**The education, training, workplace learning and regulation of non-pharmacist pharmacy staff: current approaches in the Republic of Ireland.**

**Seána Maria Hogan**

A thesis submitted in partial fulfillment of the requirements

for the degree of Doctor of Education

School of Education

June, 2014

**University of Sheffield**

**Acknowledgements**

I wish to thank all those who contributed to this thesis especially those who agreed to be interviewed and gave generously of their time.

I also wish to thank my supervisors Dr Simon Warren and Dr Nigel Wright for their help, guidance and support. Their advice was always constructive and insightful.

Finally I would like to thank my husband Karol, my daughters, Líla Maria and Noise Patricia, my parents and family for their continued support and encouragement.

**Abstract**

This thesis addresses the way in which patient-centred service delivery is opening up new roles for pharmacists and by extension non-pharmacist pharmacy staff. The thesis makes clear that this is a converging trend in the pharmacy practice model that is taking place across many countries including Ireland. The study explores a specific implication of this trend namely the up grading of the work roles of non-pharmacist pharmacy staff and the ensuing implications for their education, training and regulation. It examines and critically evaluates whether current approaches in the ROI including the Pharmacy Act 2007 are preparing non-pharmacist pharmacy staff to meet their existing and developing roles. Comparisons are made between policies, practices and provisions in the ROI, GB and the USA. The role of education and training for vocational/professional formation is examined along with the place of informal workplace learning in professional work environments. The complex and challenging process of connecting college and workplace learning is analysed and features of programmes which facilitate this process identified. The implications of this for non-pharmacist pharmacy support staff education and training in the ROI is examined. The thesis presents the results of in-depth interviews with a comprehensive cross section of participants from the pharmacy sector where issues relating to non-pharmacist pharmacy staff in the ROI were addressed. Fifteen people were interviewed and the sectors represented included regulation, education, employers and pharmacy support staff. The study found that for non-pharmacist pharmacy staff education, training and regulation the current system in the ROI is not facilitating their development and that there is a need for a coherent and robust over-arching policy which would integrate education and training and impose uniform standards across the sector. A number of recommendations are proposed for the development of non-pharmacist pharmacy staff.

**Table of Contents Page**

**Acknowledgements ii**

**Abstract** **iii**

**Table of Contents** **iv**

**List of Tables and Figures** **vii**

**List of Abbreviations** **viii**

**Chapter 1: Background and Introduction** **1**

* 1. Background 1
  2. Introduction 3
  3. Rationale for the research 4
  4. Focus of the thesis 5
  5. Structure of the thesis 7

**Chapter 2: Context** **12**

2.1 Introduction 12

2.2 Complexity of job titles, entry qualification levels/requirements

and training routes and providers 15

2.3 The development of current course structures along with their

pedagogic strategies 22

2.4 The emerging importance of competence-based assessment in

professional development and training in pharmacy 37

2.5 Examining the role of current education and training courses in

relation to the professional development of pharmacy technicians 43

2.6 The context of pharmacy support staff education and training in

the ROI vis-á-vis other countries such as GB and the USA 46

2.7 Summary 57

**Chapter 3: The Changing Face of Pharmacy and its effect on the**

**education, training and regulation of non-pharmacist pharmacy staff** **60**

3.1 Introduction 60

3.2 Literature Review: Selection criteria 61

3.2.1 Analysis of the literature 63

3.3 Summary 84

**Chapter 4: Education, Training and Learning in the Workplace 88**

4.1 Introduction 88

4.2 Literature Review: Selection criteria 90

4.3 Analysis of the literature 91

4.3.1 The role of education and training in vocational/professional

formation 91

4.3.2 Workplace learning 103

4.3.3 Connecting college and workplace learning 115

4.4 Summary 122

**Chapter 5: Research Questions and Methodology** **125**

5.1 Introduction 125

5.2 Research questions 126

5.3 Methodology 128

5.4 Summary 144

**Chapter 6: Results: Data Presentation and Analysis** **146**

6.1 Introduction 146

6.2 Data presentation and analysis 146

6.3 Summary 179

**Chapter 7: Interpretation and Reflection on Findings** **181**

7.1 Introduction 181

7.2 Discussion on findings 181

7.3 Summary 194

**Chapter 8: Conclusion and Recommendations** **196**

8.1 Introduction 196

8.2 Conclusion 197

8.3 Recommendations 207

8.4 Benefit of the research for practitioners and the research and policy communities 208

8.5 Conduct of the study 211

8.6 Areas for possible future research 214

**References/Appendices**

References 215

Appendix 1: National Qualification Frameworks 234

Appendix 2: Key Documents 237

**List of Tables and Figures Page**

Figure 2.1 Traditional 3rd level teaching model 33

Table 3.1 Job Titles encountered for non-pharmacist pharmacy staff 66

Table 5.1 Number of interviewees assigned to each category 136

Figure 8.1 Summary of the pathway to registration as a pharmacy

technician in Great Britain 202

Figure 8.2 Summary of the pathway to registration as a pharmacy

technician in Ontario 203

Figure 8.3 Components of CCP guidance framework for the education,

training, certification & regulation of pharmacy technicians

in the USA 204

Figure 8.4 Proposed routes for pharmacy support staff in the ROI 206

**LIST OF ABBREVIATIONS**

ACPE Accreditation Council for Pharmacy Education

AIT Athone Institute of Technology

APHA American Public Health Association

APPE Advanced Pharmacy Practice Experiences

ASHP American Society of Health System Pharmacists

ATO Assistant Technical Officer

BLS Bureau of Labor Statistics

BSc Bachelor of Science

BTEC Business Technology and Education Council

CAO Central Applications Office

CCEA Council for Curriculum Examinations and Assessment

CCP Council on Credentialing in Pharmacy

CCAPP Canadian Council for Accreditation of Pharmacy Programmes

CE Continuing Education

CEDEFOP European Centre for the Development of Vocational Training

CEPT Committee of European Pharmacy Technicians

CIT Carlow Institute of Technology

CPD Continuing Professional Development

DIT Dublin Institute of Technology

EAPT European Association of Pharmacy Technicians

EEA European Economic Area

EU European Union

ExCPT Examination for the Certification of Pharmacy Technicians

FAS Irish National Training and Employment Authority

FETAC Further Education and Training Awards Council

FIP International Pharmaceutical Federation

GB Great Britain

GPhC General Pharmaceutical Council

HE Higher Education

HEI Higher Education Institution

HETAC Higher Education and Training Awards Council

HSE Health Service Executive

IACPT Irish Association of Community Pharmacy Technicians

ICCPE Irish Centre for Continuing Pharmaceutical Education

IPPE Introductory pharmacy practice experiences

IPU Irish Pharmacy Union

IT Information Technology

KSC Knowledge Skills Competence

LO Learning Outcomes

MCA Medicine Counter Assistant

MCQ Multiple Choice Question

NABP National Association of Boards of Pharmacy

NAHPT National Association of Hospital Pharmacy Technicians

NCPA National Community Pharmacists Association

NHS National Health Service

NOS National Occupational Standards

NI Northern Ireland

NFQ National Framework of Qualifications

NPTA National Pharmacy Technician Association

NQF National Qualification Framework

NVQ National Vocational Qualification

OCP Ontario College of Pharmacists

Ofqual Office of Qualifications and Examinations Regulation

OSCE Objective Structured Clinical Examination

OSPE Objective Structure Practical Examination

OTC Over the Counter

P Pharmacy Status

PBL Problem Based Learning

PDF Portable Document Format

PEARS Pharmacy Education and Accreditation Reviews

PEBC Pharmacy Examination Board of Canada

PET Pharmacy Education Taskforce

PSI Pharmaceutical Society of Ireland

PSNI Pharmaceutical Society of Northern Ireland

PSO Pharmacy Service Orientation

PSS Pharmacy Support Staff

PTCB Pharmacy Technician Certification Board

QAA Quality Assurance Agency for Higher Education

QCF Qualifications and Credit Framework

RCSI Royal College of Surgeons in Ireland

ROI Republic of Ireland

RPS Royal Pharmaceutical Society

RPSGB Royal Pharmaceutical Society of Great Britain

SCRIPT Strathclyde Computerized Randomized Interactive Prescription Tutor

SOP Standard Operating Procedure

TCD Trinity College Dublin

TL Teaching and Learning

UK United Kingdom

UNESCO United Nations Educational, Scientific and Cultural Organisation

USA United States of America

VET Vocational Education and Training

WHO World Health Organisation

WPL Work Place Leaning

**Chapter 1**

**Background and Introduction**

**1.1 Background**

In 2007 I began work as a practising pharmacist and as a part-time lecturer in pharmacy practice on a third level pharmacy technician course. These roles caused me to reflect on the functions and responsibilities of the various members of the pharmacy team and in turn on their education, training and regulation, particularly that of pharmacy technicians. Changes were taking place in pharmacy with the introduction of many new patient centred services. These service initiatives were pharmacist led but were in turn affecting other members of the pharmacy team. The year 2007 also saw the introduction of the first new Pharmacy Act in the ROI in over 100 years. The Act brought in many changes to the way pharmacy is managed and regulated. It conferred an unambiguous responsibility on the Pharmaceutical Society of Ireland (PSI), the pharmacy regulator, with respect to pharmacy education and training. The Act was implemented in stages over the following three years. During this time I was involved in developing lectures and practical training for pharmacy technicians and for contributing to the development of distance learning modular programmes for healthcare advisors and pharmacy dispensers. When seeking guidance for these activities I consulted the Pharmacy Act and sought out PSI policies and research reports on the education, training and regulation of non-pharmacist pharmacy staff in the ROI. However on initial examination of the Act it appeared to me that the Act itself made little or no direct reference to members of the pharmacy team other than pharmacists and pharmaceutical assistants. The PSI as a consequence of this did not appear to have a direct role to play in relation to the education and regulation of other non-pharmacist pharmacy staff. Major research studies such as The Pharmacy Education and Accreditation Reviews (PEARs) Project commissioned by them in 2008 focused exclusively on the education and training of persons wishing to become pharmacists. The seeming non-inclusion of non-pharmacist pharmacy staff by policy makers in the ROI was I believed a serious weakness particularly in view of the developing role of patient-centred service delivery by pharmacists which was in turn spreading out to affect the non-pharmacist members of the pharmacy team and raising implications for their professional education and training. Because of this lack of guidance and research on the roles and education of non-pharmacist pharmacy staff it was difficult to develop programmes that would ensure that they were being appropriately prepared for their current and developing roles. It seemed that unlike pharmacists this group of pharmacy staff were being somewhat ignored within the changing pharmacy practice model that was developing.

When in 2010 having become a supervising pharmacist the time came for me to select a topic for this thesis I decided to determine if my initial impressions around the Pharmacy Act, the PSI and the lack of research in relation to non-pharmacist pharmacy staff were valid. I choose to investigate if current approaches to the regulation, education, training and workplace learning of non-pharmacist pharmacy staff in the ROI were preparing them to meet the changing model of pharmacy practice. At this time I had also become cognisant that changes were taking place in relation to the regulation and education of non-pharmacist pharmacy staff in GB, our nearest neighbour, so it seemed a most opportune time to conduct such a research project.

**1.2 Introduction**

The purpose of this thesis is to problematise and explore current approaches to the regulation and education of non-pharmacist pharmacy staff in the ROI. It will evaluate the impact of the new Pharmacy Act 2007 on these approaches. It will primarily question whether the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI is facilitating or inhibiting the development of pharmacy support staff? The research will be undertaken by exploring five sub-questions which ask: 1) How and to what extent policy makers and educators in the ROI have provided for pharmacy support staff regulation and education within their current legislation and educational policies and practices? 2) How this legislation and educational practice compares with systems in place in countries such as GB and the USA? 3) In what way the converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery impact the education and training of pharmacy support staff going forward? 4) What role does education and training play in vocational/professional formation and how do informal processes of learning, commonly referred to as ‘participating in practice’ lead to learning in professional work environments? 5) How do the views and opinions of key stakeholders in the pharmacy sector inform the current situation?

The research will therefore examine policy documents, reports and statements, course structures and pedagogic strategies through documentary analysis; global trends in pharmacy practice, the concept of workplace training and workplace learning through literature reviews; and the opinions and views of key stakeholders in the pharmacy sector through qualitative research interviews.

It is important to bound the focus of the research and to present the problem that the thesis will address. The research studies pharmacy support staff along a continuum of their development. The empirical data for the study was collected between 2010 and 2013. What is examined is the policy, provisions and practices that are in place in the ROI for pharmacy support staff and their ability to meet the developing needs of these staff and pharmacy practice.

**1.3 Rationale for the research**

Justification for the study lies in the changing role of pharmacy within the healthcare sector and the subsequent effect that this is having on non-pharmacist pharmacy staff within the sector.

