Stavros (2019) draws attention to the poor facilities, low status and poor allocation of time to music despite the subject's important place in literature on the cultivation of the arts.

Research on other school subjects includes a report of a programme of intervention in Physical Education (PE) which demonstrated, as well as body control and activity skills, greater imagination in creative movement, improvisation and self-esteem (Theocharidou *et al*., 2018). Introducing young children to nature through nature walks and general exploring (Ward, 2014) provides benefits in science by triggering imaginative responses, prompting curiosity and initiating a concern for the environment.

Browning and Hohenstein (2015) reported the use of narrative texts as proving more effective as a teaching method for memory and understanding of evolution in primary children than the expository texts used as a control. Kokkotas, Rizaki and Malamitsa (2010) had earlier achieved encouraging results when they applied the skills of storytelling (hypothetical interpretation and imaginative re-working) to scientific topics where conceptual thinking proved ineffective. Using an example of immersive imagination, Davies (2013) relates how children were able to grasp aspects of human anatomy and physiology through imagining a giant with a human biological structure. History, which can over-arch the whole curriculum, is considered by Percival (2014) both in this context, and for its capacity to initiate insight, imagination, and identification. Finally, here, when children are allowed to use their imaginations freely in their interpretation of subjects such as science and history, both acknowledged for their speculative natures, learning is enhanced through the

connection of the child's personal experience with the subject matter of the topic (Butterfield, 2002).

The breadth of this topic is such as to preclude a more comprehensive review. The age range is noted for its involvement with imagination for play, for role-play, for the creative arts, for its contribution to social skills including empathy, and to concept formation. The above can do more than offer an initial overview. However, it does underline the breadth of applications of imagination to teaching, and highlights the potential influence of all, children and adults alike, whether engaged in planning or delivery.

Imagination in Secondary Education

In secondary education it is inevitable that not only does the teaching change, but also the priorities. The teaching changes fundamentally with the emergence of subject specialists, where primary teachers are in the main generalists and teach across the whole, or most, of the curriculum. Apart from the level of the propositional knowledge, the one-to-one relationships common in previous years are less well-developed. The priorities also change; thus a large preoccupation with what might be termed basic skills, (literacy, language, numeracy) – which absorbed much time and effort in the early and primary years – are expected to be fit for purpose at secondary level, where additionally in many cases the propositional knowledge is delivered at conceptual level rather than as practical activities. The five statutory years of secondary education are divided between Key Stages 3 and 4. Key Stage 4 for the most part is preoccupied with preparation for the GCSE qualifications which are important both to pupils and school, the former for progression, the latter for reputation as the results are published in league tables.

In his paper 'Imagination first – unleash the potential', Handa (2015) examines an Australian initiative to positively develop opportunities to exploit the advantages of an imaginative approach to schooling. It is true that the initiative was designed for gifted children, but it is not obvious why at least some part should not be of advantage to other pupils. Nor are initiatives a new feature of education, as Skipper and DeVelbiss demonstrated in their 1969 paper of the Living Arts Center in the USA. A further piece of work proposed critical thinking as a means of encouraging students to be less conventional in exploring alternative views of their subject material. This is

similar to the approach outlined by Wollard (2012) in ‘Cultivation of the Imagination for a World of Constant Change’. A word of warning, however, was voiced by Osburg (2003) on the hazard of imagination for its own sake as potentially misleading if not adequately linked to good classroom practice.

Discussions of imagination cannot take place without reference to the curriculum. For example, a secondary review (Trotman, 2008) disclosed a divergence between personal student attitudes on the restricted nature of imagination in the curriculum, and the need for creativity as advocated by entrepreneurs in English business. A broader approach espoused by Fels (2008) would imply a cross-curricular approach which is ‘embodied, relational and intimate’, an approach similar in cross-curricular vein to that voiced a generation earlier by Kridel (1978).

It is inevitable that the arts generally have come under scrutiny, particularly with the increased emphasis on science, technology, engineering, and maths (STEM subjects). In the USA, Botstein (2018) believes that the values implicit in the arts are not understood by the public, nor sufficiently promoted by adherents, and laments their decline in public esteem. Imagination through arts subjects can promote not only traditional interpretations, but also develop alternative critical faculties (Bracken, 2018). To generate the maximum benefit from reading, Padgett (1997) developed a technique of Creative Reading, and Schofield and Rogers (2004) combined verbal and visual imagination in untraditional ways, claiming successful outcomes across a range of school activities when interfacing subject material with the students’ own real-life experience. Drama has long been noted for its fusing of empathetic identification with an awareness of actual reality, and O’Neill (1985) reported how this simultaneous blend benefitted students. Pugh *et al*. (2020) used the imagery of cartography to develop not geography, but for generalised exploration of literature, word usage and other curriculum areas. Zerull (1992) discusses how techniques such as active listening in music education can help develop greater awareness of essential musical qualities for participants and enhance their interpretation and performance.

Maths and science both benefit from the use and cultivation of the imagination. Gal and Linchevski (2010) researching visual representation of geometry, analyse what is needed to make visualisation possible with a view to greater understanding of the

processes which can then be used more effectively with students. Mun and Kim (2015) analyse those aspects of conceptual processing in science implicit in the concept of a scientific imagination. Ganguly (1995) supports this when he writes, 'Imagination and perception play vital roles in scientific inquiry. Metaphors, like perceptions, are drawn from common experiences and are a means of anchoring scientists' thought processes in generating a pattern that bridges the gap between the seen and the unseen' (p. 1). Yerrick and Simons (2017), in teaching chemistry, enlist science fiction as a means of engaging student interest through the imagination which it invokes.

That imagination is a source of interest, and its cultivation (or lack of) across the curriculum can be concluded with reference to two other subject areas: Physical Education (PE) and History. PE, because of its implication in the creativity of movement, was examined by Méndez-Martinez and Fernández-Rio (2019) who devised, successfully they claim, a straightforward test of competence with four variables: Flow, Flexibility, Imagination and Originality. In History, writing in either the first or the third person influenced students' interpretations of past events. In both cases students imagined concrete details, whilst those writing in the first person were interpreted as making links to present situations and including more judgement values (De Leur, Van Boxtel and Wilschut, (2017), and, by implication, greater personal identification between the historical and the present eras.

Whilst, therefore, in secondary schools much time and effort is devoted to propositional learning, the role of imagination in the classroom continues to yield benefits. What again becomes clear is not merely the advantages of harnessing imagination for learning and personal development, but also the scope of application which emerges when teachers cultivate it productively. However, it would appear that under pressure to cover the syllabus and prepare for examinations, teachers routinely focus on the propositional knowledge, model answers to questions, and approved responses to standard scenarios with a view to maximising marks at the expense of time made for imaginative excursions which they may consider secondary to tangible examination results. A personal view would accept a measure

of inevitability in this situation given the pressure for students to achieve, with some sympathy for teachers who are frustrated by the loss of educative opportunity.[38]

Further Education: Imagination and Vocational Training

The role of FE in the present study is specifically focused on vocational training, where the specifications are laid down by the National Awarding Bodies, and much of the teaching is undertaken by tutors with a practical background in the occupation in question. The formal specifications are functional and reflect the practical skills, and are supported by the underlying knowledge and understanding of the level being studied. In practice, this becomes a combination of practical workshop or placement experience with classroom theory. Two examples will suffice to make the point:

Level 2 Diploma in Plumbing Studies:
Unit 204/5 Common plumbing processes
1. Understand the procedures for measuring and bending plumbing tubes 1.1 Identify equipment used for measuring and bending

(City and Guilds, 2014c)

City and Guilds Level 2 Diploma in Engineering 2850-81
Unit 217 Fabricating sheet metal
1 Be able to prepare equipment and tools for sheet metal
2 Be able to use equipment, tools and materials for forming metal
3 Be able to produce fabrications using sheet metal assembly techniques

(City and Guilds, 2014b)

[38] There is equally the view that in FE these pressures are much less marked, making time available for imaginative excursions as will be developed later.

For all that these examples are prosaic, one can readily recognise that some of the more physical types of work, for example, landscaping and horticulture, also require imagination in planning and execution (Hall, 2007). As with much vocational training, there can be a marked difference between theory and workshop practice. Much of the latter is learned by demonstration and imitation. The former can, to an extent, be learned by rote without understanding. Where understanding is essential, the above examples demonstrate the need for imagination in the sense of imagining the equipment and how it functions. The claim of this thesis is not that imagination does not exist in pedagogy in FE, but rather that it could be much expanded both for training and beyond. In what follows, this section will consider the research on the subject of imagination, how it is often found in approaches including creativity and innovation, and implicit in a number of subject areas.

Creativity and human capital, and how these can be developed through skill acquisition (Watson, 1965), have been the concern of employers in the USA for over fifty years. Imagination, it is claimed, is increasingly viewed as an asset for employability. Wagner (2008) asserts that, in addition to problem-solving, leadership skills and adaptability, employers value imagination and initiative. Further, cross-referencing to related work is beneficial in broadening student understanding of their basic discipline (Işık and Taş, 2018) whilst a British initiative broadened the outlook of catering students (Johnson, 2009). A role model interview for aspiring travel and tourism students established the need for initiative and imagination (Burrows, 2008). Research from New Zealand argued that imagination is essential to young people if they are to explore available vocational options and make realistic career choices (Higgins, Nairn and Sligo, 2010), although an earlier Australian paper expressed the need for caution when imagination and fantasy were too closely allied (Rosie, 1993). Even the much-acclaimed German system, which is broad-based and is a co-operative alliance of government, training organisations and employers, has been for some time claimed to be under attack as the status of qualifications becomes a greater driving force than previously (Kutscha, 1996).

The claim of this thesis is that imagination is a much under-developed resource – but even imagination can achieve only so much and sometimes short-comings cannot be laid at the teacher's door regarding the alleged lack of imaginative input. This relates to the gap between what is possible in a classroom context and an industrial

setting. For example, from electrical installation level 2 specification, ‘Star and delta configurations are two ways in which a three-phase load may be … methods of connecting transformers. Most sub-station transformers are wound in a delta-to-star configuration’ (City and Guilds, 2014a, p. 114). The theory must be learned, but short of a visit to a sub-station (unlikely because of Health and Safety legislation) what these transformers look like or how they work in practice to many students probably remains a total mystery. If they correctly answer any question on the topic, it is more likely through rote memorising of the information than an imaginative bridge between a text-book illustration and description, and a five-ton piece of equipment *in situ*. This leads directly to a real weakness of much FE college teaching, and a much-enjoined practical demand – that of work placements (Dearing, 1996; Kennedy, [FEFC], 1997). This is iterated by Hall and Hart (2004).

Much of the writing on FE (which, in comparison with other sectors, is scant) is concerned with a body of theory where the over-riding concern tends to be with the delivery of propositional knowledge and work competence. This thesis therefore addresses a significant gap in the research and scholarship on FE. It is especially pertinent given that, for the students on vocational programmes, the advantages of expanded imagination in vocational subjects would both motivate their learning and, more importantly, initiate a habit which would expand the ‘educational’ dimension of activities in the future.

Imagination and Higher Education

Imagination and its place and rationale in Higher Education are well-researched areas of scholarship. For example, Barr and Steele (2003) argue that many Enlightenment views – for example, freedom of thought, the value of objectivity, independence from arbitrary constraints by authority – remain relevant today, but need to be modified to remain relevant, given the inroads on institutional culture by neo-liberalism (Boden and Epstein, 2006). As part of a broadening of perspective, Parker (2013, p. 1) proposes a revision of HE provision, ‘For otherwise, we are bound into "crude" instrumentalism, "delivering" "knowledge packets" rather than seeing our curricula as potentially transformative’. A vigorous case for the re-introduction of the liberal arts – where, arguably, the place of imagination is most evident – is argued by Botstein (2018) and also by Scott (2013) as an antidote to an

excessive preoccupation with qualifications and career prospects, when in the future the course of adult education may become less preoccupied with neo-liberalism (Finnegan, 2019). Closely related to the liberal arts, the humanities are, according to Barnett (2014), under real threat in universities. Part of a university education should be the cultivation of reflection as a valuable attribute of being educated (Ryan, 2012), whilst a broader perspective on how imagination brings change to the lives of students is voiced by Shanahan (1979), a change which might be described as 'transformative'.

On a broader front, the encouragement of the imagination in order to achieve the generalisations summarised above have been undertaken variously, for example, Syahrin et al. (2019) found that imaginative, divergent, and lateral thinking were evident and widespread in students, and the innovative use of science fiction stimulated the production of ideas in South African engineering students (Manià, Mabin and Liebenberg, 2018). The history of science, it was found, benefitted considerably from being presented as storytelling in a way which engaged the listeners' imagination (Williams, 2019).

Imagination can, of course, operate across disciplines, as does writing for example (a skillset investigated by Lee and Carpenter in 2015). But whilst the imagination in the liberal arts is evident, in science, for example, the conception of a way forward or of a problem-solving method, the independent testing of hypotheses, (central to verification and credibility), requires imagination to conceive of a means of testing which will be deemed valid by experimenter and peers. It also makes possible the appropriate interpretation of the findings, and demonstrably links the theory, the test and the confirming (or otherwise) data into a coherent conclusion. Equally, the STEM subjects and swathes of technical, commercial and leisure activities equally both need and exploit imagination for its contribution to their fields. The discovery of the double helix of DNA by Watson, Crick and Franklin in 1953, and the subsequent mapping of the human genome with its potential for medicine, the exploration of space, the Channel Tunnel, even less rarefied, caravan design combining safety, efficient road-handling, the combination of low weight with high strength for fittings, are all striking examples from contemporary life of the imagination at work in differing technical fields. It may be a useful reminder that, according to this research, imagination is not a distinctive cognitive attribute applicable selectively to only certain

disciplines, but ‘merely’ a way of thinking not necessarily constrained by reality and therefore universal.

As the literature shows, components of imagination are interesting in their own right – and have been examined in some detail by Liang *et al*., (2012) – but imagination operates across disciplines. Individual academic disciplines utilise imagination differently, but there are other factors that influence it. For example, it was found, perhaps unsurprisingly, that environmental factors could influence the level of imaginative output in students (Gomis *et al*., 2022). The social climate was found to be the most productive factor, and the physical environment the least significant in a study of Taiwanese students, separate from that featured above (Liang *et al*., 2012). Hsu, Chang and Liang (2014) in Taiwan, when comparing science and engineering students, found that the former group, when resources were leavened with imaginative material, improved their academic results more than the latter group. In the following year they (Hsu, Chang and Liang, 2015) working with students studying film as their main subject, found that a creative personality impacted directly and indirectly on imagination levels, although this varied according to the psychological profile of the individual student, whilst Huang and Li (2015) noted significant differences in priorities between experts and novices when engaged in the design process which could be useful for training purposes. Flexibility combined with what the researchers term ‘initiating’ and ‘transforming’ imagination amongst design students yielded positive, if indirect, improvements to academic performance (Lin, Hsu and Liang, 2014).

Across the disciplines, Coreil, in a series of articles (2002-2003), discusses the function of imagination in language learning. Vertigan (2019) uses imagination to improve instruction in economics, and Walkington et al., (2018) discuss the extended values implicit in geography through (*inter alia*) ‘geographical imagination’. In a practical paper, Ratliff (1998) offers insightful advice to actors preparing for audition which requires significant imagination and invention and the enduring hallmark of ‘individuality’. IT students, tied as they often are to learning systematic programming techniques, benefit hugely through the use of imagination to create their own ideas and develop innovative work (Shi and Wei, 2009), and some business students were deliberately encouraged to think ‘outside-the-box’ by being required to work on art

and metaphor, and to use the insights gained to deepen their understanding of their central study (Ryman, Porter and Galbraith, 2009).

***

Summary

It would be folly to suggest that much of the work done in the Early Years does not exploit the natural capacity of children to use their imagination, nor that the extensive use of play, including role play is not vital (Vygotsky, 1987; Veer and Valsiner, 1994). The wide range of creative and practical activities in Early Years' settings encourage these, and imagination, play and learning are routinely presumed to be largely inseparable. As in the earlier years, Key Stages 1 and 2 lend themselves in the hands of an enterprising teacher to much use of imagination both for its own sake, and as a motivational tool. Key Stages 3 (11-14 years) and 4 (14-16) operate at secondary level, with GCSEs covering the requirements at KS4. But in terms of imagination, whilst the rubric is highly laudable, and the Attainment Targets for Art and Design and Design and Technology are ostensibly sound, it must be remembered that these two subjects are not mandatory, and in essence many of the subjects traditionally aligned to imagination never gain fruition as a GCSE qualification. A reasonable supposition may be that many students and their families consider these subjects to be of less marketable value for work, and more dependent on native talent than some of the more propositionally-based subjects which can be systematically taught and learned.

There are significant differences in emphasis and specifications between Art and Design and Design and Technology – both subjects to which we might think the imagination is central. In simplistic terms, they may appear to favour imagination or creativity, and hence education or training respectively (although I do not propose this as more than an acknowledged distinction, such as might be applied to fine and commercial art). However, the suggestion of application is readily clear in the

latter: compare the Purpose of Study for the former which includes ‘They should also know how art and design both reflect and shape our history, and contribute to the culture, creativity and wealth of our nation’ with the latter’s emphasis that, ‘High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.’ (DfE, 2013a, p. 1).

From the point of view of the school, however, the onus is on attainment. Whichever subject choices are made, the pressure for a successful outcome, it could be argued, dominates all other considerations and even the selection of those choices. Examination results are published, and the reputation of the school is in large part measured by these. Whilst traditional preparation for examinations has fallen away as such, teachers have become (have been required to become) focussed on and highly proficient in teaching, largely to the examination at the expense of imaginative diversions. Nor, in fairness, is this pressure limited to the schools: parents and students expect results, since subsequent choices in education and training may depend on them and with them, a student’s whole career and future. This relentless pursuit of excellence in many respects has driven out opportunities for much of the reflective or less immediately pertinent, although educationally valid, byways of a classical view of what education should achieve in a young person. Perhaps, over-stated – knowledge, and the ability to reproduce that knowledge on demand and in the format expected, becomes the dominant priority.

When the discussion then moves on to FE, it must be clear that a serious limiting factor for imagination in FE is the emphasis on propositional learning allied to practical skills, underpinned by the reality that the majority of the teaching staff coming from a trade or occupational background with, traditionally, less strong knowledge or experience of pedagogical research. Performativity becomes the standard benchmark for assessing competence, therefore performativity controls the centre ground of learning, whether in the form of checklists for tasks completed satisfactorily or formalised under the NVQ regimen. A further factor is the apparent relationship between the inescapability of imagination as the level of technical complexity advances, for example with electrical installation students or the higher grades of GCSE Maths and English. Cautiously, it seems that beyond Level 2 (and this is the furthest that the majority of students progress), imagination is increasingly required to understand the material, but without clear evidence that this is abetted by

the teaching; that is, if the student has little native capacity for forging interpretative links via imagination, he or she will struggle with much of the material without being sure of relevant support through the class teaching.

Throughout this overview of the literature, it has been clear that for imagination (and creativity) to flourish, the initiative must often lie with the teacher. In principle this applies equally to the lecturer in HE. In schooling, prior to HE, these stratagems have been used for a variety of purposes: entertainment, the expansion of concepts, motivation, the extension of a normal attention span. We might consider that within HE, whilst students might look kindly upon a diverting delivery of the material, this would be dependent on that material remaining relevant to the course of study being pursued, and that patience might falter if undue deviation were to intervene. There is a sense in which at this level most subjects are 'vocational' even if only 'thinly', and the outcome of the qualification is more important to the student than the method used to achieve it. A recurrent theme, in contrast to this student attitude, is the call for a broader based curriculum, including the arts, and less preoccupation with the instrumentalist rationale of neo-liberalism and employability, and the development of a 'sociological imagination' is intermittently proposed as a means of broadening a student's perspective. Within the science and technology faculties, relating the work to known experience, for example couching propositional knowledge as storytelling, has helped to link the unknown to the known. This, to an extent, reflects no more than the belief that students benefit from a greater integration of characteristics from the differing disciplines, this sub-division of knowledge echoing a historical taxonomy, unrelated to everyday reality and presented in secondary schools as the division into GCSE subjects. It may well be the case that it is in HE that imagination once again comes into its own, with the traditional division of responsibility between teaching and research. Research (within bounds) adds to the fund of scholarship, permeates subject insight, and leads to advances in knowledge and understanding. These impact on pedagogy and stimulate further research. The contrast with FE certainly leaves this latter exposed in its limitations.

In conclusion, this review of the literature suggests that imagination has a high initial profile, but becomes much less conspicuous in formal education, although by KS4 when much of the curriculum has become conceptual, imagination underpins

understanding and insight.[39] It is the contention of this thesis that imagination is often of secondary regard in teaching and learning, and that for the students in vocational training in FE in particular, this should be rectified.

Imagination, with a few provisos, is unquestionably seen as valuable and frequently indispensable. There appears to be few areas of the curriculum (including the hidden curriculum, an important, though often overlooked component of schooling) to which it is inappropriate. As claimed earlier, there is no *prima facie* case for assuming that what is beneficial generally, will not equally benefit FE. If in education a current bedrock of imagination is to be found in HE which is only 'thinly' vocational, why could not some measure of this be translated into FE which is 'thickly' vocational? Where prior to adolescence, teachers could take imagination for granted as a positive contribution to schoolwork since children spontaneously furnish it, from secondary school onwards this becomes much less the case, and by FE, needs to be deliberately and systematically re-invoked, and this thesis aims to make a contribution to this important task. As a personal mark of regard for her contributions to both education and philosophy, the closing quotation should be left to

Baroness Mary Warnock: (1976) who asserted with no hesitancy:

> The education of children should be directed to their imagination … I am suggesting they should be specially encouraged to be creative … I have also come very strongly to believe that it is the cultivation of imagination which should be the chief aim of education, and in which our present systems of education most conspicuously fail, where they do fail (Warnock, 1976, p. 9).

[39] An example of this could be GCSE Maths as the material becomes increasingly conceptual and difficult to grasp.

Part II

Chapter 4

The Turn to John Dewey

Having considered imagination in general terms, the subject now turns to imagination as an everyday concept and, in due course, to imagination and Dewey as integral to the aim of using imagination as a means of improving the educational value of vocational training in general FE. The reader will have already noted from earlier discussions on imagination how it is viewed within a variety of academic disciplines and how it appears across the educational sectors where it is encouraged in the educational system, although it would appear to be declining at secondary level, and is conspicuously under-represented in FE.

In the popular mind, imagination is generally applauded and thought of as the ability to have ideas, perhaps fantastical, but intrinsically of merit. Young children are often acclaimed for their vivid imaginations, whilst primary children engage in a wide range of activities which engage the imagination (Saracho, 2012a; Cambridge Primary Review, 2009). In secondary schools where the common belief is that imagination either declines or is less regarded as relevant, perhaps due to the emphasis on propositional knowledge of the subject matter, imagination remains integral. This is notably the arts subjects, although opportunities to engage imagination through the curricular subjects of food, and of design and technologies have increased. In contrast to schools, in the workplace, the synopsis of recent political thinking demonstrated how imagination, in its externalised guise as functional problem-solving or creativity, is acclaimed as essential to modern industrial and commercial success without, however, specifying in more than generalised terms how this is to operate. It continues, therefore, to be both conceptually imprecise but universally commended by politicians, employers, teachers and the public. Given the vagueness of the everyday view, attention now turns to imagination in the philosophical writings of the American pragmatist, John Dewey, where greater insight is anticipated as a means of clarifying to what degree the topic yields insights which might be advantageous to FE.

Introduction to Dewey

Whilst the significance of Dewey (1859-1952) to this research will become clear both because of his background as a philosopher and educationalist, a résumé of his background will help to set his work in context. He was born in Burlington, Vermont, in the USA, and at the age of 16 went to the University of Vermont. Then followed three years of teaching before his enrolment at Johns Hopkins University as a post-graduate to study philosophy. There he read Charles Darwin's work and met Charles Sanders Peirce, widely acknowledged as the originator of 'pragmatism'. These two influences, amongst others, helped to encapsulate his views of philosophy and education which remained closely related for the rest of his life. In 1894 he was appointed Head of the Department of Philosophy, Psychology and Pedagogy, (at that stage psychology was still regarded as a branch of philosophy) at the University of Chicago where, in addition to his other duties, and in conjunction with his wife, he founded a university elementary school (also known as the laboratory school), which reinforced his view of the importance of relating theory to practice. Pring (2007, p. 17) encapsulates this relationship elegantly: 'John Dewey … for whom the separation of theory from practice distorted theory and impoverished practice.' The school also contributed to some of his beliefs about how children learn and contributed to the development and refinement of his philosophy of education. Dewey remained for ten years in Chicago before moving to Columbia University, New York, where for twenty-six years he was a professor of philosophy. During his lifetime he wrote considerable numbers of books, essays and gave lectures (many now transcribed) which continue to influence thinking on education. Whilst many of the key components of his philosophy of education will be considered subsequently, his views on imagination will to be surveyed as preliminary material in their applicability to this thesis. This chapter will argue, therefore, that since for Dewey imagination and thinking are integrated, and hence linked to the complex of his ideas about education, (including experience, problem-solving and growth), imagination cannot readily be separated from his overall philosophy of education.

Dewey and Imagination

That Dewey on imagination will prove to be a central theme of this research will be clear. Imagination, as indicated, in its general and broad educational guises, has been considered elsewhere. Attention now turns to imagination specifically in the writings of Dewey.[40] This cannot be reduced to a single task. For present purposes, there are three ways of viewing the topic of Dewey and imagination: The first is how Dewey himself must have used imagination to develop his ideas. This needs to be mainly inferred by the reader, since Dewey was more preoccupied with the coherence and systematic presentation of his philosophy than with how it was engendered. This is not to say that he disregarded the topic, indeed, his work is seeded with references to imagination. Rather, his writing tends towards how imagination applies in general terms rather than an introspective account of how he himself employed it. The second is how Dewey encourages the teacher to use his or her own interpretation to try and implement these views without distortion. As will become apparent, any active acceptance of Dewey's beliefs in practice imposes a significant burden on teachers (Darling-Hammond, 1998). The third is Dewey's interpretation of the concept of imagination. This has two strands: (i) how Dewey sees imagination as a cognitive function, and (ii) how he thinks the child uses imagination, and how it subsequently can develop. That the two strands will share significance is inevitable.

Since the aim here is to provide a detailed reading of Dewey on imagination, the three sub-divisions above will not receive equal weighting. Some of the above are less dominant than others and will be considered in less detail. The first above is largely inferential, clearly fundamental, but may be simply one of the means used intuitively by Dewey to develop his ideas together with reflective thinking (that is, to be insightful, logical and intelligent). The second point largely concerns pedagogy and how Dewey's ideas – for this thesis – might inform thinking in FE. This

[40] Since most of the references apply to Dewey's writing, a system of initials will help to identify books and papers more readily than the conventional referencing alone (Dewey, date). Citations, therefore, will follow the academic conventions but works will be alluded to in the text by the following initials: P for Psychology, 1890; MPC for My Pedagogic Creed, 1897; HWT for How We Think 1910; SS for The School and Society, 1915; DE for Democracy and Education, 1916; PD for Psychology of Drawing, 1919a; IE for The Imagination and Expression, 1919b; ION for Individualism Old and New, 1929; EE for Experience and Education, first published in 1938 but note EE here is the 60th anniversary edition (cited as 1998) with original text plus critical commentaries. NB LH referencing uses original publication date unless publisher has changed, therefore although reprints were used, the original publication is cited for referencing.

discussion of the potential enhancement of pedagogy in FE will feature heavily in Part III of the thesis. Our main focus, therefore, will be on points 1 and 3.

Expanding on the first point above, it is impossible to conceive of Dewey having developed a coherent philosophy of education without imagination as we generally conceive it – that is, as an ability to visualise ideas and the integrate them into a comprehensive structure. As stated, much with Dewey is inferential. Examples would include: the need for the reader to understand why Dewey wished to replace a traditional concept of education with what came (not without divergence amongst his adherents), to be termed 'progressive' education. This came not through a compromise, or *via media*, but through a fundamental re-thinking of education in terms of student growth rather than the assimilation of 'knowledge'. As Dewey put it, in EE it came through: 'a new order of conceptions leading to new modes of practice' (Dewey, 1998, pp. v-vi) which hinged on 'the organic connection between education and personal experience' (Dewey, 1998, p. 12) in this case, the experience primarily of the child. There are, of course, occasions when Dewey's observations of children do not adequately reflect the young adults who typically comprise the student body in in FE. Such cases will be identified as needed.

This integrated view which permeated his philosophy reflects Dewey's wholehearted acceptance of the theory of evolution (Holmes, 2015), itself a revolution in thinking and in opposition to creationist beliefs, as integrated and solving the dilemma of such dualisms as mind-body, the individual and society, thought and action, means and ends. This led Dewey to articulate in EE the 'The category of continuity, or the experiential continuum' (Dewey, 1998, p. 24) as elaborated in the section on Dewey's philosophy of education. Implicit in the development of this chain of beliefs must be an active undertow of imagination. Logic alone might legitimate the ideas, but not create them, but a combination of the two might develop a sequence of ideas such as expounded in EE:

> A purpose is an end view … it involves foresight of the consequences … which involves … intelligence. It demands … observation of objective conditions and circumstances … But observation by itself is not enough. We have to understand the significance of what we see, hear, and touch (Dewey, 1998, p. 78).

This type of sequencing can be said to be representative of Dewey's exposition of his ideas in EE. From the above, they develop into the shortcomings from the system he would have liked to replace (Pring, 2007), to a focus on the child and her environment. Education then becomes an unending sequence of cumulative growth of experience including discipline, since as asserted from EE, 'There is no discipline in the world so severe as the discipline of experience subjected to the tests of intelligent development and direction' (Dewey, 1998, p. 114). This was much misunderstood by many later 'progressive' teachers seeking a new way forward, (Pring, 2007) and with it the role of the teacher as the child's initiator into a broader society of which the child is already a part and to which he or she can contribute further in due course: an all-embracing philosophy, from the home, via the school into the broader reaches of a democratic framework.

The level of insight, therefore, which Dewey displayed – and which cannot readily be divorced from imagination – begins with an understanding of the child and her world, and develops into a scheme for an educative process via informed and equally insightful teachers which links the individual to the group, and from the group to the subject matter, discipline and classroom organisation;[41] the problem for him was the disconnection in traditional practice between what was being learned, how it related to the child's experience and needs, and how it was transmitted. Child-centredness did not mean that the teacher abandoned her responsibilities as a teacher by allowing the child free choice devoid of restraints. Indeed, the responsibilities he places on teachers is significantly greater as a result of his innovative views.[42] The long-term implication of this matrix of Dewey's demanding philosophy resides in one over-riding conjunction of warning and imperative of great importance to this research from DE and reflecting Dewey's pragmatism:

> We cannot set up, out of our heads, something we regard as an ideal society. We must base our conception upon societies which actually exist, in order to have any assurance that our ideal is a practicable one (Dewey, [DE], 1916, p. 47).

[41] Pring, pp.99-100, 105; EE pp.17, 87.
[42] EE Darling-Hammond, p. 166.

This brief summary is intended to make clear Dewey's break with the traditional view of schooling as largely dominated by propositional knowledge[43] and his concept of the child at the centre of learning (a view often misinterpreted subsequently by his adherents, of which a much-publicised example was the damaging report on the William Tyndale Junior School in 1976). Nonetheless, the issue was not propositional learning *per se*; Dewey had a clear view of the importance of knowledge:

> Collateral learning in the way of formation of attitudes, likes and dislikes, may be and often is much more important than the [subject] that is learned. *The most important attitude that can be formed is that of desire to go on learning* (Dewey, 1998, p. 49) (italics mine).

Expanding on point 2 from the introduction above, the burden that Dewey places on teachers is considerable. They need to be well-trained, have high levels of subject knowledge, and a clear grasp of and insight into his precepts, plus the organisational ability to furnish appropriate materials and monitor their use: a combination of intelligence in action and reflective thought. Their personal, professional subject knowledge needs to be interpreted such as to be useful to the pupils (Pring, 2007). They need a good knowledge into the backgrounds of the individual pupils so as to best know how to organise work that will lead to educative experiences, knowing that these experiences have been influenced by prior experience, and in turn will influence later experience, whilst assessing where the current experience is leading as formulated in EE (Dewey, 1998). In addition, recognising that for the child, the present is potent, they should aim for direct influence now whilst being continually aware of the future (EE, Dewey, 1998). Teachers, in acknowledging their responsibility as the more experienced person, have the duty to guide the pupil with materials that will accommodate the individuality of the experience whilst achieving the (provisional) end-in-view.

In essence, ideally Dewey would aim for every teacher to see each pupil as an individual and to work within the framework he conceived, not as mimic, but by using her own imagination, initiative, and intelligence to recreate the environment he advocated (Jackson, 1998). Although teacher training may embrace such an

[43] Dewey, 1998, [EE] p. 92.

ambitious breadth of aspirations, in the classroom teachers are often perplexed by the need to motivate pupils as a means of engagement and productivity, as well as by the demands of a mixed ability class. (In her critical comments on EE, however, Darling-Hammond (1998) recognises the dilemma which teachers may face when confronted by an inflexible curriculum).[44] Unfortunately, this attempt to accommodate the syllabus, individual need and general discipline, cannot become, for Dewey, the dominant or habitual aim of individual lessons, since individual experiences may be both highly enjoyable or interesting, yet lack potential for development. In these circumstances, if the short-term aim is to entertain or distract rather than lead to further potential for growth, the result is habits which are 'slack and careless' or lead to 'dispersive, disintegrated [and] centrifugal' attitudes rather than to consistent enrichment (Dewey, 1998, p. 14). Equally, the manipulation of lessons so as to covertly pursue the syllabus whilst overtly appealing to the interests of the pupil is to be discouraged as deceitful; teachers are expected to plan lessons having regard to growth by 'giving due regard to both the psychological aspects of learning and the logical structure of the subject matter' (Pring, 2007, p. 94).

Dewey on Imagination

Having summarised what may be considered as more central viewpoints, we can now turn to Dewey and his views on imagination as a cognitive process. Abstracting Dewey's views from his diverse range of writing presents problems both of organisation and understanding. A starting point would be his view of imagination as a stage of thinking as paraphrased by Archambault (1964).[45] When faced with a problem – which to Dewey meant an obstacle faced by the organism in adapting to its environment – humans go through a sequence of responses, organised in accordance with Dewey's scientific stance: (i) clarification of the problem; (ii) consideration of potential solutions; (ii) hypothetical options; (iv) comparative evaluation of these, and (v) testing the outcomes via the imagination. That the imagination may have a role in each of these stages is clear, some, admittedly, more freely than others, but as a function of problem-solving (and this, for Dewey, was what promoted thinking). Imagination appears to be not entirely separable from thinking itself. As a part of this sequence, Archambault notes that imagination comes

[44] EE 1998 Darling-Hammond, p. 158.
[45] Archambault edited selective writings from Dewey's major works.

to the fore as a means of suggesting and using the tenets of science, ‘objectivity, honesty, freedom, openendedness’ to formulate, and then evaluate, potential solutions (Archambault, 1964, p. xvii).

Caution, however, needs to be exercised as these potential solutions are the product of inference, and therefore extend beyond what is known to be reliable knowledge, and may be misleading if not subject to judgement. That is, in Dewey’s terminology, they remain unwarranted. The resolution involves analysis and synthesis: ‘Through judging, confused data are cleared up, and seemingly incoherent and disconnected facts brought together’, a reconciliation expanded in HWT (Dewey, 1910, p. 111). The question appears to remain, however, how far this process is logic, imagination or a benefit of prior experience or funded knowledge or whether such distinctions are analytical with little meaningful distinction as cognitive functions.

This detachment of imagination from thinking, however, continues to treat imagination as an independent feature instead of one of several different manifestations of thinking. In Psychology [P] Dewey describes imagination as having, ‘an aspect as a stage of knowledge’ (Dewey, 1890, p. 201). As such, it is the transition, as described in P, from the ‘particular stage to the universal’ (Dewey, 1890, p. 201), and follows on from perception and memory. Part of this aspect of thinking enables the:

> free working of the mind with the universal elements, rendered fluid by imagination, in order to reach certain intellectual ends, [which] constitutes thinking (Dewey, 1890, p. 201).

Here, ‘rendered fluid’ may reasonably be interpreted as free from the constraints of reality, logic or other inhibitions, and therefore more flexible in moving between concepts towards conclusions appropriate to the resolution of the difficulty under review.

From this, one might reasonably conclude that the separation of imagination from thinking is at best arbitrary, and potentially misleading, bearing in mind that, as Dewey wrote in HWT, ‘The teacher … should rid himself of the notion that “thinking” is a single, unalterable faculty; that he should recognise that it is a term denoting the various ways in which things acquire significance’ (Dewey, 1910, pp. 38-9). Beyond

this process lies knowledge, as Dewey developed in P: ‘Since the end of knowledge is the complete unity of perfectly discriminated or definite elements,’ (Dewey, 1890, p. 174) except that the process in unending: ‘An ideally perfect knowledge would represent such a network of interconnections that any past experience would offer a point of advantage from which to get at the problem presented in a new experience’ (Pring, 2007, p. 63). In this way a sequence emerges of problem, potential solutions, through a combination of several processes including imagination, leading to a solution (knowledge) through thinking and serves as the starting point for the next problem. It will be clear that imagination emerges as an important contributing factor. in P, Dewey defines imagination as, ‘that operation of the intellect which embodies an idea in a particular form or image’ (Dewey, 1890, p. 192). For Dewey it is distinct from perception or memory. When an end in itself, imagination is freed to digress: [it] ’has no external end, but its end is the free play of the self, so as to satisfy its interests’ (Dewey, 1890, p.198) whatever those interests might be. For example, a pleasing fantasy, an imaginary triumph over an adversary, a significant achievement or whatever. If, however, the situation were one of problem-solving as mentioned above, these interests would be the finding of a solution. It is aided in this by its amorphous nature where:

> Its forms are as various as and numerous as the subjects who exercise it, and as their interests. For this reason, it is impossible to lay down rules for the working of the imagination. Its very essence is spontaneous, unfettered play, controlled only by the interests, the emotions, and aspirations, of the self (Dewey, 1890, p. 198).

Even now, however, from one point of view the ‘goal’ has not yet quite been reached, as:

> the other activities of the mind consist simply in developing these relations to intelligence, and thus coming more and more to consciousness of the ultimate reality, intelligence itself (Dewey, 1890, p. 158).

This summary of imagination focuses on its place in the sequence of thought development. It, however, offers no real view of the characteristics of imagination which would make it distinctive. It also, wrongly, gives the impression that it has no existence beyond this. It may not over-state the case to say that imagination is

nearly ubiquitous - except perhaps for ‘knowing how’ as distinct from ‘knowing that’ in Dewey’s example from SS of thinking about and actually making cloth (Dewey, 1915) - whilst the debate continues over its role in the reconstruction of memories. Further roles and features of imagination, therefore, need to be discussed and how imagination is implicit in much of the child’s world.

Other aspects of Dewey’s thinking about imagination can be seen as a developing sequence of refinement.[46] The initial focus of imagination will be with the child, where the distinction between the imaginary and the reality are not conscious. This is because, as he writes in SS ‘The imagination is the medium in which the child lives’ (Dewey, 1915, p. 38) with the concomitant criticism that imagination is devalued by the belief that, for the child, the unreal or fantastic is the primary response (Dewey, 1915, p. 38). For Dewey, however, it is routinely a reflection of the child’s reality, circumscribed as it necessarily is by limited experience. The teacher often, whilst claiming to encourage the child’s imagination, defeats this object by the use of materials which are too limited in scope, or dull, or too precisely bound to ‘reality’, that is, to rigid propositional knowledge, to allow scope for the imagination. This places significant demands on the educator.

Where, therefore, ‘The imagination is the medium in which the child lives’ (Dewey, 1915, p. 38) an example could be seen in role play, or the acting out of the child’s known reality and its extension through interaction with other children such that the initially vicarious becomes internalised as further personalised experience. It also is apparent in early art where the object drawn relates to the child’s experience or knowledge of something (the image or idea) rather than an attempt at graphic realism (Dewey, 1919a). In MPC this is expanded as follows:

[46] It should be remembered that in, 1890, when Dewey wrote ‘Psychology,’ that psychology had barely emerged as a separate discipline from philosophy, and that he is trying to understand a bemusing topic, ‘imagination’, by logically analysing it though deconstructing it into its constituent parts. Hence the vagaries of his language when this proved elusive. That he made significant progress where logic was relevant is to his credit, given that his overall view of it was imprecise to begin with, and that his method, by intuitively deducing consecutive stages, was inappropriate for an integrated and organic cognitive function. He was, in reality, trying to understand it, to make it meaningful, to make sense of it; but his language necessarily is closer to that of a poet than to that of a scientist: intuitive, where, given the choice, he would have preferred objectivity.

> The healthy imagination deals not with the unreal but with the mental realization of what is suggested. Its exercise is not a flight into the purely fanciful and ideal, but a method of expanding and filling in what is real … However prosaic this world may be to the adults … to engage in it is to exercise the imagination in constructing an experience of wider value than any child has yet mastered (Dewey, 1897, p. 166).

Art is only one example of imagination and practical activity. In schools, other activities take place although it may not be too sweeping a generalisation to suggest that these have dramatically declined at secondary level, often replaced by IT alternatives. Drama continues but instrumental music has been curtailed by economic pressures. At primary level where practical activities continue, the interconnection of imagination and technique remains important since in IE we learn that:

> Every mode of expression … has these two sides – idea and expression … they are related as form and content … A mode of expression separated from something to express is empty and artificial, is barren and benumbing (Dewey, 1919b, p. 6).

Given the value Dewey attaches to practical activities, a balance in cultivating technique in line with imagination is central to educative expression and represents another example of Dewey's rejection of dualism: self-expression is literally the embodiment of the interest in imaginative form. Unfortunately, even in Dewey's day, the links between practical activities, everyday life, and its social component were weakening, as discussed in SS (Dewey,1915). This raises a question as to their relevance in schools of today, at least as manual skills. Where manual skills are to be developed as practical classes, their purpose needs to be carefully thought through in educational terms, although their relevance to artistic production continues to be valid.