Pharmacy has gone from the compounding and supply of medicines to include not only the safe supply of medicines but to being a subsector that is working at all levels and parts in the health services of countries. This is to ensure that people get the best from their medicines by better understanding how they work, having medication reviewed and managed and be a place where they can get sound healthcare advice. The international pharmacy practice literature has documented shifts in the orientation of pharmacy practice over the past century along a continuum of manufacturing, compounding, and distribution to clinical services (Roberts *et al*, 2007). This shift in the focus of pharmacy has been summarised as a shift from product supply to patient-centred service delivery (Roberts *et al*, 2008). Development of the clinical service orientated approach is favoured in the ROI. The PSI Pharmacy Ireland, 2020 interim report outlines services that could be provided by pharmacists in Ireland, that are currently carried out in other jurisdictions around the world with great success, enhancing services to patients and providing cost effective solutions to problems currently encountered by our health system (p.4). To facilitate the service approach, roles within pharmacy need to evolve. Some current pharmacist tasks need to be devolved to non-pharmacist pharmacy staff thereby allowing pharmacists to work more flexibly and to make better use of their clinical training and skills. However for these task transfers to occur within pharmacy it is necessary to have appropriately educated and trained support staff members capable of taking on new and extended roles. As pharmacy is a highly regulated sector it is also necessary to consider issues around regulation of such staff.

Pharmacy technicians are in the front line to take on pharmacist devolved tasks. Their practice and level of responsibility is already changing and will continue to change as pharmacists take on additional clinical activities. In turn this is affecting dispensers and healthcare advisors. It is therefore important to investigate if current approaches in the ROI are developing pharmacy support staff to meet these new challenges in pharmacy practice.

**1.4 Focus of the thesis**

In 2007 a new Pharmacy Act was introduced in the ROI. The Act heralded a new era for Irish Pharmacy. Prior to its introduction pharmacy in Ireland was governed by a variety of acts and regulations dating from 1875. Following its introduction the Act became the single document governing the profession. As mentioned earlier the pharmacy model in the ROI was also changing rapidly and as we entered the 2nd decade of the 21st century it was considered an appropriate time to interrogate the effects of such changes on members of the pharmacy team, in particular the non-pharmacist members. The term pharmacy support staff is also used for non-pharmacist pharmacy staff and the terms are used interchangeably in this thesis. The thesis focuses on the various elements that impact the education, training and regulation of this category of staff and the interpretation by members of the different groups involved in these activities as to their role in the processes.

The data for this study was obtained from documentary sources, extensive literature review searches and from interviews. Documents used in this study were obtained from the PSI (Pharmaceutical Society of Ireland), the Irish Statute Book, the GPhC (General Pharmaceutical Council), the CCP (Council on Credentialing in Pharmacy), various education providers and national associations of pharmacy technicians. Interviews were conducted with participants from the main groups involved with the pharmacy sector, namely the PSI, the Department of Health, employers, educators, employees and national associations of pharmacy technicians.

The contents of documents were examined and detailed notes made to inform the interviews.Based on the analysis of the documents, literature reviews and the interviews, I constructed a narrative account of the current status of the sector in the ROI and the trends that are developing internationally. This allowed for an evaluation of the suitability of current policies and practices in the ROI for pharmacy support staff and a comparison of these with international trends.

**1.5 Structure of the thesis**

The thesis takes the following structure. It sets out the primary research question as:

Is the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI facilitating or inhibiting the development of pharmacy support staff

Five sub-questions will enable this enquiry:

Q1. How and to what extent have policy makers and educators in the ROI provided for pharmacy support staff regulation and education within their current legislation and educational policies and practices?

Q2. How does the ROI legislation and educational practices for pharmacy support staff compare with those of GB and the USA?

Q3. In what way do the converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery impact the regulation, education and training of pharmacy support staff going forward?

Q4. What role does education and training play in vocational/professional formation and how do informal processes of learning, commonly referred to as ‘participating in practice’ lead to learning in professional work environments.

Q5. How do the views and opinions of key stakeholders in the pharmacy sector inform the current situation?

The thesis takes the following chapter structure in order to answer the main research question and its sub-questions.

Chapter 2 provides context for the study. It explores the current practices, provisions and policies for pharmacy support staff education in the ROI and provides answers for sub-questions 1 and 2. It proposes the conceptual framework of ‘unintended outcome’ to explain how current difficulties identified in the regulation and education of pharmacy support staff in the ROI have arisen. It posits this as a problem common in other areas of education policy not just in Ireland but also elsewhere. Finally in this chapter a comparative analysis of policy documents and reports from the ROI, GB and the USA allow for contextual setting of the Irish situation.

Chapter 3 explores converging trends in pharmacy as a result of the move globally, towards patient-centred service delivery. It provides answers to sub-question 3. The approach uses a literature review to identify problems around regulation and education of pharmacy support staff that are arising as a result of these trends and to compare the actions taken by the ROI, GB, USA and Canada to address these problems.

Chapter 4 considers the role of education and training in vocational/professional formation and the place of informal workplace learning, commonly referred to as ‘participating in practice’ in professional work environments. It also considers the key question of how best to connect college and workplace learning. It provides answers to sub-question 4.

Chapter 5 sets out the methodological framework of the study. It locates the empirical research focus within qualitative research interviews of key stakeholders.

Themes identified from Chapters 2/3/4 informed and framed the interview questions that allowed for the gathering of the empirical data.

Chapter 6 presents the views and opinions of key stakeholders from the pharmacy sector as told during qualitative research interviews. It helps provide answers to sub-question 5.

The themes explored with this professional grouping are:

• Titles and roles for pharmacy support staff

• Regulation and registration

• Education, training and CPD

• Workplace learning

• Pharmacy going forward

Chapter 7 evaluates, interprets and reviews the data gathered from the interviews and explores the way in which it can contribute to a more complete account of pharmacy sector education and training in the ROI. It also helps provide answers to sub-question 5.

Chapter 8 principally presents the conclusions and draws together the research findings into an understanding of the research focus. It offers a reflection on the process of the thesis construction and draws conclusions from the answers to the research questions. I believe that the conclusions drawn will be of benefit to several audiences:

• Academic Communities:

The current schools of pharmacy. As these schools move to introduce the five year integrated master’s programme to ensure that pharmacists are well prepared to take on more complex roles they need to be cognisant of the education level and competencies of the pharmacy support staff available to assist them. This thesis provides a comprehensive analysis of the current situation in the ROI in relation to this and offers a reflection on the situation in other jurisdictions. The schools multi-disciplinary integrated education programmes would benefit by incorporation of pharmacy technicians.

Education providers of courses for pharmacy support staff. While this audience may be aware of many of the particulars identified in this thesis the overall research will afford them the opportunity to familiarise themselves with the broader situation and give them insights into the views of other stakeholders in the sector. It also offers an overview and analysis on the role of education and training in professional/vocational formation. By considering the professional development of pharmacy technicians within the wider context of professionalisation of technical staff the study can contribute to the growing debate that is taking place across the healthcare sector in relation to such professionalisation.

• Practitioners:

Under Section 18 Regulations of the Pharmacy Act 2007 practitioners such as superintendent and supervising pharmacists are required to ensure their staff have the requisite knowledge to perform the tasks assigned to them. They should also be considering the role pharmacy support staff will play when they are developing a vision for the future of their pharmacy. This research will provide them with relevant contextual insights on the currently available education and training programmes for support staff. It also gives practitioners an understanding into trends which are taking place internationally and how the ROI situation may change in the future and the various routes it could take. It probes the concept of ‘industry educators’ and the need to develop ‘partnerships’ between academic providers and employers in a more intimate way than was previously done. Such developments would impact practitioners with many of them moving into these new roles.

• The Policy Community:

The study will provide policy-makers with:

a. A historical perspective

b. Comprehensive exploration of current education and training programmes

c. The views of current stakeholders in the sector

d. A comparative perspective on the situation in USA, GB and Canada.

This study establishes a basis for future policy development, not only for the pharmacy sector but for other areas where there may be moves towards the professionalisation of a previously technical workforce.

**Chapter 2**

**Context**

**2.1 Introduction**

This chapter provides context for the study and provides answers for sub-questions 1 and 2. It explores and problematises the current education and training practices and provisions for pharmacy support staff in the ROI. Education and training for this group of staff are not seen separately from its context within the overall structure of pharmacy practice and the wider healthcare sector.

The Pharmacy Act 2007 signalled a new era for Irish pharmacy. It was an act the profession had been waiting for, for a long time. It was a major development and completely overhauled the regulation of pharmacy and set new standards of governance, fitness to practice and registration of pharmacies and pharmacists. However, although the Act was very well intended this research will explore an unintended outcome of the Pharmacy Act 2007, namely that it fails to address many of the current difficulties identified in this study in relation to pharmacy support staff such as, title confusion, different entry level qualifications, the need for professional development and issues around their regulation and registration. By failing to incorporate pharmacy support staff, other than pharmaceutical assistants, and in particular pharmacy technicians in an explicit manner unintended consequences of the Act may be differentiated into (a) consequences to the support staff in terms of a failure to promote their development and to producing a sense of marginalisation in this category of pharmacy staff (b) consequences to other persons mediated through (1) the education structure, where no details are provided by the Act on education standard setting across the support sector (2) the pharmacy profession where lack of an explicitly regulated support base is not in the best interest of the profession and the public.

That a policy introduced with good intentions is subsequently shown to lead to unintended outcomes is not unique to the Irish Pharmacy Act 2007. Norton (2008) noted that the law of unintended consequences which is often cited but rarely defined, is that actions of people-and especially government-always have effects that are unanticipated or unintended. He considered that the law of unintended consequences illuminates the perverse unanticipated effects of legislation and regulation and that the law provides the basis for many criticisms of government programmes. Merton (1936) in a seminal paper on the unanticipated consequences of purposive social action identified five sources of unintended consequences of actions namely: ignorance, error, imperious immediacy of interest, basic values and public predictions of future social developments. He advised of a need for a systematic and objective study of these elements when considering purposive social action.

The following are examples of education policies which were introduced with good intentions but which were subsequently shown to lead to unintended outcomes:

A policy to employ early entry at GCSE for students who are expected to get a grade on the C/D boundary allows schools in England the opportunity to count those who pass and devote their curriculum time to other subjects. Those who fail can have another attempt in the summer exam session in the hope that they might do better and so enhance the school’s position in the league tables of performance. However an unintended outcome of this policy was that students who were entered early and gained a C grade were effectively denied the opportunity to gain a higher grade, which they might indeed have done six months later. When they later apply for a university place, it is quite possible that their lower GCSE grade counts against them (Wright, 2012).

National and local economic and education policies in England affecting teaching recruitment agency staff had the unintended outcome that these staff run the risk of being marginalised within their own profession and are prevented from participating in opportunities that will encourage better work environments, increased external rewards, career development, and increased professionalism (Pollock, 2006).

At the first international conference on Health Promotion in Ottawa Canada the Ottawa Charter for Health Promotion 1986 was signed. This charter downplayed the role of health education as a tool due to its perceived failings in the past. This had the unintended consequence of underestimating the role of health education and failed to capture adequately the potential of health education as a tool to support a full range of contemporary public health interventions.

The above examples show that the problem of unintended consequence is common in other areas of education policy not just in Ireland but elsewhere. Against a background of the idea of unintended outcomes, this chapter, therefore, will question current policies and practices for pharmacy support staff by examining:

•Complexity of job titles, entry qualification levels/requirements and training routes and providers

•The development of current course structures along with their pedagogic strategies

•The emerging importance of competence-based assessment in professional development and training in pharmacy

•The role of current courses in relation to the professional development of pharmacy support staff

•The context of pharmacy support staff education and training in the ROI vis-á-vis other countries such as GB and the USA.

**2.2 Complexity of job titles, entry qualification levels /requirements and training routes and providers**

The situation in relation to courses associated with support staff in the pharmacy sector is complex in terms of the various titles, qualification levels, routes and providers. Each of these topics is explored in turn.

**Titles**

There are at least 8 titles associated with non-pharmacist pharmacy staff courses in the pharmacy sector. Titles include, but are not limited to, pharmaceutical assistants, pharmaceutical technicians, pharmacy technicians, dispensers/dispensing assistants, pharmacy assistants, medicines counter assistants, healthcare advisors, and pharmacy sales assistants. Two of these titles namely, pharmaceutical assistants and pharmaceutical technicians relate to legacy courses which are no longer available. However the titles are currently in use and many graduates of these courses practice in the pharmacy sector. The problem that arises in relation to titles is that having so many titles associated with pharmacy support staff is confusing and this could be alleviated by the sector working to bring about development and adoption of standardised titles.

The following specific difficulties arise in relation to use of current titles:

• The close similarity of titles such as pharmaceutical assistant and pharmacy assistant which refer to very different roles within the pharmacy team is a cause for concern as it has the potential to lead to misunderstanding for patients, clients and the general public. Pharmaceutical assistants are a regulated category of staff and must be registered in the Register of Pharmaceutical Assistants kept by the PSI in order to be able to practice in Ireland. Registered pharmaceutical assistants must apply on an annual basis for continued registration and pay an annual fee. They may act on behalf of a registered pharmacist in their temporary absence. In contrast pharmacy assistants are not regulated by the PSI and are a category of staff who must work under the supervision of a pharmacist at all times.

• In the dispensary titles for non-pharmacist pharmacy staff include dispenser/dispensing assistant, pharmacy technician, pharmaceutical technician and the above mentioned pharmaceutical assistant. Each of these categories of staff have different education and training qualifications and it can be difficult for patients and members of the public to understand the education and scope of practice associated with the various members of the dispensary team. In addition titles for dispensary support staff can vary between pharmacies.

• In relation to staff working on the medicine/healthcare/OTC counter of pharmacies there are a number of different titles used such as, healthcare advisors and medicines counter assistants which frequently relate to similar role functions. Titles can also vary between pharmacies.

• The title of clinical pharmacy technician has recently emerged as a new title

within pharmacy in Ireland. This title relates to a new advanced 1 year full time course for qualified pharmacy technicians. This level 7 BSc in Clinical Pharmacy Practice is part of a growing trend by Institutes of Technology to provide courses to advance the education and professional training of pharmacy technicians. However the title has added further complexity to the many titles for non-pharmacist pharmacy staff. For the public and even members of the profession the role of staff with this title is unclear and again highlights the need to have the scope of practice associated with each title formally defined.

**Qualification levels**

The following problems have been identified in relation to qualification levels:

1. There are different entry level qualifications for pharmacy technicians. Individuals qualifying with a Higher Certificate in Science - Pharmacy Technician/Higher Certificate Pharmacy Technician Studies (NFQ level 6 equivalent to QCF level 4/5 see Appendix 1) and those qualifying with a National Vocational Qualification level 3 Pharmacy Services Certificate (NFQ level 5 equivalent to QCF level 3) both qualify as pharmacy technicians.

An NFQ level 6 is a third level qualification award and an NFQ level 5 is a further education award. Having different qualification levels for entry to a pharmacy technician role is a source of disquiet in the sector.

It is important that all qualifications for pharmacy support staff are mapped onto the NFQ to assist with level recognition of the qualifications and transferability and progression opportunities for holders of the qualifications. The PSI is working on mapping the pharmaceutical assistant qualification to the NFQ.

2. A number of courses titled pharmacy assistant are provided in Colleges of Further Education and Community Colleges where certificates are awarded in Community and Health (Drogheda Institute of Further Education), Business Studies (Monaghan Institute of Further Education and Training) and Community Care-DCHCC (Tralee Community College). The courses incorporate components/options in pharmacy practice that can lead to pharmacy support staff qualifications such as an NVQ 2 via City and Guilds (Drogheda Institute of Further Education) or MCA via IPU (Monaghan Institute of Further Education). This practice is somewhat confusing as graduates of these courses receive an overall FETAC level 5 award and either an NVQ 2 or a MCA qualification which are not at FETAC level 5.

**Routes and Providers**

There are distinctly different routes and providers for the various pharmacy support staff qualifications.

For pharmacy technicians one route offers a traditional full-time college-based third level course which incorporates workplace training under the supervision of a tutor pharmacist. The workplace training component is an officially designed and delivered activity in the workplace. It is assessed on evidence the students provide from the workplace which frequently incorporates logbooks, blogs, project work and oral presentations. Currently there are 4 providers of these pharmacy technician Level 6 courses in the ROI. The course providers are Institutes of Technology which are third level education institutions and the courses are listed as Level 6 in the Central Applications Office (CAO) system. The courses are science based, of 2 year duration and incorporate a minimum of 20 weeks workplace training. Syllabi subjects include but are not limited to chemistry, biology, physiology, mathematics, computing, pharmacology, therapeutics, pharmaceutical formulation and pharmacy practice. While there is variation between the providers in terms of subject titles and when subjects and workplace training are scheduled there is also similarity particularly when subjects of a comparable nature are grouped together. Minimum entry requirements apply for all of the courses. College assessments address the topics covered in the syllabi.

An alternative route to a pharmacy technician qualification offers a work-based only course delivered in a modular format by distance learning. This course, an NVQ Level 3 Pharmacy Technician Course, is delivered and administered by the Irish Pharmaceutical Union (IPU) in conjunction with the National Pharmacy Association in the UK and City and Guilds, a leading UK vocational awarding body. The course leads to an NVQ Level 3 Pharmacy Services Certificate and has been running since October 2002. The qualification is delivered in the workplace as part of an officially designated and delivered workplace training activity. It is assessed in the workplace on portfolios of evidence that learners produce. It is different from the traditional type science courses provided in the Irish Institutes of Technology as it is a GB qualification, is not at the same level and requires learners to show what they currently do and how they have the underpinning knowledge required to do their job, as opposed to teaching and testing them on new knowledge. To prove their competence, learners are required to collect evidence from their workplace in line with the UK National Occupational Standards (NOS) of the NVQ.

Year 1 of the course focuses on pharmacy practice, procedures, law and ethics and year 2 is practice based where participants need to demonstrate the required level of competence in a wide variety of areas of pharmacy practice including dispensing practice, stock control, health and safety, customer service, and I.T. There is no defined admission level educational qualifications for the course other than candidates must be currently employed and supported by their pharmacy.

A third route to a pharmacy technician NVQ 3 City and Guilds qualification offers a FE college-affiliated course run by Drogheda Institute of Further Education.

For dispensers/dispensing assistants and for healthcare advisors there are work-based only courses normally delivered in a modular format by distance learning either through hard copy module workbooks or through an on-line format. The courses are provided by some chain-store pharmacies for example the Boots Irish Healthcare Advisor Programme and the Boots Dispenser Programme Ireland. They are in-house courses that are delivered in the workplace as part of an officially designated and delivered workplace training activity. They are delivered to candidates while they are working in the pharmacy. For the dispenser course candidates do not need any specific qualifications to enter as a trainee, but need experience within a healthcare environment and will also have completed the Boots Healthcare Advisor course. Trainee dispensers learn how to dispense prescriptions, recommend over-the-counter medicines and give basic healthcare advice.

For medicine counter assistants, pharmacy assistants and pharmacy sales assistants there are a number of different types of courses and course providers. The IPU provide 3 types of courses geared to pharmacy staff working on the pharmacy medicine counter. These are the Medicines Counter Assistant course which incorporates a day release component to allow for face to face instruction and interaction and the other two courses are work-based only and are delivered in a modular format by distance learning.

A number of college-based courses are provided in Colleges of Further Education and Community Colleges where certificates are awarded in business or community care which incorporate components/options in pharmacy practice and use the title pharmacy assistant for the courses. FAS- the Irish National Training and Employment Authority provide a FETAC Level 4 Pharmacy Sales Assistant Traineeship which incorporates a pharmacy workplace training component. The Pharmacy Sales Assistant Traineeship provides unemployed people with a foundation in the skills and knowledge required to work as a Sales Assistant in a Pharmacy.

It should be noted that with the exception of pharmaceutical assistants no other category of pharmacy support staff is regulated by the PSI. The Pharmacy Act, 2007 did not deal with this issue and this means that there is no statutory regulation of either titles or education and training programmes for such staff. In order to reduce the complexity and prevent confusion and to provide a system that is safe, transparent and understandable for all users of pharmacy services regulation and standardisation of titles accompanied by specified education and training requirements and scope of practice definitions for each title is required. Appointment of a competent authority for pharmaceutical/pharmacy technicians would assist with EU/EEA recognition of their qualifications.

**2.3 The development of current course structures along with their pedagogic strategies**

In this sub-section course structure approaches are initially addressed in a generic manner followed with a critique of the approach before exploration of the current ROI situation. The term pedagogy in the context of this exploration encompasses how teaching occurs, the approach taken to teaching and learning, the way the content is delivered and what students learn as a result and how this learning is assessed and evaluated in current courses. Knowledge, skills and competencies can be acquired through a number of different routes, e.g. workplace training, full time education and self-directed learning all playing their parts. Within the pharmacy sector the need for supervised pharmacy training as part of formal courses is recognised and reflected in the growing requirements for experiential workplace training as an integral part of formal education. The outline of courses presented in section 2.2 shows that there are two distinct pedagogic approaches taken to the education and training of pharmacy support staff in the ROI. Work-based courses are discussed first followed by consideration of the college-based approach.

**Approach One: Work-based qualifications**

There are several exclusively work-based programmes available for pharmacy support staff in the ROI. The IPU/City and Guilds National Vocational Qualification (NVQ) Level 3 programme for pharmacy technicians and the Boots Ireland in-house programme for pharmacy dispensers are considered as exemplars of such work-based qualifications.

**National Vocational Qualifications (NVQs)**

An NVQ is a competence-based qualification (Wolf, 1995). It reflects the needs of the workplace and is assessed in the workplace. It represents a definite attempt to identify skills required in the workplace and to use them as a basis for assessment criteria.

**Background to NVQ qualifications**

NVQs were launched in England, Wales and Northern Ireland in 1987 as a framework for rationalising what was described at the time as the ‘jungle’ of existing vocational qualifications. According to Jessup (1991), father of the NVQ philosophy an NVQ was based solely on the outcome of assessment and he had ambitious aims that the NVQ model could be a basis for all qualifications. The educational case for NVQs was that at least in theory the model was non-discriminatory and did not require access to institutions such as colleges and universities which had traditionally excluded those without qualifications based on formal education (Young, 2010).

Following their introduction and with strong UK government support take up of NVQs has been significant. They have been taken up as a model for others to copy, especially in the former British colonies. However it is commonly accepted that the NVQ system has never reached the potential that its proponents believed it could attain. Criticisms of them can be summarised as being of three types: that concerned with their content, the associated process of acquiring one or the outcomes accruing from attaining the award (Cox, 2007).

In terms of the content of NVQs it was pointed out by Wolf (1995) that there are dangers to taking a functional analysis approach to assessing competence in an occupation by decomposing a job into ever smaller tasks in the interests of defining units of competence which are amenable to measurement. Oates (2004) supports the view that occupational competence cannot be adequately described by functional analysis; and that when it is so described (as within NVQ) the ‘competence’ which is thus assured cannot reliably be transferred from one work situation to another. Functional analysis begins with the assumption that a statement of competent workplace performance can be identified by researchers in ways which are recognised by appropriate employers. It derives from such statements a set of individual elements of competence and their associated performance criteria. These elements of competence (which later became known as occupational standards) are then grouped together into units of competence which are assumed to make sense to, and be valued by, employers and hence warrant separate accreditation. Each NVQ was made up of a number of related ‘units of competence’. Functional analysis aims to replace judgments of competence with rules for inferring competence from individual performances (Young, 2010). Young was critical of functional analysis believing it relies on the assumption that human performance can be measured with the same lack of ambiguity as the diameter of a screw or the resistance of a length of wire. Roe *et al* (2006) considered that the attempt to specify competence in terms of extensive lists of behaviours leads to confusion, ambiguity and unreliability. Hyland (1995) criticised the behaviourist lack of emphasis on knowledge and understanding and any attempt to link this with the aspirations of learners. Hyland considered that while this might conceivably be an adequate approach for lower level tasks and skills the roots of the NVQ idea were inimical to constructive approaches to learning. He was concerned that as well as sacrificing progressive ideals to the needs of the captains of industry, NVQs by fragmenting desired learning into assessable chunks were prone to miss very important outcomes for students, a failure to see the wood for the trees. Marshall (1991) also had concerns about the NVQ approach at higher levels and suggested that although the NVQ framework may be effective in ‘training basic skills’, it is less effective as the level of skill and cognitive requirement increases’, and, therefore, it would be ludicrous to apply the same model to all levels of training. Limitations of NVQ in developing underpinning knowledge were also reported in a research study by Roe *et al* (2006). An NHS Trust manager argued in the study that:

*NVQs are very mechanistic qualifications. This is fine up to Level 2, but not so appropriate above this.*

Underpinning knowledge is not as well developed as it could be at Level 3 upwards and needs to be supplemented with certificate and diploma courses. Young (2010) and Brockmann *et al* (2008) considered that the emphasis on demonstrating competence through performance in NVQs specifically downplays the learning process and the importance of the knowledge that underpins all but the most routine work. Young (2010) commented that it seems likely that the explicit separation of learning processes from learning outcomes in NVQs may account for their substantially higher take-up at lower levels where work tasks involve less judgment and less ambiguity. He believed that the fact that NVQs have not been taken up with any enthusiasm by large numbers of employers for whom it was claimed they were specifically designed also reflects the weak knowledge base of NVQs which was explicitly designed to emphasise performance rather than knowledge or understanding on the largely unspoken assumption that understanding was beyond the capabilities of those likely to take such qualifications.

Censure of the process of undertaking an NVQ identified bureaucracy and associated jargon as being two phenomena within a wider range of limitations which have restricted NVQ success (Keep, 1999). Smithers (1993) considered that a great deal of time is being spent filling in forms and ticking boxes and despite these paraphernalia the one award can mean very different things according to who has taken it, where it has been taken, what evidence has been brought forward, and who has assessed it. Rigour has seemingly been sacrificed to flexibility. The impenetrable language of assessment (Grugulis, 2003), time-consuming nature of portfolio production (Swailes and Roodhouse, 2003) and consistency of assessment processes were all identified as problem issues. Grugulis (2003) commented that the lists of ‘competences’ or ‘standards’ associated with each qualification which consist of lists intended to describe observable workplace behaviour are written in a way which was specially designed for NVQs and which has little general currency. This ‘NVQ-speak’ is described, even in official reviews, as complex, confusing, difficult to understand or relate to work and inappropriate, criticisms that are extended to the guidance provided with it.