It is not feasible to examine every subject in the school timetable here. Dewey's adherence to a scientific method which underwrites his philosophy has been separately described. Some pointers to school activities may, however, be had. One is that practical activities in schools are free from economic necessity and can therefore be pursued for their intrinsic satisfaction. As students mature, they may apply this principle of non-instrumental gratification to other topics, suggested in DE

(Dewey, 1916). This is particularly the case where the teacher is alert in ‘giving due regard to both the psychological aspects of learning and the logical structure of the subject matter’ (Pring, 2007, p. 94) since essentially the need is for a continuous bridge between the student’s limited knowledge and the broader world of knowledge. A further observation would relate to originality, which here means that the individual examines the matter until he or she reaches some personal conclusion with or without the aid of language through which permutations and alternatives can be constructed (Dewey, 1910).

There are further extensions to imagination in Dewey’s writing apart from the role that imagination plays in perception, memory, and the development of thinking. These can be thought of as tiers, as ideas increase in refinement and independence. This is described in P as, ‘the recognition of an idea in concrete form’ (Dewey, 1890, p. 193) which makes conscious what was not conscious previously. Dewey uses two terms for this evolving process, ‘association’ and ‘dissociation’. Association is more actively apparent in the role of imagination as influenced perception and memory.

Creative imagination is imagination’s most developed form (Dewey,1890). Here imagination, Dewey claims, infiltrates the deeper meaning of the object in a way that perception, memory, and thinking cannot do. It is not restricted to the attributes of the ‘lower’ forms, but ‘it is virtually creative’ (Dewey, 1890, p. 196). His explanation of this (clearly different to the modern usage of ‘virtual’), is that it sets the idea in a universal context, free, that is, from dependence on the personal attributes which characterised the forms discussed earlier. This is most readily made intelligible as the universal side of man, as distinct from the experience of individuals, and found most readily, for Dewey, in great poetry. A synonym might be ‘essence’. Dewey has an interest in language, expressed in P, particularly in its literary forms where the distinction in value between the ephemeral and the permanent lies in the degree to which the imaginative insights mirror the permanent values in man, rather than the transient (Dewey, 1890). ‘All products of the creative imagination are unconscious testimonies to the unity of spirit which binds man to man and man to nature in one organic whole’ (Dewey, 1890, p. 200). It will be argued in due course that when concepts, categories, and analogies are analysed, ‘fancy’ and ‘creative imagination’, as Dewey conceives of them, exist. They are possibly universal, accessible, and desirable, and in the context of FE, can be developed. To summarise, for Dewey,

using the imagination (for any purpose, including problem solving) is as natural as walking down the street.

This broad view of Dewey's writing clarifies the general - and some of the more specific - aspects of imagination and serves as an introduction to the following section. This next section will simultaneously enumerate a chosen number of key concepts and will examine how the structure of each may have emerged. In presenting Dewey's key concepts in this section, the role of imagination in the structuring of his beliefs will be highlighted.

Themes from Dewey's Philosophy of Education

It is maintained that Dewey's philosophy is unified, and that individual aspects should not be randomly extracted and accepted in isolation (Archambault, 1964). If we accept this, the reality remains that a composite cannot intelligibly be analysed as a unit and needs to be sub-divided in an attempt to interpret the significance of the inter-woven concepts. Thus, individuals will view Dewey's work as incorporating substantial numbers of components. For Pring (2007), this was 7, but each further sub-divided. I identify 15, again coalesced to three very loose groups reflecting: what, and why, teaching is of value; what and how to teach, and arbitrary factors that underlie or arise in the process. These are:

(i) Aims, Education, Experience, Ends and Means, Growth;

(ii) Subject Matter, Interests, Discipline and Freedom, Practical Activities;

(iii) General Pragmatism, Science, Imagination, Thinking and Intelligence, Democracy and Social Control, Preparation for the Future (which in one sense subsumes all the others).

Although this grouping may facilitate understanding, for Dewey (and his serious adherents), this procedure is at best artificial, and at worst destructive. Where, therefore, this writing does not, or cannot, subscribe to Dewey's ideas, an effort will be made to justify the omission or deviation. Dewey here serves as a route planner, not an Ordnance Survey map. Although unsatisfactory, some sequence of approach needs to be followed. That chosen, purely for convenience, is the order indicated by the clusters of themes above. An attempt will be made after the summaries to

integrate them. I propose to select each group in turn and suggest for each component a possible sequence of coherent links validating the endpoint. I will further aim to make clear the role of imagination in these processes.

Aims, Education, Experience, Ends and Means, Growth

The first cluster begins with ‘Aims’. The question of the aims of education in Dewey are problematic. There can be one over-riding aim, but it cannot be specific, since it will vary between individuals, and has no end beyond his concept of continued growth - a term which itself requires elaboration. The idea, therefore, of the aim of education overarching all others remains invalid for Dewey. His view is that aims, as outlined in DE, (Dewey, 1916) only make sense when related to people rather than sociological abstractions like education. From one point of view, the concept is related to a capacity for individuals to adjust, through problem-solving, to environmental pressures; to develop habits of reflective and intelligent thought, and to accumulate educatively valid experiences in cyclic fashion, each contributing to, and deriving from, previous experiences. We might see here some reflection of Dewey’s assimilation of Darwin, in that life has no teleological purpose or planned end. More specifically, in reflecting his views as a pragmatist, individuals deal with events as they occur in a pragmatic manner, that is, where the outcomes of action (following a process of decision-making) are valued or not, by the consequences of the decisions and choices made and the actions taken. An individual may attempt to determine the course of his or her life as an on-going process of dealing with, or evading, obstacles, but evolution is an abstract concept of a process lacking consciousness and does not presume some predetermined endpoint.

There is, therefore, no all-pervasive meaning to the word ‘aim’ for Dewey, since the aim (at any moment) is to make an adaptation. How successful this is, will become clear only subsequently as judged by the effects of the organism’s response. Even if the aim if fully accomplished, a further aim will arise in due course as life continues remorselessly, and ‘experience’ is the vernacular name given to what happens. ‘Education’ was the term Dewey used when an experience is added to the sum of previous experiences and makes possible further productive experiences. If, however, the aim-in-view (that is, the short-term or immediate aim) is not fully accomplished, or indeed was thwarted, then the aim needs to be modified to

accommodate the unexpected circumstance, or abandoned and replaced with an alternative response believed likely to be more effective given what one has learned from the failure of the first or at least suggests an acceptable cost or risk to the individual. The result of this 'experiment' (modelled on Dewey's view of scientific procedure[47]) will indicate how successful the strategy was. In this, the role of imagination appears as follows. Some planned sequence is interrupted. First, this must be recognised, and possibly acknowledged more consciously. Then a solution is sought. Initially perhaps a reflex is triggered without thought. If successful, the sequence continues. If not, in some form or other, perplexity ensues. Two broad options appear to be available: First, what was successful in the past. Second, if that appears unpromising, having used imagination to establish those features in common with present circumstances, and evaluated these as factors of success against the current situation, what alternative courses of action are believed to be available.

It is likely that the problem has been perceived, that is, perception was the primary signal of a problem, but perception of itself is insufficient to solve it. If what is perceived signifies nothing, that is, it has no meaning, as may be the case on first encountering something wholly unrecognised, then either a risk is taken to explore the obstruction, or caution intervenes to prompt a retreat. Either course is likely to be the result of prior experience in analogous situations. In both cases these analogous instances are called to mind before a considered decision is taken. (Some learned experiences are so crucial to survival or safety that the response must be immediate with little reflection even at the risk of error where any response is preferable to none). If a solution is sought from previous experience, the individual refers to memory, but even memory is allied to imagination. What is being considered in this instance, which may be emotionally charged or the subject of dispassionate contemplation, (which cannot take place without material to contemplate) is not of itself, productive. From one point of view memory is the imaginative reconstruction of experience from the past. Imagination figuratively speaking lays out the alternatives such as to make the examination of the pros and cons of each possible. (This

[47] In its simplest form this can be considered as the collection of data which are then examined with a view to the formulation of hypotheses which are tested as the means of validation.

pedestrian description does not do justice to the speed, complexity, finesse or vividness of real life).

If what we were to call a logical evaluation were to be made of the pros and cons, imagination operates to make the choices clear. However, the role of logic must not be over-stated, since it can readily give way to emotion, is probably learned and therefore culturally determined, can seemingly be easily replaced by prejudice, or even abandoned where the tension of uncertainty comes to dominate both the speed and nature of the choice. In all events, what Dewey refers to as a 'dramatic rehearsal' (Archambault, 1964, xvii) takes place where, from the safety of the imagination, potential outcomes can be evaluated, clearly a marked advance over the risk of overt action, not least for safety, or over real-life experimentation. The value of this capacity for internal rehearsal of alternatives should not be underestimated since it expands hugely the mechanism for problem-solving, and even allows for no action to be taken at all if inaction is considered appropriate. The choice of preferred hypothesis will depend on judgment, which, somewhat unhelpfully, may be identified as choice guided by intelligence, or, again, the consideration via imagination of alternatives with a calculation of possible outcomes. It will be seen from this that an aim for Dewey when discussing education meant simply what the individual wants to do, hence, for him, its inapplicability to broader concepts such as education as an abstract without reference to its ineluctable bond with individual experience. Lest there should be any doubt of the significance of this, Dewey wrote: 'I assume that amid all uncertainties there is one permanent frame of reference: namely the organic connection between education and personal experience' (Dewey, 1998, p. 12).

On the broader topic of education, Dewey commits himself as follows:

> We thus reach a technical definition of education: It is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience (Dewey, 1916, p. 45).

But more precisely, as some have argued, it is only by valid experience, (that is, not mis-educative) that education develops (Jackson, 1998). It will be clear from this alone that there are serious implications for teachers. Notwithstanding, education

has no purpose beyond itself and for Dewey would be free from the current instrumental applications associated with subsequent employment and national economics. As a process it flows both backwards and forwards, reflecting previous stages whilst contributing to further development, far from a static or linear pattern; rather, it is more cyclical and cumulative (Dewey, 1916).

If, therefore, education for Dewey is a concept largely free from instrumental aims, it cannot readily be measured against realistic criteria (Dewey, 1916). This, however, seems in conflict with current aims where effectively all education is, or leads towards, employability. That education can be conceived at all must therefore be as an imaginative construct, held as intrinsically valuable. What makes it perceived as valuable, one might conjecture, has two main strands. First, the historical context of social aspiration which was modelled on and emulated by the European and European-influenced countries' interpretation of the classical Greek distinction between thinkers and workers. Secondly, and perhaps unwittingly accepted by the Greeks simply because of their capacity to record their thinking, an unconscious recognition of the universal trait of curiosity. The value of curiosity in evolutionary terms is self-evident for survival, developing in parallel with problem-solving (since curiosity can provoke both positive and negative responses) and the two are therefore closely allied or even integrated. And beyond basic survival, as a mechanism using information gathering between individuals to assist socialisation, promote mutual understanding and regulate group compliance to the communal benefit. The consequences of imagination in action are clear. That these consequences were envisaged with sufficient clarity to render them desirable is the product of the imagination, even though one might conjecture that they were initially implemented unconsciously by societies as self-evident before the dawn of consciousness. The conjunction of thinking and imagination here may readily be understood, and their concurrence shows a marked resemblance to Dewey's unification of means and ends, and perhaps to curiosity and problem-solving. Dewey's rejection of dualisms is beginning to find an increasing number of supporting examples within his philosophy of a unified and integrated organism.[48]

[48] As a personal observation, given the astonishing significance of curiosity to cognition, it comes as a surprise not to find it featuring significantly in Dewey's work (such as I am familiar with). Perhaps, in common with intelligence, it is so fundamental to life that neither need be analysed.

It would be very convenient – were it possible – to divide, albeit arbitrarily, Dewey's work into the two clear strands of education and imagination. However, as will become apparent, given the broader view espoused here of imagination, such a convenient distinction is not workable. What is, or will become, clear, is the conspicuous place Dewey gives to imagination when it comes to problem-solving where he shows the rationality of his thinking, but also the combined effects of his pragmatism and his belief in the essential value of the scientific method.

The concept of experience is significant to Dewey's thinking (Dewey, 1998). It has already been claimed that some experience is mis-educative, that is, it distorts or arrests future experiences. It will be remembered that 'mis-educative' is not, for Dewey, an absolute, but embedded in the socially acceptable (that is ultimately beneficial) value system which he accepted and which, in turn, contributes to his view of democracy. On that basis, not all learning is educative. However, equally, how educative an experience proves to be, will depend on the quality of the experience which, good or indifferent, is part of what Dewey calls the 'continuity' or the 'experiential continuum' (Dewey, 1998, pp. 23-4), where all experiences in some way are altered by previous experiences, and will themselves influence future experiences, that is, are inexorably cumulative whilst simultaneously having a role in directing the choice of, and response to, further experiences.

Experience itself is viewed as the interaction of the individual with the environment of the moment, which can mean a person, book, toy, situation, a castle-in-the-air, but can only be judged by where it leads to, which will depend on the teacher's ability to discriminate between the educationally valuable or the mis-educative. The interaction has both an internal and objective dimension: the one reflecting the mindset of the learner, the other the demands of the environment. There was, for Dewey, no conflict between these two, since his imagination enabled him to think of them as simply two perspectives of the same operation, and operating together within the same person, as environment[49] and individual are inseparable. Further, the two-way influence of any experience (past and future) becomes allied to habit:

[49] Environment, as noted, can be any object of attention significant to the individual's search for progress. It is not necessarily restricted, although naturally can be, to the external, social or biological environment.

that which achieved the intended goal in the past may well achieve the intended goal in the future. This happens in such a way that what was learned in the past is applied to the present with reference to the future, the three ‘tenses’ eliding backwards and forwards, seeking a satisfactory accommodation with the current reality. The freeflow of the imagination enables this to operate fluently and to relate the three phases without inhibition, effectively as a single undertaking. This is effective provided the learner or teacher recognises and disrupts the risk of habituation which inhibits the search for other more appropriate solutions to problem situations. That habits are both time-saving and useful, being based on successful past experience, is indisputable. Part of this learning process, of course, includes the application of prior learning and funded knowledge, that is, the memory of knowledge gleaned from prior experience that can be brought to the interaction implicit in further experiences as an aid to a successful outcome. This is a matter of the imagination ‘recognising’ analogous situations, seemingly so spontaneous and habitual that the role of imagination is rendered invisible through the speed with which the parallels are formed (Hofstadter and Sander, 2013). This is also a timely reminder that imagination is not an operant conducting an activity independently, the outcome of which is then passed as a separate entity to the thinking processes for use at will, but rather an integral version of the thinking itself. This conclusion now needs to be borne in mind in what follows, since in the twin topics of ends and means, to which I now turn - the fusion of educational aspiration and imaginative conceptualisation, is indivisible. First, it is necessary to grasp Dewey’s view of the fusion between the two, and secondly it will be necessary for the practising teacher to devise a programme which recognises their combined significance.

Therefore, whilst the themes so far dealt with are clear, the dual concepts of means and ends are less transparent. For Dewey, the ends of education are not (and probably cannot) be fixed since education is subject to changing conditions within the range of experiences available to individuals and variations in social conditions. Add to this the liberating effects of education, and ends (despite thoughtful and conscientious teacher guidance) may be unforeseeable. However, as conceived, ends which do not imply means are meaningless, since achieving the goal is the set task and may require considerable flexibility and imply uncertainty. This ends-and-means, as with theory and practice or body and mind, are examples of Dewey’s

rejection of dualistic frameworks and are a part of his concept of continuity (Archambault, 1964). This does not appear to mean that unrealistic ends cannot be envisioned, nor that means can either be unconsidered or impossible of attainment, rather that the formulation of one without the other is purposeless. For Dewey they are continuous and reciprocal, in continual adjustment one to the other as the experience develops. The contemporary terms ‘analysis’ and ‘synthesis’ might have usefully echoed the process described here, except that they continue to imply two distinct, rather than one intrinsic operation.

Ends and means can initially be separated, as we shall also encounter elsewhere, as though independent concepts. There can be little difficulty in imagining ends. The immediate end, Dewey termed the ‘end-in-view’, that is to say, the end as imagined. This is more readily intelligible if such synonyms as ‘solutions sought’, or ‘the purpose’ or ‘desired outcome’ of dealing with problems are used. Accepting that once this stage is reached where an end is desired, a fluid mutual exchange between ends and means becomes possible with the imagination flowing back and forth between the desired end and the various means by which it may be attained, then a case can be made for them to be contiguous. An aim, however carefully judged or mentally rehearsed, cannot guarantee success; the process is therefore more one of speculation via the imagination, subject to validation, and so on. Dewey’s apparent view that they are indivisible can be understood in this light once the cycle has been initiated. Up to the point of direct action, therefore, the conceptualisation of the end-in-view, and speculation as to the means of procurement, are almost entirely dependent on imagination.

Extending this more broadly, it is a feature of Dewey’s fluidity that in an integrated pattern one concept flows into another. So where ends and means may be considered as episodes in the continuous accumulation of experience, so this accumulation points to what might be termed a general educational goal, and if indeed, there *is* a goal to education for Dewey, it is that of growth. (There is also the problem of language and the difficulty of distinguishing closely related concepts: here ‘links’ in a continuous ‘chain’ might serve). But even that may be a tautology, since, as one cannot fully occur without the other, an argument might be made suggesting that they are if not entirely synonymous, are at least largely overlapping. That a goal implies imagination is inescapable; even the most modest aim must be

imaginable or would be indistinguishable from a blind instinctive need without other than an automatic response. A goal, therefore, however imperfectly conceived, implies an end with an envisaged desirable conclusion. The goal of growth is further growth – hence education as a continuing process for the individual. The linear image that this conjures can be seem as so readily embedded in everyday life: bricks in a wall, stakes in a hedge, footsteps in a walk, and so on, that little further imagination or memory of parallel situations is required to evoke this – that is, imagination is always dependent on prior knowledge or experience, or where this is lacking, perception to which a meaning has been attached. What is often deemed 'imaginative' is the combination of known elements in a new, perhaps unusual, but explicable, manner.

This view of Dewey's of the continuity of accumulated experience leading to growth as an unending process should not be applied to continuing education as currently practised, as the contemporary use of the term 'continuing education' tends to imply the pursuit of systematic extensions to knowledge and understanding beyond the age of traditional schooling or education and training. This latter, whilst enormously beneficial in many respects is conscious, systematic, calculated and mechanical in its sequencing, and over time, the domain of adults. For Dewey, predominantly concerned with children, growth was organic; that is, founded in an evolutionary principle. It is both more individual and profound, of a more ontological nature than conscious or mechanical learning. An opening image may be as 'Growth in judgment and understanding is essentially growth in ability to form purposes and to select and arrange means for their realization' (Dewey, 1998, p. 104). This operates through the intervention of imagination as a means of conceiving alternatives and then of evaluating them for plausibility, that is, towards the likelihood of achieving the desired goal. However, growth is not guaranteed, nor is it without hazards. These might include the direction of an experience and what attributes the experience calls on or expands, plus the avoidance of the rigidity induced by habituation, that is, the unreflecting acceptance of routines which have proved successful in the past thereby disregarding new approaches to the matter of problem-solving.

Habits are fundamental to life. If every action had to be contemplated as it arose, life would operate at so slow a measure that advancement would be negligible. Habits, therefore, are beneficial in saving time and in avoiding endless scrutiny of familiar circumstances. The risk, for Dewey, was their becoming the automatic response to situations with new situations not being recognised as such through a failure to apply imagination as a scanning device, and therefore a failure to see the situation as an obstacle to progress. The familiarity risked ensuing failure through failing to bring to it the sequence of steps, envisaged by imagination, which would find solutions and usefully add to experience and therefore (if valid) to growth. At each stage of this series of omissions, it will be clear how imagination, in habituation, is not being invoked when it could have been beneficial. Otherwise expressed, habituation represented an initial failure resulting in the whole purpose of experience and imagination as problem-solving remaining unapplied – the individual blind to the available potential. It needs no elaboration that where this practice is frequent large areas of learning are untapped, not simply a single instance including in the classroom.

Since our current purpose is to explore how imagination might interface with the themes from Dewey, the relationship of experience, growth, and education to knowledge merits pursuit since these words can easily mask the obvious – that education means learning and learning includes knowledge, more precisely here, how knowledge and imagination intersect. In the basic scenario of an individual trying to solve a problem, accepting the sequence as already outlined above, the following may add clarity. Following the evaluation of hypotheses, the subject can test the situation against reality with some result or reaction (positive, negative or neutral). In any event ‘knowledge’ will result, that is, an understanding of what is happening, or differently expressed, what provisionally reliable meaning is derived from the nature of the response or ‘warranted assertion’ (Pring, 2007, p. 65). In this case imagination is a precursor to action. Imagination is active up to point of the test in reality, but at that point the sequence is arrested since what the subject imagines cannot influence the outcome (the response, the learned new knowledge). Therefore, whilst imagination might visualise possibilities it cannot determine the outcome, the problem and the solution therefore are not (and cannot be) directly linked by imagination.

There are, inevitably, modifiers to this position. The first is where imagination can lead to new knowledge where the solution is knowable to the subject through reflection, memory, funded knowledge gained from prior experience etcetera – that is the required information and the necessary cognitive skills needed to manipulate the existing knowledge are already available internally without reference to outside verification (though this might prudently follow). For example, 2+2 = 4, that is, where the elements of the problem can be visualised, but unlike the scenario above are not dependent on external verification.

The second modifier lies with individual differences. Given that the above is still new knowledge, temperaments, personality types, cognitive skills, memory, speed of thinking, power relations, seniority or status are all factors in any exchange. The above prototypical sequences are merely skeletons to be fleshed out in real life.

The third modifier is that although there is therefore an inescapable discontinuity of imagination in problem-solving where knowledge is dependent on external verification, in educational terms, the implications would be that the more the student knows, the greater the range of choices, resulting in more experience at problem-solving, (where training can help), then the less reliance the student has on external assistance (including the teacher) but the greater reliance she has on knowledge, understanding and imagination. There are important implications here for the co-ordinated or even simultaneous development of imagination and problem-solving techniques.

A temptation is to regard the concepts of knowledge and understanding as separate. This is convenient but superficial. A simplistic start might be the statement that understanding implies the capacity to imagine how something ‘works’. The ‘something’ is an item of knowledge previously learned. Short of deliberate rote learning, any item of knowledge separate from any comprehension, is difficult to conceive. How knowledge can lack any element of comprehension, however minimal given that knowledge implies learning and that all learning takes place in some context, is equally difficult to conceive. Most knowledge therefore contains within itself some degree of understanding. This is not so much a cognitive matter as simple practicality – we learn things in a context or for a purpose: events imply meaning. The situation is complicated by the sub-division into ‘knowing that’ and

knowing how' (Ryle, 1946) since both versions are familiar to everyone, but the interplay of the two is neither entirely separable nor fully understood. For simplicity, at least initially, the presumption is that here we are discussing, 'knowing that'. The question therefore is how does an individual move from fact to comprehension when the need for analysis presupposes that the link is not self-evident?[50] The essence, that is the difference between knowledge and understanding, is the degree of comprehension in most cases. Understanding, therefore, in the current context, implies a significant capacity to grasp the meaning of the material, of how the elements relate to each other, of what the implications are for this and so on. Therefore, the role or function of imagination here enables what is known to be analysed into its constituent parts, enables an understanding of how these influence each other, and provides opportunities to relate to other pieces of knowledge which would otherwise remain separate. It is a virtue of imagination in this process that it can even encompass the irrelevant in order to subsequently dismiss it having, again through the medium of imagination, invalidated its potential usefulness.

But a simple description of what understanding may be, is of little use in education where what is important is how understanding may be achieved. This is more inscrutable. We know that some people understand X. We know that some people do not understand X. To the latter, as teachers, we 'explain' our understanding of how the two are related (X as information linked to X as understanding). It is not clear how 'my' understanding can directly impinge on the hearer's brain functioning. If my explanation is successful, it can only be because in some way it triggered associated cognitive processes in the hearer's brain. In some manner, through my imaginative capacity to understand the problem, I was able to express it (verbally or otherwise) in a way that evoked similar imaginative links in the hearer – the much vaunted skill of communication – to connect my brain to the brain of the other person via language or other perceptual mechanisms (we rule out extra-sensory perception) that can evoke an appropriate response through capacities we hold in common. That we can deliberately think, that we can deliberately invoke the imagination, is not in dispute. What is being argued is that these do not need to be evoked but are

[50] It is accepted that insight or the rapid, almost instantaneous, stroke of significance is unconscious and will re-appear subsequently as a related concept when working on imagination beyond what can be gleaned from Dewey.

spontaneous operations that are performed regardless of the conscious will; they will happen whether we like it or not and without being specifically invoked. Where one person attempts to promote understanding in a second person, in most cases (there are exceptions) the second person will be willing to, and trying to, establish the meaning in co-operation with the speaker. Both essentially are engaged in the same exercise of 'the meeting of minds' that is looking for commonality between their viewpoints. This is, surely, the essence of teaching: I convey understanding as a consequence of my imaginative scanning and my ability to form meaningful links in the material, in a form which enables the listener to activate a reciprocal system for imaginative scanning, leading to her understanding. The words used (typically) reflect an imaginative schema on the one side, leading to the generation (through the association of ideas) of related imaginative responses on the other. How closely the two sets of schemas correspond will reflect the accuracy of the interpretation. We can perhaps see in this a considerable extension of Dewey's insistence on the teacher's knowledge of the pupil's background; the extension being that if the above reflects the teacher's ability to convey understanding (knowledge is assumed) then this will in part depend on her ability to match her mode of thinking and manner of expression to that of the pupil, rather than, as often occurs, attempting to match the pupil's thinking to that of the teacher. For that to happen she will need an understanding of the student's stage of development, of their language skills, of how (through her imagination) she can best relate to the 'trigger' which will engender the desired fusion of ideas in the student which the knowledge under discussion needs for understanding to emerge; all of which capacities demand an imaginative projection into the student's mindset, which Dewey might have described as a form of moderated empathy underpinned by professional training and judgement but appears to go far beyond Dewey's belief in familiarity with the pupil's background and also links to the 'interests' discussed below.

This attempt to relate themes to one another and show how and where imagination may be inherent, represents a brief, concentrated, sketch of the first cluster of interwoven themes. It will be clear why the themes are inextricably related, how imagination has enabled the relationships to be established, and why an arbitrary selection of some, for classroom implementation, to the exclusion of others, would not reflect Dewey's philosophy. Such a practice partly contributed to the enduring

reaction against ‘progressive’ education from the 1970s onwards as described, for example, by Pring (2007) in how Dewey’s influence underpinned the Plowden Report (DES, 1967) and of his encounter with Lord Keith Joseph, in 1989, a former Secretary of State for Education who ‘accused [Pring] of being responsible for all the problems in our schools - because [Pring] had introduced teachers to John Dewey,’ (Pring, 2007, p. 3). This first group of related topics it might be argued, probably with some justice, are pre-eminent in Dewey’s philosophy, bearing in mind the view (Archambault, 1964) that all elements contribute to the overall coherence of his beliefs. Continuing with the grouped second cluster, which embraces what and how to teach, Dewey’s observations will now be considered with the same reservations as before but with the same aim of demonstrating the role of the imagination in Dewey’s thinking.

Subject Matter, Interests, Discipline and Freedom, Practical Activities

Following what may be termed the central areas of Dewey’s philosophy of education, I now turn attention to the cluster of associated ideas which can be seen as relating to the questions of what and how to teach. Inevitably teachers have to teach something, therefore the question of subject matter arises and will be the first to be considered. The selection of this for Dewey (in EE) was important (Dewey, 1998). Bearing in mind that he was primarily discussing the education of children, the content and its potential were dominant (Dewey, 1998). It should also be borne in mind that during his era teachers had considerable freedom regarding the syllabus as compared with the National Curriculum or the specifications of awarding bodies for vocational training. However, the organisation of material and its method of delivery remained in the teacher’s gift and is her responsibility; in EE Dewey offers clear, if inevitably generalised,[51] criteria governing the transmission of learning. One determining factor lay in his assertion that no topic was of itself educative; its value lay in its capacity to promote valid experiences in the child, experiences which could not happen unless the teacher planned the content and procedures with regard to the particular stance of the individual pupil.

[51] Davis, 1998, in EE, offers an explanation of why Dewey could not or would not makes precise injunctions as to how individual teachers should proceed.

This represents, at one level, a reflection of relating material to the students' existing experiences which will be dominated by their out-of-school lives. In class, the organisation of material needs imagination in three dimensions: what to cover, how to present it, and how to foresee the likely outcome as educationally valid. What to cover, seen as subject areas, paradoxically, was less important than how to teach it: this is paradoxical, since Dewey acknowledged openly the value of knowledge but recognised that no subject was of itself either educationally valid or invalid (Dewey, 1998). This also represented a reaction against the belief that some forms of subject matter are intrinsically valuable, for example, maths as a means of cultivating logical thinking, or poetry as contributing to a sensitivity of response. Any intended learning for Dewey determined the approach in relation to the child, whilst imaginatively anticipating the outcome and the value of the experience generated. Impromptu or randomised methods failed in this respect, even if promoting short-term interest or acting as motivational factors since they lacked this conscious planning and consideration for the growth potential which might result. Ideally, one started with the individual's current level of knowledge and understanding. That, of itself, would in contemporary schooling, be regarded as standard practice. Unfortunately, with Dewey, this assumed a considerable knowledge of the child's background and what she already brought in the way of educational experience on which to build new and extended experiences.[52] The teacher could then link the teaching material and methods to the child. Dewey was aware of the potential conflict between this position and the need of the teacher to cover a set syllabus. This imposed the need for sufficient insight (a form of spontaneous imagination, largely by-passing memory or conscious reflection) to reach backwards into the past experience of the student in order to link the new content which predicated future knowledge and understanding. One aspect of what was then accepted practice which he deplored was the rote memorisation of raw facts without value to the individual.[53] He equally rejected the systematic teaching of material that had no present meaning and which related

[52] In defence of current FE practice, it must be said that this is a fraught topic ranging from very difficult for the teacher to assess with any reliability on the staff side, whilst perhaps being regarded as an intrusion from the student's point of view.

[53] This I interpret as alluding specifically to classwork of a humdrum nature since the learning of General Knowledge as a quasi-pastime was broadly seen in many homes as contributing to a general education for generations of children and not learned without a sense of achievement.

exclusively to future needs that the pupil could not foresee or appreciate, (a matter of importance in FE to which we shall return in our examination of vocational training). Many teachers become accustomed to an acceptance of the value of what is taught, and that many students respond compliantly as an act of faith. This still applies, but up to a century has passed since much of Dewey's early experience, Further, the extent of student knowledge has expanded exponentially through longer formal education, and informally through access to online material and the media. We might like to think that contemporary educators link material with understanding in a way perhaps less available to earlier teachers. Dewey could not accept a gap between the individual and the material as valid given how he linked learning to experience as a 'lived through' assemblage, nor was he persuaded that the student could envisage its relevance to her life. An intended practical outcome of this thesis (Chapter 6) will suggest how teachers might use imagination in lesson planning and delivery to bridge aspects of this gap and lay the foundations for students to continue the process spontaneously. In addition, if one, as does Dewey, rejects arbitrary dualism, the distinction between 'lived through' and 'thought through' (as external and internal) experience may be less problematic than superficially apparent.

For the insightful and conscientious teacher, Dewey's expectations were high and included thorough professional training, excellent subject knowledge and the ability to assess the needs of, and methods and materials appropriate to, the content of the lesson and knowledge of the child in order that cumulative educative experiences would follow.[54] Accepting, from his own assertions in EE, that Dewey fully accepted the need for (amongst other things) learning as knowledge, therefore subject matter (Dewey, 1998), the question arises as to how this might be achieved without violating the avoidance of teaching subject matter which the child finds meaningless. Dewey made much of harnessing the power of the pupils' interests as a potential link between their past, and how these present an educative motive force for the present (Pring, 2007). It may be in this that imagination could bring life to material that students cannot, at that point, envisage as relevant to their needs but which skilled teacher intervention might make meaningful. The foundation of this lies in the concept of the child's existing fund of experiences. Where these are to hand it is

[54] A misinterpretation of his views on the value and importance of knowledge and its acquisition would lead to significant misunderstandings in 'progressive' classrooms in later decades.

probably in these foundation stones from which further experience may emerge if properly perceived and directed by the teacher. Initially these begin with the home, and to introduce – as the school is often seen to do – new material and experiences which are distinct from, or even alien to, existing experience, is to break the continuity on which growth depends. Since growth is the continuing development of the process of education, and in so far as education has a goal, continuous growth achieves it, not only is there discontinuity, the risk of mis-educative experiences through the introduction of unintelligible material, but also an opportunity is lost to advance the continuity of experience (the 'experiential continuum') (Dewey, 1998).

Harnessing interests, however, should not be seen as an automatic solution to the problem of subject matter since the issue is rather more complex than might at first appear. That the above sections on knowledge and understanding will be aided by enlisting the student's interest should be self-evident, interests here, described as 'the fairly settled dispositions which they have to notice, to pay attention to and to engage in some with certain sorts of things rather than others' (Wilson, 1971, p. 43) or 'His interest is what the child feels from time to time inclined to do attentively … What he finds interesting he does for its interest … not on any other account' (Wilson, 1971, p. 44). Unfortunately however, interests can neither be forced nor automatically aroused but in so far as there is a technique for engaging them as an active component, it lies in the generation of intrinsic motivation and its development through the recognition that, 'A child, and often an adult, cannot simply see what to do in the furtherance of his interest as though its cognitive and practical implications were written on it … He has to learn what these implications may be and the function of teachers is to help him to do so … and see something of its significance,' (Wilson, 1971, pp. 60-1). The problem lies in establishing what these interests are, recognising that even a long-standing interest may surface only intermittently, and accepting that they are likely to be different from the way in which an adult might view the same topic. The relationship between interests and motivation from this point of view is inescapable and could be claimed to verge on circularity. Interests imply arousal, arousal can be differentiated as emotions, and emotions can be defined as 'cognitively interpreted arousal' (Donajgrodsky, 1974). What does not appear to be developed by Dewey in P is the striking nature of imagination as an active component when a person is immersed in an interest where for Dewey

‘Imagination represents the subjective side of self-acting in its freedom [where] its forms are as various and numerous as the subjects who exercise it and as their interests’ (Dewey, 1890, p. 198). The implication here, that imagination on free reign is utterly elusive, is reasonable, but my point is that its power as a component of an interest is all-pervading and irresistible.

Interests and imagination, given this emotive mode of mutuality, become effectively congruent although the link between the two resists close analysis beyond the obvious – that it is difficult to conceive of an interest that would not imply emotion or generate imaginings. The question therefore, in practice, is not how to arouse interest but to show how subject matter might contain something in which the child might take an interest thereby harnessing imagination to the content of the topic of interest. One clear advantage of success in this endeavour is that, akin to ends-and-means, with interests, the imagination and the content become reciprocally stimulating and initiate an on-going cycle.[55] The potency which Dewey ascribes to interests as part of schooling, where they are to furnish the base from which to expand learning, therefore, remains largely misunderstood, because although the correlation between interest and intrinsic motivation is apparent, the correlation between motivation and imagination appears to remain invisible (though in reality, imagination could readily furnish the means of generating that motivation). This may, therefore, be an example of Dewey’s thinking which, whilst logically consistent with his philosophy, cannot readily be comprehensively integrated into a teacher’s practice. That, for Dewey, it flows uninterruptedly from the child’s home experience to her experience as a whole, and thence to growth and education cannot be gainsaid. The problem is the intersection of the desirable with the possible. Dewey gave examples in SS of how he achieved this in his laboratory school (Dewey, 1915). It is no denial of Dewey’s views and practice to say that the classroom conditions he enjoyed are generally unrepresentative of, certainly, typical state education at the beginning of the twenty-first century or, of FE. The challenge, therefore, is to see how much of a fundamentally coherent idea can be actualised in practice, in particular with 16 to 19 year-olds undertaking vocational training in

[55] For a more detailed and clear analysis (and punctuated with very amusing images) of both Interest and discipline than Dewey provides, but with similar conclusions, see *Interest and Discipline in Education* by P.S. Wilson (1971).

general FE. In principle, students enrol on a course of interest and promise to them.[56] In reality, a contemporary picture reflects very mixed links between college and extra-curricular activities. Where this is relevant to the interests of students and part of their existing experience, the way forward is eased. However, the ease or difficulty realistically encountered by tutors in amalgamating training with 'real' life may be difficult. Clearly, no universal procedure can apply. Since, not least for motivational reasons, such a link between interests and college would be beneficial to both the skills and educational dimensions of the student's time at college, a way forward must be sought. Exploring the practicalities of this problem, however, cannot be considered at this point as the focus here is on Dewey, other writers, education, and imagination. Once the theoretical foundations have been explored, Part III will suggest ways in which these can be acted on in practical terms in general.

Whilst interest may lend a clue as to subject matter and teacher insight (imagination) suggest ways forward, effort is invariably required to yield results. With intrinsic motivation, interest and imagination are the driving forces to continuity. But even in this situation, application and the recognition (conscious or unconscious) that this is important, are factors in learning. How application is maintained, therefore, becomes significant. Traditionally the teacher insisted on it and still does (although without the same punitive levels as once practised). In this context the word 'discipline' becomes unavoidable. The word 'discipline' invariably has negative connotations, but also has two facets – internal and external applications, that is, those emerging from intrinsic motivation, and those imposed by external authority. Teachers would generally prefer the former view of discipline, although circumstances limit opportunities. Dewey viewed discipline as ideally intrinsic to the productive pursuit of the process needed to achieve the end-in-view (that is, the provisional successful outcome planned for an experience; provisional as education is unending). For Dewey, conversely, failing to achieve one's end-in-view could be of itself sufficient a penalty to prompt further effort but, as proposed in DE, requires the guidance of the insightful teacher (Dewey, 1916). Failing a successful attempt to find and pursue the discipline

[56] Many have no experience before college of the practical skills they wish to learn. Enrolment is largely an act of faith accessible to evaluation only subsequently. In reality, this could be said of all education: it is nearly impossible to appreciate what it is worth until one has it.

internal to an activity through planning and insight and be guided by these impulses, external discipline will become inevitable.

It was shown in the section on ‘Interests’ how intrinsic motivation was integral to the activity, and how this generated high levels of imaginative response. Under these circumstances the pupil essentially becomes self-motivated, but remains under the teacher’s guidance, thereby effectively limiting the degree of freedom permitted to the pupil. The concept of freedom, therefore, in its relation to discipline, hinges on the approach taken in the pursuit of educational experiences and its consequences are a result, in a disciplined setting, of calculated (that is imagined) outcomes, moderated to allow maximum freedom of expression (or the product of activity steered by imagination) in line with sought outcomes.

Where discipline is not exercised, outcomes may be random and arbitrary, poor habits of attention and study may result, and what appears as freedom may be little more than submission to unconsidered impulses (Dewey, 1998). That these may be interesting and imaginatively entertaining to the child is not in dispute, but are not, in Dewey’s terms, educationally valuable. When integral to the activity, as, for example, in pursuit of an interest, the influence of the teacher, with her greater capacity to visualise potential avenues forward, may be needed to recognise that a longer-term view of the outcome may yield greater dividends than the gratification of immediate achievement, since in reality any ‘end’ marks, for Dewey, simply the beginning of the next stage of development. However, to postpone the gratification of immediate achievement (rather than leap to the most readily available outcome) requires self-discipline. Prompting this effort is justified where, (as the teacher can see more clearly than the pupil), a better outcome will emerge, and better progress made, as a result of encouraging further imaginative pursuit of the activity. Discipline, as such, is here internalised and not seen as oppressive or externally imposed. Indeed, the child may be completely unaware of it in any motivational sense, being fully engrossed in the activity.

Discipline, seen in this light, therefore, is not exclusively dependent on the intrinsic motivation generated by the subject matter since practicality and teacher guidance intervene. For a greater value of outcome, the imagination of both the pupil and teacher are contributory factors; the one in enjoying the activity and wishing it to

continue in imagined anticipation of further enjoyment, the other in planning the direction and potential consequences of guiding it whilst remaining mindful of the value of maintaining the pupil's absorption. That intrinsic motivation is preferable appears obvious, but this hinges on the prior topic of interest where this exists. This interest also needs to be refined to make workable, and then sometimes extended for greater, but deferred, value. Where Dewey began with the interest as a component of the child's life, it is not clear how to proceed where there is none or it is too trivial to yield development or falls outside the boundary of the acceptable. Where a continuum may be preferred, common observation suggests that new interests commonly arise or diminish without conspicuous loss to the individual. Further, that even when part of the child's pre-school environment, something or someone instigated the interest initially, suggesting perhaps that the source of the interest may be less important than the stimulus it provides. In which case, there is no fundamental detriment to it being introduced by the teacher, since interests have to be activated by something or someone, and is a reasonable supposition given the overall contribution that the teacher makes to the evolving educational programme. But faced with an absence of inherent enthusiasm for any topic, some ground rules have already been suggested (in part thanks to Wilson's explication of interests) in the section on interests above[57] where it will have been noted that attention was not focused on the content, but on a search for a mechanism to engage the child's imagination and therefore, simultaneously, her interest. It will also be apparent, given the close link between the pursuit of interests and the necessary discipline (whether spontaneous or generated by the teacher) to do so, that any implication of imagination will apply equally to both.

Accepting the coherence of Dewey's philosophy, and what one takes to be his ethical standing, he may be forgiven for occasional retreats into idealistic expectations of children's productivity based on, by current standards, limited data.

[57] What appears to be missing from both Dewey and Wilson is the idea, basic to learning theory, that one learns that to which one attends, but more importantly, that one becomes increasingly interested in that to which one attends. There appears to be a positive correlation between knowledge and understanding and interest. And interest, as proposed, implicates imagination. Much of schooling, in retrospect, has been found interesting provided that it was ultimately successful or better understood, although the initial response to the subject matter may have been markedly negative or even hostile, whilst admitting that rejection often followed failure with enduring negative memories and attitudes. Success and the personality of the teacher appear to be major keys.