The final concern is around the benefits that ensue to employers and their employees from attainment of NVQs. Employer concerns crystallised around the time-consuming and bureaucratic assessment and too much, too little or otherwise inappropriate content (Swailes and Roodhouse, 2003; Sims and Golden, 1998). Many employers resisted taking on responsibility for the courses. As a consequence, assessment tasks were again taken over by awarding bodies who, funded by government, developed a complex hierarchy of assessors, and internal and external verifiers in an attempt to guarantee quality. James (2006) comments that the identification of a worker as either competent or not (yet) competent (the basis on which an NVQ is awarded or withheld), does not do justice to the depth and breadth of knowledge and skill that is constructed in the workplace. Young (2010) noted that doubts about a ‘generic model’ of quality whereby confidence is placed in the judgment of experts in procedures for interpreting outcomes may account for why some employers and professional bodies continue to insist on written examinations. For some employers assessment of outcomes on their own is not enough. West (2004) considered that there was recognition from the start that NVQs alone would not constitute a wholly adequate education rather they were supposed to inculcate occupational competence, rather than to form the basis of an entire educational programme. Employees concerns in relation to NVQs tend to focus on the processes involved in acquiring one and the status of the qualification. Swailes and Roodhouse (2003) reported that some higher-level learners found that the main barrier to completing their complex NVQ portfolios ‘was the view that NVQs do not carry the recognition that degrees have and this leads to the stigma attached to them’. Grugulis and Bevitt (2002) reported that ‘many employees felt annoyed or patronised by the tasks they are required to complete for their qualifications’.

There is concern that NVQs offer few progression opportunities for those achieving them (Young, 2010). Concern extends to the financial returns for obtaining an NVQ. In a review of vocational education it was reported that occupationally specific level 2 NVQs generally offer poor or even negative returns and are of particularly low value to males who obtain them (Wolf, 2011). At the lower levels at least, they seem to be a certification of skills that already exist rather than the further development of skills (Roe *et al*, 2006).

Despite the above concerns around NVQs they have continued to provide a model across the world for competence-based approaches to training and NQFs based on outcomes (Young, 2010). The ‘shift to outcome’ that was initiated with NVQs is now an almost unchallenged global development in how qualifications are thought about, written about and designed (CEDEFOP, 2008). Formalised use of competencies is now commonplace in job applications. West (2004) attempts to address the fundamental criticism of using written standards to express just what is required in terms of competent performance in the NVQ model. He considers that all forms of qualification express standards, and they do so through the written word; in the forms of syllabuses for teachers, guidance for the setters of examinations, and instructions for the many who mark them and that these can no more aspire perfectly to describe the level of performance required than can NVQs. He also argues that study towards NVQs caninvolve ‘deeper’ learning, but the extent to which they do will depend on matters other than their design - matters such as the circumstances under which they are studied and the pedagogic skills of instructors. In this he considers that surely, they are not very different from any other type of qualification.

There are many examples of professional groups adopting NVQs. They have been incorporated in the training, whether initial or in-service, of a number of health professions. More significantly, though, the basic tenets of the NVQ, a requirement for structured practical experience to certain standards, features in many professional accreditation schemes (West, 2004). However West does add the caveat that while this kind of approach is common in the professional arena, it is generally accompanied by theory and knowledge being directly taught, and separately assessed. Rainbird *et al* (2004) report that health care assistants attaining an NVQ 3 found the process of proving their competence ‘empowering’ and improved their status in relation to nurses and Sargeant (2000) argued that NVQs help employees understand appropriate standards of care. Wolf *et al* (2006) considered that the care sector often emerges as an exceptional case in which a particular set of factors stimulate the adoption of NVQs. Cox (2007) reported on the impact of NVQs for groups of lower grade staff working in the healthcare sector and found beneficial effects on acquisition of knowledge and skill, personal attributes and pay and career progression. The reasons for this apparent success of the qualification was argued to lie in specific features of the workplaces concerned which were partly fulfilling criteria for an ‘expansive’ orientation to workforce development. These included provision of multiple sources of organisational support for learners, careful design and quality monitoring of associated learning interventions and alignment of development for individual and organisational goals leading to opportunities for career progression. They identify the features of expansive workforce development strategies based on factors extracted from Fuller and Unwin’s (2006) research which are discussed in Chapter 4 of this thesis.

Young (2010) noted that there were three conditions involved, albeit in different ways in Accounting and Health Care NVQs that accounted for their ‘successes’. These can be summarised as: they were demand-led by employers; their development was closely linked to the development of educational institutions in close partnership with local employers; leading members of the professions and universities were closely involved in their design and assessment. Reflecting the importance of the workplace on NVQ success Wolf (2011) reported that while NVQs when taken outside employer-based apprenticeships have negative returns they have positive returns when taken within such schemes.

**Current position of NVQs**

NVQs continue to represent a system for awarding vocational qualifications based on occupational standards and assessments of performance on job-related tasks.

They have been successively revised in response to criticisms from employers, employees and researchers (mentioned previously). Reforms have centred on reducing the jargon associated with them, making them easier to access and instead of fitting into the NVQ framework some professions have modified the NVQ framework to fit their needs.

The emphasis on observed performance, though initially claimed to be indispensable to ensuring precision and objectivity, was expanded to incorporate 'range statements', 'generic competences' and 'underpinning knowledge and understanding' (Wolf, 1990).

Although NVQs were never intended to be courses, curricula or learning programmes but merely systems for assessing and more precisely, accrediting learning it was reported that this had changed and that increasingly NVQs were being linked to specific courses (Hyland, 1993). Some awarding bodies have developed teaching guidebooks and workbooks in an effort to assist candidates attain NVQ standards. Such developments have taken place despite Jessup’s claims that particular learning processes are not relevant to the assessment of competence. In an attempt to overcome the persistent criticisms that the learning process is downplayed in NVQs Technical Certificates have been introduced as an off-the-job complement to NVQs. They set a requirement that ‘underpinning knowledge and understanding’ must be shown to ‘underpin performance’. However some researchers have considered that this development means that the underpinning knowledge and understanding is invariably expressed as lists of topics with no pedagogic or curricular coherence (Young, 2007; Barnett, 2006) and that it tends to be ‘knowledge as facts’ rather than ‘knowledge as understanding’ that is emphasised (Young, 2010).

**Pharmacy technician NVQ in the ROI**

An NVQ Level 3 Course has been offered by the IPU since 2002. The qualification is delivered in the workplace as part of a pharmacy training programme. Pedagogic strategies include (1) the assignment of candidates to a workplace tutor who provides instruction, guidance and support (2) access to extensive planned workplace training experiences (3) provision of a structured distance learning plan which includes use of case studies, calculations, information days, and MCQs. Candidates prepare a portfolio of evidence to show that they have developed the required level of competence to meet the NVQ standards. Their tutor assesses whether the candidate can demonstrate their workplace ‘competence’.

On successful completion of the course candidates receive the NVQ Level 3 Pharmacy Services Certificate from the awarding body (City and Guilds).

**Boots Ireland dispenser course**

Some large community pharmacy chains in the ROI have developed courses leading to pharmacy support staff qualifications. Boots Ireland Dispenser Course is considered as an exemplar of such a course.

The qualification is delivered in the workplace as part of a pharmacy training programme. Pedagogic strategies include (1) the assignment of candidates to a workplace tutor who provides instruction, guidance and support (2) access to extensive planned workplace learning experiences (3) provision of a structured distance learning programme which includes use of case studies, activities, calculations, and MCQs.

Distance learning courses such as NVQ Level 3 and the Boots Dispenser Course are a way of certifying on-the-job experience and instruction. They have the advantage that candidates do not have to search for workplace training positions and are paid while undertaking the course. Course fees where applicable are frequently funded. Candidates have access to course material at any time and a certain amount of flexibility to juggle their job and learning commitments.

Difficulties can include lack of face to face lecturer-student interaction, lack of student-student interaction, lack of a productive wider learning community, feelings of isolation, time constraints on tutor-learner interactions within a busy workplace environment and finding study time while working full-time.

**Approach Two: College-based Education Programmes Incorporating Workplace Training**

Third level college-based education programmes particularly in science and science based courses frequently adopt a traditional model of teaching, learning, assessment and course structure. By traditional model of teaching and learning is meant the situation whereby individual science subjects are taught separately and lecturers deliver the theories, concepts and facts of each subject in lectures to students. The traditional method is summarised in Figure 2.1. The learning is often considered to be teacher-centred and subject-driven.

Lecturers deliver

theories and concepts

Students learn them

Students are encouraged to apply them

**Figure 2.1** ***Traditional 3rd level teaching model.***

Although the traditional approach has been around for a long time many researchers now consider that it is not the most effective or appropriate pedagogic method. Byers and Eilks (2009) judge that the teacher-centred approach involves little more than a simple process of information transfer (sometimes called the ‘Passive Diffusion Model of Knowledge Transfer’) and that deficiencies in this approach are now, somewhat belatedly, being widely recognised and include the fact that lecturers are not always able to explain everything fully or even comprehensibly to others, while their students in turn may often fail to listen and follow with sufficient care and attention, or even on occasion, lack the necessary cognitive ability or previous knowledge to permit the desired interpretation of newly acquired information to occur. Learning is much more complex than merely listening, memorising and repeating words. In addition the assumption in the traditional model that knowledge and understandingcan be readily transferred from the academic context where the learning is occurring to real world problems when they are encountered is not supported by evidence (DeHaan, 2005). Guile and Ahamed (2011) reported in a study on responses to the 2008 White Paper, *Pharmacy in England: building on strengths*, *delivering the future* that pharmacy students emphasised that they were unable to link their academic training together because the different subjects were taught in ‘silos’ and without cross-referencing in either teaching or assessment.

In light of the above deficiencies with the traditional model there is educational rationalisation for the introduction of innovative/alternative pedagogic strategies to 3rd level teaching with the aim of promoting more active and effective student learning.Innovative/alternative pedagogic strategies such as on-campus context-based and problem-based learning models and inter-professional learning are emerging as alternative primary pedagogy modes.

**Background to level 6 courses**

Level 6 Higher Certificate courses for pharmacy technicians will be considered as an exemplar of current college based courses. Initially however very brief reference is made to two previous courses namely, the pharmaceutical assistant’s course and the pharmaceutical technician diploma course. The then PSI was involved with both of these courses. In the case of the pharmaceutical technician diploma course this was provided jointly between Colaiste Ide, the PSI and the School of Pharmacy, Trinity College Dublin. Following the termination of the pharmaceutical technician’s course by Trinity College Dublin in 2005 a number of Institutes of Technology introduced Level 6 Higher Certificate Courses specifically designed for pharmacy technicians. Of note was that in 2004 the PSI produced a Blueprint Document for academic institutions interested in providing a Pharmaceutical Technician Certificate/Diploma Course. This document signaled the interest of the then pharmacy regulator in an academic route for the education of pharmacy technicians.

**Current Level 6 courses offered by Institutes of Technology**

These courses offer a broad higher education and training type qualification based on curricula (as the foundation for teaching programmes), time lines and specified learning outcomes. The learning outcomes are not formulated in terms of simple competence statements. Syllabi are provided and germane text books and reading materials recommended. Workbooks have been developed for some courses. The courses adopt a ‘knowledge-based’ approach to standards associated with written examinations and assessments. They espouse a dual approach to theory and practice requirements and separate assessments of theory and proficiency normally form part of the programmes.

Programme delivery methods include lectures, tutorials, laboratory sessions, and seminars. Although the courses adopt some of the traditional pedagogic approaches discussed above new pedagogies have also been incorporated. For example blended learning is a feature of some courses as is context based learning, problem based learning, case-based learning, peer learning and project learning. Other pedagogic intervention strategies adopted to accommodate different student styles include but are not limited to use of direct instructional guidance during lectures, digitally enhanced lectures, group problem solving and collaborative tasks.

College lab-based and mock pharmacy teaching provides a valuable adjunct to pharmacy technician education and training. It allows for simulations, role plays, direct observation and timely feed-back to students to develop both core skills and generic skills such as IT and communication and it allows for small-group activities and interactive workshops. One college has developed a virtual pharmacy to assist student learning.

In addition to the above each of the courses include extensive pharmacy workplace training, which can be carried out either in hospital or community pharmacies under the supervision of a tutor pharmacist. The experiences of the students on workplace training are usually tracked and assessed through liaison between workplace tutors and college staff and the use of competency sheets both sequential and once off, log books/ blogs /portfolios, and online reflective student diaries which are returned to the college for final evaluation. Each of the level 6 courses are subject to the quality assurance and control regulations of their academic institutions. Student feedback and student evaluations form an important part of such regulations.

The college-based courses provide in-college education and training before students are permitted to undertake their workplace training experiences. It is only following successful completion of college examinations and the associated workplace training programmes that graduates are eligible to seek employment as a pharmacy technician. In a broader context college attendance allows students to become participating members of student associations, clubs and societies.

The level 6 courses provide a basis for progression. Opportunities for further study include pharmacy technician degrees, pharmacy master degrees and pharmaceutical and scientific courses. Difficulties that can arise in college-based courses are that students must find a pharmacy workplace training place, their time in such work-placements is limited and college mock dispensary facilities can be somewhat restricted. Maintenance of close communication links between college and workplaces during student workplace training is challenging.

In summary while the two approaches to initial pharmacy support staff education and training discussed above offer alternative strategies it is important to also consider the increasing moves towards development of a broader competency-based approach to professional/vocational formation and development in many professions, including pharmacy. This issue is addressed in the next sub-section.