Dewey must also be remembered in the context of his time. He was contributing to, possibly initiating, a scarcely developed philosophy of education from observation and analysis. Striving to make sense of what he observed filtered through logical reasoning and plausible assumption, it should come as no surprise that a topic seemingly as nebulous as imagination should be left aside when his analytical intuition led to an impasse. Also, the foregoing perhaps suggested that the exclusive preoccupation in Dewey's work was with what happened in school. As already drafted, school was only one part of the child's life; what she brought with her from home and other outside influences would often furnish the ground plan of what was to continue and often included (probably more so than today) real and useful practical activities and perhaps is a more direct topic than those so far abridged. One starting point was his observation from his laboratory school - officially known as the University Elementary School - (Pring, 2007) of the integral part activity played in the home lives of the pupils. Conspicuous in an agricultural background, but similarly evident in industrial-based families, physical work was a norm for many. Further, activity played a conspicuous part of early childhood, much of which we would identify as play but which in many households of Dewey's era was real. The child may have imagined it as playing at grown-ups or helping mother, but laying the table, feeding the hens, or running errands was real. This was the world she knew and the reality she brought into the classroom. In Dewey's rejection of dualism, and the resulting relationship between mind and body, or equally between cognition and activity, as inseparable, we see his way of imaginatively conceiving of human life. Activity therefore is a part of the human (perhaps more broadly, the animal) condition. That physical work came to be denigrated by the educational system is evidenced by the respective status of the academic and practical strands of the educational system. This could only have happened by the imaginative contrast of the believed-to-be desirable with the believed-to-be undesirable and the consequences of following one course rather than the other. The debates over 'parity of esteem' for example in the Kennedy Report (FEFC, 1997), can be laid at the door of social history, and in so doing, excluded much that could be readily deemed educative. The distinction between body and brain and here, as is beginning to become evident, between thinking and imagination is fundamentally flawed. Dewey sought to re-integrate these mistakenly separated views back into educational

thinking and practice. This study would ideally re-integrate education and vocational training in FE.

Where, outside of school, practical matters were integral to everyday life, particularly for the period contemporary with Dewey, their exclusion, for him, from school represented a conspicuous loss of educational experience partitioning the child's life into inside school and outside school where the life itself clearly occupied both. The issue was worsened, at that period, by the encroaching factory system which further led to loss of skill, and, importantly for Dewey, led to a decline in the social bonds which had held communities together (Pring, 2007). The problem became how to regain this valuable asset without resorting to artificial 'handicrafts' which lacked the reality Dewey sought. In his words, in SS, the aim was 'to bring the child to recognize … the need of procuring for himself practical and intellectual control … as will enable him to realize results for himself' (Dewey,1915, p. 66). Neither 'recognise' nor 'realize' are possible without the intervention of imagination in visualising the present or planning the future. One interpretation of this would resonate with modern thinking, that of the self-motivated and autonomous student. Activity also has the built-in cycle of 'do', 'consider', 're-do' (or practise), 're-evaluate,' and so on. It may be a new task, or practising an old one, it may be interesting or no more than a routine chore but always has a self-contained internal cycle of reflection which contributes to a spirit of independence and autonomy.

This knowledge of options can manifest itself in the distinction between 'knowing that' and 'knowing how' particularly where the distinction is not clear-cut.[58] The former is not a substitute for the latter. Indeed, were it possible, the latter would ideally precede as providing the necessary understanding through experience that would subsequently constitute propositional learning. This view remains defensible and applies fundamentally to all activities where body and mind are not so much separate as they appear to be in dualistic rhetoric, but where the brain activity controlling the physical is not amenable to consciousness, maintaining the integrity of the unitary being and the rejection of dualism. However, even for Dewey, school and home were losing the alignment he held to be valuable for the continuity he imagined them to hold in the life and experience of the child. In essence the context

[58] This idea which has now become widely accepted was first proposed by Ryle in 1945 published in 1946.

was changing and has changed greatly since his era. Where, therefore, much of Dewey's philosophy retains a logical structure which is internally stable and remains currently tenable, with its continuing dependence on imagination, context cannot be ignored. This can, accordingly, be factored into an interpretation of Dewey's philosophy provided it retains the logical underpinning which characterised his beliefs and where, if there is conflict, it can withstand analysis for its rationality. But rationality and imagination are awkward bedfellows, each having its own modus vivendi, co-existing only as expedient. That imaginative thinking is necessary for all aspects of his fundamental views on education will remain, even when the milieu in which it is practised has to accommodate changes over time. It will also be noted that had Dewey fully expanded the topic of imagination, he would have left little scope for expansion here.

It will be becoming clear that these aspects of education relate very much to how Dewey perceived education, since this dominated how it then might be pursued productively. Superficially, the topics could be interpreted as what, and how, to teach. In reality, they reflect much more fundamentally an imaginative schema supported by logic and a clear relationship and linkage between how schooling might escape traditional practice without losing the virtues which tradition provided, whilst operating from a fundamentally different philosophical basis (Dewey, 1998). The third cluster will consider some of the underlying factors influencing this stance, how Dewey was influenced by them, and how he incorporated them into his integrated panorama of educational evolution.

General Pragmatism, Science, Imagination, Thinking and Intelligence, Democracy and Social Control, Preparation for the Future

Dewey was a product of his generation, and the beliefs he ultimately came to hold developed from the theories to which he was exposed, by which he was most influenced, and which he then incorporated into his philosophy. As argued by Arthur Holmes (2015), Dewey became associated with the philosophical tradition of pragmatism, and with its regard for consequences, and therefore with concrete experience. He was influenced essentially by three views deriving from Darwin's theory of evolution interpreted as evolutionary naturalism. The first was experience

(including affective, social and cultural experience) where ‘problem situations’ needing prompt thinking which leads to the resolution of these. A second influence was ‘functional psychology’, deriving from bodily needs, where the organism, in attempting to adjust to its environment, experiments with different ideas (imagination) as part of which reason is an enabling mechanism, but where growth is not a steady developmental movement (as in a plant) but an on-going process with experience being incorporated into itself. The third view envisages any experience therefore as embodying something of prior experience and influencing the subsequent experience. This implies the rejection of a species with fixed outcomes. The enthusiasm with which Dewey embraced Darwin’s work, and how he allied this to the scientific method, strongly suggest how these theories must have been enormously liberating for him. They were sufficiently vivid to furnish both the rationale and the method for a radical re-examination of schooling and it must be clear that this could not have been possible without extensive recourse to thinking both in its logical and imaginative forms which were to underpin his writing. Within the scientific format adopted by Dewey, truth is not fixed, but rather represents the workability of an idea. For this he coined the phrase of ‘truth as warranted assertability’ (Archambault, 1964, xv). Values become idealised outcomes that emerge from problem situations in which pragmatically, ends cannot be separated from means since to do so would imply ideas with no foothold in action which is the purpose of solving the problem situation. This leads to a means-ends continuum leading to further means-ends continua, but which are not intrinsically either good or bad, but merely problem-solving devices. Values become involved in certain situations and are related how we solve problems whilst still achieving what we desire, that is, an instrumentalist ethic.

If this appears to imply that pragmatism can be interpreted as solely unrestrained self-interest, Dewey’s views on ethics, democracy and the application of his scientific method will firmly belie this interpretation (Pring, 2007). Science offers a system of hypothesis, testing and verification which could be applied to educational theory and procedure, and in this way is intimately connected to pragmatism. Further, in Dewey’s view science attaches great importance to ideas, since these are the basis of the hypotheses to be tested. Therefore, when faced with a problem, the solution is sought through a series of steps identified as reflective thought which can be

visualised as imaginative hypotheses evaluated through the lens of logic, that is, internally consistent sequencing. Scientific inquiry becomes a pathway to educative experience, and as an intelligent procedure it can become habitual. It has already been suggested how imagination is the linking medium in this chain of events. Within this, one aspect of imagination comes to the fore – that is in the formulation of potential solutions and the evaluation of these in terms of outcomes when engaged in problem-solving, itself often the driving mechanism for thought and one of the stages in thinking. That imagination for Dewey has other dimensions will be considered as a central concept driving this thesis. Thinking seriously was a means, allied to his attachment to scientific inquiry which prompted 'warranted assertability', demonstrating clarity. It played a major role in his analysis both for his own forward-thinking proposals and as a coherent rebuttal of the shortcomings of traditional education. It also was expected of teachers. An attribute of thinking is 'intelligence' a word recurring so frequently in his writing that it assumes significance but seemingly of such transparency that it receives little more than passing elaboration[59] and implying the imaginative consideration of the different possibilities inherent in a case. Any thinking devoid of imagination is difficult to envisage. Intelligent thinking without imagination could not provide answers.

However fundamentally implicit in the operation of schooling, democracy and social control are not generally overt educational preoccupations in contemporary society but for Dewey they weighed heavily in his scheme of things which were often influenced by the period in which he lived and social conditions at the time. The embeddedness of the concept of democracy in his writing and its position as the subject of a major work (Dewey, 1916) illuminates how live an issue this was for him.

[59] As to Dewey's use of the word, speculation must suffice. The initial supposition is that the word was in such everyday currency as to need no elaboration and that any reader will know what is meant because no arcane interpretation is intended. It is not used as a special attribute accessible only to the few but rather the straightforward ability and willingness to think about the issue under consideration and come to a sensible (another imprecise word) conclusion. The notable point is not what Dewey meant by the word but the frequency with which he used it as a large proportion of his writing demands the need to think, reflect, judge and only finally act on whatever conclusion is reached. Reflective thinking, that is, being intelligent, is so essential that he continually reminds the reader of this need through repeated use of this family of words. 'Using one's brains', whilst tautological, Dewey might have accepted as no more than a reasonable expectation of people with an interest in education.

That he did not have vibrant expectations of the benefits of democracy as projections of his imagination into the future, cannot be credited. However, it must also be argued that his vision of 'associated living' in DE (Dewey, 1916) was under threat following the depression of 1929 as examined in ION (Dewey, 1929) where he stridently criticises the course society was taking compared with the way he imagined it, which he believed would have been congenial to the overall population. That his expectations of democracy have fallen from an everyday view does not mean, however, that they no longer have any contribution to make, but that this contribution should be first recognised, subsequently evaluated for its currency, and adapted to contemporary need, that is filtered through the imagination to analyse the strengths and weakness of each component and devise possibilities for the satisfaction of each step. Since society and education are linked, the development of each reflects the nature of the other, therefore an abstract ideal of either fails to take account of reality but life is a social matter. That Dewey could imagine this overall view reflects his concept of how individuals and society related to each other for which he noted three factors: we are born into social groups; we have to adjust to other social groups, and we share a common language embedded in social norms and these influence large areas of adaptation, as related in ION (Dewey, 1929) that is, evolving experience within the culture of the society. When Dewey was writing, there was much immigration, with differing cultures and the need for adaptation, and mutual communication was socially important given the frequent hostilities between segments of the population. The school offered a setting for some resolution of this, and imagination provided a means of using education purposefully to mitigate this social problem, which he believed to be based on misunderstanding which schooling might rectify (Pring, 2007). Since growth meant expanding experiences, and the individual is immersed in society, the two become inseparable, bearing in mind that the school (or here, perhaps college) is an extension of society in miniature, where individuals can benefit from shared or collective insights with a potential for mutual enrichment.

It is clear, therefore, that Dewey's interpretation of democracy carries few of the political connotations which modern society would find difficult to avoid, but has much broader ramifications to do with socialisation both for society and its members, and hence for education and personal development. Social control therefore can be

seen as that complex of forces which not only adapts the behaviour of the individuals to the social or cultural norms, but also, as embodied in society, itself changes in response to adaptation. In a democratic society (in its generalised sense as instigated by the members of that society), it is not generally perceived as oppressive, hence both internal and external discipline is achieved in a manner which can be educative as purposive adaptation to the environment. But in societies such as the UK and the USA where the bulk of the wealth is owned by a small minority of the population with attendant power, perhaps the continuance of democracy can be best served on a small-scale level within groups (such as in FE) where at least in principle common goals are shared even if authority is not.

Tentative conclusions

It can now be seen that the breakdown above ultimately fails to do justice to the integrity of Dewey's philosophy of education written over a period of seventy years. The entire composite is intended to move forward coherently, and in that sense can be viewed as preparation for the future of the pupil, but not without clarification. The first point is that it is accumulation of worthwhile experiences that deliver the well-educated man or woman, and this takes place over time, and ideally continues throughout life. But the individual experiences are relevant to the student at the point of delivery. Dewey was very clear that lessons were not aimed at some remote future having no connection with the needs of the present. That all is aimed at the student means that the sequence of experiences, each relevant to the moment, accumulates in ever complex fashion contributing to the overall growth of the individual and this only happens when the teacher is alive to the individual and has the knowledge and insight to plan accordingly. Dewey imposes great demands on his teachers and encapsulates this very neatly:

> Preparation [for the future] means that a person, young or old, gets out of his present experience all that there is in it for him at the time in which he has it. When preparation is made the controlling end, the potentialities of the present are sacrificed to a suppositious future…We always live at the time we live … and by extracting the full meaning of each present experience are we prepared for doing the same thing in the future. This is the only preparation which in the long run amounts to anything (Dewey, 1998, pp. 50-1).

This survey of Dewey's philosophy of education was designed to show first the selected main themes, and second, how they related to each other and to the concept of imagination. One may posit that his misgivings about traditional practice prompted reflective thinking on, first, why he was dissatisfied, and then on what the shortcomings of the contemporary methodology were, before moving to a reworking of theory legitimated by evolutionary theory and structured by scientific method. This led, again reinforced by reflective thinking but combined with an imaginative landscape, to the production of alternative schemata. His analytical, as he saw it scientific, sequence resulted in the formulation of a new educational philosophy. It should be made clear, however, that the explications attempted here are my attempt to understand how Dewey's thinking emerged as cognitive processes, not as sociological phenomena. Dewey requires no apologia, and it is not suggested that any analysis is needed to defend his thinking, merely to elucidate it. With suitable adaptation to accommodate a different age-group and historical context, his spectrum of learning offers great promise for FE in its preoccupation with the twin pillars of student learning and teacher insight.

Acknowledging that, a further major purpose of the foregoing sections was to re-construct as plausibly as possible how Dewey may have harnessed imagination to link sequences of concepts in order to develop a seamless flow of rational models to sustain his convictions. If this has not been achieved, it would more likely reflect the limitations of this exercise than identify flaws in Dewey's work. How Dewey used imagination can no longer be reliably determined; in this reconstruction I have offered a systematic interpretation. Any direct access to Dewey as an exemplar therefore is not viable. That these interpretations of Dewey may be mistaken is a risk remaining to be assayed but other matters are more self-evident. First, the precision of argument in P (Dewey, 1890) where imagination represents a stage in thinking does not offer useful prospects of transfer to FE, since the process by which students think is rarely accessible to the teacher and is not readily susceptible to influence as a process (that their conclusions may be arguable is a separate matter). A second limitation is the fusion of realism with imagination applicable to children. How this could be interpreted in action with adolescents and young people (if at all) is far from clear. Whilst it may lend insights to early years practitioners, adaptation to vocational training must remain elusive. The search for imagination in Dewey was to

provide a platform for use in vocational training in order to enhance its educational value. It has become clear that this objective has only partially been fulfilled. The supposition that imagination can be considered as thinking in a different form, however, represents an important advance not least since this view renders irrelevant any need for precision of definition, which as already shown, was, if not fruitless, at best nebulous. This flexibility promises great scope for needed individual variation. The search within Dewey, therefore, whilst only partially successful, did yield a major advance, leaving further advances to be sought in other sources.

Summary

It would be useful to summarise what we have established so far from my reading and interpretation of Dewey. Two questions pose themselves: 'Which parts do I accept as convincing?' and 'Which parts of Dewey's thinking might inform practice in education?' The two will overlap but may not prove synonymous as some ideas may seem wholly laudable but be impossible to implement. This, of course, goes against the mandate of Dewey's work about selectivity (Pring, 2007) but may prove unavoidable. The main point is that although his work yielded many useful views on education (although more restricted on imagination,) the reality is that where he left off I (and others) can continue. It might help therefore if we attempted some summary of what he achieved and what remains to explore further. The traditional list of 'Strengths and Weaknesses' is too sharply defined to do him justice, therefore I have marginally re-named these views of his work.

Strengths of Dewey's Arguments

Let us first turn to his philosophy of education beginning with the obvious by asking, 'What can be used?' We can accept that most of Dewey's 'themes' remain current and relevant although the question of the importance of the student's background and Dewey's ideas on democracy need consideration. Essentially, it is not immediately obvious that anything on Dewey's views on education need irrevocably be set aside. Some modifications will be required, and these will be discussed in due course in relation to general theory, and to vocational training in general FE.

Therefore, the question turns to, ‘What can be used?’ Practical work; aims; ends and means; experience; growth; ethics; discipline; some aspects of subject matter; and interests. In addition, some extensions including transfer of training, habits (selectively), motivation; and preparation for the future.

Given this positive appraisal, it would be unduly optimistic, however, to assume that his work was without its critics. Whilst this is not the place to consider the justice of these in more than outline, they should at least be acknowledged since his supporters have been freely cited. The most strident appear in neo-liberalist responses in the UK (Pring, 2007) but are motivated by political priorities. Criticism based on philosophical argument is more muted and narrowly focused. Bertrand Russell appeared to find Dewey’s acceptance of ‘the substitution of ‘inquiry’ for truth … simply not acceptable’ (Pring, 2007, p. 2) but otherwise recognised the high esteem in which Dewey was held. R.S. Peters regarded Dewey’s concept of ‘aims’ as incomplete, but generally accepted most of his overall views on education (Peters, 1973). Richard Rorty appears to have updated pragmatism for later generations (Rorty, 1991), whilst Hilary Putnam wished to remodel Deweyan democracy as one, amongst others, of his concerns (Putnam, 1991). Jerome Bruner was at one with Dewey on many points but sought to advance Dewey’s thinking (Young, 1972). Notably, in the sense of being rare to confront Dewey directly, is Kieran Egan (2002). It is not clear from my reading that many other major recent philosophers found fundamental flaws in Dewey’s philosophy of education.

Turning to Dewey’s analysis of imagination, the matter is both less clear and less precise. His main interest appears to be in its usefulness as an aid to problem-solving. This seems clear and legitimate, but there are (reasonably enough) certain avenues not developed by him but we can find complements elsewhere which can take his thinking forward. Imagination is not a separate capacity, but a different way of thinking which can be (but need not be) freed from the constraints of reality. Although Dewey never appeared to say this explicitly, it would probably be reasonable to believe he came close to this view. For example, Dewey writes in HWT: ‘The teacher … should rid himself of the notion that “thinking” is a single, unalterable faculty; that he should recognise that it is a term denoting the various ways in which things acquire significance’ (Dewey,1910, pp. 38-9) or picturesquely,

‘It does not pay to tether one’s thoughts to the post of use with too short a rope,’ (Dewey, 1910, p. 139) or perhaps as conclusively as one is going to find:

> [Imagination’s] forms are as various as and numerous as the subjects who exercise it, and as their interests. For this reason, it is impossible to lay down rules for the working of the imagination. Its very essence is spontaneous, unfettered play, controlled only by the interests, the emotions, and aspirations, of the self. Imagination represents the subjective side of self acting in its freedom (Dewey, 1890, p. 198).

Bearing in mind that in Psychology [P] (Dewey,1890) from which this last quotation is drawn, imagination is characterised as a stage of knowledge or knowing, supposition might suggest that perhaps he could not come to an understanding of it which fully satisfied his search for clarity, or that it only partly fitted into his view of pragmatism hence the prevarication, hence no definitive definition.

It is easy, in accepting Dewey’s conclusions, to forget that these are not arbitrary. In the foundations of Dewey’s thinking, is the philosophy of Pragmatism, first propounded by Charles Sanders Peirce (1839–1914) and supported by William James (1842–1910). Pragmatism as initially conceived was a philosophy which accepted the concept that philosophical disputes could reasonably be solved by reference to the consequences provoked by decision or action (Holmes, 2015). This implies the primacy of action over thought, of doing over simply thinking. What resulted represented ‘truth’ in the sense of furnishing a workable consequence of reflective thinking in situations where certainties could not be established. In evolutionary terms this can be considered as realism ranging from the prudence of avoidance to the risk of opportunism. But for Dewey the evolutionary principle for humans resulted in experiences of an on-going nature where people are seen as organic processes rather than substances, in contrast to classical dualism which distinguished body from mind. Where actions are invariably prompted by emotions, the dominant feature for humans then becomes attitude, that is, a largely continuous affective frame of mind rather than a piecemeal response to a succession of situations. But lest this attitude is misunderstood, this was not a justification for unrestrained self-interest for Dewey, since his broad concept of democracy as ‘associated living’ (Dewey, 1916, p. 50) was integrated with a system of ethics. Pring

expressed Dewey's idea of democracy in terms which can be seen to readily relate to both the modern era and to FE:

> What constitutes a community would seem to be, for Dewey, not sameness of opinion but reciprocal respect, some shared values and the readiness to listen to and to learn from others (Pring, 2007, p. 116).

However, pursuing the main thread, a limitation of pragmatism's preoccupation with outcome is that Dewey appears not to link pragmatism and imagination to extend into other cognitive operations including daydreaming, idle speculation, humour, fun, entertainment, together with other non-solving-problem situations what are common currency in everyday life. We can only speculate on why he did not pursue this line: for example, there were other issues of more lively interest; these areas were less obviously 'pragmatically' useful to educative learning in Dewey's era; they were too diffuse to yield to precise analysis and so on. But the outcome here is that thanks to his circumscribing the topic, we may have an opportunity to open it up to further educational investigation and advantage by venturing into the areas he left unexplored.

Limitations of Dewey's Idea of Imagination

For reasons which have been presumed above, Dewey did not significantly expand his views on 'fancy' (fantasy, daydreaming) as something that might be used by teachers, or as entertainment. A suggestion might be that this was not, to him, obviously educative or controllable - as quoted above - and that either Dewey was so tied to the palpable effects of pragmatism and the role of imagination in problem-solving that he was either impotent when confronted by the frivolous, or consciously considered it beyond his remit. Further, in his search for precision, ends and means for Dewey are congruent. I argue that in a genuine problem situation they become congruent only after being initiated: the end would come before the means: 'I need a car. How can I get one?', whereas in imagined situations the converse is equally plausible: 'I have this money; what shall I spend it on?' It is only an ersatz problem in that there is no real necessity to actually spend the money at all. It rather appears as though Dewey's primary concern was with problem-solving as would be relevant to people's lives but that he was not overly concerned with imagination in its other forms. To be clear – this represents no criticism of Dewey for not providing a

comprehensive psychological analysis of the whole panorama of imagination in all its complexity but does leave room for further investigation.

In problem-solving situations, however, imagination and the response evoked cannot be directly linked, as imagination (the hypothetical responses) cannot influence which of those available to the reagent (or one not even foreseen) actually happens. This is dependent on the reaction provoked which becomes an item of knowledge, that is, learning or further experience. The exception is where the solution is available internally via thinking or memory (that is, through the use of funded knowledge or prior experience) and is not dependent on external verification, but rather on the imaginative use of the resources already available. This latter aspect of imagination is easily recognised and important to contemporary education (and must have been throughout formal education) where inference, speculation, logic, and 'thinking for oneself' (*pace*, Dewey) is believed to be good practice. On the other hand, collaborative learning is widely accepted as having the advantage of embracing the variety of student thought, is considered (probably with justice) as encouraging habits of individual contribution, whilst freeing the teacher from the impossibility of foreseeing every permutation. Ironically, in a group exercise, it can then feed back into the cycle of problem-solving from which it appears to be an escapee, by expanding hypothetical variations. This, however, may not have been important if D'Agnese's (2017, p. 76) insight is correct that Dewey no longer was interested in 'philosophy as analytical thinking [but] as pragmatic transactionalism', and may be a factor in why he did not consider elaborating on his own use of imagination. But from the point of view of pragmatism, risks (of erroneous thinking or refusal by students to accept the teacher's lead), are inescapable when developing hypotheses as potential solutions. D'Agnese believes that Dewey was fully aware of the risks involved in the outcomes of thinking as 'we are already embedded in the world' and our thinking is 'grounded in the wider field of experience' (D'Agnese, 2017, p. 75) with the implication that because the teacher takes risks in encouraging this approach, courage is needed since the outcome may not be positive (D'Agnese, 2018).

The important implications here are that perceived options are embedded in the students' backgrounds and the context of experience which Dewey described as 'situations'. Hildebrand (2018, p. 291) describes 'situations' as 'episodes', which include the surrounding circumstances and attributes of the developing experience which will influence both the nature of the experience for the student, and that will have implications for teaching. This viewpoint also reminds us that the obvious is so easily overlooked – that the student does not arrive in college as a *tabula rasa* awaiting the teacher's inscription, but already has an established repertoire of assumptions, preferences, values, beliefs and prejudices. 'Situations' more realistically describe the complexity of the variables in the learning situation for the individual student. However, they introduce factors often beyond the teacher's knowledge or control and in this sense 'situations' differ from my concept of context which is broader and includes the emotional ambiance. Whilst acknowledging Dewey's deeper insight into the intricacies of learning, any detailed attempt by the teacher to unravel the finer points needed for understanding any specific 'situation' becomes a task of hopelessly diminishing returns.

A further problem given the focus of this study, is that Dewey's philosophy is based on children and not on FE students, such that it becomes my responsibility to establish the extent to which it informs work with 16 to19 year-olds in vocational training. That students joining a class engaged in vocational training implicitly opted for 'knowing how' seems clear, and whilst the associated 'knowing that' component of their chosen occupation cannot be ignored, the practical aspects of training may appear more congenial to them. I would suggest two main reasons for this. First, formal schooling at which they did not achieve in ways that are valued by government targets or league tables remain too reminiscent of the negative aspects of school. Secondly, many wish to do something practical where an end product is tangible. (A frequent complaint particularly for maths hinges on, 'When am I ever going to use this?' (Caffrey, 2016).[60] If the methods of formal education may not have been the ideal modes of learning in school, a combination of practical tuition

[60] This is evidenced by my 2016 M.A. (Ed.) dissertation based on one college where there is no obvious reason to believe that the attitude of its students is unduly skewed, having taught maths in three FE colleges.

(augmented by technical training) and underpinned by theoretical knowledge may be more successful for the students under consideration (Piaget and Inhelder, 1958).

Ryle's (1946) basic division into Knowing What and Knowing How, Winch (2017) usefully supplements with 'Knowing Wh', that is, What, When, Where and How. These are important elements of knowledge, particularly as they apply to skill acquisition and more importantly perhaps for the evaluation of skills in real life even though these 'hidden' factors are not identified in the specifications which define the task in formal assessment. A more reliable assessment regime for overall competence would demand knowledge by the tutor of individual students' strengths and weaknesses over a much broader front (Lum, 2017), where the assessor is concerned primarily with the specifications leading to certification. Again, we note an echo of Dewey's concern that the teacher is alive to her students' characteristics.

On a more theoretical level, what can also be seen here is the cautious move towards Jean Piaget's stage of formal operations, (Piaget, 1952; Piaget and Inhelder, 1958) whilst remaining largely engaged with the prior stage of concrete operations. What appears not to be widely reinforced in the literature on child development is that whilst Piaget's stages are identifiable, they should not be interpreted as phases insulated from each other but flexible and that reversion is common between levels and that each stage forms part of an accumulating pattern of overall development with continuing back and forth movement between them as needed at particular moments or for particular needs, making available a repertoire of responses and techniques. This flux of maturation has cognitive implications for learning, aspects of which Winch identified when he added to Ryle's (1946) distinction of Knowing That and Knowing How by adding Knowing Wh. Knowing with its ill-defined relationship to understanding will now be considered from a different point of view.

Since education sets out to develop knowledge and understanding, Dewey's concept of how the teacher moved the student from knowledge to understanding is important. We have already noted his thorough dislike of the teaching of material meaningless to the child (Dewey, 1998). It is probably a realistic comment that for propositional knowledge, the teacher often attempts to attune the student to the teacher's way of thinking. From Dewey's point of view, to engender understanding (rather than just

knowledge), the teacher must find a way of attuning her thinking to that of the student in order to provide the necessary cognitive links or emotive resonance needed for the student's thinking to be in accord with that of the teacher. This represents what might be considered a reversal of normal practice. Put simply, the teacher in common practice tries to convey what is in her head to the student's head. For Dewey, if this were to be educatively successful, the teacher needed to see the situation from 'inside' the pupil's head and respond from that perspective, and this is no mean feat of imagination. If achieved, the network of related data yielded exponential dividends.

For all this idealised aspiration, the fact remains that this challenge contains an element of difficulty to be overcome by teachers in FE, where many students enrol on vocational training often with little practical experience and only elementary background knowledge of the chosen occupation. In principle, this lack of real knowledge might entail problems for the teacher where the established interests and bias of the student are challenged (D'Agnese, 2017). There is also the risk of resistance (D'Agnese, 2018) since, 'we are already embedded in the world' and our thinking is 'grounded in the wider field of experience' (D'Agnese, 2017, p. 75). It is a reasonable surmise that these belief and value systems are counterbalanced by an act of faith on the part of the student that she will receive the training she wants, having internalised over her years in school an unconscious acceptance of the credibility of the teacher's role. Compared with the study of more 'academic' subjects where purpose and utility can be far from self-evident, vocational training is comparatively 'safe' for both teacher and student, since it was deliberately chosen as promising interest and possibly a career, and with a strong practical element. Evidence of achievement is also more apparent as theory is covered in defined units and increasing practical competence is readily apparent to the student whether in workshop or placement.

Having considered the background factors, there are three areas which can now be further considered:

(i) Limitations of Dewey's concept of the imagination

Dewey's primary concern was with imagination within a pragmatic framework focused on problem-solving where it is used to develop hypothetical solutions to problems which can be internally rehearsed as low-risk alternatives to immediate and unconsidered direct action. Therefore, it appears that whilst Dewey's examination of imagination well served his purpose in analysing problem-solving, his preoccupation with pragmatism limited his further detailed analysis of imagination. It is the purpose of this research to demonstrate how imagination can now be extended into areas Dewey did not explore to the benefit of students undergoing vocational training in general FE.

(ii) The need to extend Dewey's work on the imagination

One crucial area of imagination which Dewey did not develop included that aspect which he termed 'fancy'. Fancy we can interpret as that indeterminate mode of thinking which embraces daydreaming, wool-gathering, fantasy, lateral thinking, and seemingly purposeless whimsy. This type of thinking or imagination may or may not be related to problem-solving. It may or may not have a foundation in reality. It may or may not involve discipline or logic. What it does offer is both the breadth and flexibility to extend thinking in any direction with or without restraint, providing unlimited opportunities for innovation. And importantly here, it can be harnessed selectively as an effective 'mechanism' to add educational value to vocational training with 16 to19 year-olds.

(iii) From Dewey to Hofstadter

However, because Dewey did not pursue imagination as it manifests itself in this amorphous form, we are free to look for insights elsewhere, and this presents an opportunity to develop imagination further. A valuable source is to be found in the work (amongst others) of Douglas Hofstadter on categories and analogy which will be considered in the following Chapter. These offer imaginary and imaginative models of cognitive structures which can serve as pedagogical foundations for helping students learn to engage more fully with their own thinking, and therefore

more broadly with the world. Having noted which features of Dewey's work are relevant here, as reflecting aspects of his philosophy of education, and his (incomplete) analysis of imagination and its usefulness to education, attention now turns to how learning can be organised coherently. Dewey may indicate what is *worth* learning, but *how* this may organised in a coherent fashion is next examined using a model for cognitive structuring and expansion developed by Douglas Hofstadter. But the link will become clear:

> An ideally perfect knowledge would represent such a network of interconnections that any past experience would offer a point of advantage from which to get at the problem presented in a new experience (Dewey, (1916, p. 185).

As will be seen, Dewey could hardly have written (albeit ninety years earlier), a more perfect description of Hofstadter's categories. There should be no doubt that the two ineluctably reflect each other.

Chapter 5

From Dewey to Hofstadter: Introduction

The overall aim of this research is to argue that vocational training can be used as a springboard to greater educational value through the intervention of imagination as a catalyst to expand knowledge and understanding, and that this is a justifiable aspiration. I have argued that Dewey's philosophy of education remains valid, and that the precepts he espoused continue to be relevant. Whilst accepting that his work on imagination is articulately presented for the limited number of topics he analysed where imagination was central, I suggest that his exploration of imagination can be extended into areas he did not investigate. Whist he shows clearly how imagination applies to problem-solving (Dewey, 1910), and how it can be seen as a stage in the construction of knowledge (Dewey, 1890), he does not venture into the less precisely identified areas of daydreaming, wool-gathering, fantasy creation, and aimless speculation, nor to the manner in which the imagination can freely move between all of these different manifestations. I have shown how imagination in all its forms represents an alternative view of thinking which can provide a method of moving forward the education of students in vocational training.

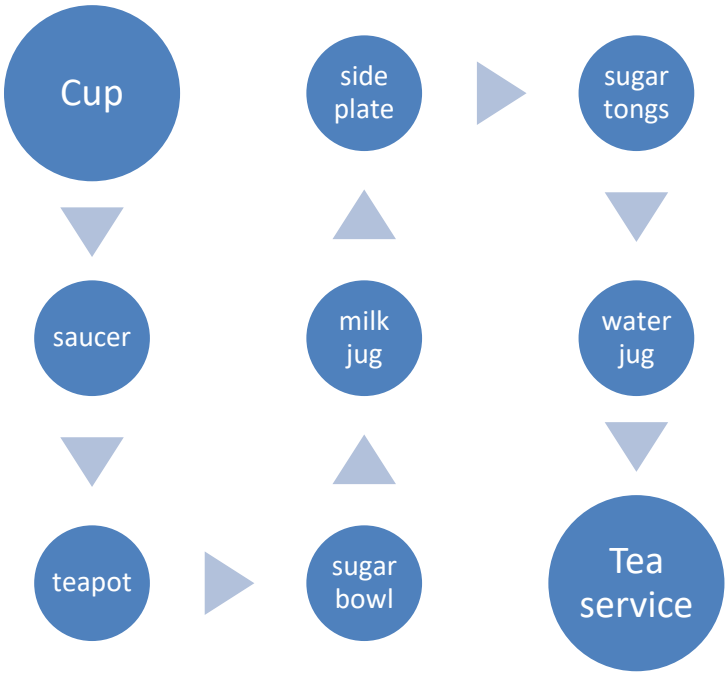
My argument, therefore, takes up imagination where Dewey left off, and will develop it further. For convenience, thinking and subject matter can temporarily be conceived of as separate in the dualistic tradition, but this is purely a matter of expediency, since body and mind are obviously unified (Dewey,1916; Lakoff, 2015)**.** If, therefore, the imagination supplies the thinking half of the equation, the subject matter supplies the content. Given the numerous ways in which knowledge has been catalogued and organised from arcane taxonomies to the specifications of the National Awarding Bodies, I now propose how one may regard subject matter from a viewpoint which begins with a student's existing knowledge. This view, given the end aim of these proposals, evolves more broadly than a rigid adherence to vocational training would nominally require, taking into account individual aptitudes and interests through the concept and use of 'categories' and other cognitive schema. The coalescence of imagination and information (categories) will then serve as a platform for extended

educational value and forms the foundation of some pedagogical applications in Part III. However, a cautionary note needs to be introduced right at the beginning for the benefit of the reader. The terms ‘category’, ‘bubbles’, ‘analogy’, ‘compression’ and ‘frames’ will be introduced into the discussion below and occur repeatedly. These are important terms contributing to a fuller picture of how I will argue that knowledge can be organised. Unfortunately, it is impossible to cover all simultaneously, although I will introduce them under sub-headings at a point relevant to the development of the exposition. Their introduction inevitably is therefore staggered, and it is suggested that the reader resists too rigid an initial interpretation as it is important that they are not confused. How the imagination is implicit in these ideas will be dealt with subsequently but the present fundamental for our purposes is the concept of ‘category’ and how it and related concepts relate to and help to develop the themes undertaken here.

***

Categories

A category is a component or a group of linked ideas or concepts. In its simplest form it could be seen as a noun, for example, ‘a cup’. Generally, however, one element of a category or a datum, seen by itself, is self-contained. The importance begins when we link data together, here, continuing the example, ‘cup, saucer, spoon, teapot, milk jug, sugar bowl’ and so on (see Figure 1 below for a diagrammatic representation of the concept of categories). The link we call association and is made possible by analogy: that recognition between two items of sufficient similarity of features to make them compatible in some way. Although, therefore, the above is a very basic example, which could further be grouped as ‘tea service’, it will be shown that categories can be significantly more varied than a list of nouns, and it is their flexibility which makes them of interest here.



(Figure 1)

The theory underlying categories and associated concepts has been developed by an American cognitive scientist, Douglas Hofstadter (1945-) working at Indiana University. Hofstadter's career spans mathematics, physics, and cognitive science. He has a long-standing interest in language and its relationship to thinking, including an elaboration of categories, and the significance of analogy as crucial to cognition, which is that aspect of his varied work of most relevance here about which he has written several works, and on which he has lectured widely.

Hofstadter's (Hofstadter and Sander, 2013) ideas on 'categories' are both interesting and useful. At their simplest they are 'strings' of associated concepts or ideas, as suggested above, but as will become evident, their potential for thinking about pedagogy in FE is considerable. Essentially, anything can be a category: nouns, adjectives, tunes and so on. There may even be (although it is difficult to conceive of one), a category containing only one idea. The components of categories are linked: for example, people: 'men, women, families, children, schools' and so on. They can expand in any direction forming a huge network of connected ideas. The connection to the observer may not be self-evident, but it is there somewhere, or could not be made. This system enables humans to form extensive patterns of related concepts. This works from our existing knowledge base and readily expands our ability to relate concepts to each other (certainly a component, perhaps the whole, depending

on degree of understanding) and clearly operates by using imagination as that function which enables similarities to be apprehended. There are likely to be similarities between the patterns of individuals for cultural reasons, but all individuals will be capable of building a complex network that is distinctive. Neither the person nor the pattern is, in that sense, entirely dependent on others, which offers great diversity, and choice becomes available to the group as a whole. This expands opportunities, amongst other things, for collaborative problem-solving, or perhaps as Dewey (1998) would see it, as contributory to the ultimate cohesion of the community. We use this idea on a limited basis for brain-storming or bubblegrams, but in these cases the network does not expand either in unlimited fashion, nor exponentially as with personal 'categories'.

Categories, however, akin to the analogies which make them possible, need not be precise classifications, and may both be graded in significance and blurred as regards similarity of detail. The manner in which categories relate to each other is by analogy, and this can be conceived of as the imagination recognising patterns of similarities between ostensibly different concepts. The importance here, as will be repeated, is that each individual has a personal network of categories representing his or her total aggregate of knowledge. The word 'total' has greater significance than might initially be recognised in that much knowledge is memory-based. It follows, then, that not only do students draw on past learning, but are also capable of imaginative projections into the future, giving a broader compass of 'knowledge' than the mere recitation of facts. Much will be irrelevant to particular courses in a college, but those areas representing vocational knowledge will be the starting points for expansion. Important therefore that categories are as representing data or units of knowledge, it is the process of joining these which contributes – I suggest – much to the concept of the educated person.

Having outlined in the simplest terms possible the concept of categories, a more developed example can now be considered. Before this, however, a concession needs to be made to convention: philosophical writing is generally (although not exclusively) presented in written form. Conveying the concepts here will initially benefit from the use of images. The advantages, I suggest, are self-evident. The graphic chosen here is the map of the London Underground (Figure 2). The map, more properly a diagram modelled on electrical circuits, was first produced by Harry

Beck in 1931. He sold it to the Underground Electric Railways Company of London (UERL) for £10, and it was brought into use with refinements in 1933. The image shown here (below) is part of a now more familiar modern version. Although it will be obvious that no one graphic can do full justice to a complex model, since in this case both the graphic and the unspecified categories envisioned are both metaphors, the image of the London underground network (see Figure 2 below) also represents a visually helpful starting point as a representation of categories. That it is imperfect is inevitable since, for example, in the majority of cases, there is no single link between every station of the network. Nor does it indicate those routes in most demand. And, inconveniently, it is two-dimensional. There will be other shortcomings, but the virtues outweigh the limitations. Although graphically represented as lines, the connotations with chains and links is too forceful to ignore and will periodically occur in the text.

In essence, each station on the tube map represents a category. What that category is chosen to represent is entirely at the reader's preference, but for convenience let us continue with 'cup' as represented by the visually most central station, Holborn. The list: 'cup, saucer, spoon, milk jug, sugar bowl' as discussed above might follow the underground line in one direction, each item being the next station in sequence. Starting again at Holborn as 'cup', the line might equally travel in the opposite direction as 'cup, mug, beaker, glass' and so on. It can be seen that the first group represents a table setting, the second, drinking vessels. Both began with 'cup', but evolved along different sequences, but all are coherently linked to the others as extensions of the initial idea 'cup'. Equally the extensions might have gone North and South instead of, or as well as, East and West, resulting in further chains of cup: 'bone china, utility, Blackpool kitsch, potter's vernacular,' denoting the design types, quality or value of the cup. Although, therefore, it may not be immediately apparent how two items are linked if the two words were given in isolation, this schema makes clear at least one route (of countless alternatives) which plausibly connects them. The phrase 'of countless alternatives' neatly summarises how variable may be the 'route' chosen to connect two distant stations or concepts. The triumph of the system is that any station on the map can connect to any other station by any route whatsoever, providing only that the starting point leads ultimately to the chosen destination.

Figure 2[61]

Although initially it appears that the map is complex, it can now be seen that it is essentially fool-proof and negotiable, as millions of commuters find every day, because of its inherent sequencing. Mistakes, should they occur, are rectifiable either by re-tracing one's steps or by adopting a corrective route. As a metaphor for an individual's knowledge, its appropriateness can be seen. As a model for the potential complexity of thinking, it is both useful and navigable. Regrettably, the complexity is inescapable as the following variants in interpreting the model will indicate. They have been enumerated below not (except incidentally) to emphasise complexity, but rather to demonstrate the flexibility and scope for expansion of this way of seeing concept formation. The advantage is the freedom afforded to passengers (a metaphor for students) in finding ways to reach their destinations or, continuing the metaphor, for students to enhance their learning. Learning can be straightforward or complex, and it is not necessarily within the gift of the teachers to decide (would that they could) which response will ensue. The map is given, the destination is suggested. The route taken will reflect an individual student's

[61] Adapted from: https://i2-prod.mylondon.news/incoming/article23149224.ece/ALTERNATES/s810/0_Tunnel-Tube-map.jpg

response, hence the potential for much individual interpretation of options, opinions, and knowledge expansion.

The following represent some of the ways this image can reflect the ‘association’ of the components of categories, and some general characteristics are worth noting as indicators of interchangeability. Visually the list may appear daunting, but in reality, it does no more than articulate what everyone already knows and takes for granted, about the underground. The only difference is that normally people do not consciously describe it as a list of separate parts of the whole complex:

1. Routes may begin anywhere and end anywhere.
2. They can run in either direction.
3. They can change direction as needed.
4. They can cross each other.
5, They can form loops.
6. Detours can be used to circumvent obstacles.
7. They can run together for part of their course before diverging.
8. They are not necessarily committed to any pre-determined pathway.
9. Some routes are more important, habitually used, and more direct or easy to navigate than others.
10. At the outset there may be no readily perceivable destination.
11. Some routes terminate abruptly.
12. The most direct route need not be the one taken.
13. Routes can run in parallel without converging where potential alternatives may be convenient.
14. Routes can be directly linked.
15. The complexity of a route and the time taken to traverse it may not correlate to its importance.
16. Stations can be viewed as points where the direction of the sequence is changed.
17. Stations can be viewed as clusters of family concepts, either as grouped relations, or as nested inside larger constructs. (This idea is expanded later as ‘Bubbles’).

18. Some stations may be more significant than others.
19. Intermediate stations may be ignored where of secondary significance to the main route or purpose.

It is largely the huge difference in scale and scope which makes categories useful for mapping knowledge and offers humans alternatives vastly in excess of those available to other animals, but which could not operate without imagination. Imagination identifies which related characteristics are relevant to the thread being constructed. In a more general sense, this has been known to psychologists for some time as ‘affect’ in language selection (Spiteri and Pecoskie, 2018) and arguably, intuitively, to writers, speakers, and advertisers for decades as ‘association’ or ‘connotation’.

However, it needs to be noted that the above, for all that it appears elaborate, is little more than how the word ‘category’ might be used in everyday speech, but its proposed use here is significantly more sophisticated. Some of these elaborations now need to be outlined in order that, by Part III, the variety and flexibility of categories may be utilised. Some background will help here. The term ‘association’ is established in common usage, but how concepts or ideas arise in the first instance needs to be clarified. Knowledge we probably derive originally from the environment (including the humans in it) as sensory stimuli which we need to cognitively process rapidly. Units of information are then integrated. Unfortunately, the brain has limitations regarding the amount and speed of processing capacity (Beck, 2016). The development of categories and other models may be mechanisms for accommodating these limitations, or it may be the most efficient way of using what little information is available. In other words, it may be an adaptive capacity to compensate for neurological limitations. Other mechanisms also exist for the organisation of information which will be discussed subsequently. Neuroscience will, no doubt, in due course, be able to add to our understanding of these operations from which I have borrowed the word ‘plasticity’ (Boyd, 2015) which I use here, somewhat loosely perhaps, as similar to flexibility or elasticity. Regrettably, the increasingly productive source of information from neuroscience on how the brain works is extraneous to the matter in hand, although allusions to it will prove inevitable.

As one example of the limitations of sensory perception, we might cite vision, which, is encapsulated in the classic demonstration of reaching an arm out at full stretch with the thumb upright. The only part of the visual field which can be focused on with precision is the nail.[62] This is not of course how vision works for obvious reasons, hence scanning where the *Gestalt* explanation operates for efficiency. In other words, we are incapable of assimilating more than a very small amount of information at any time (the working memory is a clear example of this) but have evolved mechanisms to compensate for this shortcoming.

Returning to the production of categories, and how elastic or plastic they can be, a popular party-game derivative is for players to suggest words in turn which have no relationship to the preceding word. For the concept of categories this presents no problem: one simply develops a further category where components do not relate to each other. However, the word-association variant does raise the question as to how far one can have categories without recourse to language. I can visualise a series of geometric shapes but excluding the name of each beyond early childhood whilst visualising each is, I suggest, very difficult, and only occurs when made a deliberate condition of the exercise. Language is therefore intimately allied to concept formation, development, and use, but need not be examined in detail here (Egan, 2002). However, it needs to be understood that categories can exist as whole sentences or other relatively complex combinations of language. Three examples will suffice: officially worded clauses in legislation, jokes, and nursery rhymes.

Although categories represent data, one arguably conceptual (arbitrary and certainly disputable) distinction between categories and knowledge is the quantity of necessary information. The distinction may, in fact, be purely a matter of language use, as it is not clear that distinguishing between them could be a precise matter. It is convenient however to retain the words as they are established in the vocabulary. Both categories and knowledge can be very extensive, but categories here basically require only the minimal content or understanding, or ‘knowledge of’ as synonymous with ‘merely having heard of’, whereas ‘knowledge’ as fact about which one can reasonably claim to know something implies some understanding of the subject

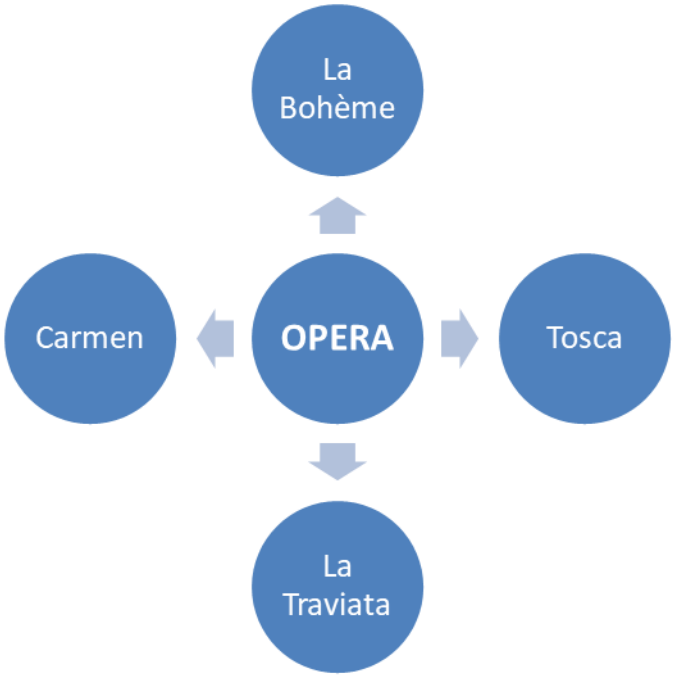
[62] A question might therefore be: how long would it take to scan (in focus) the entire visual field? I have calculated this very approximately as an hour and a half.

matter. For a category to exist, often a nametag will suffice (‘relativity’ or ‘existentialism’ or ‘black holes’, for example).

Categories, as we have seen, link the existing to other extant objects, and are internal to the individual, but the links could be deemed arbitrary in that other choices would form networks of commensurate value. Further, categories can go in numerous directions as indicated above: not merely that of following a series of related concepts, but rather of creating a series of hitherto unrelated concepts. This is a strength that Part III will explore in some depth. From the logical perspective, anomalies might appear problematic to categories, but in in fact are readily assimilated into the structure. An anomaly is a connection between A and B that nominally should be disallowed. Seemingly misplaced or not, the connection has been made. Anomalies can be categories and exist, if the chain accommodates them, even within otherwise logically structured sequences.

Bubbles

Elaborating the model, categories need not operate exclusively as simple chains; indeed, to conceive of them exclusively as such would diminish their huge versatility since they can represent any grouping. For example, they can form clusters which are convenient and economical. To borrow a topical word: ‘bubbles’ for example, I might think of ballet dancers, or within ballet dancers, a further group from a particular production: or male dancers. Or again, famous operas, and within operas, singers from a chosen generation with individual names. Or within that, a further sub-bubble of famous duets and so on (see Figure 3 below for a diagrammatic representation of the concept of bubbles). Other people will have their own groups: famous psychologists, philosophers, sportsmen and women. The idea of the bubble is an efficient way of grouping, rather than listing, a succession of individual names which, in itself, makes greater demands on the memory. Also, a ‘string’ may have associated concepts which distract from the issue at hand, whereas bubbles have a ‘title’: ballet dancers, philosophers, or whatever. Or we could borrow the set theory from maths as a development of the idea, where sets can be inclusive or exclusive or share features.



(Figure 3)

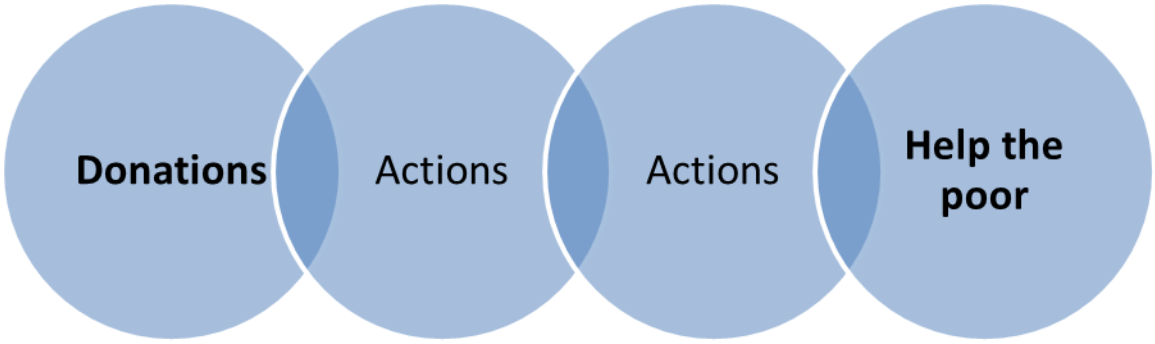
The precise nature of these ways of forming bubbles, bundles, clusters, whichever word one prefers, does not matter; they are simply models, patterns for grouping like concepts together 'envisaged' for clarity. They can be added as sub-sets, thereby remaining neighbours to the main bubble, or nested inside the larger matrix, more convenient for apperception and more rapidly retrievable perhaps than strings of concepts diverging off as new branches. The individual is unconscious of the system adopted to render it the most convenient, useful and easy way of grouping associated concepts and, crucially, forming new ones. In one sense this way of envisaging relationships falls between categories and 'compression' (which will be discussed in due course) as combining separate elements under one sub-heading whilst maintaining their individuality without requiring them to be separately enumerated. It also makes it easier for them, where needed, to circle back on themselves to re-join the main line of thought since they have not in fact deviated but resemble more lakes and ponds forming along the course of one major river. They serve, in less extreme form than compression as a shorthand, and although more formally denoted in highly structured fields of knowledge as taxonomies, are not here tied to specific disciplines, but are simply a convenient way of organising topics with

the flexibility needed for use with students in vocational training. Unlike the 'bubblegram' used in analysis to identify the sub-divisions of the main topic, they remain here linked together. The utility of the 'bubblegram' is to isolate, for provisional convenience, rather than to link, related parts of a theme.[63] The difference here is important, as it distinguishes between the continuous cognitive flow towards the integration of discrete elements as implicit in understanding, as an advance over the simple acquisition of detached items of information where propositional learning is often assumed to commence (Tyler,1949). The whole tenor of this research is to move forward towards higher cognitive functioning, but it would be misleading to allow any suggestion that the processes of categorical linkage need only be linear.

Compression

Compression is not only important, but rather an essential adjunct to categories. Briefly, compression can be equated to an information management system. Two ideas are linked, and the intervening steps ignored as of little import to the main purpose. A simple example would be, 'Donations to charity help the poor' (see Figure 4 below for a diagrammatic representation of the concept of compression). The reader of this phrase is able without difficulty to link the two concepts via the imagination. The compression masks the numerous steps which in reality have to be taken for the first idea (the source) to achieve the second (the target). Even where the links are more remote the meaning is clear: 'Binge-drink today, liver transplant tomorrow.' Any reader will immediately grasp that the meaning refers not to the activity of binge-drinking but to those who indulge in it. Compression serves to suppress irrelevant details. In addition, the timescale here is recognised as symbolic not literal. Through analogous thinking, compression brings two activities together: binge-drinking and liver disease. One implication is severity (consequence), the other rapidity of onset (timescale). But the viewer does not challenge these as unrealistic, or not necessarily related as implied, having long internalised the conventions of compression.

[63] A 'bubblegram' is a method for generating and recording ideas, often called 'brainstorming' where all ideas are initially accepted and evaluation occurs only once sufficient ideas have been collected.



(Figure 4)

The idea of compression has received considerable attention from Gilles Fauconnier (2008).[64] He argues that compression can be thought of as reducing material to a 'human scale' (Fauconnier, 2008). A distinction can be drawn between metaphor and compression. In metaphor, the intervening links are not necessarily being compressed; they may not consciously exist at all; there may be no perceptible intervening stages unless the originator systematically contrived them. Some writers or speakers have the gift of apparently producing apt metaphors spontaneously (this so-called spontaneity is discussed later). They cannot readily be retrospectively expanded as is generally implied by the suppression of material in compression.

The importance of compression is multi-faceted: since the aim is clarity of meaning, it suppresses inessentials. It avoids boredom in not delaying the key 'point' and hence loss of attention. It reduces demands on the short-term memory and reduces cognitive loading. In relation to categorisation, it makes possible substantial leaps across groups without confusion, provided sufficient analogous associations are retained for intelligibility. It enables a rapid expansion of ideas to take place as a résumé with the inherent capacity to re-construct the 'invisible' concepts where detail

[64] In justice to both Fauconnier and the subject matter, the usage given here represents only superficial coverage of a more extensive analysis.

is required. Even at the prosaic level of note-taking, summarising or paraphrasing for students, whole sentences, words and explanatory links can be omitted without loss of meaning. For the imaginative expansion of ideas or concepts leading to creativity, reflective thinking or enhanced meaning, it serves as an efficient form of shorthand tailored to the imaginative mobility of individual students who, as we all do, employ it constantly. Its match to the underground system discussed above (and hence to categories as a form of information organisation) will be clear: passengers generally are interested only in two questions: where do I get on and where do I get off? The intervening stations are ignored beyond their usefulness in charting the progress of the journey; in themselves they are without significance. Any organisation of data has implications for classroom practice which might be extended as an adroit supplement to learning.

Leaving aside these important extensions of categorisation as illustrations of how adaptable categories are to teaching, and therefore accessible in terms of the proposals of this research, we can now begin to list some of the ways in which we identify categories in action in order to illustrate their functioning. These will highlight the everyday nature of the linking of categories by analogy in use, even when called by another name. An understanding of their functioning will help make clear how the structures may be used to extend thinking in any direction beneficial to students. Many of the illustrations I have used relate to the subjects I teach, one of which is English language. Other subjects would serve equally well since categories, at the very least, represent data. The essential intention is to use the ideas in vocational training, and this will be the ultimate focus. The use of illustrations from GCSE English language here is purely as convenient examples, familiar to the reader, but illustrative of the flexibility available to categories as a way of organising material.

Categories and Analogy as Used in Language Features

One of the simplest language features is the simile which is identified by linguistic pointers such as ‘like’, such that the association can be reversed, that is, operate in either direction. One idea or category is directly indicated to be ‘like’ a different one. Metaphor follows. Metaphor requires some cognitive processing, linking whole idea to whole idea as a single step leaping across intervening categories and functioning as a literary feature of analogy. Again, the source and target are independent, but

once made, can be reversed: A is a metaphor for B just as B can be a metaphor for A. Hofstadter (Hofstadter, 2006) makes much of the significance of such analogies: those diverse situations which appear to have sufficient characteristics in common for us to see then as analogous. They have no meaning, but expand the possibilities, or perhaps even are what makes association possible and are therefore relevant to metaphors.

A further view is that categories appear not to be limited to literary form. Again, using examples from English language, whilst hyperbole is just an ordinary element of a category writ too large, rhymes are categories which may not look alike, but sound alike: the eye and the ear, two different senses, operate in combination with the concept to form a relationship. Similarly, onomatopoeia is the link between the aural and symbolic (written) version of the same word, both linked to a meaningful concept. Here we see that categories are not necessarily exclusive as to their formation, but again it is worth stressing that the formation of categories is a highly plastic process. They are not exclusively tied to 'internalised' systems but can readily relate to sensory perception as well as cognitive symbols. A few further comments will be sufficient to make this clear. Whilst being wary of dualism, some concepts need the initial sensory input to make meaning explicit, for example, 'loud' or 'fluffy'. Words alone are unlikely to make possible the generation of these concepts accurately where physical exposure will do so in seconds. Some ideas cannot be learned directly through the senses; for example, an abstract idea like 'justice', needs to be built up of specific examples before the concept becomes clear. Some concepts are ambivalent: 'beauty' or 'sin' become abstract nouns but will probably derive from real life examples.

We now can broach the structure and operation of categories which exist in a slightly less self-evidential form, but which will remain familiar to the reader. Not all relationships are immediately conscious. Insights, for example, are simply when connections appear with startling (and often unexpected) clarity, and because of the 'Eureka' effect we attribute high value to them. Is there more to this than the fact that they are accompanied by high arousal? Yes, the arousal which we interpret as emotion results from (or properly speaking is contiguous with) the recognition of how perfectly they illuminate the situation, or make previously unnoticed bonds; that is, from our recognition of how highly analogous the two ideas are. It is possibly a highly

charged version of the more prosaic (and dubiously regarded because we do not understand it) intuition which is often equated with an unconscious understanding of relationships. We do not understand insight, but the 'flash' overwhelms our misgivings, while inspiration may simply be the name we apply when a solution appears without apparent conscious effort. The difference between the two suggested here could be debated, but is of lesser importance since the way in which we use the terms is sufficiently well understood to serve as fit for purpose in everyday usage.

If intuition, insight and inspiration are the names given to the process which provide a conclusion which we believe to be legitimate without knowing how it was arrived at (since it was not consciously tracked), an explanation would be useful. Two ideas are linked. There must be a possible connection between them for us to even consider them together, but the link will vary in intensity from very nearly unconscious, to so unconscious that the beneficiary may not even recognise herself as capable of the outcome. As to why we accept the legitimacy of these processes, the answer must relate to our having found an analogous situation in the past which proved successful, which has lodged in our unconscious memory, and which we now re-use as a model for the current situation. If this model has been successfully repeated over time, it will emerge as the preferred mechanism precisely because semi-consciously we believe it to have been successful. This can relate either to problem-solving or to relationships between people. Where the outcome is generally recognised, or at least accepted as the right one, in the latter case the person becomes regarded as intuitive. In a perverse way it is the persistence of beliefs as successful in the face of the evidence that prompts us to make the same mistake over and over again. We follow our intuitions even when we can see that they do not work because we believe they *can* work. Failures are deemed exceptions to the rule. The rule, by virtue of repetition, for good or bad becomes a habit: the automatic generation of associated ideas without reflection. Most habits are very efficient shortcuts. Life would be intolerable without them. Having to think through every single thing that happens every minute of the day before making a decision is unimaginable.

A further application would be that as used by artists. Perhaps, if nothing comes from nothing (Roach, 2017), the talent of an artist resides in her ability (not necessarily

conscious) to link categories or analogies that are so far removed from each other as to be imperceptible to the lay person. ‘Art is the ability to see relationships that are not normally apparent,’ (Phillips, 1966, p. 12). Given this definition, is art any more than a recherché version of metaphor or extended categories? Art links a remote (and possibly unconscious) category or elements of separate categories, to an amalgam of categories in a new pattern, that is, it may be ‘original’ to the practitioner. This may be the only one of those listed which cannot be systematically taught, although a habit of deliberate searching for, or awareness of, potential links probably can be trained. But because of the remoteness of the categories in art which are ultimately linked, the pathway may not be reversible that is, accessible to conscious awareness. Artists generally undergo a long period of training. Part of this, and to a large degree they will be aware of this, is the habit, ultimately automatic, of scanning, spotting connections, provisionally evaluating ideas or categories, or whatever name they give to this process, reflection perhaps. An idea may spend days, months, years, incubating before an artist feels content to synthesise the scanning process that has been on-going over time and which she would be quite unable to re-trace as a sequence, though sequence there must assuredly have been. Incubation (Christensen, 2005), although not conscious, is not passive; it is the unconscious actively scanning a myriad of pathways of categories in the search for acceptable links or analogies. What prompts us to accept a link as acceptable must be related to our knowledge and experience. An artist may think of this as aesthetics, but the rules of aesthetics must be initially learned - even if subsequently expanded. It would make sense to suggest that this is based on past successes, rather than past failures, or on the uncalculated chance of selecting the ‘best’ answer from the immeasurable number of possible random associations. Random associations might be tried experimentally, but need to pass the test of, as a minimum, intuitive, aesthetic or even logical acceptance prior to development. A supposed talent therefore for the spontaneous production of spontaneous metaphors or artistic output becomes open to question.

This system of ‘categories’ initially appears so simple that some things fit in with an ease that makes them suspect – stories for example. It appears not to matter which type of story, or whether they are true or plausible – fairy stories and fantasies are neither – but all stories have some sort of coherence about them, and presumably

we learn to recognise this well enough to assign stories to genres. The content can come from anywhere – real life, personal experience, hearsay, invention, fact and so on; the writer chooses the elements and binds them together. No doubt 'experimental' authors have tried writing stories without this thread – once you have made a point, little is to be gained by repeating it. John Cage (1912-1992) made the point that silence is an integral part of music when he composed 4' 33'', but one could argue that it demonstrated a point about music more than it displayed creativity.[65] Creativity was there, admittedly, but overshadowed by the point being made. Modern composers, particularly those involved in atonal composition, break with the conventions (the 'rules' so called) of composition, but are only choosing from categories that contradict the conventions and even there one assumes that there are limits to what informed authorities or the listening public, however sympathetic, will either accept as valid composition or take seriously.

Frames

Thus far we have outlined categories, and how they may be viewed in totality as one useful classification of knowledge for use with 16 to19 year-old students in vocational training. We have also seen how they can elaborate existing knowledge, and combine to form new areas of learning. We have also considered what I termed 'bubbles', meaning the combination of related components under one heading for ease of identification and use. We have seen compression as primarily a means of reducing the loading of a topic by reducing it to its essential end points, where the central information is not identified, but could be constructed if needed to give a detailed account of the overall theme. We now come to 'frames' (Lakoff, 2008). These are most easily explained through exemplars. If the topic, for example, were 'school', everyone would be able to immediately visualise what was meant – a building, classrooms, teachers, pupils, desks and so on down to a significant level of detail. Similarly, 'home', 'the doctor's surgery' and so on. We have been accumulating these frames since our earliest years and have hundreds of such frames at our disposal. Some are highly and accurately detailed (home or school for

[65] 4 minutes and 33 seconds (4' 33'') was a seriously intended and interpreted piece of music in three movements written by John Cage in 1952. It could be 'performed' by any musical ensemble or solo instrument who sat throughout in silence. The music comprised any incidental environmental sounds (including those made by the audience) which the audience could hear. A study of the relationship of noise to music is an on-going topic.

example), some are partially detailed (the doctor's surgery), whilst others are almost completely imaginary (the cockpit of a space craft, for example). It will be clear that these represent ready-made scenarios of experiences throughout life. In that sense, they do not need be constructed when a particular topic arises; they are already available. It will be obvious that these avoid considerable cognitive processing since only situations not already represented in the collection of frames needs to be constructed, and depending on how much detail is required, existing frames can be readily modified. They represent efficient shortcuts to routine material leaving the brain free to apply itself to any additional input required from these foundations. Here they are the most panoramic of the terms so far mentioned and provide a major viewpoint for topics. Categories and frames could loosely be termed the lens and the landscape. We have across the range, therefore, a model for the greater picture (the frame), important components of the picture (bubbles), a summary of the picture (compression) and details of the picture (categories and their elements). The four together provide comprehensive coverage of any topic whilst the parts of each, and collectively, are available if needed and are held together by analogy through the working of the imagination.

Some Observations on Imagination in Conjunction with Categories

It will have become increasingly clear that categories and their associated concepts are wholly dependent on imagination. There is a sense in which, therefore, in what follows the focus will move more towards the imagination than towards the subject matter, although this may not always be definitive. What, however, by now must be becoming apparent is that it is less the content of the categories that need concern us in general; more the manner in which these are constructed or linked. (The content, bearing in mind vocational training in FE, will vary with the occupation where the mechanism of linkage may present itself as more of a generalised feature). An example may be the following. The imagination, working within categories, can also expand given perceptions. For example, looking at a wheel on my car, a mechanic might see five wheel nuts. A mathematician might see that these form a pentagon within three concentric circles (the outer and inner borders of the tyre) enclosing a further circle (the hub). An artist might notice that although each of the nuts has a hexagonal head, no two are aligned exactly the same, seeing asymmetry in a symmetrical pattern, and interpret what the mathematician saw as shapes, as order,

order, order, disorder, order, introducing a discordant element into an otherwise symmetrical (and therefore concordant) pattern. A choreographer might see five dancers facing in different directions on stage and ask herself, 'How did they get into this position, and where are they going next?' This idea is very close to that of the metaphor. If one can see A as B, then an already extensive network can expand: where the 'real' stops, the 'unreal' can continue.

Because the concept of categories is so all-embracing, innumerable questions could be posed about them. One such relates to repertoires of categories, essentially distinctive, but emanating from a common core. In dance, gymnastics, intricate military drill, two concepts here linking them are those of movement and sequence, but the component parts are not random. They are part of and contribute to a performance. They have a beginning, they have an end, but not presupposed as arbitrary: all contribute to the creator's concept of the whole. Ballet is to a large degree standardised; modern dance is more open to invention, gymnastics largely follows an established repertoire, as does military drill, but all have potential (but not unlimited) expansion. There is one sense in which gymnastics, dance, military drill and so on are too structured to be of great interest here, in that all are based on a repertoire of movement. But that is not the case. Seen as an analogy, vocational training covers many topics, the details of which may have no relation one to the other, but are all housed under the umbrella of preparation for work or the much vaunted term, 'employability'. Perhaps all activities involving some creative component can be reduced to categories, but some are more constrained than others – bricklaying by the plan, hairdressing by the client, science by testing, or childcare by the setting, but all have greater internal flexibility than, say, plumbing which has less scope for personalised intervention. Scaffolders cannot compete with gardeners for creative opportunity. But all require thought, planning, sequencing, and varying degrees of creativity, even if this is conceived purely as the routing of pipework or the satisfactory completion of a length of walling. Otherwise stated: thought, planning, sequencing and creativity all need imagination. And imagination without content is meaningless, thus a return to the cycle of categories as inescapable.

Categories and Their Potential for Educational Value

How might all this relate to extending the educational value of vocational training in FE? The answer is that categories, as I have initially demonstrated, have a huge capacity for generating relationships between concepts. A relationship between items of knowledge can lead to understanding when the components are intelligibly linked, and the associations accepted as coherent. A greater range of ways of seeing any topic under review (or of seeing the world in expansive style) offers greater choice for avenues of pursuit, whether these are wished to lead to solutions to problems or simply to further interesting ideas. If we take Dewey's quotation as acceptable that:

> An ideally perfect knowledge would represent such a network of interconnections that any past experience would offer a point of advantage from which to get at the problem presented in a new experience' (1916, p. 185)

then we can see, as used as the link between the chapters on Dewey and Hofstadter, that this statement is a perfect description of Hofstadter's categories written ninety years earlier and forms the insoluble bond between them.

More specifically, particularly in relation to vocational training, transfer of training is an indisputable extension of imagination crossing the boundaries of categories. Transfer of training is that ability to grasp the similarity between things that are ostensibly different, and expand what is known to a broader situation, in practice, to apply what is known in one context to a similar but different context (Cornford, 2002). An obvious example would be that having learned how to change a generator on a Volkswagen in automotive mechanics, one could now change a generator on a Ford. Interestingly, transfer is an almost entirely neglected issue in teaching, although not in the academic literature (Perkins and Salomon,1992) and, as a personal opinion, the loss of a real opportunity for the extension of learning. Where considered at all, it is considered automatic; however, the scholarly articles on the subject are clear that this is not the case, but must be specifically taught (Albany Intergovernmental Studies Program, 2006). The bridge is imagination: the ability to 'see' the similarities and to mentally invent or speculate on the unfamiliar elements or relate the components of one series of categories to another. In other words, the general view appears to be distracted (blinded) by the similarities because these are more

evident, that is, easy to identify and require less effort, whilst the elements that actually need to be taught remain peripheral and by consequence are relegated in importance. The link between transfer and imagination is therefore very clear, but what appears equally clear (but would need to be empirically tested) is the speed with which transfer ceases to operate as the dissimilarities become increasingly evident. (This may be to do with the relative simplicity of categories where, broadly, only essential features are considered sufficient to relate the items to each other). My own 'Law of Transfer' is therefore as follows: 'The ease of transfer is inversely proportional to the square of the differences between the perceived elements.' In other words, where similarities are almost inescapable, transfer is readily achievable, but very rapidly ceases to operate as differences between the two contexts increase. From this, a brief overview of transfer of training may prove useful.

Transfer of Training[66]

Transfer of training requires significant cognitive processing, linking part to part, or whole to whole, generally in multiple sequential steps. Often in vocational training this happens under supervision. But what appears equally clear (but also would need to be empirically tested) is the speed with which transfer ceases to operate as the dissimilarities become increasingly evident. (This may be to do with the relative simplicity of categories where, broadly, only essential features are considered sufficient to relate the items to each other). Again, the relationship of the two patterns can be reversed, but as suggested above, only following the maxim of 'the obvious is only obvious once you have seen it'. The implications of transfer of training will be considered in Part III, but more pertinently here is the question of whether transfer is 'merely' a workaday version of art? If that were to prove the case, my proposals could be reduced to an exercise in transfer of training. Except that the aim is not only the extension of specific areas of learning as would apply readily to vocational training, but also the deliberate use of the imagination to generate options as a routine response to a range of situations affecting the student's life both at college (where this facility can be developed) and beyond. The aim is to become so

[66] The notion of 'transfer of training' is very similar to the more commonly used notion of applying a skill learned in one context directly to another (e.g. using a mitre joint for a picture frame, and applying the same skill to make a jewellery box. However, 'transfer of training' implies the utilisation of the principles of an operation in one context for use in another (e.g. changing a generator on a Ford car, and being able to change it on an Audi).

ingrained as routine practice that it prompts some version of life-long enquiry, of investigation, of curiosity, of learning: of becoming ‘educated’ as appropriate to one’s aspirations and role in life.

For students, therefore, imagination and transfer are closely allied and, by their capacity to apply the known to the unknown, are comparable with simile, metaphor, *Gestalt* or art, sharing a common heritage – that of the ‘analogy as the core of cognition’ (Hofstadter, 2006). Critically, they are essential for students, and work for anything more complex than an assembly line or the routine production of identical parts on a machine.

Bringing Together Dewey and Hofstadter

It needs to be remembered that all these views are invested in John Dewey’s writings on imagination which remain viable for the twenty-first century. It is also the aim of this research to show that, in conjunction with categories, a way forward can be argued for students in vocational training in general FE. A link will emerge coalescing Dewey’s philosophy of education, including problem-solving (together with, crucially, that area of imagination which, by not pursuing, he left for further development), and the concept of categories. One of his major examinations of imagination is its role in problem-solving. In this way Dewey remains a significant contributor to the arguments being developed. The relationship of categories to problem-solving may prove less clear because logic may play a greater part than some of the concepts we have so far discussed. Problem-solving has one big advantage, that we know half of the equation from the start (the problem). This advantage is offset, however, by the fact that a solution is therefore circumscribed. (A writer, looking for a metaphor, would have no such restraint beyond aesthetic discrimination). How therefore do we go about finding the solution? Following Dewey (HWT, 1910), we think about the problem, we analyse it. What do either of those two truisms actually mean? The first appears to mean going over and over the problem, (that is, repeating it to ourselves) hoping that a solution (or a least a step in the right direction) will present itself without entailing very much effort on our part, as though the repetition will of itself trigger a response. And sometimes this happens, and we call this intuition, or if we are lucky, insight or inspiration. I have already suggested how these may reasonably work.

Analysis is more elusive. Serious analysis is, I suspect, quite rare, difficult, and involves a systematic study of the problem, looked in part, or as a whole, in its consequences, in its possibilities, and via a combination of logical thinking applied to quasi-trial-and-error models. Provisional solutions are accepted, discarded, or set aside for reconsideration later. The trial and error is, of course, not arbitrary, but related to our knowledge and understanding of the problem, and solutions we already know of from previous experiences, either our own or others' that we believe we might plausibly try. Logic may be applied, but the constituents of logical thinking have emerged over time and may be culturally determined. It is too structured to be entirely intuitive although correct procedures will consolidate with practice. A reasonable assumption, therefore, is that logic is a learned set of skills and procedures. In evolutionary terms, it must have accorded with reality, that is with personal experience, possibly learned at some cost and passed on as tribal wisdom. Thence it became systematised. When one talks of a scientific or mathematical imagination (Levy and Godfrey-Smith, 2020), one refers to the disciplined process where adjacent categories are scanned for their potential, and then analysed further or rejected. Hypotheses are the provisional conclusions that result from this process, subject to closer examination. And importantly, this verification system can be replicated by others. For Dewey, not least given his attraction to science, (Dewey, 1915) part of the process of finding a solution to a problem is by the use of hypotheses which are 'internally rehearsed' (Archambault, 1964, xvii). The whole process is through the imagination, but again, the hypotheses are founded on supposition, knowledge, experience, calculation and so on, all identifiable as categories. It is the coalition of imagination (taken from Dewey), and its identification with relevant categories (taken from Hofstadter) that makes problem-solving tenable. Without the capacity to harness imagination in a way that accords with the contextual 'reality' demanded by problem-solving, the individual is stranded in a hinterland of possibilities without a sense of direction.

Some Limitations to Categories

So far, categories and their extensions have been presented as essentially problem-free. It is inevitable that this need not be so in practice, as it has been presented in theory. Two areas need to be considered from this point of view – one from learning theory, the other from personality types. First, one view of learning theory. A possible

explanation of how learning takes place is based on an inductive-deductive format. Learning for many students requires not only elaboration of the method, but also considerable subsequent practice to develop the knowledge, skill and understanding to perform effectively. For example, accurately estimating how many rolls of paper are required for decorating a hallway is not intuitive; it needs measurement, a knowledge of how many lengths can be cut from each roll, how to accommodate irregular shapes, and how to make allowances for waste. This practice is the inductive part of the process. Ideally, this eventually becomes the deductive principle encapsulating the individual examples once the principles are understood, and only then can it be readily applied to other examples. Until the underlying principles are understood, they cannot be applied. This is precisely the reason why transfer, for example, cannot take place: the student is given the deductive principle without the necessary practice needed to establish competence to the point where the deductive principle can emerge. For the teacher, the subject matter is so well understood, and the obvious advantages of a deductive 'recipe' to be applied to all examples is such an efficient blueprint for success, that it can easily be forgotten that this appears not to reflect how much learning takes place (Mazur, 2014). Rules are so integral to school life that they are assumed to apply indiscriminately to all learning. But like much learning, they need to be applied to a number of specific examples and then practised. As transfer, the example cited here, is closely associated with any learning where the association of categories is the key, it can be seen that considerable practice may be needed before the exploitation of the mind's plasticity achieves ready use.

This leads necessarily to variations of personality with students, and the range of so-called 'intellectual attributes' which include 'honesty, courage, rigour, creativity,' (Kotzee, 2018, p. 359) to which might be added curiosity, intelligence, persistence, resistance to distraction, faith in the outcome, and so on, many of which were subsumed in the now perhaps out-dated belief in 'character'.[67] Two of these

[67] For further reading on this topic see The Jubilee Centre for Character and Virtues at Birmingham University at: https://www.birmingham.ac.uk/research/activity/education/jubilee-centre/index.aspx#:~:text=The%20Jubilee%20Centre%20for%20Character%20and%20Virtues%20is%20a%20pioneering,for%20public%20and%20professional%20life.

attributes merit a brief summary as fundamental to categories (subject matter) and imagination (thinking). They are curiosity and intelligence. It is difficult to think that imagination is not triggered by curiosity. In evolutionary terms curiosity could be fundamental to survival: what was safe or dangerous, what was edible or poisonous, how might that animal react, and so on.

This function was so crucial that it became embedded, perhaps over-embedded, like an infant's suck reflex, to the point where now it is engaged even for seemingly purposeless activities. It may ultimately prove useful, but we accept the possibility that it may not. That it became linked to problem-solving is unavoidable since curiosity may have provoked the problem in the first place. How curiosity developed as a survival trait must be linked to intelligence, that is, the management of behaviour appropriate to the situation and to the achievement of the desired goal. For Dewey (1998) and for Pring (2007), intelligence may imply the following: a combination of curiosity (the desire to find links), insight (the ability to recognise links as they arise), imagination (to forge links that are not immediately obvious), perhaps perseverance (the time and effort put into the exercise), and memory (to keep these associations available for future use). It seems likely that practice will encourage habits, which will become, in part at least, autonomous. In addition, it may involve a scanning system for rapidly examining categories and able to identify analogies or connections (i.e. potential answers) from the options available and, where several are possible, to compare and then select the best, that is, the one most fit for purpose.

Summary

Seen in the light of all of the above, some observations seem justified:

(i) With categories, numerous aspects of association are frequently presented as discrete, when in fact they are different manifestations of imaginative thinking.

(ii) Although some of these forms are more sophisticated than others, there is no pre-set 'list' which could be seen as a form of stepping-stones for differing developments of imagination.

(iii) Students can develop according to individual responses as there is no suggestion of any being taught as discrete stages. Where, for example, in English language, simile, metaphor, analogy and so on are isolated as distinctive features of a text used to analyse writing, our interest has little real interest in the label applied to these perspectives being more concerned with how it can be used to synthesise a broader grasp of relationships.

(iv) Insight, or the sudden, meaningful apprehension of meaning, can occur at any level, and it may be of less moment whether this phenomenon is called, insight, intuition, or inspiration.

(v) Transfer of training can be developed in its best known (if underexploited) role as an adjunct to vocational training, or simply viewed as just a further demonstration of imaginative association.

(vi) Other factors need to be considered such as tenacity, individual awareness of the potential for the expansion or analysis of an idea, how readily students can free themselves from the habit of pragmatic utility, the significance of teaching, and the necessity of practice.

(vii) Those who attained the 'art' level[68] are those closest to autonomy as least in need of external guidance, where the process of forming chains of linked associations, and reflecting on them, happens without prompt and with increasing complexity.

One view of the implicit dimensions of categories would so far include therefore: analogies, anomalies, simile and metaphor, *Gestalt*, transfer of training, insight, intuition, inspiration, art, problem-solving, scientific or mathematical imagination. These are aided by the intellectual attributes of curiosity, intelligence and so on, and rendered more efficient by the selective process of bubbles, compression and frames. As the neurosciences develop, knowledge will be clarified further as new

[68] The 'art' level, it will be remembered, is that level of category extension where the analogous link between the first and final categories (or concepts) is no longer self-evident due to there having been a number of intervening (and perhaps less obvious) links before the final link is reached. As a consequence, the route or sequence connecting first and final categories is no longer apparent to the point where its traces remain at best subliminal or intuitive. It is the intuitive awareness of this diffuse connection that underpins one definition of art as 'the perception of relationships that are not normally apparent' (Phillips, 1966, p. 12).

models of thinking become available and perhaps a new integrated understanding of imagination will emerge.

Discussion

The idea of using imagination is to extend thinking beyond the immediate propositional knowledge. Categories link these known factors to not-yet-perceived related factors in a coherent way (reducing, hopefully, claims of irrelevance by students, and consequent rejection of the technique and resulting material). They expand the central (prototypical) concept to make apparent related matters, and thus enlarge the fund of knowledge or understanding and potentially offer additional means of problem-solving to situations beyond the central core of the propositional knowledge. The propositional knowledge generally taught in class can be described as the ‘core’ knowledge of vocational training, since constraints on time and student capacity to absorb supplementary information are limited. These limitations result from the nature of timetabling and by the student’s relative ignorance of the subject as a novice. Students are inexperienced regarding how much deviation is permitted from the central material, or how far exceptions to the rule are acceptable.

The more the expansion of prototypical concepts is applied to what the students learn, the more they will be freed from a rigid view of what is valuable or useful, and the greater their ability not merely to find solutions but to have available in their repertoire of thinking a wider degree of flexibility. The reason flexibility is important is that it cuts across the tenets of received knowledge and habitual ways of tackling problems when propositional training may have led to the supposition that there is a ‘right’ or ‘wrong’ way of seeking solutions, when the availability of a choice makes the selection of the most appropriate easier to recognise. But it may not be recognised by the student if the student is not freed from a tenacious adherence to central propositions which, in reality, are often the more typical, pragmatic, readily recognised, and workable, outcomes, not immutable paradigms. The technique therefore deliberately, but not without risk for some of a loss of focus, cuts across the practices of habitual student thinking. Categories and imagination fuse to mean thinking based on one’s existing knowledge and within one’s existing plasticity for manipulating cognitive elements. With teaching and practice new categories or elements of categories can be formed or seemingly ‘invented’ by using existing

plasticity whilst existing plasticity can be rendered even more plastic through the abandonment of learned restraints. Some things we learn are rejected as silly or nonsense or meaningless, and we often come to discount them as unacceptable in formal education. This is probably a socially learned practice since painters such as Salvador Dali (1904-1989) exploited this very inhibition and gained international acclaim by so doing. We can see in this the stranglehold of propositional learning on our range of 'serious' thinking, and, in part gain some understanding of difficulties faced by practitioners in artistic fields and students in practical subjects.