**2.4 The emerging importance of competence-based assessment in professional development and training in pharmacy**

Having rejected the functionalism of the competency approach and the pursuit of verification through the reduction of knowledge statements to observable, measurable forms Assiter (1992) argued for a broader conception of competence taken from Boyatzis (1982), in which competence is defined in terms of ‘underlying characteristics’ that enable ‘effective action’ and ‘superior performance’. In this conceptualisation, transfer of skills from one context to another is central, and ‘is strikingly different from the NVQ focus on behaviours and outcomes of behaviours’ (Assister, 1992 p.23). Anderson (2005) described competency-based education as a planned sequence of student experiences designed to move students through the stages in the competency continuum. Different methods of instruction and evaluation are used as appropriate to each level of professional growth, and the entire sequence is coordinated to produce a competent beginning practitioner. This competency-based approach, while containing elements of the NVQ method, is broader in perspective and designed to inculcate occupational competence as part of conventional educational programmes.

In line with a broader conceptualisation of competency the pharmacy profession is applying a competency-based approach to professional/vocational formation. The International Pharmaceutical Federation (FIP) has in recent years focused attention on the development of programmes to evaluate and develop competencies in pharmacy, and to develop educational models that would enable an increase in competencies. The FIP along with the WHO and the UNESCO have developed a global competency framework for pharmacists. It is envisioned that the Framework be used by individual institutions in their self-assessment and quality improvement efforts (FIP Pharmacy Education Taskforce, 2010). Quality assurance systems must ensure that educational programmes are competency-based, reflect a vision for pharmacy practice and education developed through profession-wide consensus, are of high quality and appropriate, and meet the needs of the country and its people (Rouse, 2008). It is not only for pharmacists that competency frameworks have been developed. Hough *et al*. (2010) introduced a Professional Development Framework for Pharmacy Technicians in Medicines Management in the UK. Many of the competencies within this framework are associated with specific tasks and roles and this may reflect the more structured role of the pharmacy technician. The National Association of Pharmacy Regulatory Authorities in Canada in 2007 introduced Professional Competencies for Canadian Pharmacy Technicians at entry to practice. One of the stated purposes of this development is to support national educational outcomes for pharmacy technician programmes.

The PSI in 2013 introduced the first core competency framework for pharmacists in Ireland to be used both in terms of the qualification for practice and also for the continuing professional development (CPD) of registered pharmacists (Core Competency Framework for Pharmacists, 2013). The framework sets out the domains, competencies and behaviours that are expected in the workplace for the profession. The framework is the cornerstone of the PSI’s programme to reform the education and training of pharmacists. Courses of study in Schools of Pharmacy are expected to contribute to the development of competence in a much more focused way. Standards are set for the schools to meet the competency framework. An assessment strategy must be developed that aligns with the teaching and learning strategy and the purpose of which is to confirm that a student can demonstrate the defined competencies in the framework. This approach by the PSI is a portent of changes that will most likely follow for pharmacy technician courses in the ROI. In view of this it is important to consider the following problems that research has revealed in established approaches to competence-based assessment (frequently referred to as CBA) and to solutions that have been offered to these problems and to the ability of CBA to hinder or help professional development of pharmacy staff:

• Choice of assessment framework

Wright and Morgan (2011) note that assessment of competence is complex, subjective and should be based upon frameworks with limited numbers of competencies to minimise bureaucracy. They advise that where a large number of behaviours are required to demonstrate a competency a sample of behaviours should be used. Similarly, where competency frameworks consist largely of tasks then a sample should be selected to be used to demonstrate individual competence. Gonczi *et al* (1993) stress the need for an integrated assessment framework as this allows for choice of assessment methods that can then assess a range of elements and performance criteria, rather than collect evidence for each element and performance criterion.

• Competency framework implementation

There is concern about how competency frameworks have been used by learners and tutors to demonstrate and assess development. Eraut and Hirsch (2007) and Brown (2010) consider that if used inappropriately, competency frameworks can be responsible for reducing the assessment of complex professional behaviours to a tick-box exercise, where more energy is expended on ‘signing off’ than on individual development. To avoid this The Academy of Medical Royal Colleges in the UK suggests that mentors or supervisors consider evidence from a sample of the listed behaviours underpinning a competency rather than expecting all of them to be signed off individually.

• Form of assessment.

Gonczi *et al* (1993) considered that a general principle underlying the validity of assessments is that the narrower the base of evidence for the inference of competence, the less generalisable it will be to the performance of other tasks. They advise that developing performance assessment measures requires careful thought about what students are expected to know and what competencies they should develop, and also what methods will be used in both teaching and assessment. Palomba and Banta (2001) advised that assessment efforts should not only determine whether students are acquiring the knowledge, skills, and values that faculty and the profession have determined are important, but also provide a tool that enables students to visualize the desired level of performance and give them detailed feedback on their actual performance. Due to the subjective nature of competency, assessment is recommended to be of a formative nature for developmental purposes and summative only for regulatory purposes (Wright and Morgan, 2011). Workplace-based assessment is believed to be best performed by a mentor or supervisor using a variety of assessment instruments as this enables the whole picture of someone’s competency to be best portrayed (Brown, 2010). Pharmacy educators have adopted a range of multiple assessment strategies, which include more integrated types of assessment than formal examinations. Many of these have been adopted from medical education. Assessment strategies include: direct observation and feedback during experiential training; development of reflective practice portfolios; objective structured clinical examinations, which comprise a flexible examination structure comprising a circuit of 5-15 minute patient stations.

The following difficulties arise in relation to many of these assessment strategies:

Direct observation and feedback during experiential training necessitates strong workplace support. It must ensure that learners are able to demonstrate specific competencies that represent continuing growth and development. For this to occur there must be sufficient good quality mentors and tutors available to support assessment strategies. Difficulties can arise around workplace tutors learning support and assessment roles and tutors having the time and the training to provide adequate observation and feedback to learners. Guile and Ahmed (2011) in a research paper on ‘Modernising the Pharmacy Curriculum’ advise of the need for closer collaboration between higher education institutes (HEIs) and employers (possibly on the basis of a regional structure and national structure) to strengthen their partnerships to support the initial formation of pharmacists e.g. through professional as well as academic mentoring and better management of work-based learning and assessment to pave the way for their subsequent professional development.

Wright and Morgan (2011) in an ‘Independent Evaluation of Frameworks for Professional Development in Pharmacy’ reported that the use of portfolios has been criticised on the basis that (1) a kitchen sink approach, where everything is included, is sometimes used in compiling them; (2) there is a question mark over to what extent they are tutor rather that learner led; (3) there are concerns about the validity and reliability of evidence provided for consideration. For portfolios to be effective it was suggested that a wide variety of accepted tools were necessary for inclusion in a structured manner and that a reflective piece of writing summarising the portfolio may be more useful than current approaches, which involve review, by an educational supervisor. Kalata and Abate (2013) in a study on ‘A Mentor-Based Portfolio Programme to Evaluate Pharmacy Students’ Self-Assessment Skills’ looked at the use of e-portfolios. A significant problem they identified was the untimely or delayed return of feedback and grades shortly before a self-submission deadline. This could be addressed by highlighting the importance of timely grading and feedback to instructors. Overall they concluded that the e-portfolios represent a useful method of incorporating self-assessment into a curriculum, allowing feedback to be provided.

OSCEs and OSPEs are used as training tools and as a means of assessing students’ practical skills.  They are intended to assess whether students are competent as practicing professionals. Kirton andKravitz (2011) in a study to compare OSCEs and traditional assessment methods among recent pharmacy graduates concluded that OSCEs add value to traditional methods of assessment because the two evaluation methods measure different competencies. This conclusion lends credence to the argument that OSCEs are an important methodology for preparing undergraduates for clinical practice.

Notwithstanding the problems identified above with the various CBA tools many of them are being incorporated into pharmacy education and training both at pharmacist and pharmacy technician pre and post entry levels. For example e-portfolios are currently being used by the GPhC and the Ontario College of Pharmacists for both technicians and pharmacists. They are also being introduced in the ROI as part of the new CPD model for pharmacists. OSCE examinations have been incorporated into undergraduate pharmacy courses, and as a component of the professional registration examination for pharmacists in the ROI. Canada is leading development in the use of OSCEs for pharmacy support staff with the introduction of OSCEs as part of the entry to profession level for pharmacy technicians.

The above discussion illustrates that CBA, when carried out judiciously, has the ability to help development and training in pharmacy and is being used in professional/vocational formation. The next section will consider the role of the current courses in relation to professional development of pharmacy technicians within the wider context of professionalisation of technical staff across the healthcare sector.

**2.5 Examining the role of the current education and training courses in relation to the professional development of pharmacy technicians**

Looking at pharmacy technicians it could be argued that current discourses seem to be favouring the increased importance of pharmacy technicians as a profession. This could be argued to have arisen from the changes to the pharmacy practice model at the heart of which is the move towards patient-centred service delivery. The model as a result requires pharmacists to take on more direct clinical activities which in turn will require delegation of previous pharmacist tasks to be passed down to technicians. Such devolution of tasks is not unique to pharmacy. A study of technician and intermediate roles in the healthcare sector in the UK reported that technological advances and changes in the way work is organised have combined to facilitate the standardisation of a wide range of tasks. This has allowed such tasks to be classified as routine and to be devolved downwards, and has facilitated the expansion of more complex tasks at higher levels. The researchers point out that if the healthcare sector is to address the challenges it faces then it has to recognise the importance of understanding the changing nature and place of the intermediate role, (positioned between ‘professional’ and ‘semi-skilled’ grades) including the potential for registration (Fuller *et al*, 2013).

All of this is very pertinent to the situation of pharmacy technicians in the ROI where their representative groups are calling for them to become a regulated and registered profession. Calls for professionalisation need to be facilitated by a new emphasis on technician education and training and the ‘willingness’ of technicians to take on new and extended roles. The next logical step therefore is to examine the appropriateness of the current courses in the ROI to prepare the technicians for increasing professional development.

The education, training, qualification level and registration of other healthcare occupations which have undergone the process of professionalisation offer useful insights. One striking example has been the development of nursing in relation to its professionalisation and the role of education in this as being professional education. Nursing education moved from a work-based route which incorporated workplace training to developing a relationship with higher education, which is intrinsically linked with the ‘idea’ of a ‘profession’. Full-time nursing degree programmes were introduced and nursing converted to an all-graduate entry profession, with full-time participation in higher education now the entry route. Qualifications changed from a Certificate/ Apprenticeship Programme to a Registration/Diploma Programme to a 4-year Registration/Degree Programme. Nurses in the ROI are regulated and registered by An Bord Altranais (The Nursing Board). The Board sets requirements and standards for nurse registration education programmes.

Biomedical Science is also another case to consider. Originally those wishing to become biomedical scientists (also known as medical scientists) followed work-based training programmes to a diploma level qualification. However, to become a biomedical scientist now individuals must complete full-time honours bachelor degree programmes. Membership or eligibility for membership of the Academy of Medical Laboratory Science (AMLS) is a requirement to practice in the profession in Ireland.

The trend observed in the examples discussed above is that as occupations move towards professional level training they move away from work-based education and training programmes to higher education full-time degree programmes. Fuller *et al* (2013) report this trend noting that in general, the training of professional level staff has moved to the full-time route with a standardised curriculum, particularly where this links to the regulatory approval process for entry to a statutory register. The entry level education and training pathway for pharmacy technicians in the ROI has followed a somewhat rather confusing direction. A course run with a university (TCD) offering a qualification at diploma level and assessed by the then PSI closed and two parallel courses offering different routes and qualification levels are now in place neither of which is regulated or assessed by the current PSI. While both entry level courses offer quality assured programmes that strive to introduce approaches to enhance student learning, thereby demonstrating educators commitment to increasing their student development, the question that remains to be answered is: are the courses developing their learners to meet the needs of the changing pharmacy practice model? Answering this is difficult as it depends on the scope of practice, duties and responsibilities to be assigned to technicians in the developing practice model and the subsequent need to establish at what level technicians’ entry qualification should be positioned relative to pharmacists above (now a masters level entry qualification) and other pharmacy support staff below. It is only when these issues are resolved and complete reviews of current courses undertaken can judgements be made on the appropriateness of the courses.

If we look to developments elsewhere we find different approaches adopted. Interestingly, in GB while many healthcare occupations have moved from work-based routes to accept only full-time higher education programmes, pharmacy technicians, although now a profession regulated and registered by the GPhC has retained the work-based route requiring a GB NVQ level 3 qualification. On the other hand Ontario in Canada has moved to a full-time college-based route for technicians registered by the OCP.

In the case of the occupations such as nursing, where professional development has taken place, a statutory body has driven and controlled the development. The Pharmacy Act 2007 clearly empowered the PSI as the statutory body to address pharmacist education and training. Its role in relation to pharmacy support staff is considered next along with a comparative examination of the policies and practices in GB and the USA.

**2.6 The context of pharmacy support staff education and training in the ROI vis-á-vis other counties such as GB and the USA**

In this section a number of key documents, reports, and statements from the ROI, GB and USA are interrogated. This is done to establish the position of policy makers and other stakeholders in the ROI in relation to pharmacy support staff and to compare our policies, provisions and practices with those in place in GB and the USA. The documents are grouped into categories based on their country or region of origin. The main issues relating to pharmacy education and training for support staff identified in the documents make it clear that the ROI had a different starting point for its introduction of reforms compared to GB and the USA. When the Pharmacy Act 2007 was introduced the ROI already had a regulated category of pharmacy support staff, namely Pharmaceutical Assistants. The Act required that they continue to be regulated and to be registered in the Register of Pharmaceutical Assistants kept by the PSI in order to be able to practice in Ireland. Incorporation of this category of support staff in the Act referred only to a very precise category of staff and did not apply to any other pharmacy support staff. The pharmaceutical assistant qualification is no longer awarded in Ireland and the original register has closed. For other support staff, documents show that there was no voluntary register. There was NFQ level 6 and NFQ level 5 pharmacy technician courses in place along with a range of courses for other non-pharmacist pharmacy staff.

Documents from GB show that when they introduced their 2010 pharmacy reform, three years after the Irish 2007 Act, they had already been considering the issue of pharmacy support staff for some time and had a voluntary register for pharmacy technicians in place since 2005. They also had the UK National Occupational Standards of the NVQ for pharmacy support staff courses. In 2010 they made registration of technicians statutory and set the NVQ level 3 qualification as the entry requirement for registration. Documents from the USA show that the Council on Credentialing in Pharmacy are offering a well-defined and comprehensive strategy for a standardised national system for pharmacy technicians but they advise that there is much variation among states in the regulation of and requirements for technicians.

**Documents pertaining to the ROI**

The Pharmacy Act 2007. This Act makes no direct reference to pharmacy support staff such as pharmaceutical technicians, pharmacy technicians, dispensers, pharmacy assistants, healthcare advisors or medicine counter assistants. It does make reference to pharmaceutical assistants, a precise category discussed in Section 2.2. The link for the Pharmacy Act 2007 is given in Appendix 2. Reference is made to pharmacy staff’s knowledge and skills in the statutory instrument S.I No. 488 of 2008 Regulation of Retail Pharmacy Business made under powers conferred by Section 18 of the Pharmacy Act 2007 in the section on the management and supervision of a retail pharmacy business. The link for this S.I. is shown in Appendix 2 and the relevant excerpt relating to non-pharmacist staff is shown below:

*S.I. No. 488 of 2008*

*Regulation of Retail Pharmacy Business Regulations 2008*

*Arrangement of Regulations*

*5. (1) The pharmacy owner and the superintendent pharmacist shall, inter alia ensure that-*

*(h) he or she is satisfied that all of the pharmacists and other staff, employed or engaged by him or her, or under his or her management, have the requisite knowledge, skills, including language skills, and fitness to perform the work for which they are, or are to be, responsible.*

This interpretation is confirmed in a subsequent PSI educational session. This session makes evident the joint obligations on pharmacy owners and superintendent pharmacists in relation to staff but also requires that supervising pharmacists play a role in non-professional staff training. Relevant excerpts of these are shown in the following section.

**Pharmacy Act 2007: Understanding your role**

**(ICCPE / PSI / HSE joint educational session Spring 2009)**

Superintendent pharmacist

‘Section 18’ regulations:

*The pharmacy owner and superintendent pharmacist must be satisfied**as to the competency of pharmacists and other staff employed, and also to the identity and registration status of pharmacists;*

Roles and Responsibilities of Superintendent and Supervising Pharmacists Superintendent pharmacist:

*The superintendent pharmacist must be satisfied as to the competence of pharmacists employed, including the supervising pharmacist(s), and other staff.*

Supervising pharmacist:

*The supervising pharmacist must ensure that staff are competent for the tasks assigned to them; they therefore have an important role in staff training, for example, training non-professional staff with regard to patient counselling and when patients should be referred to the pharmacist.*

The link for the full article is given in Appendix 2.

**Pharmacy Ireland 2020 Working Group Interim Report** **April 2008**

The Registrar and the Council of the PSI, in the PSI Service Plan for 2008, commissioned a review of pharmacy services entitled Pharmacy Ireland 2020. In April 2008 the Pharmacy Ireland 2020 working group published an interim report on how the pharmacy profession can contribute to the development of a more integrated approach to healthcare in Ireland in order to enhance services to patients. The interim report was analysed for this thesis to identify what issues (if any) were raised in the report concerning pharmacy support staff. With the exception of a brief reference to pharmaceutical assistants and pharmaceutical technicians no reference was made to pharmacy support staff in this important report on the future of pharmacy services in Ireland. This highlights the need for pharmacy as a whole to incorporate its support staff base in its vision for the future development of pharmacy services as this vision requires more deployment of pharmacists’ time to clinical activities and this in turn requires enhancement of the capacity of support staff. The link for this report is given in Appendix 2.

**Review of the Community Pharmacy Sector in Ireland (2011)**

This report was commissioned by the IPU to Grant Thornton in July 2012. Its primary purpose was to present a profile of the community pharmacy sector in Ireland for 2011. While the report provides much information on the sector and some information on pharmacist education no such information is provided for any category of pharmacy support staff. As the methodology of the review incorporated a survey of community pharmacy enterprises registered with the IPU an opportunity to obtain information on the education and training of pharmacy support staff in the community sector was missed.

**The Pharmaceutical Society of Ireland**

The PSI is an independent statutory body, established by the Pharmacy Act 2007. The society is charged with, and is accountable for, the effective regulation of pharmacy services in Ireland, including responsibility for supervising compliance with the Act. It works for the public interest to protect the health and safety of the public by regulating the pharmacy profession and pharmacies. Analysis of documents such as the role, responsibilities, organisation and governance, mission and values of the PSI and the terms of reference of the society’s professional development and learning committee suggest that the situation of the society in relation to support staff is somewhat complex. The documents appear to indicate that the society has a remit in relation to the education of pharmacy support staff but that it is an implicit rather than explicit remit.

**Role, responsibilities, organisation and governance, mission and values of the PSI**

When each of the functions of the PSI was examined it is noted that no direct reference is made to pharmacy support staff other than the category of pharmaceutical assistants referred to in the Pharmacy Act 2007. This could be interpreted as signifying that all other non-pharmacist support staff in the ROI do not come under the remit of the statutory pharmacy regulator. However as the PSI has responsibility for supervising compliance with the Pharmacy Act 2007, which in turn places responsibility for ensuring ‘requisite education and training and fitness to practice’ for all pharmacy staff onpharmacy owners andsuperintendent pharmacists it could be interpreted that the PSI has responsibility for ensuring that both of these groups fulfil their responsibilities in this regard.

Reference to the role, responsibilities, organisation and governance, mission and values of the PSI is given in Appendix 2.

Strawbridge *et al* (2010, p.6) in a report on pharmacy education and training in Ireland stated that:

*One of the main drivers for development has been the Pharmacy Act 2007, which conferred responsibility on the Pharmaceutical Society of Ireland (PSI), the pharmacy regulator, for overseeing education, training and lifelong learning in pharmacy.*

This could be understood as encircling all education, training and lifelong learning taking place in the pharmacy*.* In addition a role for the PSI in respect of education and training for pharmacy support staff is stated in terms of reference number 2of their Professional Development and Learning Committee (PD&L), one of the main operational units of the Council of the PSI.

**Professional Development and Learning Committee**

Reference 2 - *To assure the delivery of programmes of education and training for student pharmacists (and incorporating the designated learning and competencies for persons obtaining qualifications appropriate for practice), pharmacists, pharmacy support staff,* *including pharmacy technicians and pharmaceutical assistants.*

There is no requirement in this term of reference to incorporate designated learning and competencies for pharmacy support staff. However the previous PSI did produce a blueprint document for academic institutions delivering a pharmaceutical technician certificate/diploma course in 2004. A number of excerpts from this document are given in Appendix 2.

**Pharmacy Support Associations**

There are two voluntary Pharmacy Technician Associations representing Pharmacy Technicians in the Republic of Ireland namely, The National Association of Hospital Pharmacy Technicians (NAHPT) which has been in existence since 1997 and The Irish Association of Community Pharmacy Technicians (IACPT) which was formed in March 2010. The following statements and reports highlight that both associations are striving to achieve regulation and registration of pharmacy technicians by the PSI.

The following excerpts from a report by the NAHPT to CEPT in 2011 provides information on pharmacy technician education and their quest for regulation and registration by the PSI:

***Update on new Pharmacy Technician professional regulations:***

*In 2010 the NAHPT met with the Pharmaceutical Society of Ireland for the second time in a decade to discuss the need for registration and regulation of pharmacy technicians in Ireland. The second meeting was more positive than the previous one as we learnt that the Council had agreed that there is the need for registration and regulation of pharmacy technicians. It was then agreed that the first step required was to evaluate the current courses that are available for pharmacy technician studies. The results of this information would form a baseline from which we can work from. The NAHPT met with the PSI in March of this year and they have advised us that the council have included this evaluation in the PSI service plan 2011. This evaluation is expected to be completed in the last quarter of this year. The NAHPT agreed to bring an awareness of regulation to pharmacy technicians and to all stakeholders. We plan to do this through collaboration with the IACPT.*

The link to the complete NAHPT statement is available in Appendix 2.

The aim of the IACPT is expressed in the following statement:

*The Irish Association of Community Pharmacy Technicians has been set up to create a link between the technicians working across the country. In doing this we hope to become a recognised and registered profession.*

The link to the association’s website is given in Appendix 2.tion

From the above documents it is clear that in the ROI under the Pharmacy Act 2007 superintendent pharmacists and pharmacy owners must ensure that all pharmacy staff involved in the provision of specific pharmaceutical services be appropriately trained to carry out the roles for which they are responsible. What is less clear is the explicit role of the PSI, the pharmacy regulator in relation to regulation of pharmacy support staff education and training. By failing to make explicit reference to pharmacy support staff and by assigning responsibility for their education and training to pharmacy owners and superintendent pharmacists, while undoubtedly well intentioned, has resulted in failure to provide a statutory body to address current difficulties and to lead developments and set uniform requirements and standards for support staff. The economic downturn which hit in 2008 saw a huge increase in the numbers attending third level institutions and once these students qualified many of them have since been forced to emigrate with their qualifications to find work. However the lack of a competent authority for pharmacy technicians has greatly hindered graduate movement. The extent of this situation could not have been foreseen at the introduction of the Pharmacy Act in 2007.

The next section studies the situation applying to pharmacy support staff in GB a neighbour with many historic ties and some similar operating systems to the ROI.

**Documents pertaining to Great Britain**

The main regulatory document is S.I. No. 231 of 2010.

Of interest to this thesis is the responsibility given to the GPhC for the regulation of pharmacy technicians which includes setting pre-entry education and training standards and fitness to practice obligations for their now statutory registration with the GPhC and also sets requirements for recording of their CPD. Not only must standards and requirements be set but the Council must take steps to ensure that they are met. Indemnity arrangements for pharmacy technicians must be put in place thus recognising them as a professional category of healthcare staff responsible for their actions. The Council approves or arranges with others to approve (i) courses of education or training (ii) qualifications granted (iii) institutions (iv) other providers including tutors (v) premises for Post-Graduate education for pharmacy technicians. The GPhC also sets policy on minimum training requirements for dispensing/pharmacy assistants and medicine counter assistants.

An excerpt from S.I. No 231 of 2010 showing the power and responsibility of the GPhC and a link to the Order relating to the registration, education and training of pharmacy technicians is provided in Appendix 2.

General Pharmaceutical Council. Standards for the initial education and training of pharmacy technicians September 2010

This document sets out the initial education and training standards for pharmacy technicians in GB. These are the standards and criteria against which the GPhC approve pharmacy technician qualifications and training programmes. The document highlights the importance that the GPhC places on the creation of a category of pre-registration trainee pharmacy technician who must be assessed, monitored, supervised and only allowed to undertake practice at a level that is consistent with their stage of education and training. This is an important requirement as it ensures that trainees are not vested with direct access to patients and the public before they have been judged safe to do so. Their education and training must provide a structure for their professional progression.

A number of selected excerpts from and a link for the full document are available in Appendix 2. The link for the GPhC policy on minimum training requirements for dispensing/pharmacy assistants and medicine counter assistants is shown in Appendix 2.

**Documents pertaining to the EU**

Brief reference is now made to Directive 2005/36/EC as this relates to recognition of professional qualifications across the EU. It raises the matter of “national competent authorities.” These are any authority or body of a relevant European State designated by that State for the purposes of the Directive as competent to - (a) receive or issue evidence of qualification or other information or documents, (b) receive applications and take decisions referred to in the Directive in connection with the practice of pharmacy. The PSI is the statutory regulator/competent authority of pharmacists and pharmacies in the Republic of Ireland. The GPhC is the competent authority for pharmacies, pharmacists and pharmacy technicians in Great Britain. There is currently no competent authority for pharmacy technicians in the Republic of Ireland. This creates difficulties for pharmacy technicians from the ROI seeking employment as technicians in other EU member states. The link to this EU Directive is available in Appendix 2.

**Document pertaining to the USA**

According to the Council on Credentialing in Pharmacy in the USA there is much variation among states in the regulation of and requirements for pharmacy technicians. There is also, at least presently, substantially less standardisation in the education and training processes for pharmacy technicians than for pharmacists. In an effort to address this, the Council proposed a pharmacy technician credentialing framework. This document is considered next.

**Council on Credentialing in Pharmacy. Pharmacy technician credentialing framework**

In 2009 the Council on Credentialing in Pharmacy released a resource document intended for policy development on the education, training, certification, and regulation of pharmacy technicians in the USA. It offers a well-defined and comprehensive strategy for a standardised national system. The credentialing framework is a proposal endorsed by an expansive range of pharmacy groups and practice areas.

The link for this framework is provided in Appendix 2.