As the 'counterpart' to categories, the role of imagination is as follows. Given that the proposed extension of ideas falls outside the already known, imagination is needed to prompt alternative viewpoints; to leap the gap, to make the connection. Although this process may be recognised by the more familiar label 'association', imagination is the mechanism which enables these links to become apparent, connected, and therefore meaningful. Part III will develop an aspect of pedagogy which embraces these classroom techniques.

It is not apparent that this form of thinking is generated under specific circumstances. Nor does it exclude the subsequent application of either logical or critical thinking; rather it presupposes these, if numerous, ideas are to be winnowed for purposeful, serviceable or practical application. The generation of ideas is the first step; it is not solely established as an idle practice, as an end in itself - it is also designed to expand conscious choices to a purpose. Where that purpose serves to assist the student in achieving some goal, it may have both a practical and educational value. There are different ways of both generating ideas and of evaluating them. Edward de Bono (1933-2021) devoted much of his working life to these topics and coined the phrase 'lateral thinking' (de Bono, 1970). Some choices will be outlined later. The central argument here is not the precise analysis of methods, but the proposal that the theme as an integral feature of pedagogy is worth pursuing for the reasons given whilst the specifics of implementation will have to rest with the tutor.

Tentative Conclusions

Categories, and the associated models of bubbles, compression, and frames, are therefore a combined method for cataloguing the broad sweep of an individual's knowledge. They organise this knowledge without regard for its breadth, depth, completeness, accuracy, credibility, or truth. This includes the intangible like abstract thinking; for example, something in maths that cannot be replicated physically, but which operates by becoming embodied in a symbolic language. Categories are the fuel which equally ignites practical and abstract thinking, realistic problem solving and day-dreaming, humour and regret. They are possibly the ultimate taxonomies with limitless plasticity and able to re-group their constituents on demand to meet the needs of the moment.

In addition, categories are the building blocks of thinking. They are the meta-structures necessary for thinking. In so far as thinking uses relationships or analogies, imagination is invoked to make meaningful the connection between the components. Without categories or analogy, it is not clear how thinking could take place, since there would be no matter about which to think. We need to remember that a dualistic framework is ultimately misleading, since thinking and the object of thought are inseparable, however the distinction is convenient for analysis. Nor, in this area would imagination serve any purpose since, by my definition, imagination is 'merely' that form of thinking which need not be circumscribed by reality. Categories, therefore, make possible what we call thinking by furnishing the data. The benefit to the students under consideration is that the more extensive the categories, and the more plastic the imaginative interpretation which affords meaningfulness, the better equipped the individual will be to extend thinking both quantitively and qualitatively. Significant advantages, as we have tried to demonstrate, are that categories represent 'easy' building blocks for students by using existing knowledge, and are largely language based and therefore readily accessible. The fundamentals of this research as providing an achievable extension to education through imagination can now be seen to be based on readily available foundations – the adapted principles of much of Dewey's philosophy of education linked to existing mechanisms of imagination and categories. These, where conceived of for convenience as dualistic entities (but are effectively a cohesive array of cognitive functions), combine as a practicable means of achieving the goal established by an overriding concern with

the question: ‘How can imagination be used to improve the educational value of vocational training with16 to19 year-olds in general FE?’

Postscript: A Way Forward

It is easy to conceive of the above as saying little more than, ‘Learn more, think more’. In one sense this view is justified, and, as such, says nothing about education that is not already taken for granted. But I argue that what I am proposing is more nuanced than this. First, the concept of categories offers a framework. Without this, learning and thinking are arbitrary, amorphous and without structure, direction, or purpose. Beginning with categories related to vocational training provides a cohesive entry into the expansion of the vocational curriculum. Second, by beginning with known material (but expanding into the unknown), the exercise is not a mere repetition of routine classroom practice: new material arrives but is not presented as a result of the lecturer’s effort as something extra to be learned, but by the student uncovering the unfamiliar for herself. Since the presumption is that the subject tutor covers the essential specifications needed for successful completion of the award, this attempt to improve the educational value of classwork is no impediment to this primary aim, but is freed from narrow (but not absolute) prescriptive restraints. There is scope for diversity and individual contribution. Indeed, these are essential if the process is to go forward productively. Habits learned by years in school and a ready recognition of, and dependence on, the credibility and security of propositional learning may be significant inhibitions until familiarity with this more flexible form of ideas is attained. In essence, students are being encouraged not only to think, but to develop metacognition, and learn new ways of learning. These, surely, must be advances for their education, whether in vocational training or elsewhere. We have reached the stage, therefore, where the combination of imagination and categories provides an integrated platform for the development of education for any individual based on the broad philosophical tenets of Dewey adapted to contemporary need.

Part III

Chapter 6

Towards a Pedagogy of the Imagination: Introduction

It may be useful as a prelude to this Part III to offer a résumé of the stages of the argument so far. The preface outlined the situation which prompted this research. It outlined on two fronts the education which I had received through schooling, and that which had accreted through other interests and activities. This contrasted sharply with that of my students. Whilst it would be inappropriate to think in terms of my experience of education as transferable, relevant, or even ethically right as grafted on to my students, some parallel of the breadth and diversity I enjoyed could be made available to those I teach in vocational training. This might then be to their gratification when reflecting on the education they have received, and to their advantage both in college and in later life. Schooling for my students, that is to say, their formal education, in large part was complete at age 16 after taking a series of subjects at GCSE level at which, for the most part, they had achieved at average, or below average, levels for their cohort. Further advances in their education, particularly those forms invoking the imagination, therefore, seemed both possible and desirable. I articulated this as: 'How can we use imagination to improve the educational value of vocational training in general FE with 16 to 19 year-old students?' This appeared to encapsulate both the problem and the solution.

It needs to be borne in mind that the focus here is on students in FE undergoing vocational training in general FE, where the academic style of delivery to which HE students are accustomed may not apply. This might include fluent note-taking, or a ready ability to summarise information succinctly, ready for subsequent revision. It will be remembered that a large proportion of FE students enrol without a GCSE in English or maths. (That competence in English and maths is important is not in dispute but the coverage should be relevant to the needs of the student.) These two are highlighted simply because they remain mandatory, but this should not be interpreted as excluding any other qualification or achievement. Most students will leave with a Level 2 qualification, only a limited number continuing to Level 3 or industry standard. In parallel, but in a later context and in much less disadvantaged circumstances, these students are akin to 'Our Future Half', echoing the Newsom

Report 1963 (Ministry of Education, 1963) on secondary schooling.[69] Therefore, it is essential that nothing written here should be interpreted as patronising; these students are products of their circumstances. As part of those circumstances, they are statistically (no doubt with exceptions) from the lower two quartiles of academic achievement for their year. Those in the upper quartiles will, in the main, continue to HE and generally achieve a qualification at Levels 4 to 6. 50% of school leavers now go on to university or the equivalent (UCAS, 2019). One aim of a Pedagogy of the Imagination that I will explore in this final Part of the thesis is to find a method which, in consort with their vocational training, will improve the life chances and opportunities both for employment and in their private lives, for students who, so far, have achieved the least. Many, however, are capable of benefitting from a broader palette of education and training than the 'standard model' provides. In British education, specialisation can be seen as beginning in secondary school with early preparation for GCSEs. The FE students here have, in general, not benefited from this approach in a way conspicuous by formal standards. With a more practical dimension, vocational training continues this specialisation. To this, a Pedagogy of the Imagination adds improved opportunities for the development of the so-called intellectual attributes and the equally so-called soft skills: in a phrase, capacity with flexibility.

Once enrolled in FE, students' time is shared between vocational training and continuing GSCE in English and Maths for those (the majority) who have not yet passed in these subjects. These latter subjects, which are mandatory, could be viewed as the remnants of their formal education. The vocational training – part theory, part practical workshop activities – follow the specifications determined by the Awarding Body and represent relatively precise components of both practice and propositional learning, with little general deviation from the prescribed programmes.[70] The possibilities for expanding educational opportunities to existing procedures are, therefore, limited under the current regime.

[69] While this is a useful allusion, this parallel should not be stretched.

[70] 'Workshop' here should be broadly interpreted to mean any context of practical activity, for example the salon for hairdressers, the kitchen for catering students, placements for early years students and so on.

This reductive pattern of vocational training is a direct consequence of political policy, as discussed earlier in this thesis (Part I, Chapter 1). It showed how FE as we recognise it today emerged from its antecedents to become a broad umbrella of provision. These earlier sections demonstrated how increasing pressure from central governments has focused on all education (however thinly) as preparation for employability with, conspicuously in FE, the loss of a broader educational viewpoint.

The proposed solution[71] focuses on the question of education about which much has been written, proposed and contested. That an overall definition, acceptable to all, is unlikely to be found should not be viewed as a deterrent since, akin to 'intelligence', 'imagination' or 'humour', education is a broadly accepted concept of sufficient flexibility to remain viable whilst accommodating wide variability. It is further recognised that education and training cannot be fully separated, since, even at the poles of their interpretation, each depends to a degree on the other: training embraces elements of education; education depends on skills acquired through training. There is therefore no inescapable conflict between them although debate will continue (Winch, 1995).

My proposal, however, does require a method[72] for implementation. Whilst imagination can be conceived of as a form of thinking not necessarily constrained by reality, the two concepts of education and training may be treated as though separate where convenient, whilst in fact remaining closely bound together as aspects of cognitive activity.

The practical outworkings of the Pedagogy of the Imagination which I address in this final Part comprise the exposure and enlargement of the 'educational' in vocational training. Education is almost universally conceived of as individual. In broad terms, vocational training, like many other forms of training, for example, basic military training, is concerned less with the individual than with the homogeneity of the learning in progress (although some aspects of the NVQ model attempts a balanced and judicious awareness of both strands in assessing individuals against minimal performance standards). In essence, training aims to undertake and complete a

[71] This is of course a simplistic way of summarising a complex matter but conveniently fits the shorthand referred to in the Preface as The Problem, The Solution and a Proposed Method.
[72] As with The Problem, and The Solution, A Proposed Method is no more than a convenient shorthand for a range of interventions based on imagination.

specified task correctly both in method and outcome. In an ideal situation, anyone, correctly trained, could achieve an equally satisfactory result. Education, (not least in its manifestation as schooling) on the other hand, accommodates individual variability and indeed, where not inconsistent with the lesson, can encourage and embrace it. This is the virtue of using categories for the extension of the learning envisaged here: every individual has his or her own network of categories, built up as chains of related concepts. That there will be similarities in the nature, content and scope of these chains between individuals is not only desirable, but also necessary. Desirable because this view reflects individual capacity, but also necessary because it ensures, where useful, as with vocational training, that the same chains of knowledge and understanding will be common across like groups but that individuals within those groups are not merely clones.

The last remaining step in this triad of Problem, Solution and Method, is how this expansion can be achieved. I now turn to this and discuss what is proposed and what is not; for whom these ideas are intended, and for whom they are not. First, it is not a panacea for my view of the shortcomings of a governmentally directed reduction of education for young people to only instrumental functionality. Nor, in parallel, is it a manifesto for sweeping policy changes. That these may come to be seen as desirable is beyond the scope of this discussion. Nor, importantly, does it imply disfavour for vocational training which is currently undertaken diligently and effectively by the tutors engaged in it, since without this training the students would neither be employable nor have productive career opportunities. On the positive front, it is aimed, as a bottom-up venture for those who, like me, believe that the educational value of vocational training can be significantly expanded to the advantage of the students, but, as will be discussed later, not without additional effort and risk in return for possibly unacknowledged longer-term rewards.

Part II of this thesis, whilst examining the situation from a theoretical viewpoint, provided two useful components of the central idea of using imagination. One was an examination of Dewey for his philosophy of education in general and his view of imagination in particular which largely revolved around problem-solving leaving scope for further development. The second theoretical part was derived from Hofstadter and others, using the concepts of categories and analogy as a basis for a taxonomy of knowledge (implying learning). Both Dewey and Hofstadter moved the

argument forward, but were incomplete in themselves as not providing immediate practical help. The core of the ideas of using imagination to extend the educational value of vocational training still needed a practical dimension if it were to be implemented in practice in the classroom, as theory alone – whilst providing a foundation – is insufficient of itself for the purposes envisioned. Thus, we revert to the question of 'what can we do for the students?' I argue that this focuses on the concept of the Pedagogy of the Imagination. In what follows I will discuss this in relation to other articulations of pedagogy such that its distinctiveness might become apparent. I will explore the implications of my claims for imagination in vocational training in FE, focusing on aspects of what I call the Pedagogy of the Imagination, and on the demands on lecturing staff, students, and the curriculum itself, of such ideas.

Pedagogy of the Imagination

At face value a generally accepted definition of pedagogy as the art and craft of teaching young people (see, for example, Oxford English Dictionary, 2022) appears unproblematic, but, as with many educational concepts, this proves unsatisfactory upon closer analysis. A weakness is its vagueness, since it can refer to a wide-ranging tableau of disciplines. It is probably easy to argue that pedagogy, despite its simple basic definition, is far from being a clear topic in education.[73] Many of those who historically gained prominence did so because of their approach to pedagogy. Some innovators, significant in their day, for example, William Gilpin (1724-1804), are now largely forgotten. He became headmaster of Cheam School which, from precarious foundations, grew in public esteem due to Gilpin's innovations and philosophy of education. His general principle aimed at an education suited to the role in life which his charges would later assume – in his case, largely in trade, commerce, and administration – as appropriate to the middle classes of the era (Stewart and McCann, 1967). Half a century later, Friedrich Froebel (1782-1852) should be included for his contribution to early years in providing a wide range of art and craft activities, promoting the idea of individuality, encouraging play as an educationally valid activity, developing exploration and discovery learning and a love

[73] It is probably wise to admit that the evolution of pedagogy would demand a study in its own right. Almost everyone who became significant in education, contributed a further stage to the development of the subject. The isolated cases noted here should, therefore, be seen as no more that random examples.

of the outdoors and nature. He first used the term ‘kindergarten’ and was instrumental in training women as teachers in them (Palmer, 2001). Given the recognised value of Early Years education today, his was an important move forward.

By the twentieth century it was probably a justified claim that pedagogy had been standardised in state schools, although not all plans were to bear fruit, for example, the tri-partite secondary division of the 1944 Education Act where the technical provisions were impossible to finance in post-war Great Britain. Idiosyncratic pedagogies were available mostly within the private sector as A.S. Neill (1883-1973) demonstrated at Summerhill (Bailey, 2013) (although the so-called William Tyndale Affair of 1976 proved to be a major setback for ‘progressive’ education). John Dewey, for our purposes, provides much source material in the development of a Pedagogy of the Imagination.[74] The topic is overlaid with numerous variables which make the task of finding a perfect model effectively impossible, but nonetheless essential.

Where pedagogy is the art and science of teaching, the Pedagogy of the Imagination is teaching by invoking the imagination to support and extend the subject material, here in vocational training. So far, in brief, the ‘What?’ Having outlined the ‘What?’, we need to consider the ‘Why?’ There are several strands to the answer. The first is that individually, each student is prompted to develop new ideas or items of knowledge by the setting of tasks that are not immediately recognisable as received knowledge. This may involve innovation, problem-solving, hitherto unremarked associations, or simply a choice amongst existing responses. That is, the ‘answer’ is not already immediately available as such, but the link to the main topic is recognised and the expansion identified as a legitimate addition. The second is that these outcomes are not pre-determined by the teacher. They operate with reference to the individual’s current level of knowledge and understanding, but arise idiosyncratically within the individual, thereby extending her range according to her existing framework. That is, the material so conceived is not alien, but a natural extension of her existing repertoire. Third, the group now contributes ideas which

[74] Currently pedagogy appears to be moving towards a more intensive use of digital and online forms of teaching and active learning, flipped classroom techniques and other innovations which must remain beyond the scope of this study.

add to the total and will further extend each individual's framework, since it is likely that contributions will include views and concepts which any random individual could not have generated by herself. Group participation and a variety of contributions break out of this restricting limitation. Beneficially, once new patterns of thought (categories or associations) have been implanted in the mind, however initially alien, they prompt a recognition of the feasibility of alternative ways of viewing situations beyond those habitually used. The unconceived becomes conceivable and the totality of the individual network grows accordingly. The longer-term aim is that imagination (that is, thought in a variety of guises) through habituation, comes to be used with a degree of flexibility not initially practised, as the less obvious becomes acceptable through familiarity and less prone to unconsidered rejection.

The further stage is 'How?', and this section will ultimately form a major component of this final Part of the thesis. The Pedagogy of the Imagination is developed by using the material at hand as a starting point for expanding the topic through prompting (by the lecturer, or indeed peers) imaginary scenarios. The pathways which follow in the minds of the students are not pre-determined as with the transmission of propositional knowledge, although to be educationally valid they must operate within certain bounds. The imaginary 'products' will vary from student to student according to each individual's strings of existing categories. The initial trigger or stimulus will associate with an existing structure within the student's total framework of categories, and then proceed in a direction which is appropriate to the task set but according to, initially, existing categories. The individual categories will then either be extended or new associations are formed. Therefore, there could be great diversity between students in the outcome, but consistent with individual patterns. However, when pooled, as for example in group discussion, 'new' (that is, associated with a different person) ideas, concepts, creations, solutions or whatever, according to the nature of the task, are created through shared responses. These extend the former range of each participant in a manner which could not necessarily be presumed of individuals thinking alone. Confronted by novel ideas – and assuming these are not rejected out of hand since they do not automatically integrate with the existing cognitive structures – they will form new categories or sequences which then add to the totality of networks and become a part of the whole.

A Pedagogy of the Imagination is not a new, undiscovered way of teaching. It is in common usage all the time. Good Early Years and Primary Education teachers use it endlessly, from the teacher who reads a riveting story, but stops before the final page to ask, ‘How do you think this story ends?’, or the teacher who finds a stick and says, ‘I wonder if this could be a magic wand. How can we find out? What do you think it could do?’ But imagination can sometimes prove fragile. For example, when I was teaching young children basic English in a Language Centre before the children’s transfer to mainstream schools, we read the standard range of children’s stories. After one, a boy approached me, almost breathless with excitement, and asked: ‘Mr. Caffrey, is that true?’ I said, ‘Amir, it’s a story.’ His face and body immediately crumpled with disappointment. ‘Oh,’ he said, ‘so it’s lies then’. I had killed the magic. The point is not that a Pedagogy of the Imagination is rare, but that seemingly it evaporates through the age range. Whether this is a normal phenomenon overwhelmed by an increasing grasp of reality or, in schools, by the pressures of the curriculum, remains in debate. It would appear, however, that in many cases, by the time students reach FE it has for many almost completely ceased to be a living feature of formal learning. I argue that it is (at least in the early stages) the tutor who should re-awaken it. But for that to happen, the teacher must first be aware of it as an option. Many seemingly are not or if they are, fail to exploit it. In this instance, perhaps the pressure of the syllabus for GCSE, the Awarding Body specifications, or reservations about time versus benefit may be factors. These observations have implications which will be examined later.

In order to clarify in outline a Pedagogy of the Imagination, two brief examples may help to show how such an approach might operate.

Some initial examples

Barbering

Consider learning barbering. In the salon, with a trainee, the conversation might proceed as follows:

- Have you found out what the client wants?

- Yes, a trim.

- Good. Now first comb the hair flat and spray it lightly with water to hold it in place. Starting here [demonstrates] take a hank of hair about this size and hold it like this [demonstrates] and lift it at 45°, to the scalp. Why 45° and not 90°? [Student answers or demonstrator explains]. Then trim like this [demonstrates]. Then move on to the next hank here and work your way round to here. [A further demonstration.] Do you understand so far?

- Yes.

- When you get to the front, you can choose – either continue on round, or start again from the back on the other side and work to the front as here. Do you understand?

- Yes.

- Show me. [Student demonstrates the technique.]

- Good. Have you any questions?

- No.

- If you have any problems, ask. Also, I will check how you are doing from time to time.'

This step-by-step description approximates how a student barber might proceed under direction. Using the Pedagogy of the Imagination to project this training into an extended exercise, the tutor might say: 'Now imagine that your client were blind. He wasn't always blind, and when he could see he was very conscious about his appearance at all times, and he still wants to look smart. So, now he can't see what you are doing; what adjustments would you have to make? How would you go about dealing with a client like that?' This is a not wholly unrealistic scenario, as people of all types only have their hair cut because they have some regard for their appearance and the impression they create with other people. In the example just given, it will be clear that there is no set 'correct' answer, though some responses will be more sensible than others. The aim is not to evoke the perfect answer, but to prompt the student to use their imagination to think more broadly than the immediate

situation demands. The cultivation of this habit of thinking beyond the immediate situation – activating the imagination to do so – is one of the aims of the exercise.

Carpentry and Joinery

A second example might be for carpentry and joinery students. Their standard training would include specific skills: use of tools, how to measure, how to make joints, how to construct a window-frame, how to hang a door and so on. These exercises are all demarcated within narrow tolerances appropriate to their stage of training. Having completed the acquisition of the basic skills needed for the proposed exercise, the tutor, cognisant of the Pedagogy of the Imagination, might say, 'Now, using what you have learned, or experimenting if you wish, I would like you to design and make a pull-along toy for a toddler. I would like it not to be a simple copy of something you have seen, and I would like it to do something more than just roll along the floor.'[75]

The use of an imagination exercise of this type would demand a level of inventiveness that currently is not generally demanded of students. Invariably they are shown a finished model of the exercise, follow set plans, have the techniques demonstrated, often are given dimensions, use specified materials, and follow a predetermined sequence of procedures as deemed good practice and consistent with NVQ standards. (It should be noted that this last is not necessarily a limitation; many tasks require a coherent sequence, and it is one measure of the joiner's occupational knowledge that she knows these). The completion of this task would demand not only memory of similar items, but also an individual capacity to complete the brief whilst exploiting the manual skills learned up to that point. A clear distinction, however, needs to be made between imagination as generating invention, and skills as meaning the application of learned techniques to ideas even in novel contexts. First comes the idea; only then are skills relevant to the creation of that idea. This is expressed simplistically for clarity although the two, once initiated, operate, as with aim and method, in tandem flowing backwards and forwards but the distinction needs to be clear – inventiveness and skill are not synonymous. In a sense this applies to all vocational training in that without some tangible outcome

[75] A shed would be better as something more appropriate to their needs, but projects have to be realistic in terms of technical demand, materials, size and cost. Earlier generations of traditional carpentry and joinery apprentices would have planned and constructed a made-to-measure personal toolchest.

being conceived, there is no opportunity to exercise skill no matter how highly developed. The extended use of imagination is neither unknown, nor asks for the unrealistic in terms of skill or creativity, but appears little cultivated in my personal experience of general FE. This example from Carpentry and Joinery, as with the scene from barbering, is developed subsequently.

It will be clear from these examples that, as distinct from the NVQ approach – which when conscientiously pursued can offer a valuable lens for observed competence – extensions of the topic evolve into what might be more aptly described as the Pedagogy of the Imagination. This is engaged through triggering excursions into the so-far unexperienced, possibly even unreal, potential for creativity through openness, problem-solving, invention, or co-operation with others. Such situations are generally overshadowed by the demands and practicality of real-life events or the restricted scope of the prescribed specifications. They can, however, contribute to the expansion or complexity of the categories model and again, unlike the NVQ, immediately offer scope for great individual variation. At this point, I suggest a metaphor: the NVQ follows an established path through the woods, whereas the Pedagogy of the Imagination – whilst acknowledging the value of the path – encourages students to discover additional, less well-trodden, routes.

This metaphor is illustrated by a further examination of the barbering scene if we now consider in more depth how the pedagogy might work in comparison to the more readily recognised forms of pedagogy. A beginning might be to analyse how the dialogue from the barbering scene develops this since this scenario has already been sketched out. The question of hair-cutting for someone who had lost their sight could just as easily been presented as more propositional knowledge: ‘If by chance you had to deal with a blind client, this is what you would do …’. By presenting it as an open question, several consequences become apparent. Firstly, no obviously ‘right’ answer presents itself as would happen if a joiner were asked, ‘If this job had to be left in the garden which glue would you use?’ Secondly, a Deweyan exercise might ensue as an internalised conversation: ‘What do I already know about hair-cutting? Have I ever worked with a blind person? What difference does being blind make? What choices of technique do I have? Which of these is most likely to succeed? Do I consult the client? What do I do if he asks for something unrealistic, or ridiculous or difficult to manage?‘ and so on, probably as a haphazard rather than

logically structured series of questions (the joiner, however, would simply run through the types of adhesive which she knew). The trainee barber then needs to scan these in order to choose a course of action whilst remaining alert to the possibility that no simple answer may emerge, and some type of negotiation will follow.

The amount of imaginative processing, therefore, that needs to be undertaken is considerable, with real consequences for subsequent action. Whilst it is likely that only a few of the possible choices might be needed, having had to conceive the list initially prompted a set of responses that may be retrievable from the memory on subsequent occasions as funded knowledge. The contrast, therefore, between the joiner replying, 'Araldite,' and the comparative complexity of the barber's situation gives some indication of how thinking, requiring imagination rather than the iteration of propositional knowledge, expands the demands made of the student. Demands prompt possible answers. Possible answers prompt hypotheses. Hypotheses prompt analysis. Analysis leads to choice. Choice implies what is believed to be potentially the most successful outcome. But the potentially successful outcome is now subject to the test of action and verification, the arbiter of truth in a pragmatic world. And it might be wrong, whereas 'Araldite' is reliable (although even the joiner might have been challenged if told that for outdoor use adhesives were unreliable and other forms of assembly were needed). Little wonder that tradition has the advantage in practice: training, to a greater degree than education, aims to avoid errors from the outset; the focus is on *delivering* the correct performance not on *discovering* the correct performance.

If the argument is to develop a Pedagogy of the Imagination, a cautionary note needs to be sounded on introducing the following sections. Superficially it may appear that the aim is to undermine the virtues of more standard pedagogic forms. This is not at all the case. These all have well established histories and credibility. Most have the virtue of enabling large amounts of information to be communicated in a limited amount of time and space. Most can be well organised, and the material presented in a logical or otherwise relevant manner. Most readily lend themselves to note-taking or other easily recoverable means of reproduction. In short, they have survived, probably for as long as education, however selectively it was delivered, because they work very well in many situations and can be adapted to the needs

and capacities of the students. The thrust of the following sections is to outline how these kinds of method can be adapted to extend the learning, and also the educational, experience where this is considered beneficial. The intention is not to discourage or abandon well-proven techniques, but rather to expand their potential, to add breadth and depth to material by approaching it from less orthodox directions so as to increase thinking, awareness and all the other desirable outcomes through the engagement of imagination as a deliberate mechanism. That this may appear to introduce novelty is admitted. What is not intended is novelty purely for its own sake; even where this may improve attention and motivation, the object is always the student's learning.

I suggest here that there at least three differing levels of scrutiny for any proposed pedagogy. The first is the theory, or educational philosophy, which underpins credibility. Here that has been illustrated through the work of firstly Dewey, then Winch, then Hofstadter and others, with an essential focus throughout on the value of imagination and how the work of these writers contributes to its understanding and use. The second is the pedagogical approach adopted by the teacher as most suitable for the students in question, here reaching beyond the baseline of vocational training into personalised cognition through the stimulus of imagination. This strand continues here under exploration. The third is how the student responds to or engages with the material, and how her education is enhanced (this will be addressed in later sections). How the teacher navigates her way through this labyrinth depends on a number of factors which are also developed below.

As stated, a crucial aspect with potential for misunderstanding is that the Pedagogy of the Imagination is not an 'add-on', but integral to the propositional learning itself; it does not constitute a separate supplementary curriculum. Given that these proposals are effectively covert, there are obvious obstacles to their implementation which will be more fully developed in the discussion below on the benefits and limitations of these ideas.

How Does a Pedagogy of the Imagination Operate?

Before studying in FE, students will have been taught by a variety of recognised pedagogical of methods which will have included visual, verbal, and kinaesthetic approaches. There is no clear reason why any of the traditional pedagogical

methods could not accommodate an extension into the imaginative adjuncts of the type suggested as examples here. In the following three sections, I will first introduce and outline what is meant by what I call 'attributes' and their purpose. In the second, I will suggest activities which a Pedagogy of the Imagination might use to encourage an attribute (or group of related attributes). In the third, I will analyse each to consider how the imagination is implicated, and how it represents a *sine qua non* of the 'attribute'. Whilst every attempt will be made to focus closely on imagination in education, no argument is being made that imagination need have a conscious role in all situations in the sense implied by the phrase 'the Pedagogy of the Imagination'.[76] The single examples viewed here suggest where it can be applied to added advantage with specific reference to vocational training in general FE, but with multiple examples as envisioned in the course of the students' stay at college, there are implications for extensions to the students' personal and social lives.

Attributes

In this Part of the thesis, I have used the word 'attribute', but passed over it with little explanation; it may now be helpful to expand on why it is significant here. Attributes are those values and habits which a society considers valuable, and which it attempts to cultivate in its members. For our purposes, these attitudes include a desire for truth, honesty, tolerance, persistence, courage, empathy, and so on. Within employment they may include conscientiousness, civility, compliance, flexibility, an acceptance of workplace *mores*, and so on. However, the list is endless, reflecting the values of both individuals and society, and only a surface introduction can be attempted here. They are the temperamental and dispositional factors which permeate how we approach tasks and problems, and they also affect our attitudes and emotions. Many are learned at home, further encouraged by schooling, and become the traits which govern much of our personal, emotional, social, civic or occupational lives.

[76] It was very convenient when 'imagination' had an everyday accepted meaning, however imprecise or individually conceived, as a 'separate' identifiable attribute. Being seen here as a form of thinking not necessarily constrained by reality imposes a lack of linguistic clarity on the word.

Some attributes are so well-recognised as to be taken for granted. Others are less consciously recognised and further reference will be made, for example, to curiosity or inquisitiveness, without which little action will follow. Imagination is one of those factors which is presumed (rightly in my view) to be universal, but varies in meaning, according to viewpoint, as a capacity for inventiveness, or fantasy, or day-dreaming, or problem-solving or empathy, each user seemingly choosing that stance which best suits her interpretation. For those who regard it more in the light of a singular gift, it could be considered an attribute. The stance here, is not that there are not individuals specially gifted in this way, as some are for maths or music or painting, but that at a more prosaic level it is a universal phenomenon.

Universally acclaimed though imagination notionally is, it may be this uncertainty of interpretation which tends to diminish its value in favour of the security of measurable propositional knowledge in schools from secondary years on, when the pressures of performativity required under the current regimen become dominant. There is an argument, therefore, that by the time students reach FE (or other contexts of learning), imagination, as an educational adjunct in many areas, has atrophied to the point where, with exceptions, it plays little further conscious role in vocational training.[77]

The Pedagogy of the Imagination, therefore, attempts to fuse these two: the re-activation of the imagination within the pedagogic repertoire used in vocational training as one means of further reinforcing the knowledge and understanding of the technical specifications, whilst equally, fortifying the desirable attributes of the students. It is from this fusion, where successful, that the *educational* value of vocational training further emerges. Knowledge is essential. Equally essential is a mindset which enables adaptation to the norms of one's society. As Dewey insisted:

> Collateral learning in the way of formation of attitudes, likes and dislikes, may be, and often is, much more important than the [subject] that is learned. The most important attitude that can be formed is that of *desire to go on learning* (Dewey, 1998, p. 49) (italics mine).

[77] A mystifying loss of opportunity is the seemingly widespread lack of awareness in systematic teaching of the power of the transfer of training which is enabled precisely because of the flexibility of the imagination and upon which much vocational training depends. This topic however, cannot be pursued here.

The Pedagogy of the Imagination aims at the simultaneous expansion of both propositional knowledge and the development of the individual. Where traditional training closed down a topic as 'learned' and therefore complete, imagination, operating on the burgeoning attributes, opens up further under-developed avenues for exploration.

Although the attributes are presented as distinct, it will be clear that in practice they fuse with other attributes and are rarely free-standing. The purpose of singling out the main features here is not to suggest that a simple approach is possible, rather, to focus attention on how one attribute may be conceived of as central to the activity suggested.

Activities Which a Pedagogy of the Imagination Might Use to Encourage an Attribute

What follows are four examples of how a Pedagogy of the Imagination might extend the educative value of vocational training through a focus on personal attributes as well as on technical skills, across different areas of learning. As indicated, these will be outlined in brief. Each example will be examined for its cognitive content, and then related to a potentially effective pedagogical approach, thus fusing all three perspectives: attribute, activity, and a Pedagogy of the Imagination.

Given the huge range of vocational training undertaken by FE nationally, only a very small selection of examples can be offered here. Nor, as the preceding paragraph made clear, are the attributes chosen the only ones possible for the subject material. They represent no more than how the Pedagogy of the Imagination *may* be encapsulated into the discipline in order to enhance personal attributes seen socially as of value, whilst simultaneously requiring pertinent technical skills.

- **Art, Design, Fashion and Textiles**: This example is based on a real need for the attribute of conscientiousness in filling a perceived niche in Dress Design**.** When my wife was in the advanced stages of her terminal illness, the lack of clothing adapted to bedridden patients was marked, and caused substantial inconvenience to both patient and carers. The need therefore was for imagination to develop a range of bedwear suitable for vulnerable patients.

- **Carpentry and Joinery:** Recalling the scenario introduced earlier, the tutor might say: ‘Now, using what you have learned, or experimenting if your wish, design and make a pull-along toy for a toddler. I would like it not to be a simple copy of something you have seen, and I would like it to do more than simply roll along the floor’. What is required here is a capacity for innovation and imagination as personal attributes distinct from technical skill.
- **Motor Vehicle:** This example might ask motor vehicle students to account for uneven tyre wear which then becomes an exercise in problem-solving. Students ask for further information from the vehicle owner, and then imagine a range of possible causes for further discussion with the tutor.
- **Construction:** In this example, students are required to open a locked door for which the key has been lost – a real-life practical problem demanding the activation of the imagination to solve.

Analysis of these examples will now show how the tutor’s use of a Pedagogy of the Imagination could prompt students to respond. This naturally must remain hypothetical, but has the advantage of plausibility, and since the overall aim is to improve the educational value of training to the student, the direction taken by the student’s cognitive and affective functioning is important.

Pedagogical Approaches to the Scenarios with Reflections on Student Response

Art, Design, Fashion and Textiles

While based on real, and very personal events, the scenario could be imagined like this: a patient is severely ill. Carers have difficulty dressing and undressing their patient using conventional bedwear. The patient is increasingly less and less able to move and assist with the twice daily routines, whilst significant discomfort ensues if handling is, however unintentionally, jarring. The need is for clothing adapted for people in this and similar situations, since existing garments need to be pulled up from the feet, down from the head or threaded through the arms from the back. None of these can be readily accomplished with patients who, in the main, are restricted to lying on their backs or sides. To add to the physical practicalities, the matter of patient dignity is an important additional factor, since this is one of the emotional factors which accompany the physical ones and an important part of professional

practice. To produce designs to accommodate these restrictions, apart from the highly imaginative need for inventiveness, demands a deep understanding of the problem through reflection and research with a lively appreciation of the seriousness of the project. An appreciation of all the complex factors involved is not readily met, as practicality of design, ease of handling for carers, comfort, convenience and the maintenance of dignity for the patient are all important factors. Added to these is a recognition that many patients will be vulnerable, in pain or easily made uncomfortable with attendant distress added to existing emotional states of anxiety or fear. It will be clear, therefore, that undertaking this assignment would need, (if the exercise had a real-life dimension which would be essential were it to be considered as a realistic commercial opportunity), a real capacity for conscientiousness extending far beyond the technical requirements of mere dress design.

Given these factors, a number of staged imaginative approaches which the tutor might use could include the following. The tutor might continue like this:

- ‘We have discussed in detail the issues surrounding what I want you to do. First, I would like you to take it in turns to sit in a wheelchair and try changing your clothes by yourself. I want everyone to have a turn.’

The exercise will then be developed through question and answer and the prompting of the student to reflect on both the practical issues and the patient’s reaction to the difficulties of the task. Once completed the tutor may move to the central, but significantly more demanding, matter of bed-ridden patients:

> ‘Now that you have some idea of the problems involved, divide into groups of three and again, with everyone trying each role, I want you to pretend you are either the patient or one of the two carers and again as the carers, try changing the patient’s clothes. A conspicuous difference here is that whilst the patient in the wheelchair has a measure of physical competence, the patient in the bed has very limited control over her movements. In addition, she can very easily be injured, or subject to pain and you must avoid both. You must also remember that whilst she will co-operate to the best of her ability, her ability is very limited. Lastly remember to be patient. Put yourself in her position and ask yourself how you would cope if it were you. All of these things will influence what you are able to design.’

The concept of conscientiousness in this hypothetical project means the disposition to do something correctly, to a high standard, with appropriate attention to detail, to be willing – through invoking the imagination – to revise and re-work as needed where room for improvement becomes evident. It also entails a strong sense of ethical involvement in the standards needed for the task, and the sense of responsibility to the end-user which would carry the project through to a successful conclusion. A clear appreciation of the end-user over-rides many other considerations.

It must be clear that this project aims at the ideal. The acceptable level of reality would be judged as work developed by the tutor. Since it is based in vocational training, her duties would probably first need to consider the technical requirements laid down by the Awarding Body, and, since qualification is the bedrock, this is both necessary and ethical. However, once these demands are met, then the refinements extraneous to initial design, that is, consideration for the patients and carers could be added according to the aptitude and attitude of the students, the time available and her assessment of how remaining course time should most usefully be spent. Ideals can rarely be regarded as more than a road to be followed, rarely a destination. Conscientiousness, however, remains a laudable intellectual and moral attribute.

Carpentry and Joinery

We recall from earlier discussions that the brief to these students was:

> ‘Now, using what you have learned, or experimenting if you wish, I would like you to design and make a pull-along toy for a toddler. I would like it not to be a simple copy of something you have seen, and I would like it to do something more than just roll along the floor.’

This represents an imaginative approach by the tutor to extend skills through a project which, at face value, has little to do with the formal specifications, but which requires use of the formal skills learned for successful completion. The tutor will check understanding and answer any initial questions. However, much of the planning, if the project is to achieve what is intended, will need to be done by the students either individually or through discussion. Question and answer by the

teacher will help focus thinking on the essentials and reduce undue time-wasting or unproductive errors.

A reasonable starting point for the student would be to try and remember examples of such a toy she has already seen in real life or in a book or catalogue. This may become the starting point for some. Others may well decide to attempt the task from the ground up, working from basic principles and clearing their minds as far as possible of preconceived ideas. This might follow an analysis of the wording of the brief. Pull along. By what? String? A handle? The family dog? Elastic? Something else? Does ‘toy’ mean restricted to unconsidered play, or can some deliberate learning task be incorporated? ‘Roll along the floor’. Does that mean that wheels must be incorporated? Would skids, rollers, runners, caterpillar tracks equally meet the design brief? No mention is made of materials. What materials are available? No colour or finish is mentioned. Paint, varnish, natural wood or other material, naturally non-toxic. Could it match the child in height? Could the child sit on it? Safety, not mentioned, has to be implicit and may include, stability, sturdiness of structure without excessive weight, splinters, or the potential for trapped fingers. ‘Do something more’ could mean several things: provide opportunities for educational play, incorporate some device for moving parts, make noises, play tunes, carry loads, incorporate a brake and so on.

Initial sketches or drawings will help both to visualise work in progress and to aid memory as the scheme develops. It would be an interesting variation if a student were to assemble pieces of cardboard rather than draw sketches. General observation of students places them in one of two categories. Those who produce a large and varied number of different possibilities in a rapid overview of possibilities without undue detail, and those who having decided on a basic format work on that until either complete or abandoned as unlikely to be serviceable: broad brush or magnifying glass. It will be clear that both groups will need to visualise the potential product with greater or lesser regard for detail before completion. Both will need the capacity to visualise their projects; the one as multiple versions with variations, the other with an increasing refinement of detail to a workable prototype. Without this capacity to visualise, the task will become very difficult demanding a system of practical trial and error beyond the trial and error likely to be unavoidable. Individual differences between students are also likely to identify those who include

dimensions, consider technical skills, and allow for accessories early on and those who ignore practicalities until there is a workable idea to construct avoiding the inhibition of practical limitations in favour of freedom of expression (although ultimately inevitably reined in by practical considerations).

Inventiveness – as just one component of the imagination – is a cornerstone of this exercise. Initially to visualise the analysis above before moving on to the production of ideas is needed, particularly when not part of the conventional set of work skills. This requires reflection, research, the formulation of possibilities, the capacity to assess the value or otherwise of options, the self-discipline not to plagiarise and the capacity to adapt old ideas to new purposes. From inception the student needs the self-discipline to formulate prototypes within the technical competence of their creator, the ability and willingness to evaluate the strengths and weaknesses of her own ideas and reject the unsuitable. Looking to the end user, she needs the imagination and insight necessary to visualise how the toddler will respond to or use what is made, the courage to risk the unconventional in design, but also the willingness to discard the unsuitable following dispassionate appraisal of her own work. Not least, she must give serious consideration to the likely response of the child's parents or carers who will be faced with the consequences of any misadventure. Given that the end-product is a physical artefact, internalised visualisation (aided by sketches perhaps) is an inescapable and on-going part of the developmental sequence.

Considering this not as a practical exercise, but rather as it operates in the student's mind, reminds us of Dewey's problem-solving, and Hofstadter's concept formation, and the extension of existing categories. Freed from material restraints, problem-solving and inventiveness therefore become allied in a search for new choices, inevitably emerging from existing schemata, even where the pathways are not self-evident. It is the bringing into conscious awareness of these hitherto unseen associations which we recognise and label as inventiveness. Some pathways are there already. The capacity for association through the innate ability to identify analogies creates new sequences. Part of the aim of this exercise, with its educational implications, is the loosening of habitual ways of thinking in favour of forging a new and extended repertoire. The old is not abandoned; much in vocational training is received practice and efficient; it is merely deprived of some of its potency

as a monopoly for choice where alternatives could be profitably considered. The attempt is to weaken the habit of predictable responses without loss to its virtues, whilst strengthening the habit of assuming that a less myopic view of the world is possible. The exercise asks for new thinking, but it also incorporates, without in any way diminishing them, the application of existing practical skills and techniques.