**Global Survey of the Pharmacy workforce**

The report of a global survey of the Pharmacy workforce was also examined and it is of interest to note the inclusion of pharmaceutical technicians and assistants and their regulation and education thereby recognising their role within the sector. The link for this Survey Report is provided in Appendix 2.

The above non-ROI documents show that in the case of GB the GPhC, the pharmacy regulator, sets standards and requirements for pharmacy technician education and training and registers them with the Council and sets requirements for CPD recording. It also sets standards and requirements for dispensing/pharmacy assistants and medicine counter assistants. In the USA the CCP framework provides policy guidance in an effort to bring greater consistency among states in the regulation of and requirements for pharmacy technicians.

**2.7 Summary**

This chapter has explored current education course provision for pharmacy support staff in the ROI to examine the context of the teaching practice and the support staff education. It has explored debates about work-based competence courses, such as NVQs and the broader concept of competency based education and competence-based assessment. Current discourses in pharmacy seem to speak to universalism in a growing trend to give national and international expression to the use of lists of competencies and behaviours as identified in PSI and FIP competency frameworks.

The chapter has also questioned the current positioning of pharmacy technicians in the context of moves towards professional development of technical and intermediate staff in the healthcare sector. Within the healthcare sector in the ROI occupations such as medical scientists and nursing have undergone the processes of professionalisation and in so doing taken the route from work-based education and training to full-time third level graduate only entry. As new roles for pharmacy technicians open up due to increased patient-centred service delivery in pharmacies it is to be expected that there will also be increasing moves towards professional development of this category of staff. There has already been movement towards full-time third level entry through the development of the Institute of Technology pharmacy technician courses. The work-based entry route remains an option. It is of interest to note that where graduate-only entry has taken place the occupations, unlike pharmacy technicians are regulated healthcare professions.

In addressing sub-question 1 of the study in terms of - How and to what extent educators and policy makers in the ROI have provided for pharmacy support staff within their current educational policies and practices - it was found that course provision was substantial and quality assured but it was not without its difficulties. Differing entry levels and pedagogic practices were identified as issues of concern. College educators have begun to introduce advanced level 7 courses for pharmacy technicians with a view to providing for their professional development. However, again here concern has been expressed about the roles and responsibility of graduates from such courses in the absence of national clearly defined roles for pharmacy technicians. On the question of how policy makers have provided for pharmacy support staff regulation and education it was found that the Pharmacy Act of 2007 is the act that governs pharmacy in the ROI. This Act, by placing responsibility for ensuring that staff have the requisite education and training on individual pharmacy owners and superintendent pharmacists, while certainly well considered as this was fitting due to their expertise and knowledge of their particular pharmacy context, had the unintended consequence of not providing for a standardised regulatory framework for support staff across all pharmacy practice settings.

In answer to sub question 2 of the study - How legislation and educational practice in the ROI compares with systems in place in countries such as GB and the USA? - Comparative analysis with these countries shows that pharmacy reforms have been taking place in each jurisdiction. While the reforms have differed and are at varying stages of development in relation to support staff regulation and registration the uniting motivation of reforms has been to prepare pharmacy for its changing practice role.

The next chapter continues the focus on charting converging trends in the pharmacy practice model as a result of the move, globally, towards patient-centred service delivery.

**Chapter 3**

**The changing face of pharmacy and its effect on the education, training and regulation of non-pharmacist pharmacy staff**

**3.1 Introduction**

This chapter addresses, through a comprehensive literature review, sub-question 3 of the research study namely, ‘in what way do the converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery impact the regulation, education and training of pharmacy support staff going forward?’. As the practice model changes it is important to question the way the converging trends impact the regulation, education and training of pharmacy support staff and to ask how the ROI is faring in relation to these trends.

The chapter considers discourses around practice model changes in the ROI, GB and the USA by examining:

* job titles used to describe pharmacy support personnel
* role definitions linked to job titles
* incremental developments that have taken place in relation to the regulation of pharmacy support staff, in particular pharmacy technicians
* qualification requirements for pharmacy support staff across the countries of interest

The chapter begins by explaining the selection criteria for the inclusion of literature and the method of its analysis and then moves to consider the above key issues which are to be found in the literature across all three countries. Comparisons are made between the countries by drawing attention to how the issues are arising in each and how they are being addressed.

The review will show that each of the countries studied are implementing changes as a result of shifting trends in the pharmacy practice model. Some of the changes introduced in the ROI have had unintended outcomes, discussed in chapter 2, while other jurisdictions, such as GB, have introduced additional policy mechanisms such as S.I No. 231 of 2010 to address a number of these issues.

**3.2 Literature review: Selection criteria**

Pharmacy is an academic discipline and a practice discipline. It is also in most countries a highly regulated discipline. Consequently the literature of pharmacy is a broad church and covers regulation, academic research, practice, practice research and education. In fact there is some overlap in relation to the coverage of many topics in the literature with practice research being covered in professional journals and practice issues being covered in academic research journals. A preliminary literature review found articles pertaining to the education of pharmacy staff in both (Bell, 2005 ; Buring *et al*, 2009; Boyce *et al*, 2009; Donnelly *et al*, 2009; Herrera, 2007; Anderson, 2007; Pearson *et al*, 2010).

A period of over 30 years was reviewed for the changing face of pharmacy spanning from 1980-2011. Selection of this very broad time period was to ensure encapsulation of the on-going revolution that is taking place in pharmacy.

The criteria used for evaluation of the literature were based on: Relevance to policies, work practices, education and training of pharmacy support staff. In addition to journals significant reports were identified and analysed to inform the research study.

**Method**

**Search Strategy**

The literature search entailed consulting key academic medical, pharmaceutical and educational databases including, PUBMED, MEDLINE, IPA, BEI, ERIC and Higher education empirical research database-Medical Teacher. Some twelve different combinations of search terms were employed covering central terms such as ‘pharmacy technician education’, ‘pharmacy support staff education and training’, ‘pharmacy health care assistants education and training’, ‘workplace learning in the pharmacy’, ‘work based learning in the pharmacy’, ‘formal qualification learning for pharmacy technicians’, ‘formal qualification learning for pharmacy support staff’, ‘qualifications for pharmacy support staff’, ‘qualifications for pharmacy technicians’, ‘pharmacy education’, ‘pharmacy technician’ and ‘workplace learning’. A similar range of search terms were used to explore the Pharmaceutical Society of Ireland website. Finally a similar key word search was made of the leading pharmaceutical journals which for this study were The International Journal of Pharmacy Education and Practice, International Journal of Pharmacy Education, Pharmacy Practice, The Pharmaceutical Journal, The Irish Pharmacy Journal, The Irish Pharmacist, British Journal of Clinical Pharmacy.

In addition reference lists of relevant articles were searched. Copies of all the evidence included in the review were obtained and kept on file.

More than 125 documents were identified during the search process. The criteria for inclusion were that the literature related to evolution of pharmacy practice, and the education, training and regulation of pharmacy support staff and was published in the years 1980-2011. The review excluded non-English language literature. The majority were North American in origin. Most were research studies using surveys, interviews, comparative analysis, evaluation impact or mixed methodologies. A number were policy statements or proposals while opinion articles, regulations, draft regulations, an audit and summit report accounted for the remainder.

**3.2.1 Analysis of the literature**

**Job titles used to describe pharmacy support personnel**

This literature review shows that the traditional pharmacy practice model is changing to incorporate more clinical functions across the countries studied and that the change is affecting all members of the pharmacy team. However it also reveals that once one moves from the pharmacist, a title common in most parts of the world and a profession whose education and role is clearly defined and robustly regulated by governments through various regulatory mechanisms, the situation in the pharmacy becomes more complex. A range of personnel with different titles are to be found. That this occurs and is of concern is reported in many studies.

A survey of pharmacy law in 1996-7 (NABP) across the USA found that at least 11 terms were used to describe pharmacy supportive personnel. The CCP in the USA published a White Paper on Pharmacy Technicians called: *Needed Changes Can No Longer Wait* in 2002*.* In the paper the vagueness of titles for pharmacy support staff was identified as having been a problem for a long time and it recommended that the profession should work to bring about the development and adoption of stardardised definitions and terminology for pharmacy supportive personnel. A comprehensive research study (Mullen, 2004) on the skill mix in community pharmacy for the Research and Development Division of the RPSGB in 2004 also reported on the range of titles used for dispensary support staff. A 2009 survey by the NABP in the USA found that the situation there had not improved and that many titles continued to be used across the states. During the literature review for this thesis a bewildering assortment of job titles for pharmacy support staff was encountered and in addition titles were found to vary between countries. Table 3.1 gives an overview of the titles encountered.

**Table 3.1: Job titles encountered for non-pharmacist pharmacy staff**

|  |  |  |
| --- | --- | --- |
| Title | Country Context | Sample Reference |
| Pharmaceutical Assistant | ROI | Pharmacy Act 2007 |
| Accredited Checking Technician | UK | Telford and Soma (2005) |
| Accuracy Checking Technician | UK | TNS-BMRB Report (2011) |
| Pharmacy Technician | ROI  USA  GB | Strawbridge et al ( 2010)  Myers (2011)  SI 2010 No. 231 Health Care and Associated Professions. The Pharmacy Order 2010 |
| Pharmaceutical Technician | ROI  USA – Nevada | PSI Blueprint Document for Delivering a Pharmaceutical Technician Certificate/Diploma Course 2004  Myers (2011) |
| Pharmacist Technician | ROI | Review of the Community Pharmacy Sector in Ireland (2011) on behalf of the IPU December 2012 |
| Prescriptionist | Sweden | Mullen (2004) |
| Pharmaconomist | Denmark | Mullen (2004) |
| Pharmacist’s assistant | Holland | Mullen (2004) |
| Qualified Pharmacy Technician | USA – Ohio | Myers (2011) |
| Registered Pharmacy Technician | USA - North Dakota and Wyoming | Myers (2011) |
| Pharmacy Technologist | Canada  College of Pharmacists of British Columbia | White Paper on Pharmacy Technicians – A discussion paper for Council March 2006 |
| Unlicensed personnel | USA – Colorado | Myers (2011) |
| Title | **Country Context** | **Sample Reference** |
| Unlicensed Persons | USA-New York | Myers (2011) |
| Ancillary Personnel | USA-District of Columbia | Myers (2011) |
| Assistant pharmacist practitioner | Scotland | Sturgeon (2009) |
| Dispensing Technician | GB | Savage (1995) |
| Dispenser | GB | Braddick (2006) |
| Dispensing Assistant | GB | Braddick (2006) |
| Pharmacy Assistant | GB | Braddick (2006) |
| Assistant Technical Officer | GB | Woolfrey (2006) |
| Accuracy Checkers | UK | TNS-BMRB Report 2011 |
| Pharmacy Aids | USA | The US BLS occupational outlook handbook 2010-2011 |
| Medicines Counter Assistant | UK  ROI | Braddick (2006)  IPU website |
| Healthcare Advisor | UK  ROI | Banks *et al* (2007)  Boots the Chemist website ROI Jobs |

**Role definitions linked to job titles**

A key issue charted in this literature review is a need for clear role definitions linked to agreed job titles across the sector. This need is found to be particularly important in view of the changing model of pharmacy practice and the expanding role of pharmacy support staff, in particular pharmacy technicians. This section presents the results of the analysis of the literature relating to role definition. It is presented chronologically under the headings: History and Current Landscape.

**History**

In the 1980s studies in the USA focused on the move to a more clinical orientation for pharmacy services and the importance of having a strong clearly defined support base for this move. Anderson (1987) advised that pharmacists’ traditional functions should be melded with a clinical orientation to provide pharmacy’s maximum contribution to patient care. Delineation of roles as judgmental or nonjudgmental should be replaced by clear job descriptions and procedures and an understanding of the complementary roles of pharmacists and technicians. Ryan (1989) noted as an imperative that as pharmacy continued to evolve as a profession that it would develop a more rational manpower model that takes advantage of appropriately trained supportive personnel who would be functioning in an environment greatly influenced by technology. As pharmacists gained in professionalisation there would most likely be a concomitant need for growth in the support base required by pharmacists.

In the 1990s studies and reports continued to address the importance of role definition and the expanding role of pharmacy support staff. A white paper policy report issued by the APHA, NACDS and the NCPA in 1996 emphasised that defining the different levels of pharmacy supportive personnel and determining the responsibilities or functions appropriate for individuals at each level and determining the competencies required at each level was an issue to be addressed.Studies in the UK focused on the roles and responsibilities of MCAs. Ward *et al* (1998) found that four-fifths of deregulated medicine sales were carried out in community pharmacies by MCAs in the absence of any formal input from the pharmacist. Given these findings, it was recommended that the current role, workload and experiences of MCAs should merit more attention.

In the decade 2000-2009 the following studies and reports describe changes in the roles of pharmacy support staff and highlight the need for clear role definitions and the efforts being made to address this issue. In 2002 the CCP white paper advised that the profession in the USA needed a shared vision for pharmacy technicians and other supportive personnel. It advocated for a definition of the responsibilities and functions for pharmacy technicians and identified defining different levels of pharmacy supportive personnel as a remaining challenge. It considered that only when pharmacists limit their direct involvement in the technical aspects of dispensing, delegate this responsibility to pharmacy technicians working under their supervision, and increase the use of automated dispensing technology will they be able to fully concentrate on the services for which they are uniquely educated and trained. This advice is as pertinent today to the pharmacy profession as it was in 2002.