Were the tutor to modify her pedagogical approach by presenting the task, not as a competition, but with the understanding that the resulting toys would be viewed and appraised by fellow students, opportunities would arise for objective appreciation of merit or realistic criticism. This could be a useful opportunity for analysis based on objective scrutiny where overall concept, execution, attention to detail and suitability for purpose were seriously regarded. Constructive feedback might emerge at individual level. For the group the range of ideas available on approaches to problem-solving when viewed as inventiveness, would be broadened. This would extend inventiveness to embrace open-mindedness to alternative ways of responding to challenges and the application of judgement in assessing the results through the pooling of the group's contributions.

Motor Vehicle

Determining likely causes for uneven tyre wear for Motor Vehicle students can be presented as a real problem, and therefore merits a real answer. For experienced students this task may be too simple, but for these new to this area of vocational training, it is a useful opportunity to combine observation, elicit opinions and develop a list of alternatives, filter these for plausibility, and inevitably provide solutions to avoid reoccurrence. The tutor presents the problem by showing an unevenly worn trye. She wants the students to imagine how this might have happened. Real knowledge, and an understanding of the mechanical features of cars, will vary amongst students. There is opportunity, therefore, for both a display of knowledge and considered speculation. The tutor will decide on how much latitude is permissible. Suggestions will probably include poor tracking, worn mechanical components, defective tyres, driving style, deliberate damage, uneven road surfaces and so on. Discussion will revolve around the circumstances of each and the likelihood of each occurring, with emphasis placed on observation of the wear and logical interpretation. A list will emerge that is reminiscent of Dewey and problem-

solving. Like Dewey, an evaluation of the choices will result in some consensus for the cause. What for Dewey would then constitute a choice of action to test the validity of the choice made, will in this case be substituted by the tutor for reliable knowledge of the tyre in question where available, or a description of the more commonly occurring causes for the defect. Given the nature of the list generated, 'solutions' to each problem should become self-evident. It will be remembered that a problem arises only when an obstacle intervenes to obstruct the planned intention of the organism. Here, this means ignorance of the real causes of the wear, hence few suggestions as how to avoid the problem in future.

Now, having dealt with the routine causes, the tutor might choose to extend the exercise through an imaginative approach and introduce specially briefed 'visitors' (owners of the said car) to the group whose driving habits or circumstances the students will interrogate. Under guidance it might transpire that one lives at the end of a stony track. Another habitually accelerates hard and brakes hard. One buys re-treads or part-worns to save cost. Another never bothers with servicing until the car breaks down and so on. Problem-solving often is revealed through a decision tree, but aberrant situations also occur but are nonetheless problems to be solved.

Construction

For Construction students, the task of opening a locked door when the key has been lost contrasts sharply with workshop exemplars summarised earlier as the following of approved procedures. Here the scope for extending the known into the unfamiliar through fault-finding and repair is conspicuous, particularly if presented as a problem for the student to solve, and not as a further procedure simply to be learned and followed. Such a task could itself be regarded as a particularly pertinent example of how the Pedagogy of the Imagination might operate.

Where some imagination on the part of the teacher would generate such problems, the demand on the student for sensible answers would test their knowledge of procedures, their capacity to visualise the circumstances, and the ability to range over hypothetical solutions, whilst analysing each for the most promising in ways which are not necessarily envisaged in the formal specifications. As extensions dependent on imagination, self-questioning as to how something works, and how to

use this knowledge productively, and be intelligently handled, can be seen to have much to commend it.

I have earlier argued that curiosity is a crucial attribute for imaginative action. In this example, an initial requirement would be an examination to establish the problem. Which part of the mechanism was preventing the door from opening? How did it operate? How could it be circumvented, and what tools would be required? What techniques might be explored? (what techniques should not be explored if significant damage were to be avoided?), and once opened, how might the lock be salvaged and if not, what alternative locks would be suitable and how did one fit them? These the tutor might elicit through question and answer including such basic questions as, 'Is a lock necessary here?' It will be clear therefore that before, during and after physical intervention, a significant amount of analysis will be needed. This will be based on existing knowledge, close observation, the imagining of useful techniques, partly to solve the problem, partly for fear of worsening the situation, causing unnecessary damage, or acting prematurely when further thought might provide a more satisfactory approach. In essence, most of the solution results from thinking rather than from direct action. Crucially, the students must want to know how the problem can be solved.

Without curiosity there would be little impetus to envision the nature of an unfamiliar problem, even less to devise and evaluate a range of possible solutions before experimentation actually took place to effect a solution. One can assume some sort of internalised conversation by the student as she proceeds from an initial 'What is the problem?' and 'How does this lock work?', to 'How far does the bolt go into the keeper? Can it be worked back until free? What type of tool would I use for that? Can I cut through it? Could I get a hacksaw blade in there? Can I get something in between the edge of the door and the jamb? Would a disc work? Can the lock be dismantled? Could I pick the lock?' and so on. The running commentary is akin to Dewey's list of hypotheses, except that in the case of the lock, experimentation might be tried for each idea as it emerged. If it worked, the problem was solved; if not, the search continued. The method after curiosity had triggered the imagination would probably be pragmatic. The tutor, after leaving the student to exercise her initiative for a while, might then consider it productive to talk to the student as analysis proceeded. This would be a means of checking progress, identifying weaknesses or

misunderstanding, and help focus attention where this would be beneficial, since the purpose of the exercise is to give an opportunity for curiosity to solve a problem, but allowing excessive levels of frustration to develop may be counter-productive. Throughout these exercises, it is taken for granted that the tutor remains on hand to intervene where needed. But in additional to these instrumental purposes, her imagination can transform questions into a source of interest and attentiveness. Having established the facts, questions such as, 'What would happen if …? can extend thinking beyond prosaic boundaries, and link ideas in a memorable way and focus attention to where it can be effectively used to extend knowledge and understanding - particularly if, by good fortune, insights result.

Summary

The examples above of how vocational training might be extended through imagination to broaden the educational value of the technical skills, are varied in complexity. The aim was to suggest ways in which the formal specifications can be made more resonant to the advantage of the student, whilst detracting nothing from the merit of the skills involved. That the examples used can be criticised as artificial is acknowledged; the intention was to cover what appeared to be a realistic range of desirable attributes which FE colleges could extend, even when pre-existing, through imaginative interpolations by the tutor. Since the range of vocational training across FE nationally is huge, only a small proportion of what is available could be chosen. By linking the examples of attributes sought for enhancement to the nature of the training, it is hoped that the key arguments were persuasively made.

Before developing the argument further, a summary of related concepts which have arisen in the course of this thesis might clarify any remaining questions about distinctions between analogies, transfer of training, and a Pedagogy of the Imagination. It will have been noted that whilst these may intersect or be complementary, they are not synonymous. Therefore, as was shown with categories, an analogy is a cognitive construct where there is the recognition between two concepts of features seen to be of sufficient similarity, common to both, and perceived with sufficient clarity, for them to be linked in the subject's mind in a way which did not occur prior to the analogy being drawn.

In transfer of training, a similar set of circumstances occurs. In vocational training it is likely that the tutor will draw attention to the analogous situation in order to broaden the student's experience of different, but similar, circumstances in the hope that the idea of analogous situations may implant itself in the student's mind to be subsequently applied as needed. This is useful since not every variation of every technical specification can be covered in taught sessions. The virtue of this is time-saving as it reduces exploration of possible, but unhelpful, attempts to complete the task as the analogy or parallel features are assumed. Of course, as a challenge — the tutor may not do this. She may simply say, 'You have just changed the generator on that Ford. Now see if you can change the generator on that Audi,' leaving the student to identify the analogous factors for herself. One of three things may result: first, the student recognises the common features and readily changes the generator. Second, the student fails to see the similarities and cannot do the job. Third, the student may ignore much learned from the Ford and treat the task as new and after inspection say to herself, 'If I take off those two bolts, disconnect the wires at the connection block and remove that tensioning arm, the generator should come off. To put a new one on, I will reverse the procedure.' Here the task is treated as a new example of problem-solving where the degree of transfer is open to debate. A Pedagogy of the Imagination, however, might prompt the question, 'What else could you use a generator for?'

A Pedagogy of the Imagination, whilst sharing some common features with the two situations above, differs from them in the following ways. There may or may not be a 'correct' end point. For example, in the example of hair-cutting with the blind client, the outcome is known only in in the sense that it must be competently done within a flexible range of styles agreeable to the client. With joiners making a pull-along toy, there is a very wide set of outcomes. Indeed, it is possible that even the parameters set may be abandoned if the end product is of such a nature as to justify it through, for example, originality of design, quality of workmanship or other note-worthy attribute like end-user popularity. In other words, a Pedagogy of the Imagination indicates a potential conclusion, but leaves both the details of this, and the method adopted to achieve it, to the judgement of the student. In performance-based training, as with the NVQ model, the analogy is presumed, and the outcome known. In a Pedagogy of the Imagination, an analogy is seen by the tutor, but not disclosed

and the outcome is presumed in general form only. The student must search back and forth, this way and that, through her existing repertoire of categories looking for an endpoint which displays a set of matching analogous features of sufficient force to create both a credible link, and to satisfy the demands of the task set. When she finds such a pairing, she adds a new category to the network; she adds to her range of categories and gains practice in undertaking this type of exercise. This is part of the educational process: it incorporates the acquisition of new knowledge, the extension of existing knowledge and a greater level of understanding between the two. This prompting, it is argued, could make a crucial difference to the standard model of training by using imagination to open up new opportunities for individuals based on their mind-set whilst in no way detracting from the training itself.

To conclude this account of how a Pedagogy of the Imagination impacts on those associated with it, I now turn to examine the main strengths and weaknesses of this venture into reforming vocational training.

The Benefits and Implications of a Pedagogy of the Imagination

Having alluded to pedagogy, the implications for my proposals need to be considered over four further strands: the implications for the student, the tutor (including teacher training), the employers, and the curriculum for vocational training in general FE. I have added an introductory note on the institution of the college itself. To an extent, some will more conspicuously overlap than others. For clarity each will be examined as though independent. It will be clear that the tutor as instigator and student as recipient are the prime agents.

Introduction

Some general remarks may prove apposite before considering the implications of these developments but are not suggested as reflecting any hierarchy. The first is that the tutor is, at least in the initial stages, the instigator of activities. It is hoped that this will become less marked once the students' dependence on someone else to provide the impetus declines. The second is the active nature of the interventions where 'doing' includes pertinent thinking. The third is the demands placed on the student in terms of her imagination, whether this is framed as analysis, problem-solving, innovation, transfer of training or physical activity. The fourth is the bonus to the student of the cultivation of the so-called soft skills increasingly demanded in the

modern workplace (a reminder that the vocational training with its aim of employability remains dominant). The last is the opportunity to develop attitudes of mind that are adaptable not just to the workplace but to a broad range of situations which could readily emerge in the student's social or private life and provide her, through practice and familiarity, with a responsiveness to novel situations which may not otherwise have presented itself.

Implications and Benefits for the Institution

Discussion and Personal Observation:

Although it would, in the main I suspect, be optimistic to think that FE colleges are completely integrated in their activities, it would be an injustice to deny that the overall aim of any college is to transform the lives of its students. It is, however, inevitable that large organisations can rarely attend to individual cases as a matter of policy, devolving responsibility rather by delegation through increasingly subordinate tiers of management. This can also, in a sense, been seen as the expansion of the general to the specific, of policy to practice. Nonetheless, allowing for this distancing between strategic planning and implementation, the college, as an entity, gains or suffers from the overall view taken of it by interested parties. It seems a reasonable suggestion that a college's reputation hinges on two things: how it is viewed locally in its student outcomes, and on how the various departments of central government assess it as a corporation with neo-liberal measures of accountability and efficiency. Where this latter might purport to mean that a college's main concern is with measurable outcomes, the potential for improvement over time on its reputation is not negligible and can expand across a broad reach of local influences. Under these circumstances active support for schemes to improve benefits to students (where they do not conflict with essential duties) will be noted as positive.[78] Given that colleges broadly serve local communities, it seems a reasonable assumption that reputation is important for students (and their parents) and employers. These points are expanded below.

[78] The reality inevitably is more complex than this summary suggests since there are numerous factors to be included in any fair assessment of a college's standing, not least that 'government' is far from being a single tangible entity.

The major overall scrutiny of college performance is undertaken by the Office for Standards in Education, Children's Services and Skills - Ofsted (Government UK. [Ofsted], 2019)[79] and the influence of Ofsted should not be underestimated. Colleges are graded following the Education Inspection Framework on the quality of education, behaviour and attitudes, personal development, and leadership and management. This results in grading, covering the areas inspected, as Outstanding, Good, Requires improvement, or Inadequate with implications for re-inspection in all cases. These grades are published, and for many general FE institutions are significant. Unfortunately for my argument, the preoccupation of Ofsted is with the planning of the curriculum, its systematic coverage, the sequential nature of student learning, and successful outcomes for the learners. How these are to be achieved is not specified, and therefore absent from the guidance except by inference. Therefore, an appropriate pedagogy, as devised by the teacher, is assumed (and evaluated in its effectiveness). The emphasis throughout is on achieving the intended goals. The teacher, by implication, is free to select her own methods, but will be judged by how successfully her students achieve their goals. All this could readily suppress any initiative on the part of the teacher to deviate from a standardised programme. There is no reason therefore to believe that imagination be even considered, let alone risked. Part of the purpose of research for this thesis is to persuade tutors in general FE that a Pedagogy of the Imagination can enhance the educational dimension of vocational training, rather than constitute a threat to it.

For FE institutions to survive, funding is crucial and largely depends on the recruitment of students. This is influenced to some degree by a whole range of factors, including, most significantly for the college, following student recruitment, retention, and achievement.[80] The success and reputation of colleges will also depend on parental and student opinion often gleaned from sources as dubiously reliable or functionally convenient as hearsay and personal impressions, a knowledge of limited cases, common-sense assumptions, convenience, travel and simple prejudice. But equally, over time, the quality of instruction and the

[79] These regulations appear in England under part 8 of the Education and Inspections Act 2006. For FE inspections see: Further Education and skills inspection handbook, available from Gov.UK at: https://www.gov.uk/government/publications/further-education-and-skills-inspection-handbook-eif

[80] The funding system is avowedly complicated with differing categories of students drawing down different strands of the funding stream.

competence of students emerging into employment will become noted. Whilst people outside the college may know nothing of the specifics, the market value of a good reputation is not inconsiderable. And for those who are directly influenced, the outcomes that justify the reputation may be both profitable and prestigious. Whilst the primary beneficiaries of the proposed interventions through imagination are naturally the students, their vocational learning at college is only one part of a matrix of influences shaping their lives. The proposals made here, akin to a self-fulfilling prophecy, both impact on other stakeholders and are in turn impacted upon by them in cyclic fashion.

For FE colleges, the local dimension is not insignificant since it includes recruitment of not only students, but also of personnel. The culture of the college will be influential, not least in a bottom-up process such as described here. Colleges will be informally judged by those who work and study in them, and the opinions of these groups will add to or detract from the image which the college seeks to present. As a reflection of their business ethos, many adopt commercial strap-lines and claims which whilst thought to reflect the individuality of the college often appear to reflect little more than clichés from marketing. Examples would include: ‘We are the shape of things to come’; ‘Transforming lives through learning’; ‘Our future is bright’; or ‘Providing high quality academic, technical and vocational training to enhance qualifications, skills and employability across the region’. Although the primary purpose of a Pedagogy of the Imagination is not to bolster marketing clichés, any notable successes achieved by it will inevitably support these claims with something rather more substantial than rhetoric and move them closer to an achievable reality.

A further factor of interest to institutions is student satisfaction with the overall experience, though HE appears to be under much greater pressure than FE to demonstrate high levels of student satisfaction. This seems likely to impose views on ‘acceptable’ procedures for staff, and a conscious awareness of survey outcomes from which FE is in the main (currently) shielded. However, should circumstances change, and some colleges gain prestige which disadvantages others (as is possible in a market scenario), the importance of benefits evident as a result of a Pedagogy of the Imagination could become more significant.

It has been made apparent that the foundation of work in the areas under discussion is with vocational training, qualification and certification. Beyond this, colleges will vary in their aspiration and effort, depending on culture and individual application. For some, these three outcomes will suffice; others may have a more extensive system of integrated education and training. Each college, as an individual business, decides on the demands its sets as minimal requirements. The crucial measure is student outcomes. Should a Pedagogy of the Imagination prove successful, other capacities associated with vocational training, here grouped as attributes, will become prominent. These attributes, 'soft skills' and other desirable attitudes and competencies will become noteworthy with significance for the college, and with implications for the other interested parties. If these are identified as improvements in standards, pressure will arise for these to be maintained, and what began as initiatives localised within certain classrooms will be encouraged to develop. Over time what began as innovation could become a culture and from there, a norm.

Implications and Benefits for the Student

Although, perhaps not always apparent, the student has been at the centre of this thesis throughout. It has been the aim of this research to show how by a commitment to activating the imagination in existing teaching, a platform could be developed from which to expand the educational value of, initially, the students' training, but ultimately of the students' lives. Therefore, the argument made here is of critical importance. It is hoped that the advantages to the students of an 'expanded' curriculum will have now become clear to the reader, but this may not be true immediately to the student herself, who may have joined the college for entirely different reasons including ease of local access, or in response to the credibility accorded to former students and their families.

Re-iterating the advantages to the student here would seem superfluous given how much has already been said. Students vary in their engagement with curricular content. Many of this age-group (16 to 19 years) show a strongly practical attitude to what they learn – is it useful or not? (Caffrey, 2016). Even usefulness may be a limited virtue if the material is difficult, rarely needed or dull. Practical time in the respective vocational workshop appears to be much more favoured, suggesting a preference for a practically-focused approach to learning.

It may be a cliché, and unsupported by empirical evidence, but general belief favours the view that for less mature students, much motivation lies in present satisfaction rather than in the tolerance of present dissatisfaction for benefits which will accrue in the future. This is, of course, a broad generalisation. Nonetheless, the Pedagogy of the Imagination is largely intangible, and should attempts to use it fail to arouse interest (or sufficient interest to justify the diversion from 'real work') however dedicated the teacher, some momentum will be lost to the future. Worse, this loss will not be appreciated by the student, or her attitude to it will remain one of indifference. To exhort tutors to be 'interesting' is a deadening imposition, but a steady trickle approach may appear innocuous, yet yield cumulative and lasting effects. The aim, after all, is to change a habit in the student of a limited approach to tasks away from the simplest, or most obvious, to a prior consideration that alternatives may exist. If this change of mind-set is to become habitual, it needs to be sufficiently robust to withstand the routine nature of many work tasks.

Mention has been made elsewhere of the attributes of curiosity, responsiveness, application, a problem-solving capacity and so on. It is not anticipated that an exhaustive list of desirable attributes is to be attempted as part of the proposals to enhance the educative value of vocational training since, however admirable it might be to turn out a cohort of 'perfect' students, this is not possible, nor is there a definitive list of such attributes. The aim is to provide some generalised breadth to balance the deep, but narrow, parameters of the occupational learning. How commonly colleges underline the importance of these attributes to students cannot readily be assessed, but these are clearly important characteristics of individuality. It should become clear to the students after some exposure to a Pedagogy of the Imagination that they are receiving more than the minimum required by the occupational specifications, particularly if their attention is drawn to this, and the advantages that will accrue to them are accentuated. It can be made clear that an awareness of this gives them competitive advantages and therefore greater work opportunities. This message, however, needs to be repeated, that is, reinforced (Longo, 2010). This is not simply to overcome initial indifference, but because this is the way in which information (learning) is moved from the short-term memory into the long-term memory, making it effectively a permanently retrievable part of the

student's view of her repertoire of behaviours (her mindset) which will be consolidated through practice.

If this growing awareness is linked to the concept of the student as a 'professional' of her occupation (albeit still in training), it seems a reasonable supposition that greater identification with the goal of the training may take place. This will result in a change of view of the individual from the perspective of a student to that of embryonic practitioner, a significant enlargement of outlook and self-regard. If, further, this change in outlook is shown to expand beyond the perimeter of work to the student's personal and social life (a reasonable supposition since work is but one feature of a total life), then any advantages which emerge for the one, can be applied to the other.

Part II of this research used the model of categories to show how the totality of an individual's learning could expand substantially through the formation of new bonds. From this it should be clear that any supposed limitation to learning is illusory if considered bounded by arbitrary demarcations into 'work' and 'personal'. Using the model of categories, these are simply different aspects of an integrated matrix. Part of the Pedagogy of the Imagination is to render permeable on demand these apparent boundaries, and capitalise on the brain's plasticity. The term 'flexibility' is often used, but seemingly with little analysis of its meaning beyond the convenience of compliance to the needs of the workplace. Flexibility as used here implies access to any ramification of the category complex without the presumption of automatic inhibitions imposed by arbitrary boundaries unless these prove useful as temporarily convenient boundaries. That categories are convenient, possibly essential, means of organising data is undisputed. That they are impermeable is far from true, and to treat them such can dramatically limit cognitive options. Because, however, of the convenient manner in which they organise information, it is easy to think of individual categories as relatively independent and isolated from the matrix in which they appear. As thinking, like most forms of behaviour, readily becomes habituated, this tendency to think of categories as effectively isolated from their neighbours is, in this case, an unhelpful example of habituation. The capacity to opt in or out as needed is one aim of these proposals. Part of the Pedagogy of the Imagination is to develop the increasing practice of rendering 'permeable', that is flexible, arbitrary divisions, so as to make more readily available differing approaches to thinking than those

available when restricted by habit. The Pedagogy of the Imagination combines cognitive, affective and practical manifestations.

Further, using the interpretation of education as '*e-ducere*' (literally 'to lead or draw forth'), this open-ended approach serves to expand the semi, or un-planned, matrix of categories, whilst propositional knowledge represents the planned part of the matrix. This combination of the two expands the total 'horizon' of the student far beyond the remit of vocational training and employability into what may fairly be described as an educational or transformative dimension. That transformation is achievable has been shown in the writing of Duckworth and Smith (2016) where they present examples of how, given a supportive college culture, practical and individually relevant measures can make progress along this path. That similar advances are achievable, beyond vocational training, through a Pedagogy of the Imagination, into a richer view of the educational for all students, has been the central line of argument in this thesis. Vocational training, plus the inherent educational value within it, plus the Pedagogy of the Imagination as a means of expanding horizons, plus the further cultivation of personal attributes identified with any specified student, represent the totality of the value of that student's educational experience initiated in college and integral to that student's future.

Having noted general factors, the role of the tutors as initial instigators of a Pedagogy of the Imagination now needs to be considered.

Implications and Benefits for the Tutor

The claim of the Pedagogy of the Imagination is that the effort is worth the potential benefits to the student, and that these in time will be recognised and appreciated, but hinge on the initiative of the individual tutor. A positive advantage of college organisation to the tutor is the personal freedom generally allowed for time-tabling the organisation of lessons. Tutors naturally vary in motivation, but for those to whom 'added value' or 'distance travelled' are important concepts, these proposals should appear as further means to a broadening of achievement by their students. The 1998 paper by Plewis and Goldstein suggesting that greater awareness should be taken of students' entry points as well as exit points, is important and seems pertinent here. The academically limited background of many students imposes restraints on both the complexity of the material to be covered, the speed with which the programme

may move forward, and where applicable, the quality of the assignment work produced by the students. These are not negligible constraints, but if, as argued, a Pedagogy of the Imagination enriches learning, then it should prove beneficial where these limitations apply by introducing elements of learning in ways where traditional pedagogy has been less successful.

The case is not, however, a simple matter of presenting standard material in novel guise, although that may occur. The difficult part is establishing what extra needs are to be tackled, why, and what would be achieved if successful. For much of the time, this will be vocational material, but the outcomes embrace attributes that are more generic than specific, for example, the capacity to analyse a situation and devise potential outcomes. The evolving of the Pedagogy of the Imagination can be seen as a 'movement' from the vocational to the general, from the specific to the personal attributes which, I argue, are not, in the main, systematically developed, and from which the students, given their entry points and the strictures of vocational training, could significantly benefit. Once accepted, this aspiration makes substantial demands on tutors (in addition to their on-going duties) from an initial desire to broaden the context of vocational training, through consideration of how this may be done with the formulation of lessons which will meet these needs. Imagination is required to visualise how students will benefit, what can be done in practical terms, and which activities may contribute to the desired end. This, of course, has ramifications for how far the teacher views her responsibilities, her view of education as distinct from vocational training, her grasp of the educationally valid within vocational training (Colley et al., 2003), and the extent to which imagination, as a means of expanding horizons, was awakened during her initial training or continuing in-service training.[81] The teacher, as one influential contributor to an institutional matrix, is at the centre of a personal complex of demands, duties, loyalties and aspirations. Some elements of the demands made of teachers can now be expanded. The first to be considered is credibility.

[81] There are significant implications of the Pedagogy of the Imagination for initial teacher training/education (the language here is important, and signals broader political shifts in thinking about how teachers and lecturers are prepared). Some of these implications will be considered below.

An essential attribute of those who yield influence – philosophers, teachers, magicians, confidence tricksters, doctors and religious leaders is credibility: that is the capacity to generate in those who attend them either the wish or the willingness to believe in what they say or in what they claim or appear to be able to do and an ability to assuage any or most of the doubts they may harbour. Part of this is the capacity to project a persuasiveness in concert with a range of ill-defined attributes which collectively we refer to as 'personality'. Where the effectiveness of the interaction of one person on another is marked, the former may generally be described as having a personality.[82] What is relevant, however, is the assurance gained by secure subject knowledge and the clarity with which this is expounded to the students (Dewey, 1998; Spangler, 2011). For all that, some qualities and attributes can readily be harnessed to what natural talent one has (or as a teacher has learned through training). Some of the more readily acquirable are summarised as follows but the brevity with which they are listed should not disguise the depth which each might assume.

Credibility is just one of a list of expectations. Others would include: an understanding of pedagogical strengths and weaknesses (Bilash, 2015; Nind, 2016); and a broad range of teaching methods, and how to focus these relevantly to both student needs and the desired outcomes (Mazur, 1997, 2014, 2018; Milligan, 2016; Born, 2017). Not least, in this truncated list, is her knowledge of the individual pupils (Dewey,1998; Emdin, 2012), and her acceptance of an educative dimension as inherent in vocational training (Colley et al., 2003). Except in the 'born' or gifted teacher (a highly contested concept), these attributes are not acquired purely by chance.

For the tutors, however, these ambitions mask complications to do both with professional training and personal temperament. It is almost inevitable that proposals which require a change of habit, or pose a risk to standard procedures, will encounter resistance to the proposals under discussion. These limitations to the ready adoption of extending programmes through imagination may occur at all levels. This thesis has argued for these barriers to be surmounted where

[82] Whilst it would be foolish to deny that some people have strong personalities, the question of how to develop one, if not naturally so endowed, is beyond the scope of this thesis.

circumstances, even if marginal, make it possible, and it is argued later that resistance may be less than anticipated, and any increased burden of teaching responsibilities less onerous than at first envisaged. Nonetheless, only limited comprehensive support is to be found in the literature. Academic sources, inevitably, cannot cover the complexity of the principles above, whilst the relative scarcity of academic scholarship on pedagogy for FE limits progress. Some available coverage includes the identification of shortcomings in current policy and practice (Relly and Laczik, 2021). A further issue is the limited availability of teacher Continuing Professional Development and industrial updating in England (with hairdressing here being an exception) including different styles for undertaking this development, including overseas examples as comparators (Lloyd and Payne, 2012). A further paper importantly critiques the disjunction for the students of theory and practice, the more so when comparisons are made between theoretical practice and industrial reality (Reddy, 2014).[83] In addition, the emphasis on the vocational standards tends to overshadow matters such as creativity and higher order thinking skills (Ogunleye, 2002) and problem-solving (Correnti, 2016).

At a purely practical level, the teacher may encounter resistance from students. Where it becomes clear that the expansion evokes protests, it is suggested that the benefits are truthfully elaborated as two-fold: the prospective advantages to employers, and as potentially valuable educational assets to the individual. Greater weight may be usefully attached to the practice (where it occurs) of tutors' written references to potential employers as a significant bonus, identifying the attributes shown by the student and preferred by the employer. It seems clear, however, both in theory and from actual practice, that the central force must lie in the generation of interest, that is, in intrinsic motivation for the topics in hand, and may well lie beyond propositional learning alone.

How teachers are initially trained could prove to be an important influence on later practice, and so now needs to be considered. Initially, many tutors, coming into FE from industrial backgrounds had no training as teachers, although this has now been rectified and appears to have made significant differences to outlook (Buckley and

[83] As the focus of this last paper was plumbing, this weakness has implications for both practical competence and health and safety, but also has relevance to other occupations.

Husband, 2020). In addition, although nominally encouraged, CPD ceased to be mandatory in 2012 when the Institute for Learning (IfL) was replaced by The Society for Education and Training (SET), and speculation about the consequences of this could be extensive were such a debate to be opened. For staff joining colleges from industry, attitudes to training may follow traditional patterns, and although formal teacher education may modify these, many have survived because time has shown them to be effective. In addition, since for many this is how they themselves were trained, it is the only system that some know; it works satisfactorily at technical level, and reflects the structure of the occupational specifications. The pedagogy, here the transmission of technique, knowledge, understanding, received belief and practice, is thus passed from generation to generation. Neither tutors nor students appear to have reservations with this, nor reasons to question its efficacy and as the history section (Part I, Chapter 1) showed, training originated as the sole province of industry, and only fused with the educational service within the last century. Since for most of this period, training was predominantly undertaken as work-based apprenticeships, the influence of colleges was mainly on the theory of the occupation. Any apparent unawareness of extended techniques, therefore, may be bound up with the defensible traditions of vocational training. But, more is now demanded of teachers than the straightforward transmission of knowledge and skills, most obviously, greater formal planning and record keeping; a regard for retention and achievement targets; pastoral work; adaptive teaching; an active awareness of inclusiveness; changes in legislation including safeguarding; placement supervision; and health and safety requirements, plus a familiarity with distance learning via IT, as conspicuous examples.

Whatever the demands on teachers and lecturers, it is essential that their initial education/training imparts a sound understanding of basic principles. If the teacher educators, for whatever reason, do not promote a Pedagogy of the Imagination, newly qualified teachers are less likely to take it for granted as they would the more traditional pedagogies, and a regrettably spiral situation ensues. This is exacerbated by the emphasis on delivering curricular content. But one can readily see how, under the pressure of time, the need-to-know what demands will made on students by the examination system, can dominate priorities, and a preoccupation with the transmission of formal knowledge (probably through traditional pedagogic methods)

may simply not appear to fit the available timetable. Subsequent experience may moderate an initially rigid view of methodology, allowing for personal variation and the cultivation of a Pedagogy of the Imagination, whilst judicious CPD (if pursued) will refine views, attitudes and methodologies with a potential for further development.

If training, therefore, in addition to everything else, does not embrace the 'soft skills', literacy and numeracy, innovation, problem-solving, flexibility, co-operative working and so on, elements of the student's programme will be either missed or under-valued.[84] Asking tutors therefore, to now take seriously a Pedagogy of the Imagination could easily be interpreted as an imposition rather than an opportunity. This, however, would be to misconstrue much of the intent. A Pedagogy of the Imagination is a pedagogy in the sense that it is a way of presenting material. It differs from a more formal example of a pedagogy in that it has no immutable structure, manner of delivery, or capacity for ready assessment. Whilst much may be delivered almost in opportunistic style, and much on a one-to-one basis, it is not intended that this informality be confused with casualness or become a matter of mere whim to the teacher. Informality here masks a serious intent having clear foundations as a productive form of intervention to be seen as a regular, preferably routine, feature of classwork. That it may appear dialogic does not *per se* imply a lack of purpose, merely a lightness of touch.

Whatever the thoroughness of the training, however, where a Pedagogy of the Imagination is not fully integrated, or where there is a tight focus on the technical specifications, but the teacher is nonetheless persuaded that these proposals are beneficial and she is willing to engage with them, there remains the issues of a greater commitment to additional work. This, however, need not be onerous, but will require mindfulness and an attentiveness to opportunities in class. There is naturally the potential for noting useful ideas, forward planning and perhaps some need for preparation but it is not envisaged as just another form of formal pedagogy. Notes, sufficient for purpose, of situations, productive or unsuccessful would prove useful in

[84] An important group to which, to judge from the literature, training in the hidden agenda importantly applies is the medical profession and the sub-divisions within it (Hill et al., 2014; Paul et al., 2014; MacLeod, 2014). Patient expectations and responses are integral to consultation, diagnosis and treatment. This used to be referred to as a doctor's 'bedside manner'. There are parallel needs in some areas of vocational training.

compiling ideas, failures, strengths and weaknesses for future reference. It is a pedagogy, but cannot be readily identified as can a PowerPoint presentation, a lecture, a question and answer session or a discussion, but like them, it does benefit from practice and until practice renders the habit automatic, conscious intent will aid application.

A response to these pressures inevitably will vary according to the temperament of the individual tutor, and personal circumstances will influence and require a practical accommodation with the demands of work. Some individuals are acknowledged as more ‘imaginative’ than others (Kind, 2021). The question arises therefore as to whether such individuals are more likely to wish to add an imaginative dimension to their work finding it more ‘natural’ and more easily accessible. Given the conclusions of this research that imagination is ‘merely’ a form of thinking not necessarily constrained by reality, a continuum is most likely to reflect the proneness of some to engage in it more than others. The issue, therefore, is more a matter of awareness and conscious engagement, perhaps through training, since much behaviour is habit-based. But if neither awareness nor conscious engagement are routine responses, they will not automatically present themselves, and this lack reinforces the techniques as further desirable components of staff training. That the deliberate application of a dimension grounded in the imagination to teaching and learning is readily achievable, I do not doubt. Whether individual teachers are aware of it, choose to use it or are persuaded of its advantages are separate issues.

Some groups have an advantage since there is one significant variable reflecting practice rather than training. This is the extent to which the occupation deals with members of the public, the service professionals and those engaged with the education or social services. The relationship between the client and the hairdresser is of a different order from that between builders and their customers. The manual trades and service professionals differ markedly in their focus, the former preoccupied with the technical aspects of the work, the latter, in addition, having a more direct responsibility to the client as a result of the more personal relationship between them. In a sense, the manual trades have a responsibility for quality of the work, the service professionals also have a responsibility to the client. The latter group therefore are more likely to have had to adapt their attitudes and practices more than the former group, even where their skills and the manner in which they

were learned may have followed the traditional format. It is possible that this interaction of client and practitioner has forced this group to become more imaginative as effective ways of accommodating demands, offering advice, making suggestions and adapting to the vagaries of the customer. This is because plans and problems become a shared responsibility at a personal level, that is, following the Deweyan need for problem-solving. Problem-solving for the plumber does not normally impinge on his personal relationship with the customer in similar fashion. That, for example, hairdressers and plumbers both use their imaginations is indisputable. However, for me, there is a difference; but, as with other related concepts, for example 'education and training' or 'interest and boredom', the distinction cannot be finely tuned. The broad difference is that while both address themselves to the cognitive and practical aspects of the task (for example cutting the hair, or fitting a sink), the hairdresser engages with the client in the affective domain more conspicuously than the plumber (in general terms). However, they both operate similarly in that they aim to gratify the service user or customer with the outcome.

Given that the perceived priorities of colleges often vary according to one's role, these proposals may not be broadly recognised as valuable. This is one reason why they need to be bottom-up – they depend on the tutor's allegiance to the idea and to her willingness to move forward. Faith in the undertaking and practice, as in many situations, eases the workload. A further reason for viewing a Pedagogy of the Imagination as a teacher-classroom-led initiative is the difficulty of introducing top-down ideas. For example, although specifically analysing the difficulties of introducing Citizenship into the National Curriculum in 2000, Hayward and Jerome (No date, p. 1) write:

> Translating any educational initiative into classroom reality involves a range of bureaucratic, managerial, financial and pedagogical hurdles with the potential for misunderstandings and understatements at each stage.

If specific subjects can cause confusion, what chance nebulous interventions? A willingness to accept the risk attendant on an initially untested and ill-defined venture needs to be weighed, not least since there is an attendant risk of uncertainty about the outcomes. Encouragingly, the corollary, that the traditional pedagogies do provide certainty of outcome, might provoke sceptical comment from FE tutors.

Implications and Benefits for the Employer

Consideration is needed with respect to how a Pedagogy of the Imagination can play a part in forming, or modifying, employers' views of students emerging from college into industry. The attitude of local employers as providers of work placements, and a willingness to engage former students, will be shaped by their perception of the strengths or otherwise of the local college. Beneficially, employers are sometimes members on the college's board of directors. This last has benefits which operate to the advantage of colleges by making employers aware of the strengths and aspirations of the college whilst remaining alive to the constraints under which colleges operate. As stakeholders, local employers will form opinions for the good or otherwise on a range of attributes based on personal experience of the young people they have engaged (their knowledge, skills and attitudes), and the judgements of colleagues whose experience they value. Attitudes to job applicants may be influenced by the reputation of those who trained them, whilst for their part, students will be advantaged, or otherwise, through this. In terms of expectations, employers generally require competent technical skills or academic knowledge, but increasingly (UCAS, 2020; Owen, 2001) expect what are referred to as 'soft' or 'transferable' skills. There is no definitive list of these, but they invariably include good communication, teamwork, independent working, problem-solving and so on, plus a generic 'good attitude' including careful workmanship, courtesy, good timekeeping and adaptation to the norms of the workplace. Many of these arguably are learned at work through experience. How they might be cultivated does not appear to be a regular part of an Awarding Body's specifications, and only a proportion of FE students will have significant prior experience of this type. It will come as little surprise that colleges are enjoined to do more to develop these 'character qualities' (Cheary, 2023; OECD, 2015; [The] Business and Industry Committee to the OECD [BIAC], 2015). Some of these skills will be cultivated by a Pedagogy of the Imagination as part of the educational dimension of vocational training, since they are important attributes both industrially and socially, and crucially, are transferable. From point of view of benefits, if the broader approach undertaken in training results in ensuring that the (new) employee responds more positively to the demands of the workplace this will be noted. A well-adjusted attitude is invariably considered to be

an asset, and clearly what the student learns today will influence how she performs tomorrow.

Implications and Benefits for the Curriculum

The curriculum has two nominal strands, that of education and that of vocational training. The former is determined by governmental demand, the latter by National the Awarding Bodies in association with the organisations representing industry. Colleges deliver what these two groups specify with seemingly little control over content *per se*. However, as part of their business-style ethic, increasingly are found acclaim for such market values as 'Dynamic – developing a culture where new ideas are embraced and nurtured', and 'Enterprising - determination to find successful solutions.' Although these are marketing slogans of arguable importance to the day-to-day work of the teaching staff, under a Pedagogy of the Imagination they could begin to yield some reality to the avowed hopes of these aspirations. It would be foolhardy to anticipate wholescale change, but some inroads into these expectations are likely. This process could be accelerated of course by adroitly raising awareness of how they are cultivated, and of how students can demonstrate them and, importantly, of how employers can benefit.

One interesting view of the contrast between 'training' and the Pedagogy proposed is the distinction between 'closing down' and 'opening up'. I argue that, in the main, training 'closes down' in the sense that once the material has been mastered, that component of learning is therefore complete. This could broadly summarise the formal requirements above. The Pedagogy proposed here implies that the topic is 'opened up', that is, takes on opportunities for new and additional learning in ways which may not always be predictable when viewed as relating to individual students but which are designed to expand their personal capacities. This of course can be seen almost in opposition to traditional training where, once taught and learned, the matter was deemed complete. The Pedagogy of the Imagination on the contrary presumes no *a priori* boundaries but supports an indefinite potential. In that sense it is akin to Dewey's concept of education.

The effect of a Pedagogy of the Imagination will inevitably, in its initial phases of teacher initiation, be imperceptible beyond the classroom. But were such a movement to become more widespread, and subsequently 'officially' encouraged within the college, structural changes and staff training would need to be modified. The reaction of the Awarding Bodies must remain speculative, but reservations from them, if raised, should be readily appeased as their specifications had never precluded expansion, and that those who embraced such a move merited approval and encouragement. That is, the specifications represent the minimum that should be taught, but the manner in which instruction was delivered has always been within the gift of the individual teacher.

The demands made of individual members of the teaching staff have already been discussed, but the implication for the curriculum remain imprecise for a number of reasons. These might include: there are no 'set' specifications; they are the product of the teacher's own imagination; the outcomes, even where estimated in planning, will be variable. Worse, from the current perspective of accountability, they are not readily measurable; they will take time to emerge in student responsiveness; they may go unremarked by the students themselves who simply accept them as 'part of the course'; they will absorb time which sceptics will argue could be put to better use, the outcomes, being longer-term, do not immediately appear to benefit anyone, and so on. What can be claimed, is that, if adopted, curricula would expand to the benefit of both the training and the personal education of the student in ways which would enhance all aspects of her later life including work. A reality easily overlooked and normalised through practice, is that the curriculum in vocational training with its roots in an industrial model aims to fit the learner to the specifications. The Pedagogy of the Imagination attempts to fit the material to the learner – a reversal of priorities.

Summary

No programme is without its detractors. Innovation can be resisted on many grounds, and many are based on seemingly realistic constraints. It would be foolish to imply that what is proposed here is without risk, or that will gain immediate recognition. Much hinges on the persuasiveness of the arguments made. Much also depends on the willingness of individual tutors to support and act on the principles espoused, given that the pretexts for resistance are readily available and plausible.

All hinges on the optimism underlying this effort for improvement, and a commitment to its principles. However, there are major differences distinguishing the Pedagogy of the Imagination from vocational training, or even the principles of the GCSE syllabuses. The latter two have pre-determined outcomes following a set curriculum, the former has not. The two former presume a learned competence as a pre-determined outcome of directed teaching within narrow boundaries provided the appropriate procedure is followed; the former cannot, has few readily identifiable specific learning goals, and may not even be able to establish what 'works' best for individual students. The Pedagogy of the Imagination is broader in intent than the acquisition of knowledge and understanding derived from propositional learning. This requires an act of faith in the proposed benefits, and has modern echoes of some nineteenth century proposals to expand the virtues of reading and writing to working man and women.

A complication of the situation under scrutiny is that each stakeholder has different priorities, wants, and perspectives. It was shown, for example, how there is a disjunction between the training provided by colleges, and that ideally required by employers (a gap bridged by private training providers). Equally students want qualifications and jobs; colleges want successful outcomes (whether they lead to jobs is beyond their remit); employers want technical skills and acceptable attitudes from a dependable workforce; the government wants value for money, and so on. They all have vocational training in common, but at the centre of this complex is the teacher trying to do justice to all parties by providing good training and personal development for the student whose interests remain at the centre of this initiative. This thesis has suggested a way in which she may succeed better in satisfying each of these interests through a development of her pedagogical approaches. This can happen by including an admixture of imagination to her repertoire of teaching methods, difficult and unrecognised though her efforts may initially prove, but with a potential to create a minor revolution where once initiated. If successful, the proposals gain momentum through credence, approval, are mirrored in other sectors, generate expectations and finally elicit support and recognition.

Concluding Summary

This study has shown the limitations of education (including GCSE English and maths) and vocational training as currently practised with 16 to19 year-olds in FE; this is compared with the education I enjoyed. More relevantly, as appropriate to peer comparison, the disparity highlights the differences between two halves of a cohort: one continuing in education, the other moving into vocational training. I have argued that the disparity that this entails should, and can, be moderated. The research continues to show how the FE which currently provides much of the vocational training available nationally arose from diverse beginnings to what eventually coalesced as the FE we know today.

Having drawn the broader picture, the thesis outlined how political thinking over the post-World War 2 era increasingly focused on national competitiveness, which has been reflected in the priorities imposed on FE in a neo-liberal market economy which resulted in a restricted and largely instrumental model of training to enable employability. Winch has argued that there is no clear boundary between education and training. Each, to a degree, is dependent on the other. To enhance one is therefore *ipso facto* to enhance the other. On this basis, a model of education beyond that solely inherent in vocational training will broaden the overall educational value of training for students. This, however, requires a rationale. As an additional model of education, therefore, supplementary to the reductive component in training, I have shown how much of the philosophy of education of John Dewey is applicable to the current situation in general FE. This is because it espouses values which remain relevant to contemporary education and training. As part of this philosophy I have argued that whilst much of Dewey's work on imagination is coherently expounded, his failure to develop the less structured forms of imagination provides scope for development which can be applied to vocational training and education. Within a matrix of Deweyan values, the elaboration of imagination (conceived as a Pedagogy of the Imagination) forms half of the innovation developed by this thesis for expanding the educational value of vocational training in general FE.

In considering the knowledge base of education and training, I have shown how Hofstadter's conceptualisation of Categories, fuelled by analogy, offers a flexible model which can operate as a platform to extend learning, knowledge and

understanding (that is, a grasp of the relationship of parts to the greater context) with students in vocational training, and in a manner amenable to the learning, learning style and capacity of individual students. This model of knowledge acquisition, organisation and expansion combines with the Pedagogy of the Imagination as the second half of the proposed innovation in training. As imagination is to furnish much impetus for change, I have given examples of how imagination is generally interpreted across a range of academic disciplines where, although it is a contested topic, despite this imprecision, it might be harnessed to vocational training to extend both training and educational value. I have included a synopsis of the use and range of imagination across the different mainstream sectors of the education service in support of this. The thesis has then illustrated how, through the increased use of imagination by the students undertaking vocational training in general FE and the cultivation of desirable attributes, both the personal and occupational aspects of their lives can be enriched.

It is accepted that the initial responsibility for this change will lie with the teacher and not be without cost to her, but how increasingly, as practices become routine, the students will come to initiate them with less and less need for external prompting. At various stages it has been shown both how the stakeholders are to a greater or lesser degree involved in the lives of the students, and how the implications for my proposals will impact on them, ultimately to the benefit of all parties. This is in contrast to current perspectives of vocational training which tend to adopt a sectoral rather than an integrated view. This dispersion of energy towards sectoral interests weakens the potential for coherence within an overall structure which ostensibly shares a set of common goals. The achievement of these goals remains significantly correlated to the inevitability that what students learn today will determine how they perform tomorrow. This thesis offers a route to how tomorrow they may perform better, and their lives be enhanced, as a consequence of which all the stakeholders stand to benefit.

On the basis of this, I would propose that this thesis makes an original contribution to knowledge in two ways. First, it brings together the work of Dewey and Hofstadter to provide an educational philosophy based on an extension of the one's work on imagination – in combination with the other's ideas of categories – to provide a platform for the development of a greater and valid educational dimension for

students. Second, by developing this reading of imagination as an innovative methodology, it extends the potential for students to develop their thinking in an open-ended manner appropriate to their individuality in ways not currently practised across vocational training in general FE, and not visualised within the formal specifications which determine their career profiles.

That this thesis has, from the start, had a practical intent, even whilst philosophically based, is a bonus if one accepts the comparative ease with which a Pedagogy of the Imagination could be introduced. Philosophy is not merely abstract speculation; Standish (2011) rejects the view that it is, advocating the practical import of philosophy to everyday activities: 'Ultimately I would say that the questions about what's worth doing, and how we come to know what's worth doing, [are] questions about how one should live one's life.'

***

The argument throughout this thesis has been that imagination is central to education. What contributes to one's education, however, or what can help us to understand the concept of education itself, can assume different guises. In the field of philosophy of education in particular, there is an established tradition of arguing not only for the arts (film, drama, literature etcetera) *as* educational, (Fiske, no date) but also as central for understanding the nature of education itself (see, for example, Fulford, 2021).

The coda which follows here, therefore, moves away from what has gone previously in this thesis, with its focus on logical written argument, and reasoning, to the visual form of film. While this may appear an unexpected, or abrupt shift, its aim is to provide a rich illustration of the power of imagination in vocational training in education. It is a powerful and viscerally dramatic example of where vocational training, seen as the primary (and largely prescriptive) purpose, is enhanced by personal experiences, and, crucially, the imagination, in ways that that are individualised and indisputably educational.

Coda

A coda in music signals to the listener that the piece is about to conclude. It can achieve this by reflecting the theme or style, but with increasing dramatic effect to create a climax. In like manner, though rather unusually, I want to turn to film, specifically, the 2012 Polish film ‘Imagine’ directed by Andrzej Jakomowski which is set in a school for the blind in Portugal.

This film serves as an example of how a form of thinking transforms an outlook on, and engagement with, life in a branch of training not frequently encountered: that of training the blind towards greater adaptation to a world organised for sighted people. And as a film made about the blind for the sighted, much more besides. It portrays how expectations of limitations restrict advances beyond what is believed to be the immediately accessible, and shows how these limitations can be in part illusory, and thereby broached where guidance and encouragement are given to defy the inhibitions inculcated by restraints. But as a further layer of significance, it shows how imagination, even where not necessarily reflected in external reality, can of itself bring a richness to the internalised life of individuals. The flawed protagonist and teacher, Ian, proves, in more sense than one, to be a ‘visionary’, subject, as we all are, to miscalculations, to over-confidence in our sense of rightness, to our optimistic expectations of others, and fatally, professionally speaking, to transgressing the tolerance of those on whom he depends.

The innovative but unorthodox teacher, Ian (played by Edward Hogg) uses a Pedagogy of the Imagination. He is the embodiment of this approach to teaching and learning; he uses this pedagogy to open up to his students’ experiences and understandings not available to them previously (Fulford, 2021). In so doing, he develops the educational value of what they learn, with the potential to develop further, and eventually to allow them to move forward more independently. In Ian’s approach can be seen integrity in both senses: he wishes to integrate as far as possible his students into the broader world of the sighted, whilst simultaneously attempting this with integrity, that is, in a way which he honestly believes will broaden not only their competence but their general experience.

As the central character, Ian, a blind teacher of the blind, encourages advances in competence to his students in innovative ways well beyond the norms expected of them. He does this by stimulating and activating their imaginations. Ian's expectations so far exceed traditional methods, whilst his accomplishments are so marked that to the students he is an inspiration, so conspicuous in his gifts and his implicit promise that they may share them, that he generates awe and hope in his pupils to a level where credence and incredulity vie for prominence.

The film is a mixture of reality and unreality where imagination is used in everyday life for problem-solving, but also for innovation. Imagination is seen in different forms such as daydreaming, the creation of ideas, images, and stories, all of which beautify the limited world by which the blind students are bounded. But the world of the clinic/school is very limited, and part of Ian's aim is to enlarge it. Whilst imagining can be thought of as time-wasting, this only applies when something is considered more important by someone who can exercise discipline or enforce other priorities, and who considers it a distraction from attention to the priority task, or to more purposive activities.

The film uses a variety of these aspects of imagination, but with one variation: in a life where practicality is forefront, 'fancy' (to use Dewey's word), that is aimless imagining suggested as largely non-purposive, is limited and secondary to the established and the safe – to learning in the most practical of senses how to navigate, and survive in, a sighted world. However, Ian attempts to show how the generation of internal images, even when they do not conform to external reality, can be pleasurably evocative to the dreamer. They not only enhance the mood of the moment, but within a repertoire of other forms of thought, expand an individual's horizons (metaphorically speaking) to provide an overall greater richness to life. That this can be interpreted as escapism presents an ethical problem cannot be denied insofar as this distracts from the urgency of the immediate training which quite literally, in the context of the film, may have life-saving consequences.

Ian encourages the view that, at one level, through a refinement of the sense perceptions, the imagination yields substantial practical benefits. Imagination fills the gaps for the pupils where nothing existed before, and these imaginings generate the world to the students. In this internalised world, whether these are objectively

realistic and expand the currently known, or are 'simply' fantastical, becomes an irrelevance; their purposes are different, but both are legitimate. Both aspects, however, need to be encouraged, and Ian consistently urges this on his students: that they endeavour to make the unreal real within their own cognitive realities, beginning with the accessible, and voyaging into the imaginatively possible.

Throughout the film, we see Ian consistently using what I have come to call the Pedagogy of the Imagination to open up the world to his pupils – to enrich their daily routine of training, for example, how he navigates without the use of the white cane.[85] On one occasion, for example, following the decision that trips beyond the institution are considered an undue risk to the pupils, the group is restricted to experiencing the outdoors – 'the other' world – only through the open door leading to the street. But even here, a greater awareness is possible via using the imagination and the senses together, and as a result, a world beyond the confines of the school walls is opened up. We see an example of this when one of pupils imagines what is happening from a noise she hears. She imagines an approaching thunderstorm. It is, in fact, an aircraft overhead, but what she is learning is that the imagination opens up possibilities.

Symbolism is conspicuous throughout the film: the outside world, the inside world: the scene, an inward- looking courtyard, quarantined from the outside world by high walls, stout gates and, by implication, strict censure. One world is within – accessible to a limited degree once the techniques (for example, the use of a cane, rudimentary sensory perception and routine training) have been learned; the other world is 'outside', barely accessible, risky. From the windows overlooking the courtyard pupils – especially the diffident student, Eva – 'look out' on to the inner courtyard, aware only of very limited external signs of reality – for example, the birds who come to feed. Within this restricted compass, the new teacher Ian uses the Pedagogy of the Imagination to make the pupils aware of much more of the world than they had previously conceived. In a touching scene, Ian activates the Pedagogy of the Imagination by asking the pupils what they know about what's in the courtyard. Ian

[85] As in many areas of vocational training where safety is important, Ian's approaches are not without risk and the Director's responsibility to the school makes caution an imperative, even at the cost of restricting potential benefits.

suggests a cat; the pupils are astounded. ‘How do you know there’s a cat in the courtyard?’ they ask. Ian responds that he imagines the presence of the cat because he heard one of the staff putting out a saucer of milk. The cat then meows, much to the delight of the assembled pupils. But then, to confirm the reality, the students then find the saucer of milk.

In another scene, Ian leads Eva to a local café and then on to a square to sit and ‘watch’ the world go by. There he purports to pick cherries from what later we discover is an acacia tree, but her imagining sitting below a cherry tree opens up the world to her (her inner life expands, regardless of the outer reality). What this scene shows is that ‘the opening up of the world comes from attending to the world together with others; from imagining it together’ (Fulford, 2021, p. 38). In this, we see the possibilities of the Pedagogy of the Imagination, but also the responsibilities inherent in it for both tutor and student. There is something relational at the heart of it: the tutor for her part invokes the Pedagogy of the Imagination in her practices, but the student must choose whether to respond. It is, at its heart, educative practice in the etymological sense of leading out (*e-ducere*). We see how Ian leads Eva out of the confines of the clinic; he walks side-by-side with his pupils, sometimes, as with Eva, just a few paces in front of her as they venture out, imagining the world together. As Ian says to her, “The most I can do is to take a few steps for you - then you tell me what I’m doing as if you were walking”.

List of Abbreviations

AoC	Association of Colleges
AELP	Association for Employment and Education Providers
BIAC	Business and Industry Committee to the OECD
BTEC	Business and Technology Education Council
CBI	Confederation of British Industry
C&G	City and Guilds
CPD	Continuing Professional Development
CSE	Certificate of Secondary Education
DBIS	Department for Business, Innovation and Skills
DCSF	Department for Children, Schools and Families
DfE	Department for Education
DfEE	Department for Employment and Education

DES	Department of Education and Science
DfES	Department for Education and Skills
ETF	Education and Training Foundation
FE	Further Education
GCE	General Certificate of Education
FEFC	Further Education Funding Council
GNVQ	General National Vocational Qualification
HE	Higher Education
HFAH	National Foundation for Arts and Humanities
HNC	Higher National Certificate
HND	Higher National Diploma
IoD	Institute of Directors
IfL	Institute for Learning

NSS	National Student Survey
NTO	National Training Organisation
NVQ	National Vocational Qualification
OECD	Organisation for Economic Co-operation and Development
Ofsted	Office for Standards in Education, Children's Services and Skills
PGCE	Post Graduate Certificate in Education
PISA	Programme for International Student Assessment
QTLS	Qualified Teacher Learning and Skills
RSA	Royal Society of Arts
SET	Society for Education and Training
SSC	Sector Skills Council
TIMSS	Trends in International Mathematics and Science Study
TVEI	Technical and Vocational Education Initiative

UERL	Underground Electric Railways London
UCAS	Universities and Colleges Admissions Service
WEA	Workers' Educational Association
WMC	Working Men's College
YTS	Youth Training Scheme

List of References

Abraham, A. and Bubic, A. 2015. Semantic memory as the root of imagination. *Frontiers in Psychology*. **6**. No pagination.

Adams, P. 1968. Primary Creative Reading. *International Reading Association Conference Proceedings*. **1**(13), pp.119-22.

Albany Intergovernmental Studies Program. 2006. *A Practitioner's Guide to Transfer of Learning and Training*. Albany: University of Albany.

Alexander, E.P. 1996. Museum Masters: Their Museums and Their Influence. In: *The American Association for State and Local History: Museum Masters: Henry Cole and the South Kensington Museum*. Lanham MD: AltaMira Press, pp. 143-174.

Anderson, J. 2010. *The Idea of a University Today*. [Online]. [Accessed 29 May 2020]. Available at: http://www.historyandpolicy.org/policy-papers/papers/the-idea-of-a-university-today

Angell, J.R. 1906. *Psychology: Chapter 8: Imagination*. [Online]. [Accessed 2 Feb. 2019]. Available at: https://brocku.ca/MeadProject/Angell/Angell_1906/Angell_1906_h.html

Apprenticeships, Skills, Children and Learning Act 2009. (c. 22). [Online]. Kew: The National Archives. [Accessed 14 March 2020]. Available from: https://www.legislation.gov.uk/ukpga/2009/22/contents

Archambault, R. ed. 1964. *John Dewey on Education: selected writings.* Chicago: University of Chicago Press.

Argles, M. 1964. *South Kensington to Robbins.* London: Longmans, Green and Company.

Armitage, A., Bryant, R., Dunnill, R., Flannagan, K., et al. 2007. *Teaching and Training in Post-compulsory Education.* 3rd ed. Maidenhead: Open University Press.

Armytage, W.H.G. 1965. *Four Hundred Years of English Education*. Cambridge: Cambridge University Press.

Association for Employment and Learning Providers [AELP]. 2018. *2017 should be the last year for compulsory English and Maths GCSE resits*. [Online]. [Accessed 20 March 2019]. Available from: https://www.aelp.org.uk/news/news/press-releases/2017-should-be-the-last-year-for-compulsory-english-maths-gcse-resits/

Association of Colleges [AoC]. 2019. *College Key Facts 2018-19*. [Online]. [Accessed 3 May 2020]. Available at: https://www.aoc.co.uk/news-campaigns-parliament/aoc-newsroom/gcse-results-day-2019-aoc-comment

Association of College [AoC]. 2021-2. *College Key Facts*. [Online]. [Accessed 4 July 2022]. Available from: https://d4hfzltwt4wv7.cloudfront.net/uploads/files/AoC-College-Key-Facts-2021-22.pdf

Avis, P. 1999. *God and the Creative Imagination.* Abingdon: Routledge.

Baer, J. 2012. Domain Specificity of Creativity: Implications for Early Childhood Education. In: Saracho, O. ed. 2012a. *Contemporary Perspectives on Research in Creativity in Early Childhood Education.* [Chap. 3]. [no pagination]. Charlotte, NC: Information Age Publishing Inc.

Bailey, B. 1990. Technical Education and Secondary Schooling, 1905-1945. In: Summerfield, P. and Evans, E.J. eds. 1990. *Technical education and the state since 1850*. pp. 97-119. Manchester: Manchester University Press.

Bailey, R. 2013. *A.S. Neill.* London: Bloomsbury.

Barnett, R. 2014. Arts and Humanities in Higher Education*. An International Journal of Theory, Research and Practice.* **13**(1-2), pp. 42-53.

Barr, J. and Steele, T. 2003. Revaluing the Enlightenment: Reason and imagination. *Teaching in Higher Education*. **8**(4), Special Issue. pp.505-515.

Bath, N., Daubney A., Mackrill, D. and Spruce, G. 2020. The declining place of music education in schools in England. *Children & Society*. **34**(5). Pp. 443-457.

Beck, H. 2016**.** *What is thought? How the brain creates new ideas*. [Online]. [Accessed 3 July 2019]. Available from: https://www.youtube.com/watch?v=oJfFMoAgbv8&t=24s

Bible. Genesis 1: 26-27 and Genesis 2: 19-20.

Bilash, O. 2015. *Pedagogic Content Knowledge*. [Online]. [Accessed 9 August 2021]. Available from: https://www.youtube.com/watch?v=YsEs6cuW8rM

Blacker, D. and McKie, J. 2003. Information and Communication Technology. In: Blake, N., Smeyers, P., Smith, R. and Standish, P. eds. 2003. *The Blackwell Guide to the Philosophy of Education*. Oxford: Blackwell Publishers Ltd. pp. 234-252.

Blair, T. 1996. *The agenda for a generation*. [Online]. Ruskin College Oxford address. [Accessed 2 October 2017]. Available from: Gillard, D. 2013. http://www.educationengland.org.uk/documents/speeches/1996ruskin.html

Blake, N., Smeyers, P., Smith, R. and Standish, P. eds. 2003. *The Blackwell guide to the philosophy of education.* Malden MA: Blackwell.

Bland, D. and Sharma-Brymer, V. 2012. Imagination in school children's choice of their learning environment: an Australian study. *International Journal of Educational Research*. **56**, pp. 75-88.

Board of Education. 1926. *The Education of the Adolescent.* [Online] Report of the Consultative Committee. London: His Majesty's Stationery Office. [Accessed 22 June 2020]. Available from: http://www.educationengland.org.uk/documents/hadow1926/hadow1926.html

Board of Education.1938. *Secondary Education with Special Reference to Grammar Schools and Technical High Schools*. [Online]. London: Her Majesty's Stationery Office. [Accessed 23 June 2020]. Available from: http://www.educationengland.org.uk/documents/spens/spens1938.html

Boden, R. and Epstein, D. 2006. Managing the Research Imagination? Globalisation and Research in Higher Education**.** *Globalisation, Societies and Education*, **4**(2), pp. 223-236.

Born, C. 2017. *Models of teaching*. [Online]. [Accessed 20 October 2020]. Available from: https://www.youtube.com/watch?v=fU91XEd9Ewk

Botstein, L. 2018. Redeeming the Liberal Arts. *Liberal Education.* **104**(4). [no pagination].

Boyd, L. 2015. *After watching this, your brain will not be the same*. [Online]. [Accessed 19 June 2019]. Available from: https://www.youtube.com/watch?v=LNHBMFCzznE

Bracken, E. 2018. Imaginative Possibilities or Moral Fable? Different Ways of Reading "A Christmas Carol". *Changing English: Studies in Culture and Education.* **25**(1), pp. 3-13**.**

Browning, E. and Hohenstein, J. 2015. The use of narrative to promote primary school children's understanding of evolution. *Education 3-13.* **43**(5), pp. 530-547.

Bruner, J. 1986. *Actual Minds, Possible Worlds*. Cambridge, Mass: Harvard University Press.

Buckley, C. and Husband, G. 2020. Lecturer Identities and Perceptions of CPD for Supporting Learning and Teaching in FE and HE in the UK. *International Journal of Management and Applied Research.* **4**, pp .432-453.

Burnard, P., Craft, A. and Cremin, T. 2006. Documenting "Possibility Thinking": A Journey of Collaborative Enquiry. *International Journal of Early Years Education*. **14**(3), pp. 243-262.

Burrows, F. 2008. How did I get here? *Travel Weekly (UK).* 4/4/2008.

[The] Business and Industry Committee to the OECD [BIAC]. 2015. *Character Qualities for the Workplace*. [Online]. BIAC Survey Synthesis Report. [Accessed 9 September 2021]. Available from: https://www.spcr.cz/images/MO/2015-BIAC-Annual-report-FINAL-web.pdf

Butterfield, C. 2002. *Education by Imagination: Using Nonfiction Children's Literature to Promote Aesthetic Connection.* pp. 1-17.

Caffrey, T. 2016. *The perceived relevance of Functional Skills Maths to vocational training*. M.A. (Ed) Dissertation, University of Leeds Trinity.

Cage, J. 1952. *4' 33".* [Online]. [Accessed 2 October 2019]. Available from: https://www.britannica.com/topic/433-by-Cage

Cambridge Primary Review Trust, 2009. *Children, their World, their Education*. [Online]. [Accessed 18 September 2018]. Available from: https://cprtrust.org.uk/cpr/cpr-media-coverage/2009-2/

Canning, N. 2013. 'Where's the bear? Over there!' – creative thinking and imagination in den making. *Early Child Development and Care.* **183**(8), pp. 1042-1053.

Çer, E. 2016. Preparing Books for Children from Birth through Age Six: A New Children's Reality Approach. *Universal Journal of Educational Research*. **4**(5), pp. 1024-1036.

Chatfield, G. 2020. *This summer's grades and exams fiasco has brought into sharp focus the question of what exams are for.* [Online]. [Accessed 15 May 2021]. Available from: https://www.thersa.org/blog/2020/10/gcse-exams

Cheary, M. 2023. [Online]. [Accessed 6 May 2023]. Available from: https://www.reed.co.uk/career-advice/what-are-transferable-skills/

Chen, N. 2015. Playing with Size and Reality: The Fascination of a Dolls' House World. *Children's Literature in Education.* **46**(3), pp. 278-295.

Christensen, B. T. 2005. *Creative Cognition: Analogy and Incubation*. Ph.D. thesis, University of Aarhus, Denmark.

City and Guilds Group. 2014. *Sense and instability: three decades of government policy*. [Online]. [Accessed 30 December 2019]. Available from: https://www.cityandguildsgroup.com/-/media/cgg-website/documents/skillsandinstability-executivesummary-pdf.ashx?la=en&hash=EA28AFF7E0FBACCD30AA

City and Guilds. 2014a. *Level 2 Diploma in Electrical Installation*. London: Hodder Education. p.114

City and Guilds. 2014b. *Level 2 Diploma in Engineering 2850-81*. London: City and Guilds.

City and Guilds. 2014c. *Level 2 Diploma in Plumbing* Unit *204/5 on plumbing processes.* London: Hodder Education.

Coates, E. and Coates, A. 2006. Young children talking and drawing. *International Journal of Early Years Education.* **14**(3), pp. 221-241.

Colley, H., James, D., Diment. K. and Tedder, M. 2003. Learning as becoming in vocational education and training: class, gender and the role of vocational habitus. *Journal of Vocational Education & Training.* **55**(4), pp. 471-498.

Collins English Dictionary. [no date]. Glasgow: HarperCollins Publishers. [Online]. [Accessed 27 May 2020]. Sv Overlearn, [no pagination]. Available from: https://www.collinsdictionary.com/dictionary/english/overlearn

Confederation of British Industry [CBI]. 2019. *Centre Stage: keeping the UK's creative industries in the spotlight*. [Online]. [Accessed 6 June 2020] Available from: https://www.cbi.org.uk/articles/centre-stage-keeping-the-uk-s-creative-industries-in-the-spotlight/

Conservative Party. *Conservative manifesto, 2019: Our Plan*. [Online]. [Accessed 30 December 2019]. Available from: https://www.conservatives.com/our-plan

Coreil, C. ed. 2002-3. *Journal of the Imagination in Language Learning and Teaching*, **7**. 2002-2003, pp. 1-112.

Cornford, I.R. 2002.Two Models for Promoting Transfer: a Comparison and Critical Analysis. *Journal of Vocational Education and Training*. **54**(1), pp. 85-102.

Cornish, C. 2018. Keep them students busy: 'warehoused' or taught skills to achieve. *Research in post compulsory Education*. **23**(1), pp.100-117.

Correnti, S. 2016. The 'PBL working environment' as interactive and expert system to learn the problem-based learning method. *Tecnología, Ciencia y Educación*. **3**(3), pp. 87-96.

Craft, A. 2000. *Creativity across the curriculum.* London: Routledge.

Craft, A., Jeffrey, B. and Leibling, M. 2001. *Creativity in education.* London: Continuum.

Cremin, T., Chappell, K. and Craft, A. 2013. Reciprocity between narrative, questioning and imagination in the early and primary years: Examining the role of narrative in possibility thinking. *Thinking Skills and Creativity*. **9**, pp. 135-151.

Cropley, A.J. 2001. *Creativity in education and learning.* London: Kogan Page Ltd.

Cropper, W. H. 2001. *Great Physicists: The Life and Times of Leading Physicists from Galileo to Hawking.* Oxford: Oxford University Press Inc.

Csikszentmihalyi, M. 1996. *Creativity.* New York: HarperCollins Publishers Inc.

Curtis, S.J. and Boultwood, M.E.A. 1960. *An Introductory History of English Education Since 1800.* 4th ed. London: University Tutorial Press.

D'Agnese, V. 2017. The Essential Uncertainty of Thinking: Education and Subject in John Dewey. *Journal of Philosophy of Education*. **51**(1), pp. 73-101.

D'Agnese, V. 2018. Courage, Uncertainty and Imagination in Deweyan Work: Challenging the Neo-Liberal Educational Agenda. *Journal of Philosophy of Education.* **52**(2), pp. 316-329.

Darling-Hammond, L. 1998. Experience and Education: Implications for Teaching and Schooling Today. In: Dewey, J. 1998. *Experience and Education* (60th Anniversary Edition). West Lafayette, Indiana, US: Kappa Delta Pi Publications. pp. 150-167**.**

Davies, D. 2013. Taking a "Giant Tour" to Explore the Human Body. *Primary Science.* **127**, pp. 26-28.

Davis, O. L. 1998. An invitation to think. In: Dewey, J. 1998. *Experience and Education* (60th Anniversary Edition). West Lafayette, Indiana, US: Kappa Delta Pi Publications. Pp. 168-175.

Dearing, R. 1994. *The National Curriculum and its Assessment: Final Report*. [Online]. London: School Curriculum and Assessment Authority 1994. [Accessed 25 September 2021]. Available from: Gillard, D. 2012. http://www.educationengland.org.uk/documents/dearing1994/dearing1994.html

Dearing, R. 1996. *Review of Qualifications for 16-19 year olds*. [Online]. Hayes: SCAA Publications. [Accessed 25 September 2021]. Available from: Gillard, D. 2014. http://www.educationengland.org.uk/documents/dearing1996/dearing1996.html

De Bono, E. 1970. *Lateral Thinking.* London: Ward Lock Education.

Deguara, J. and Nutbrown, C. 2018. Signs, symbols and schemas: understanding meaning in a child's drawings. *International Journal of Early Years Education.* **26**(1), pp. 4-23.

De Leur, T., Van Boxtel, C. and Wilschut, A. 2017. 'I Saw Angry People and Broken Statues': Historical Empathy in Secondary History Education. *British Journal of Educational Studies*. **65**(3), pp. 331-352.

Department for Business, Innovation and Skills [DIBS]. 2012. *Final Report of the Independent Review Panel on Professionalism in Further Education*. [Online].

[Accessed 27 April 2018]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/422247/bis-12-1198-professionalism-in-further-education-review-final-report.pdf

Department for Children, Schools and Families [DCSF]. 2007. *Raising the bar, closing the gap*. [Online]. Green Paper. [Accessed 4 January 2018]. Available from: http://www.educationengland.org.uk/documents/pdfs/2007-conservative-policy.pdf

Department for Education [DfE]. 2013a**.** *Design and technology programmes of study: key stages 1 and 2.* [Online]. [Accessed 9 May 2019]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/239041/PRIMARY_national_curriculum_-_Design_and_technology.pdf

Department for Education [DfE]. 2013b. *The National Curriculum in England. Framework Document*. [Online]. [Accessed 9 May 2019]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/210969/NC_framework_document_-_FINAL.pdf

Department for Education [DfE]. 2019. *Employers' Skills Survey.* [Online]. [Accessed 10 October 2020]. Available from: https://www.gov.uk/government/collections/employer-skills-survey-2019

Department for Education and Employment [DfEE]. 1996. *Learning to Compete: Education and Training for 14-19 year olds.* [Online]. White Paper. Cm 3486. [Accessed 15 December 2019]. Available from: Gillard, D. 2017. Ttp://www.educationengland.org.uk/documents/wp1996b/

Department for Education and Employment [DfEE]. 1998. *The Learning Age: a renaissance for a new Britain.* [Online]. Green Paper. Cm 3790. [Accessed 4 April 2017]. Available from: http://www.educationengland.org.uk/documents/pdfs/1998-the-learning-age.pdf

Department for Education and Employment [DfEE]. 1999. *Learning to Succeed: a new framework for post-16 learning.* [Online]. White Paper. Cm 4392. [Accessed 26 January 2018]. Available from: http://www.educationengland.org.uk/documents/pdfs/1999-learning-to-succeed.pdf

Department for Education and Employment [DfEE] and Department for Digital, Media, Culture and Sport [DfCMS]. 1999. The National Advisory Committee on Creative and Cultural Education [NACCCE]. *All Our Futures: Creativity, Culture and Education.* [Online]. [Accessed 21 October 2019]. Available from: https://www.creativitycultureeducation.org/publication/all-our-futures-creativity-culture-and-education/

Department of Education and Science [DES]. 1967. *Children and their Primary Schools.* [Online]. A Report of the Central Advisory Council for Education (England). London: Her Majesty's Stationery Office. [Accessed 5 November 2017]. Available from: http://www.educationengland.org.uk/documents/plowden/plowden1967-1.htm

Department for Education and Science [DES] and the Welsh Office. 1985. B*etter Schools.* [Online]. Cm 9469. [Accessed 4 June 2018]. Available from: Gillard, D. 2017. http://www.educationengland.org.uk/documents/wp1985/index.html

Department for Education and Science [DES] and The Welsh Office. 1988. *Advancing A Levels.* [Online] Report to the Secretary of State. London: Her majesty's Stationery Office. [Accessed 13 September 2022]. Available from: Gillard, D. 2014. http://www.educationengland.org.uk/documents/higginson1988/higginson1988.html

Department for Education and Skills [DES]. 1991.White Paper. *Education and Training for the 21st Century*. [Online]. Cm 1536 Vol.1. [Accessed 5 June 2022]. Available from: http://www.educationengland.org.uk/documents/wp1991a/index.html

Department of Education and Science [DES]. 2011. *Review of vocational education.* [Online]. [Accessed 30 September 2020]. Available from: https://www.gov.uk/government/publications/review-of-vocational-educati.n-the-wolf-report

Department for Education and Skills [DfES]. 2002. *Green Paper. 14-19: extending opportunities, raising standards*. [Online]. Cm 5342. [Accessed 3 February 2018]. Available from: https://dera.ioe.ac.uk/4502/7/14-19-extending-opportunities-raising-standards_Redacted.pdf

Department for Education and Skills [DfES]. 2003. *!4-19: opportunity and excellence*. [Online]. [Accessed 27 January 2018]. Available from : http://www.educationengland.org.uk/documents/pdfs/2003-green-paper-14to19.pdf

Department for Education and Skills [DfES]. 2004. 14-19 *Curriculum and Qualifications Reform.* Final Report of the Working Group of 14-10 Reform. [Online]. [Accessed 4 April 2018]. Available from: http://www.educationengland.org.uk/documents/pdfs/2004-tomlinson-report.pdf

Department for Education and Skills [DfES] 2005. *14-19 Education and Skills*. Cm 6476. [Online]. [Accessed 7 April 2018]. Available from: http://www.educationengland.org.uk/documents/pdfs/2005-white-paper-14-19-education-and-skills.pdf

Department of Employment [DoE] and Department of Education and Science [DES]. 1981. *A New Training Initiative: A Programme for Action.* [Online]. White Paper. Cm 8455. [Accessed 25 March 2018]. Available from: Gillard, D. http://www.educationengland.org.uk/documents/wp1981/index.html

Devi, A., Fleer, M. and Li, L. 2018. *International Journal of Early Years Education*. **26**(3), pp. 295–311.

Dewey, J. 1890. *Psychology.* New York: Harper and Brothers *and* London: F.B. and Co. Ltd.

Dewey, J. 1897. My Pedagogic Creed. Pamphlet by E.L. Kellogg and Co. *and* In: Archambault, R. ed. 1964. *John Dewey on Education: selected writings.* Chicago: University of Chicago Press.

Dewey, J. 1910. *How We Think.* Lexington, MA: DC Heath *and* New York: Prometheus Books.

Dewey, J. 1915. *The School and Society.* New York: Elementary School Record.

Dewey, J. 1916. *Democracy and Education.* [No place]: Simon and Brown.

Dewey, J. 1919a**.** The *Psychology of Drawing.* New York: Teachers College, Columbia University.

Dewey, J. 1919b. Imagination *and Expression.* New York: Teachers College, Columbia University.

Dewey, J. 1929. *Individualism Old and New.* New York: Capricorn Books.

Dewey, J. 1998. *Experience and Education.* (60th Anniversary Edition). West Lafayette, Indiana, US: Kappa Delta Pi Publications.

Dillon, J., Rickinson, M., Teamey, K. and Morris, M. 2006. The value of outdoor learning: Evidence from research in the UK and elsewhere. *The School Science Review.* **87**(320), pp. 107-111.

Donajgrodsky, T. 1974. *Private conversation with Tony Caffrey.*

Dowling, M. 2002. Developing Potential in the Early Years. *Gifted Education International*. **16**(3), pp. 241-47.

Duckworth, V. and Smith, R. 2016. *Further education in England – transforming lives and communities.* [Online]. University and College Union. [Accessed 10 November 2020]. Available from: https://www.open-access.bcu.ac.uk/5240/1/Transforming_lives_FE_report_Jan17%20%28002%29.pdf

Duckworth, V. and Smith, R. 2019. *Transformative Teaching and Learning in Further Education.* [Online]. Summative report for the University and College Union: Transforming Lives and Communities Project. [Accessed 16 February 2020]. Available from: https://research.edgehill.ac.uk/ws/portalfiles/portal/29005865/Transformative_Teaching_and_Learning_in_Further_Education_July_2019.pdf

Duffy, B. 1998. *Supporting Creativity and Imagination in the Early Years.* Buckingham: Open University Press.

Dziedziewicz, D., Gajda, A. and Karwowski, M. 2014. Developing children's intercultural competence and creativity. *Thinking Skills and Creativity.* **13,** pp. 32-42.

Education Act 1902. (2 Edw. 7 c. 42). [Online]. London: Her Majesty's Stationery Office. [Accessed 27 October 2019]. Available from: http://www.educationengland.org.uk/documents/acts/1902-education-act.html

Education Act 1918. (8 & 9 Geo. 5 c. 39). [Online]. Kew: The National Archives. [Accessed 24 June 2020]. Available from: https://www.legislation.gov.uk/ukpga/Geo5/8-9/39

Education Act 1944. (7 & 8 Geo. 6 c. 31). [Online]. Kew: The National Archives. [Accessed 24 September 2020]. Available from: https://www.legislation.gov.uk/ukpga/Geo6/7-8/31/contents/enacted

Education and Inspections Act 2006. (c. 40, part 8). [Online]. Legislation.gov.uk [Accessed 5 July 2020]. Available from: https://www.legislation.gov.uk/ukpga/2006/40/contents

Education and Training Foundation [ETF]. 2014. *Effective Practices in Post-16 Vocational Maths.* [Online]. London: ETF. [Accessed 21 November 2022]. Available from: https://www.et-foundation.co.uk/wp-content/uploads/2014/12/Effective-Practices-in-Post-16-Vocational-Maths-v4-0.pdf

Education Code Act 1890. (53 & 54 Vict. c. 22). [Online]. Kew: The National Archives. [Accessed 23 May 2022]. Available from: https://vlex.co.uk/vid/education-code-1890-act-861232467

Egan, K. 2002. *Getting it wrong from the beginning*. New Haven: Yale University Press.

Egan, K. and Nadaner, D. 1988. *Imagination and Education.* Milton Keynes: Open University Press.

Eisner, E. 2009. What Education Can Learn from the Arts. *Art Education*. **62**(1), pp. 6-9.

Elementary Education Act 1870. (33 & 34 Vict. c. 75). [Online]. London: HMSO. [Accessed 13 January 2019]. Available from: Gillard, D. 2013. http://www.educationengland.org.uk/documents/acts/1870-elementary-education-act.html

Emdin. C. *Reality Pedagogy*. 2012. [Online]. [Accessed 27 September 2019]. Available from: https://www.youtube.com/watch?v=2Y9tVf_8fqo

Emerson, R.W. 1883. *Letters and Social Aims.* In: Emerson's Complete Works, vol.viii. Essay 1 (Poetry). Riverside Edition. London: Routledge.

English, A. 2016. Listening and the educational relationship. In: Fulford, A. and Hodgson. 2016. *Philosophy and Theory in Educational Research*. Abingdon: Routledge. pp. 65-73.

Evans, R. 2009. *A Short History of Technical Education.* Chapter 9 – The Beginning of the 20th Century 1900-1921. [Online]. [Accessed 10 October 2018]. Available from: https://technicaleducationmatters.org/2009/06/17/chapter-9-the-beginning-of-the-20th-century-1900-1921/

Fauconnier, G. 2008. *How compression gives rise to metaphor and metonymy.* [Online]. [Accessed 24 January 2018]. Available from: https://www.youtube.com/watch?v=kiHw3N6d1Js&t=1424s

FE News. 2021. *GCSE Results Day 2021 – Sector Response*. [Online]. [Accessed 24 November 2021]. Available from: https://www.fenews.co.uk/fe-voices/gcse-results-day-2021/

Fels, L. M. 2008. Performative Inquiry: Arresting the Villains in "Jack & the Beanstalk". *Journal for Learning through the arts.* **4**(1). [no pagination].

Finnegan, F. 2019. Moving against and beyond neoliberal higher education in Ireland. In: Tett, L. and Hamilton, M. eds. *Resisting Neoliberalism in Education*. pp. 151-164. Bristol University: Policy Press.

Firth, L., Alderson-Day, C., Woods, N. and Fernthough. 2015. Imaginary Companions in Childhood: Relations to Imagination Skills and Autobiographical Memory in Adults. *Creativity Research Journal.* **27**(4), pp. 308-313.

Fiske, E. B. Ed. No date. Champions of Change: the impact of the arts on learning. Arts Education Partnership. [Online]. [Accessed 25 May 2023]. Available from: https://www.americansforthearts.org/sites/default/files/ChampsReport_0.pdf

Fleer, M. 2011. Conceptual Play: Foregrounding Imagination and Cognition during Concept Formation in Early Years Education. *Contemporary Issues in Early Childhood*. **12**(3), pp. 224-240.

Fulford, A. 2021. Academic Integrity and the Disintegration of Pedagogy. *Philosophy and Theory in Higher Education.* **3**(2), pp. 23-42.

Fulford, A. and Hodgson, N. 2016. *Philosophy and Theory in Educational Research*. Abingdon: Routledge.

Further and Higher Education Act 1992. (c. 13). [Online]. Kew: The National Archives. [Accessed 26 July 2020]. Available from: https://www.legislation.gov.uk/ukpga/1992/13/contents

Further Education Funding Council [FEFC]. 1997. *Learning works: widening participation in further education.* [Online]. Coventry: Further Education Funding Council. [Accessed 14 September 2021]. Available from: Gillard, D. 2018. http://www.educationengland.org.uk/documents/kennedy1997/kennedy-report.html

Gal, H. and Linchevski, L. 2010. To see or not to see: analyzing difficulties in geometry from the perspective of visual perception. *Educational Studies in Mathematics*. **74**(2), pp. 163-183.

Ganguly, I. 1995. *Scientific Thinking Is in the Mind's Eye*. [Online]. Chicago: International Visual Literacy Association. [Accessed 16 August 2017]. Available from: https://files.eric.ed.gov/fulltext/ED391504.pdf

Gattenhoh, S. and Radvan, M. 2009. In the Mouth of the Imagination: Positioning Children as Co-Researchers and Co-Artists to Create a Professional Children's Theatre Production. *Research in Drama* Education. **14**(2), pp. 211-224.

Gillard, D. 2010. *A national debate based on the facts*. [Online]. James Callaghan, Ruskin College, Oxford. [Accessed 8 July 2018]. Available from: http://www.educationengland.org.uk/documents/speeches/1976ruskin.html

Gillard, D. 2011. *Education in England: a brief history*. [Online]. Chapter 2 :1800-1860. Towards a state system of education. [Accessed 15 August 2020]. Available from: file:///C:/Users/Tony%20Caffery/Downloads/Education%20in%20England%20-%20Chapter%202.pdf

Gillard, D. 2018. *Education in England: a history*. [Online]. Chapter 5. 1750-1860 : Towards mass education. [Accessed 17 November 2018]. Available from: https://www.educationengland.org.uk/history/chapter05.html

Gillard, D. 2018a*. Education in England: a history.* [Online]. Chapter 18. 2007-2010 Brown and Balls: mixed messages. [Accessed 19 June 2020]. Available from: https://www.educationengland.org.uk/history/chapter18.html

Goldman, L. 1995. *Dons and Workers: Oxford and Adult Education since 1850*. Oxford: Clarendon Press.

Gomis, K., Saini, M., Pathirage, C. and Arif, M. 2022. Enhancing quality of teaching in the built environment higher education, UK. *Quality assurance in education*, **30**(4), p.523-538.

Gordon, C. 2015. Adventures with Mr. Monkey: Stimulating creative writing in the primary school classroom through play. *Practically Primary.* **20**(1), pp. 30-31.

Government UK. [Ofsted].2019. Guidance: Further Education and skills inspection handbook. [Online]. [Accessed June 2020]. Available from: https://www.gov.uk/government/publications/further-education-and-skills-inspection-handbook-eif

Gray, V. 2006. *Charles Knight: educator, publisher, writer*. Aldershot: Ashgate Publishing.

Green, A. 2005. Technical education and state formation in nineteenth-century England and France. In: McCulloch, G. 2005. *The RoutledgeFalmer Reader in History of Education*. pp. 100-117. Abingdon, Oxon: Routledge.

Green, J. L. 1985. Concept of Reason in Hirst's Forms of Knowledge. *The Journal of Educational Thought.* **19**(2), pp. 109-116.

Groce, R. 2014. Conceptualizing the Blue Guitar and Room 13: Engaging in the Arts with Teacher Candidates and Education Faculty. *Educational Forum*. **78**(4), pp. 440-444.

H.M. Government. 2020. *English Apprenticeships: Our 2020 Vision.* [Online]. [Accessed 29 December 2023]. Available from: https://assets.publishing.service.gov.uk/media/5a74eacde5274a59fa715f9d/BIS-15-604-english-apprenticeships-our-2020-vision.pdf

Hager, P. and Hyland, T. 2002. Vocational Education and Training *In: Blackwell Guide to the Philosophy of Education.* 2002. Oxford: Blackwell Publishing. pp. 271-287.

Hall, R. 2007. Needed -- youth's energy. *Landscape Management.* **46**(5), pp. 11-11.

Hall, V. and Hart, A. 2004. The use of imagination in professional education to enable learning about disadvantaged clients. *Learning in Health & Social Care.* **3**(4), pp. 190-202.

Handa, M. C. 2015. Imagination first: Unleash the power of possibility. *Gifted Education International*. **31**(2), pp. 117-141.

Hansard HC Deb*. Technical Education.* 1891. [Online]. 05 February 1891 vol 350 cc3-4. [Accessed 4 Mar 2018]. Available from: https://api.parliament.uk/historic-hansard/commons/1891/feb/05/technical-education#S3V0350P0_18910205_HOC_5

Hansard HC Deb. Evening School Code. 1893. [Online]. Lectures in Evening Schools Vol 15. 7 August 1893. [Accessed 3 January 2018]. Available from: https://hansard.parliament.uk/Commons/1893-08-07/debates/6bfddc58-e8ca-41c7-a274-0a2ad88a979b/LecturesInEveningSchools

Harrison, F.J.C. 1954. *A History of the Working Men's College 1854-1954*. London: Routledge and Kegan Paul.

Hayward, J., and Jerome, L. No date. *Crick and Teacher Education*. [Online]. [Accessed 9 June 2020]. Available from: https://www.academia.edu/867749/Crick_and_Teacher_Education

Herbst, P. 1973. Work, Labour and University Education. In: *The Philosophy of Education.* Peters, R.S. ed. 1973. Oxford: Oxford University Press. pp. 58-74.

Higgins, J., Nairn, K. and Sligo, J. 2010. Vocational Imagination and Labour Market Literacy: Young New Zealanders Making Education-Employment Linkages. *Journal of Vocational Education and Training.* **62**(1), pp. 13-25.

Hildebrand, D. L. 2018. Experience is Not the Whole Story: The Integral Role of the Situation in Dewey's 'Democracy and Education'. *Journal of Philosophy of Education.* **52**(2), pp. 287-300.

Hill, E., Bowman, K., Stalmeijer, R. and Hart, J. 2014. *Medical education*. **48**(9), pp. 884-894**.**

Hillman, J. 2019. *From Types to Images. e*d. Klaus Ottman. Zurich: Spring Publications.

Hodgson, A. and Spours, K. 1997. *Dearing and Beyond – Qualifications, Frameworks and Systems.* London: Kogan Page.

Hoffman, C.D. and Hawkins, W. 1980. The Effects of Pretraining on Children's Recognition Memory for Pictures. *Journal of Genetic Psychology.* **137**(2), pp. 301-02.

Hofstadter, D. 2006. *Analogy as the Core of Cognition*. [Online]. [Accessed 23 January 2018]. Available from: https://www.youtube.com/watch?v=n8m7lFQ3njk&t=26s

Hofstadter, D. and Sander, E. 2013. *Surfaces and Essences.* New York: Basic Books.

Holmes, A. 2015. *A History of Philosophy, 65: John Dewey. Wheaton College*. [Online]. [Accessed 3 January 2020]. Available from: https://www.youtube.com/watch?v=7knMB7YPVH4

Hsu, M-C., Chiang, C. and Liang, C. 2014. The mediator effects of imagination between learning environment and academic performance: a comparison between science and engineering majors. *International Journal of Technology & Design Education*. **24**(4), pp. 419-436.

Hsu, M-C., Chiang, C. and Liang, C. 2015. The effects of creative personality and psychological influences on imagination. *Innovations in Education & Teaching International.* **52**(6), pp. 587-598.

Huang, Y. and Li, J. 2015. Comparing personal characteristic factors of imagination between expert and novice designers within different product design stages. *International Journal of Technology & Design Education.* **25**(2), pp. 261-292.

Imagine. 2012. [Film] Andrzej Jakimowski. dir. Poland: Production Companies: CANAL and Polska S.A., Film and Music Entertainment.

Industrial Training Act 1964. (c.16). [online] [Accessed 20 January 2018]. Available from: https://www.legislation.gov.uk/ukpga/1964/16/enacted

Institute for Academic Development. (2023). *Literature Review.* University of Edinburgh. [Online]. [Accessed 29 August 2023]. Available from: https://www.ed.ac.uk/institute-academic-development/study-hub/learning-resources/literature-review

Işık, B. Ö. and Taş, Ç. S*. 2018.* Landscape Design in Architectural Education. *Journal of History, Culture & Art Research.* **7***(*2), pp. 390-*399.*

Jackson, P. W. 1998. Dewey's Experience and Education revisited. In: Dewey, J. 1998. *Experience and Education* (60th Anniversary Edition). West Lafayette, Indiana, US: Kappa Delta Pi Publications

Johnson, K. 2009. Corporate sperm count and boiled frogs: Seeds of ideas to kindle innovation in students. *International Journal of Contemporary Hospitality Management*. **21**(2), pp. 179-190.

Johnson, N. and Giorgis, C. 2003. Imagination. *Reading Teacher.* **56**(5), pp. 504-11.

[The] Jubilee Centre for Character and Virtues at Birmingham University. [Online]. [Accessed 4February 2022]. Available from: https://www.birmingham.ac.uk/research/activity/education/jubilee-centre/index.aspx#:~:text=The%20Jubilee%20Centre%20for%20Character%20and%20Virtues%20is%20a%20pioneering,for%20public%20and%20professional%20life

Karlstad, M.S. 1986. Art in a First Grade Classroom. *Insights.* 19(2), [no pagination].

Kelly, T. 1962. *A History of Adult Education in Great Britain*. 3rd ed. Liverpool: Liverpool University Press.

Kidd, E. Rogers, P. and Rogers, C. 2010. The personality correlates of adults who had imaginary companions in childhood. *Psychological Reports*. **107**(1), pp. 163-72.

Kieran, M, and Lopes, D. 2012. *Imagination, Philosophy and the Arts*. Abingdon: Routledge.

Kind, A. 2021. *The power of imagination*. [Online]. [Accessed1 September 2020]. Available from: https://www.youtube.com/watch?v=RlNmYYaE5s8

Kokkotas, B., Rizaki, A. and Malamitsa, K. 2010. Storytelling as a Strategy for Understanding Concepts of Electricity and Electromagnetism. *Interchange: A Quarterly Review of Education.* **44**(4), pp. 379-405.

Kotzee, B. 2018. Dewey as Virtue Epistemologist: Open-Mindedness and the Training of Thought in Democracy and Education*. Journal of Philosophy of Education.* **52**(2). pp. 359-373.

Kridel, C. 1978. General Education - An Antidote to the Patchwork Curriculum. *Educational Leadership.* **36**(2), pp. 148-50.

Kudriavtsev, V.T. and Fattakhova, D.I. 2015. The Child on the Threshold of Becoming a Pupil. *Journal of Russian & East European Psychology.* **52**(3), pp. 1-15.

Kutscha, G. 1996. The dual system of vocational education in the Federal Republic of Germany. *European Education.* **28**, pp. 49-62.

Labour Party manifesto 1997. *New labour because Britain deserves better.* Foreword. [Online]. [Accessed 17 September 2019]. Available from: http://www.labour-party.org.uk/manifestos/1997/1997-labour-manifesto.shtml

Labour Party manifesto 2010. A fair future for all. [Online]. [Accessed 10 May 2020]. Available from: http://www.cpa.org.uk/cpa_documents/TheLabourPartyManifesto-2010.pdf

Lakoff, G. 2008. *Idea Framing, Metaphors, and Your Brain.* [Online]. [Accessed 25 February 2020]. Available from: https://www.youtube.com/watch?v=S_CWBjyIERY&t=13s

Lakoff, G. 2015. *How Brains Think: The Embodiment Hypothesis*. [Online]. [Accessed 4 September 2019]. Available from: https://www.youtube.com/watch?v=WuUnMCq-ARQ

Lee, S. and Carpenter, R. 2015. Creative Thinking for 21st Century Composing Practices: Creativity Pedagogies across Disciplines. *Across the Disciplines*. **12**(4), pp. 1-24.

Levy, A. and Godfrey-Smith, P. eds. 2020. *The Scientific Imagination: Philosophical and Psychological Perspectives*, Oxford: Oxford University Press.

Liang, C., Hsu, Y., Huang, Y. and Chen, S-C. 2012. How Learning Environments Can Stimulate Student Imagination**.** *Turkish Online Journal of Educational Technology - TOJET*. **11**(4), pp. 432-441.

Lin, W-S., Hsu, Y. and Liang, C. 2014. The mediator effects of conceiving imagination on academic performance of design students. *International Journal of Technology & Design Education.* **24**(1), pp. 73-89.

Ljungdahl, L. 2010. Creative Strategies with Literature: Developing Literacy in the Classroom. *International Journal of Learning*, **17**(7), pp. 391-398.

Lloyd George, D, 1918. *Report of the Committee appointed by the Prime Minister to enquire into the Position of Natural Science in the Educational System of Great Britain.* London: His Majesty's Stationery Office. [Online]. [Accessed 10 October 2020]. Available from: Gillard, D. 2019. http://www.educationengland.org.uk/documents/thomson1918/thomson1918.html

Lloyd, C. and Payne, J. 2012. Raising the Quality of Vocational Teachers: Continuing Professional Development in England, Wales and Norway. *Research Papers in Education*. 27(1), pp. 1-18.

Local Taxation (Customs and Excise) Act 1890. [Online]. [Accessed 3 May 2018]. Available from: https://api.parliament.uk/historic-hansard/commons/1891/feb/05/technical-education#S3V0350P0_18910205_HOC_5

Longo, C. M. 2010. Fostering Creativity or Teaching to the Test? Implications of State Testing on the Delivery of Science Instruction. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas.* [Online]. pp. 54-57. [Accessed 29 March 2020]. Available from: https://www.semanticscholar.org/paper/Fostering-Creativity-or-Teaching-to-the-Test-of-on-Longo/08aa62bf0d75408bcbe7b2c7c6b4f003b0af72f2

Lord President of the Council. 1946. *Scientific Man-Power*. [Online]. Report of a Committee appointed by the Lord President of the Council. London: His Majesty's Stationery Office [Accessed 1 April 2018]. Available from: Gillard, D. 2017. http://www.educationengland.org.uk/documents/barlow1946/barlow1946.html

Lum, G. 2017. Making Sense of Knowing - How and Knowing - That. *Journal of Philosophy of Education*. **51**. pp. 655-672.

Lyons, J.D. 1999. Descartes and Modern Imagination. *Philosophy and Literature.* **23**(2), pp. 302-312.

Lysaker, J. and Sedberry, T. 2015. Reading difference: picture book retellings as contexts for exploring personal meanings of race and culture. *Literacy*. **49**(2), pp. 105-111**.**

MacClintock, P.L. 1902. Literature in the Elementary School. *Elementary School Teacher.* **3**(2), pp. 87-95.

Macgregor, J.G. 1882. *Technical Education Abroad and at Home*. Halifax NS: Herald Publishing Company.

MacLeod, A. 2014. The hidden curriculum: Is it time to re-consider the concept? *Medical teacher*. **36**(6), pp. 539-540.

Maine, F. 2013. How children talk together to make meaning from texts: a dialogic perspective on reading comprehension strategies. *Literacy.* **47**(3), pp. 150-156.

Manià, K,. Mabin, L.K. and Liebenberg, J. 2018. 'To Go Boldly': Teaching Science Fiction to First-Year Engineering Students in a South African Context. *Cambridge Journal of Education*. **48**(3), pp. 389-410.

Mazur, E. 1997. *Peer Instruction.* Upper Saddle River, NJ: Prentice Hall.

Mazur E. 2014. *Peer Instruction for Active Learning*. [Online]. [Accessed 3 September 1921]. Available from: https://www.youtube.com/watch?v=Z9orbxoRofI&t=1s

Mazur, E. 2018. *Getting Every Student Ready for Every Class*. [Online]. EDULEARN18 Keynote. [Accessed 25 February 2021]. Available from: https://www.youtube.com/watch?v=anAp5UIsGCA

McArdle, F., Knight, L. and Stratigos, T. 2013. Imagining Social Justice. *Contemporary Issues in Early Childhood.* **14**(4), pp. 357-369.

McConnon, L. 2013. *Communicating possibilities: a study of English nursery children's emergent creativity: exploring the three to four-year-old child as an artistic communicator and possibility thinker*. Ph.D. thesis, University of Exeter.

Mendelowitz, B. 2014. Permission to fly: Creating classroom environments of imaginative (im)possibilities. *English in Education*. **48**(2), pp. 164-183.

Méndez-Martínez, E and Fernández-Río, J. 2019. Design and validation of an instrument to assess motor creativity in adolescents. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte.***19**(75), pp. 535-551.

Milligan, T. A. 2016. *The Basic Methods of Teaching – Pedagogy*. 2016. Brigham Women's Hospital: Brigham Education Institute. [Online]. [Accessed 16 December 2020] Available from: https://www.youtube.com/watch?v=3s6TaDeHmtM

Millward, R. 2008..The rise of the service economy.[Online]. In: *The Cambridge Economic History of Modern Britain.* eds. Floud, R. and Johnson, P. Cambridge: Cambridge University Press. Chapter 10. pp.238-266. [Accessed 8 June 2018]. Available from: https://www.cambridge.org/core/books/abs/cambridge-economic-history-of-modern-britain/rise-of-the-service-economy/4211AA972F313F88E4F81933304E685D#

Milne, S. 2008. *Fiction, children's voices and the moral imagination: a case study.* Ph. D. thesis, University of Nottingham.

Ministry of Education. 1947. Pamphlet no. 9 *The New Secondary Education 1947*. London: His Majesty's Stationery Office. [Online]. [Accessed 4 July 2019]. Available

from: Gillard, D. 2017. http://www.educationengland.org.uk/documents/minofed/pamphlet-09.html#08

Ministry of Education. 1959. *15 to 18*. [Online]. A report of the Central Advisory Council for Education (England). London: Her Majesty's Stationery Office. [Accessed 11 October 2018]. Available from: Gillard, D. 2010. http://www.educationengland.org.uk/documents/crowther/crowther1959-1.html

Ministry of Education. 1963. *'Our Future Half'*. [Online]. A report of the Central Advisory Council for Education (England). London: Her Majesty's Stationery Office. [Accessed 2 April 2018]. Available from: Gillard, D. 2007. http://www.educationengland.org.uk/documents/newsom/newsom1963.html

Miranda, M. 2015. Moving off the Page: Tapping into Young Children's Imagination. *General Music Today.* **28**(2), pp. 33-35.

Møller, S.J. 2015. Imagination**,** playfulness, and creativity in children's play with different toys. *American Journal of Play*. **7**(3), p.322.

Mullineaux, P. and Dilalla, L. 2009. Preschool Pretend Play Behaviors and Early Adolescent Creativity. *Journal of Creative Behavior.* **43**(1), pp. 41-57.

Munn, P. 2010. Early Childhood Development. *International Journal of Early Years Education*. **18**(1), pp. 1-2.

Mun, J., Mun, K. and Kim, S-W. 2015. Exploration of Korean Students' Scientific Imagination Using the Scientific Imagination Inventory. *International Journal of Science Education*. **37**(13), pp. 2091-2112.

National Endowment for the Humanities [NFAH]. 2000. *A Trip to Wonderland.* [Lesson Plan]. [Online]. [Accessed 3 March 2018]. Available from: https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED449491

National Statistics on the Creative Industries. 2022. [Online]. [Accessed 16 December 2022]. Available from: https://pec.ac.uk/news/national-statistics-on-the-creativeindustries#:~:text=In%20the%20year%20from%20October,in%202018%20(DCMS%202019)

Newby, P. 2014. *Research Methods for Education.* London: Routledge.

Newman, J.H. 2020. *The Idea of a University*. Milton Keynes: Lightning Source UK Ltd.

Nickerson, R.S. Enhancing Creativity.1999. In: Sternberg, R.J. ed. 1999. *Handbook of Creativity*. Cambridge: Cambridge University Press. pp. 392-340.

Nida, E. 1975. *Language Structure and Translation: Essays.* [Online]. In: Hilpert, M. 2015. A course in cognitive linguistics: categorization. Stanford CA: Stanford

University Press. [Accessed 18 June 2020]. Available from: https://www.youtube.com/watch?v=G_tPdCBQSVc&t=332s

Nind, M. 2016. *The pedagogical content knowledge of methods teachers*. [Online]. [Accessed 7 January 2021]. Available from: https://www.youtube.com/watch?v=MKe_dKHgnwI

Norris, J. 2022. The positioning of GCSE and Functional Skills in Further Education: How do vocational students make sense of post-16 mathematics pathways? [Online] *Research in Mathematics Education*. [Assessed 16 October 2022]. Available from: https://www.tandfonline.com/doi/full/10.1080/14794802.2021.2010239

Norris, E. and Adam, R. 2017. 'All change' Institute for Government. [Online] [Accessed 15 December 2019]. Available from: https://www.instituteforgovernment.org.uk/publications/all-change

Oakeshott, M. 1959. *The Voice of Poetry in the Conversation of Mankind: An essay.* [Online]. London: Bowes & Bowes. [Accessed 22 Apr 2021]. Available from: http://entersection.com/posts/819-michael-oakeshott-on-conversation

Offord P. 2020. *Decision to retain forced maths and English GCSE resits 'extremely' disappointing.* [Online]. [Accessed 18 April 2021]. Available at: https://feweek.co.uk/2017/04/10/decision-to-retain-forced-maths-and-english-gcse-resits-extremely-disappointing/

Ogunleye, J. 2002. *An investigation of curriculum arrangements conducive to fostering creativity in post-compulsory education and training institutions*. Greenwich: University of Greenwich

Olivine, A. 2023. *Left Brain vs. Right Brain: Separating Fact From Fiction.* [Online]. [Accessed 3 April 2023]. Available from: https://www.verywellhealth.com/left-brain-vs-right-brain-7093257

O'Neill, C. 1985. Imagined Worlds in Theatre and Drama. *Theory into Practice.* **24**(3), pp. 158-65.

Organisation for Economic Cooperation and Development [OECD]. 2015. BIAC *Enhancing Employer Cooperation in Education.* [Online]. [Accessed 27 February 2021]. Available from: https://www.oecd.org/education-industry-summit/BIAC%20Statement%20to%20OECD%20Global%20Education%20Industry%20Summit.pdf

Organisation for Economic Co-operation and Development [OECD]. 2018. *Programme for International Student Assessment* [*PISA] 2018 Results* [Online]. [Accessed 2 January 2019]. Available from: https://www.oecd.org/pisa/publications/pisa-2018-results.htm#:~:text=The%20OECD%20Programme%20for%20Inte

Orr, K. 2020. A future for the further education sector in England. *Journal of Education and Work.* **23**(7-8), pp. 507-514.

Osburg, B, 2003. A Failure of the Imagination. *English Journal.* **92**(5), pp.56-59.

Owen, E. 2001. What Key Skills do Employers Need? *Journal of Geography in Higher Education.* **25**(1), pp. 121-126.

Oxford English Dictionary [OED]. 2022. [Online]. [Accessed 6 October 2020]. Available from: https://www.oed.com/viewdictionaryentry/Entry/139520#:~:text=The%20art%2C%20occupation%2C%20or%20practice,based%20on%20such%20a%20theory.

Padgett, R. 1997. *Creative Reading: What It Is, How To Do It, and Why*. [Online]. Urbana, Il.: National Council of Teachers of English, Urbana, IL. [Accessed 22 March 2018]. Available from: https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED404618

Page, D. 2015. The soldier danced with them unseen: managerial resistance and collusion in FE. In: Daley, M., Orr. K. and Petrie, J. eds. 2015. *Further Education and the Twelve Dancing Princesses*. Stoke-on-Trent: Trentham Institute of Education. pp. 121-130.

Palmer, J. ed. 2001. *Fifty Major Thinkers on Education from Confucius to Dewey.* Oxford: Routledge.

Panchi, G. [no date]. *Imagination: Meaning, Nature and Types.* [Online]. PsychologyDiscussion.net [Accessed 4 June 2018]. Available from: https://www.psychologydiscussion.net/imagination/imagination-meaning-nature-and-types-psychology/1647

Parker, J. 2013. Imaging, Imagining Knowledge in Higher Education Curricula: New Visions and Troubled Thresholds. *Teaching in Higher Education.* **18**(8), pp. 958-970.

Patera, M., Draper, S. and Naef, M. 2008. The Magic Cottage: a Virtual Reality environment for Stimulating Children's Imaginative Writing. *Interactive Learning Environments.***16**(3), pp. 245-263.

pathways.org, 1997. *How Kids Learn to Play: 6 Stages of Play Development* [Online]. [Accessed 30 April 2019]. Available from**:** https://pathways.org/kids-learn-play-6-stages-play-development/

Paul, D., Ewen, S. C. and Jones, R. 2014. Cultural competence in medical education: aligning the formal, informal and hidden curricula. *Advances in health sciences education: theory and practice.* **19**(5), pp. 751-758.

Percival, J.W. 2014. *The efficacy of cross-curricularity: can primary schools retain the integrity of history as part of an integrated or thematic approach to the curriculum?*. Ph.D. thesis, University of Warwick.

Percy Report. 1945. *Higher Technological Education.* Report of a Special Committee appointed in April 1944. London: His Majesty's Stationery Office 1945. [Online]. [Accessed 6 June 2018]. Available from: Gillard, D. 2017. http://www.educationengland.org.uk/documents/percy1945/percy1945.html

Perkins, D. and Salomon, G. 1992. *Transfer of Learning*. In: International Encyclopedia of Education*.* 2nd ed. Oxford, England: Pergamon Press**.**

Peters, R.S. ed. 1973. *The Philosophy of Education.* Oxford: Oxford University Press.

Phillips, G. *Private conversation with Tony Caffrey*. 1966**.**

Phillips, L. 2017. 'I see you' by Imaginary Theatre. *Practical Literacy: The Early and Primary* Years, **22**(1), pp. 36-43.

Piaget, J. 1952. *The Origins of Intelligence in Children*. New York: W.W. Norton & Co.

Piaget, J. and Inhelder, B. 1958. *The Growth Of Logical Thinking From Childhood To Adolescence*. London: Routledge.

Pirrie, A. 2016. Re-imagining educational theory. In: Fulford, A. and Hodgson, N. 2016. *Philosophy and Theory in Educational Research*. Abingdon: Routledge. pp.84-91.

Plewis, I. and Goldstein, H. 1998. The 1997 Education White Paper - a failure of standards. *British Journal of Curriculum and Assessment,* **8**, pp. 17-20.

Pring, R*.* 1995. *Closing the Gap: Liberal education and vocational training.* London: Hodder and Stoughton.

Pring, R. 2007. *John Dewey: a philosopher for our time?* Vol 4. Continuum Library of Educational Thought Series. London: Continuum International Publishing Group.

Pring, R., Hayward, G., Hodgson, A., Johnson, J., Keep, E., Oancea, A., Rees, G,. Spours, R. and Wilde, S. eds. 2009. *Education for all. The Future of Education and Training for 14-19 year olds.* Abingdon: Routledge.

Pugh, S. and others not named. 2020. *Metaphorical Ways of Knowing: The Imaginative Nature of Thought and Expression.* [Online]. National Council of Teachers of English, Urbana, IL. [Accessed 1 March 2019]. Available from: https://files.eric.ed.gov/fulltext/ED404675.pdf

Putnam, H. 1991, A Reconsideration of Deweyan Democracy. In: Brint, M. and Weaver, W. eds. *Pragmatism in Law and Society*. Boulder: Westview. pp. 217–243.

Ratliff, G. L. 1998. *Performing Memorable Monologues*. [Online]. [Accessed 23 September 2020]. Available from: https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED434360

Reddy, S. 2014. *A study of tutors' and students' perceptions and experiences of full-time college courses and apprenticeships in plumbing*. Ph.D. thesis, University of Essex.

Reed, No date. *Courses*. [Online]. [Accessed 4 September 2022]. Available from: https://www.reed.co.uk/courses/banking

Relly, S.J. and Laczik, A. 2021. Apprenticeship, employer engagement and vocational formation: a process of collaboration. *Journal of education and work*. **35**(1), pp. 1-15.

Roach, A. 2017. *Private conversation with Tony Caffrey*.

Robinson, K. 2001. *Out of our minds. Learning to be creative.* Oxford: Capstone Publishing.

Robson, C. and McCartan, K. 2016. *Real World Research.* Chichester: Wiley.

Roderick, G. and Stephens, M.D. 1972. *Scientific and Technical Education in Nineteenth-Century England.* Newton Abbott: David and Charles.

Rogers, S. and Evans, J. 2007. Rethinking Role Play in the Reception Class. *Educational Research*. **49**(2), pp. 153-167.

Roget, P.M. 1980. *Roget's Thesaurus* (section 515). London: University Books.

Rolf, D. 1981. Education and Industry: The Malcolm Committee. *Oxford Review of Education.* **7**(1), pp.95-106.

Rorty, R. 1991. The Priority of Democracy to Philosophy. In: Rorty, R. 1991. *Objectivity, Relativity and Truth: Philosophical Papers Volume 1.* Cambridge: Cambridge University Press. pp. 175–176.

Rose. J. 2001. *The Intellectual Life of the British Working Classes*. New Haven: Yale University Press.

Rosie, A. 1993. `He's a liar, I'm afraid': truth and lies in a narrative account. : *Sociology.* **27**(1), pp. 144-152.

Rossiter, G. 2012. Reflections on issues for children's spirituality and primary school religious education. *Journal of Religious Education.* **60**(3), pp. 14-24.

Rowe, M., Salo, V. and Rubin, K. 2018. Toward Creativity: Do Theatrical Experiences Improve Pretend Play and Cooperation among Preschoolers? *American Journal of Play.***10**(2), p. 193.

Ruitenberg, C. 2009. Introduction: The Question of Method in Philosophy of Education. *Journal of Philosophy of Education*. **43**(3), pp. 315-323.

Ryan, E.B., Ledger, G.W. and Weed, K.A. 1987. Acquisition and Transfer of an Integrative Imagery Strategy by Young Children. *Child Development.* **58**(2), pp. 443-52.

Ryan, G. 2019. *GCSE Maths and English: do I need to re-sit them?* Times Educational Supplement [TES]. [Online]. [Accessed 24 April 2021]. Available from: https://www.tes.com/magazine/archive/gcse-english-and-maths-do-i-need-resit-them

Ryan, M. 2012. Conceptualising and Teaching Discursive and Performative Reflection in Higher Education*. Studies in Continuing Education*. **34**(2), pp. 207-223.

Ryle, G. 1946. Knowing How and Knowing that. *Proceedings of the Aristotelian Society*. **46**(1), pp. 1-16.

Ryman, J. A., Porter, T. W. and Galbraith, C. S. 2009. Disciplined Imagination**:** Art and Metaphor in the Business School Classroom. *International Journal of Education & the Arts*. **10**(10), pp. 4-25.

Saracho, O. 2012a. Young Children's Creativity in different Contexts. In: Saracho, O. ed. 2012a. *Contemporary Perspectives on Research in Creativity in Early Childhood Education.* pp. 3-30.

Saracho, O. 2012b. Contemporary Perspectives on Research in Creativity. In: Saracho, O. ed. 2012. *Early Childhood Education.* Charlotte, NC: Information Age Publishing, Inc. pp. 109-134.

Schierholt, C. 1994. *Enhancing Creative Dramatic Play and Story Reenactments in a Primary Grade Classroom.* Unpublished thesis, School of Education, University of Alaska Southeast.

Schofield, A. and Rogers, T. 2004. At Play in Fields of Ideas. *Journal of Adolescent and Adult Literacy.* **48**(3), pp. 238-248.

Scott, R.A. 2013. Thoughts on a "Liberating" Education. *Liberal Education*. **99**(4).

Serafini, F. 2014. Exploring Wordless Picture Books. *Reading Teacher.* **68**(1), pp. 24-26.

Serafini, F. and Moses, L. 2014. The Roles of Children's Literature in the Primary Grades. *Reading Teacher.* **67**(6), pp. 465-468.

Shanahan, Daniel. 1979. Toward a Redefinition of Relevance. *Educational Leadership.* **36**(7), pp. 511-14.

Shi, F. and Wei, S. 2009. How to Cultivate the Ability of Innovative Thinking in Computer Programming Teaching. *International Education Studies.* **1**(1), pp. 50-53.

Shibata, K., Sasaki, Y., Won Bang, J., Walsh, E.G., Machizawa, M.G., Tamaki, M., Chang, L-H. and Watanabi, T. 2017. Hyperlearning overstabilizes a skill by rapidly making neurochemical processing inhitory-dormant. *Nature Neuroscience*. **20**, pp. 470-475.

Shorthose, J. and Maycroft, N. 2017. *Where is creativity?: a multi-disciplinary approach.* London: Routledge.

Simon, B. 1974. *Education and the Labour Movement 1870-1920.* London: Lawrence and Wishart.

Sissons, P. 2020. The local low skills equilibrium: Moving from concept to policy utility.*Urban Studies*. **58**(8). [no pagination]. [Accessed 29 July 2019

Skillicorn, N. 2014. *The science of improving your brain's creativity*. TEDx Durham University. [Online] [Accessed 2 March 2019]. Available from: https://www.youtube.com/watch?v=y44GBM99JOA

Skipper, C. E. and DeVelbiss, J.A. 1969. Developing creative abilities in adolescence. *Educational Leadership.* 27, p. 191.

Smith, R. 2016**.** Reading between the lines. In: Fulford, A. and Hodgson, N. 2016. *Philosophy and Theory in Educational Research.* Abingdon: Routledge. pp. 129-138.

Spangler, D. 2011. *Why Content Knowledge Matters in Teaching and the Implications for Teacher Education.* [Online]. [Accessed 14 October 2022]. Available from: https://www.youtube.com/watch?v=zRTw4A1iTo4

Spiteri, L. and Peckoskie, J. 2018. Expanding the scope of affect: taxonomy construction for emotions, tones, and associations. *Journal of documentation*. **74**(2), pp. 383-397.

Standards and Testing Agency. 2017**.** *Foundation Stage Early Years Profile: 2018 Handbook*. [Online]. [Accessed 9 May 2019]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669079/Early_years_foundation_stage_profile_2018_handbook.pdf

Standish, P. 2010. What is the Philosophy of Education? In: *The Philosophy of Education: an Introduction.* R. Bailey ed. London: Continuum International Publishing Group Ltd. pp. 5-20.

Standish, P. 2011. *So you think philosophy relates to practice?* [Online]. [Accessed 8 October 2018]. Available from: https://www.youtube.com/watch?v=9SufG1QDmIw&t=16s

Statute of Artificers 1562 (5 Eliz. 1. c. 4). [Online]. [Accessed 7 June 2018]. Available from: https://www.google.com/search?q=staotutr+of+artificers&oq=staotutr+of+artificers&aqs=chrome..69i57j0i13i512l5j0i22i30l3j0i390i650.7938j1j15&sourceid=chrome&ie=UTF-8

Stavros, M. 2019*. Approaches to creativity by Cypriot primary music teachers*. Ph. D. thesis, University College London (University of London).

Sternberg, R.J. ed. 1999. *Handbook of Creativity*. Cambridge: Cambridge University Press.

Sternberg, R.J. and Lubart, T.I. 1999. The Concept of Creativity: Prospects and Paradigms. In: Sternberg, R.J. ed. 1999. *Handbook of Creativity*. Cambridge: Cambridge University Press. pp. 3-15.

Stewart, W.A. and McCann, W.P. 1967. *The Educational Innovators 1750-1880.* London: Macmillan.

Summerfield, P. and Evans, E.J. eds. 1990. *Technical Education and the State since 1850.* Manchester: Manchester University Press.

Sutton-Smith, B. 1988. In Search of the Imagination. In: *Imagination and Education.* Egan, K. and Nadaner, D. 1988. Milton Keynes: Open University Press. pp.3-29.

Syahrin, A., Dawud, D., Suwinyo, S. and Prynatni, E.T. 2019. Creative Thinking Patterns in Student's Scientific Works. *Eurasian Journal of Educational Research*. **8**(1), pp. 21-36.

Tateo, L. 2015. Just an illusion? Imagination as a Higher Mental Function. *Journal of Psychology and Psychotherapy.* **5**(6), pp. 1-6.

Tawney, R.H. 1922. *Secondary Education for All: A Policy for Labour*. London: Hambledon Press.

Technical Instruction Act 1889. (52 & 53 Vict. c. 76). [online]. [Accessed 3 December 2018]. Available from: Gillard, D. 2013. http://www.educationengland.org.uk/documents/acts/1889-technical-instruction-act.html

Theocharidou, O., Lykesas, G., Giossos, I., Chatzopoulos, D. and Koutsouba, M. 2018. The Positive Effects of a Combined Program of Creative Dance and BrainDance on Health-Related Ouality of Life as Perceived by Primary School Students. *Physical Culture & Sport. Studies & Research* **79**(1), pp. 1-52**.**

Thoreau, H.D. 1873. *A Week on the Concord and Merrimack Rivers*. Boston: James R. Osgood and Co.

Townshend, K. 2017. The Tooth Fairy paradox of primary teaching. *Times Educational Supplement* TES Magazine. [Online]. [Accessed 7 May 2020]. Available from: https://www.tes.com/magazine/archived/tooth-fairy-paradox-primary-teaching

Trends in International Science and Maths Study [TIMSS]. 2019. [Online]. [Accessed 8 June 2020]. Available from: https://timssandpirls.bc.edu/timss2019/

Trotman, D. 2008. Imagination and the adolescent lifeworld: Possibilities and responsibilities in the national secondary review. *Thinking Skills and Creativity.* **3**(2), pp. 125-133

Tyler, R. W. 1949. *Basic Principles of Curriculum and Instruction.* Chicago: The University of Chicago Press.

United Kingdom. House of Commons Library. 2023. Apprenticeship Statistics for England. [Online] [Accessed 27 February 2023]. Available from: https://commonslibrary.parliament.uk/research-briefings/sn06113/

Universities and Colleges Admissions Service [UCAS]. 2019. *End of Cycle Report 2019* [Online]. [Accessed 3 May 2020]. Available from: https://www.ucas.com/file/292736/download?token=xurFczbC

University and College Admissions Service [UCAS]. 2020. *Universities and Colleges Admissions Service (UCAS) 2020 End of Cycle data and 2021 Cycle January deadline Applicant Figures.* [Online]. [Accessed 11 December 2021]. Available from: https://www.advance-he.ac.uk/knowledge-hub/universities-and-colleges-admissions-service-ucas-2020-end-cycle-data-and-2021-cycle

van den Berg, B. and Fortuin-van der Spek, C. 2019. The Appropriation of Symbolic Language in and Education through Bibliodrama. *Education Sciences.* **9** Article 88.

van der Veer, R. and Valsiner, J. 1994. *The Vygotsky Reader.* Oxford: Blackwell Publishers.

Verriour. P. 1985. Face to Face: Negotiating Meaning through Drama. *Theory into Practice.* **24**(3), pp. 181-86.

Vertigan, S. 2019. Imagination's potential role in teaching economics. *Prospero.* **25**(1), pp. 17-18.

Vygotsky, L.S. 1987. Problems of General Psychology. In: Rieber, R.W. and Carton, A.S. eds. 1987. *The Collected Works of L.S. Vygotsky.* New York and London: Plenum Press.

Wagner, T. 2008. *The Global Achievement Gap: Why Even Our Best Schools Don't Teach the New Survival Skills Our Children Need, and What We Can Do about It*. New York: Basic Books.

Waite, S. and Rees, S. 2014, Practising empathy: enacting alternative perspectives through imaginative play. *Cambridge Journal of Education.* **44**(1), pp. 1-18.

Walker, M. 2012. 'It is Only the Instructed and Trained Overlooker and Artisan That Can Successfully Compete against Foreign Skills': Nineteenth-Century Adult Technical and Vocational Education Offered by the Yorkshire Union of Mechanics' Institutes and the Foundation of Further Education Curricula. *Journal of Adult and Continuing Education.***1**(2), pp. 61-79.

Walkington, H., Dyer, S., Solem, M., Haigh, M. and Waddington, S. 2018. A Capabilities Approach to Higher Education: Geocapabilities and Implications for Geography Curricula. *Journal of Geography in Higher Education*. **42**(1), pp.7-24.

Ward, C. 2014. Connecting Young Children With Nature. *Teaching Young Children*. **8**(1), pp. 24-7.

Warnock, M. 1976. *Imagination.* London: Faber and Faber.

Watson Jr., T. J. 1965. Creativity: A Major Business Challenge. *Columbia Journal of World Business*. **1**(Inaugural issue), pp. 29-36.

Webber, A. 2022. Young people's skills don't match employer needs, finds survey. *Personnel Today*. [Online]. [Accessed 11 May 2020]. Available from: https://www.personneltoday.com/hr/young-peoples-skills/

Weininger, O. 1988, "What if" and "As if": Imagination and Pretend Play in Early Childhood. In: Egan, K and Nadaner, D. 1988. *Imagination and Education.* Milton Keynes: Open University Press. pp. 141-152.

Weisberg, R.W. 1999. Creativity and Knowledge: a Challenge to Theories. In: Sternberg, R.J. ed. *Handbook of Creativity.* 1999. Cambridge: Cambridge University Press. pp. 226-50.

White, J. 2002. *The Child's Mind*. London: Routledge Falmer.

Whitehead, A.N. 1932. *The Aims of Education*. London: Williams and Norgate Ltd.

Williams, C. T. 2019. Effects of Historical Story Telling on Student Understanding of Nature of Science. *Science & Education*. **28**(9/10), pp. 1105-1133.

Wilson, P.S. 1971. *Interest and Discipline in Education.* London: Routledge and Kegan Paul.

Winch, C. 1995. Education Needs Training. *Oxford Review of Education.* **21**(3), pp. 315-325.

Winch, C. 2000. *Education, work, and social capital: towards a new conception of vocational training.* London: Routledge.

Winch, C. 2017. Knowing 'Wh' and Knowing How: Constructing Professional Curricula and Integrating Epistemic Fields. *Journal of Philosophy of Education.* **51**(2), pp. 351-369.

Winch, C. and Hyland, T. 2007. *A Guide to Vocational Education and Training.* London: Continuum International Publishing Group.

Wollard, K. 2012. A review of A New Culture of Learning – Cultivating the Imagination for a World of Constant Change. *Development and Learning in Organizations*. **26**(2), [no pagination].

Wright Mills, C. 1959. *The Sociological Imagination.* [Online]. New York: Oxford University Press. [Accessed 22 May 2019]. Available from: https://global.oup.com/academic/product/the-sociological-imagination-9780195133738?cc=gb&lang=en&#

Yerrick, R, and Simons, T. 2017. The Affordances of Fiction for Teaching Chemistry. *Science Education International.* **28**(3), pp. 232-243.

Young, E. 1972. Dewey and Bruner: a Common Ground? *Educational Theory*. **22**(1), pp. 58-77.

Yu, J.L.W., Garces-Bascal, R.M. and Wright, S.K. 2017. Young Children's Responses to Artworks: The Eye, the Mind, and the Body. *International Journal of Education & the Arts.* **18**(30), pp. 1-28**.**

Zalipour, A. 2008. *An approach for the study of poetic imagination: An investigation on contemporary personal poetry*. Ph.D. thesis, University of Kebangsaan, Malaysia.

Zerull, D. 1992. Just Imagine ... Improving the Band Experience. *Music Educators Journal*. **79**(1), pp .25-28.