In 2004 a comprehensive research study on the skill mix in community pharmacies undertaken for the RPSGB (Mullen, 2004) also concluded that for community pharmacies to provide additional services and to enable all staff groups to extend their role the right level of skill mix is paramount. This study, which explored and defined the roles of dispensary support staff in GB, found that the role of dispensary support staff had expanded vertically into areas, such as, management of service provision and accuracy checking.

In 2005 a survey conducted in the USA by the PTCB identified new roles and responsibilities performed by pharmacy technicians, including the handling and processing of restricted, investigational and chemotherapy drugs; working in mail-order pharmacy settings; and increased involvement in third-party payments (Muenzen *et al*, 2005).

A new job profile was announced for pharmacy technicians under the Department of Health, Agenda for Change Pay System in GB in 2005. This new job profile was the first to cover pharmacy technicians working in either primary or secondary care and recognised that pharmacy technicians have a role in both systems. The RPSGB also recognising the importance of pharmacy technicians began operating a voluntary register for them in January 2005. In 2006 the following two important developments continued to signal the growing interest of the UK Department of Health and the RPSGB (the then pharmacy regulator) in pharmacy support personnel:

(1) The Council of the RPSGB issued a policy statement announcing the setting up of a support staff advisory group to provide the society with expert and informed advice on the education, training and continuing development of pharmacy technicians and other pharmacy support staff. (2) A research report on Governance and the Pharmaceutical Workforce in England in 2006 noted that the Department of Health was planning for a dispensary-based ‘checking technician’ role and for the establishment of a separate register for pharmacy technicians from 2007 (Noyce, 2006). That much role development of pharmacy staff was already taking place across the profession was reported in a study by Woolfrey (2006). She reported that ATOs were taking on roles such as dispensing that were previously the remit of technicians. In addition she reported that in turn, technicians were taking on roles traditionally performed by pharmacists, such as the final accuracy checking of dispensed products, basic clinical screening of prescription charts and taking drug histories. These initiatives released pharmacist’s time (and technicians time as appropriate) thereby increasing the capacity of pharmacy departments to provide patient-focused clinical services.

In 2007 the UK moved to bring forward developments in relation to pharmacy technicians. The Draft Statutory Instrument-Pharmacists and Pharmacy Technicians Order 2007 was laid before the UK parliament. The Order set out arrangements for bringing pharmacy technicians in England and Wales into statutory regulation for the first time. Carwen Wynne Howells, Chief Pharmaceutical Advisor for Wales advised that regulation would enable pharmacy technician development in a structured manner. Barriers to developing the potential of technicians were identified as a lack of investment in services to enable the best use of skill mix and a lack of willingness among some technicians to transfer their skills to new roles, because of a lack of confidence (Elmes and Wynne Howells, 2007). A number of studies returned to concerns surrounding the supply of non-prescription medicines from community pharmacies by MCAs. Watson *et al* (2007) in their study of community pharmacies in Scotland found that MCAs supplied the majority of non-prescription medicines to customers and that suboptimal communications between the MCAs and consumers were identified as a major cause of inappropriate supply of non-prescription medicines. Garner and Watson(2007) when conducting a linguistic analysis study of consultations between MCAs and customers found that MCAs did not appear to have been made sufficiently aware of the ways in which their exchanges during such consultations for non-prescription medicines are crucially different from natural conversations.

In the ROI changing patterns in the pharmacy workforce were also taking place and Cotter (2007) reported that the role of the pharmacy technician in the ROI had evolved very much since its beginnings in 1985. In an effort to tackle concerns around role definitions the IPU issued guidelines on dispensing in community pharmacies that stressed the importance of defining the dispensing process and specifying which activities must be carried out personally by a pharmacist and those that can be delegated to identified, competent support staff. The 2007 Pharmacy Act brought many significant changes to the regulation of pharmacy in Ireland.

In 2008-2009 studies continued to identify extended role development of pharmacy technicians (Thomas *et al*, 2008; Mirczuk, 2008; Carter, 2009). The approval of the Health Care and Associated Professions Order in the UK in 2009 meant that the RPS would regulate pharmacy technicians throughout England, Scotland and Wales from the 1st of July 2009. Sturgeon (2009) advised that once pharmacy technicians are registered and trained they would be able to undertake extended roles thus releasing capacity elsewhere. However as GB was introducing mandatory regulations in relation to pharmacy support staff concerns continued to be raised in the USA in relation to their role in the expansion of pharmacy practice there. Eckel (2009) judged that the days of count and pour, lick and stick pharmacy are going away. Pharmacists who delegate this role to technology or others so that they can help patients make the best use of their medications will be what society needs from their pharmacist. However concerns were being raised in relation to expansion of roles for support staff. Thompson (2009) considered that the legality of technicians’ involvement in medication reconciliation was unclear with much variation existing between states.

**Current Landscape**

This review shows that as we entered the second decade of the new millennium the situation in relation to role definition and titles for pharmacy support staff was becoming clearer in GB. Pharmacy technicians were becoming part of a new regulated profession and the term “pharmacy technician” a protected title. Titles and roles for other support staff were clearly delineated. In the ROI the Pharmacy Act, 2007 was bringing changes to the profession and in the USA calls were going out for clear definitions of the functions and responsibilities of different pharmacy supportive personnel. However no steps had yet been taken in either of these jurisdictions to bring about statutory regulation of all pharmacy technicians.

In the early years of the second decade studies across the countries of interest continued to look at workforce issues and role development for support staff. Matthews (2010) advised that community pharmacy has a unique position in the new NHS structure and needs to think about skill mix differently so that community pharmacists can take on an increasingly clinical role. A survey of community pharmacies in 13 European countries including the UK and Ireland confirmed that support of non-pharmacist staff was important to the provision of enhanced services by community pharmacies (Hughes *et al*, 2010). A first pilot workforce census of pharmacy technicians in GB was launched in advance of mandatory pharmacy technician registration which took place from the 1st July 2011 (Seston and Hassell, 2012). Manasse and Menighan (2011) considered it critical that as the profession enhances the level and scope of pharmacy practice there must be a consistent and credible bar for pharmacy technicians and the collective energy of the profession in the US must be behind meeting this universal standard. Myers (2011) highlighted the issue of risks associated with expanding the role of pharmacy technicians in USA Health Systems. Serious errors and harm do occur and he documents some of the recent serious events that have involved pharmacy technicians and proposes that risks associated with expanding the role of pharmacy technicians can be reduced by intelligently managing such expansion.

**Incremental developments that have taken place in relation to the regulation of pharmacy support staff, in particular pharmacy technicians**

This section of the literature review documents the incremental developments that have taken place in relation to the regulation of pharmacy support staff, in particular pharmacy technicians, across the ROI, GB and USA, over the time span of the review. The Pharmacy Act 2007 did not introduce statutory regulation of pharmacy technicians neither did it define roles nor provide guidance for the education and training of pharmacy support staff. By not overtly incorporating support staff in the Act the policy makers failed to detect the consequences of this for pharmacy support staff which has led to a sense of frustration, marginalisation and lack of development for this group. This issue is becoming increasingly germane as pharmacy services are moving to the forefront of pharmacy practice.

In GB the review shows that a number of incremental policy initiatives have been introduced leading up to statutory regulation of pharmacy technicians with protection of their title and guidance provided for the education and training of other pharmacy support staff. In so doing they have addressed the issue of support staff regulation directly and provided a clear structure thus avoiding some of the debates around support staff in the ROI. Their policy has however not been without difficulties particularly in relation to the Responsible Pharmacist Act where issues arise as to what extent technicians can practice in the absence of the responsible pharmacist. In the USA the review shows that State Pharmacy Acts and regulations for pharmacy technicians vary considerably. This is understandable due to the federal nature of the USA which means that individual states can apply their own regulations. However more uniformity is progressively emerging with the NABP 2009 Task Force Recommendations on pharmacy technicians that form a basis for future NABP’s Model State Pharmacy Act and Model rules.

**Qualification requirements for pharmacy support staff across the counties of interest**

This section presents the results of the analysis of the literature relating to qualification requirements for pharmacy support staff across the countries of interest. The aim of the analysis is to identify interweaving problems and trends to provide cross cutting and individual country perspectives on the subject. The early part of the review chronicles the existence of ad hoc, informal on-the- job training and lack of formal qualifications among many pharmacy support personnel. It will show that in the ROI the subject of pharmacy support staff education and training has yet to be addressed in a holistic comprehensive manner. For GB the review illustrates that, although lack of standardisation of programmes for support staff was identified as an issue early in the review, the introduction of mandatory education and training requirements have made the situation there much clearer for pharmacy support staff. However, a recent study (TNS-BMRB, 2011) shows that despite this clarity concerns continue to arise around titles and scope of practice. The review tracks the ongoing struggle by the pharmacy profession in the USA to agree on the type of education and training that should be provided for its pharmacy support staff, in particular pharmacy technicians.

The results of the analysis are presented according to the countries to which they relate under the following headings: General Background and Support Staff Qualifications.

**The Republic of Ireland**

**General Background**

In 2004 the PSI issued a blueprint document for delivering a pharmaceutical technician certificate/diploma course. The purpose of this document was to provide guidance to academic institutions in the development and delivery of a pharmaceutical technician course. In 2006 the PSI announced that Trinity College Dublin’s Pharmaceutical Technician Course would come to an end. This decision meant that the pharmacy regulator in the ROI no longer had any direct role in the education and assessment of pharmaceutical technicians. In 2007 The Pharmacy Act 2007 was passed by the Oireachtas. This Act was considered in detail in Chapter 2.

**Support Staff Qualifications in ROI**

The Pharmine Survey of European Higher Education Institutions delivering pharmacy education and training reported that in Ireland pharmacy technician training is conducted via City and Guilds through the IPU or via the Dublin, Carlow or Athlone Institutes of Technology (Strawbridge *et al*, 2010). The survey gave no information on the duration of studies, subject areas, competencies and roles of such staff.

The final report of a baseline study of community pharmacy practice in Ireland commissioned by the PSI and carried out in the summer of 2010 made very little reference to pharmacy support staff education and training. It gave information on the number of pharmaceutical assistants, pharmacy technicians and counter staff per pharmacy. When asked why some pharmacists might not delegate as much as possible to non-pharmacist pharmacy staff some participants mentioned that staff training might not have been up to date and therefore the staff were not yet capable of taking on certain tasks. Unfortunately the study missed an opportunity to record the working patterns, qualifications and training of the current cohort of pharmacy support staff. A survey was carried out by the NAHPT in April 2010 to identify the training currently available for Pharmacy Technicians in the Republic of Ireland. This was discussed in Chapter 2.

Despite major changes to the operation of the pharmacy sector in the ROI since 2007 the literature review shows that the issue of qualification requirements for support staff has yet to be fully addressed by the pharmacy regulator and by the profession as a whole. Future research is essential.

**Great Britain**

**General Background**

Until the mid-1980s on-the-job learning was the norm in the community sector. The situation for individuals employed as a pharmacy technician in a hospital was different. They required an appropriate qualification to comply with Whitley Council rules. The foremost qualifications available at the time were the dispensers’s certificate of the Society of Apothecaries (of London) and the Dispensing Technicians Certificate of the City and Guilds of London Institute. Some chain community pharmacies provided their own in-house training but these were not recognised outside the chains concerned.

Wykes (2003) reported in a scoping study that until the late 1980s the RPSGB did not concern itself to any great extent with the training needs or qualifications for support staff in pharmacies who were involved in the sale or supply of medicines. However from the mid-1980s this situation began to change. The Nuffield Foundation Inquiry Report in 1986 recommended that the RPSGB should be more involved in the education and training of support staff and so the RPSGB Council set up a working party to look at the issue. Once the pharmacy regulator became involved the review shows that sweeping developments began to take place.

In 1996 S/NVQ level 3 in Pharmacy Services was launched, to run concurrently with the pre-existing BTEC/SCOTVEC national certificate in pharmaceutical science. However the S/NVQ level 3 was considered by some to be inappropriate for community dispensing assistants and a level 2 S/NVQ was then developed and came on stream in 2002 (Noyce, 2004). In 1999 The Council of RPSGB decided that from 1st January 2005 all staff involved in assembling prescriptions including the generation of labels would be required to attain a minimum standard of competence. In December 2001 the Council decided to move towards the regulation of pharmacy support staff as part of the modernisation of the Society as a whole, in line with the 1999 Health Act.

A number of studies underscored the need for regulatory reform. A community pharmacy study for the RPSGB in 2004 found that dispensary support staff ranged from being unqualified to working towards, or having already achieved dispensing qualifications, including, dispensing/pharmacy assistant and pharmacy technician. A number of dispensary support staff interviewed in the study did not possess and were not undertaking any formal dispensing qualifications. Informal and ad hoc ‘on-the-job’ training was a key observation in all pharmacies visited in the study, where tasks were demonstrated or dispensary support staff were shadowed. Qualified and unqualified support staff were involved with operational aspects of a range of services and activities undertaken were not always linked to qualifications, for example, some staff were checking the accuracy of dispensed medicines without any formal accreditation (Mullen, 2004). Woolfrey (2006) noted that many in-house training programmes in the UK were not standadised.

In 2006 the RPSGB issued a policy statement announcing the setting up of a support staff advisory group to provide the society with expert and informed advice on the education, training and continuing development of pharmacy technicians and other pharmacy staff. In 2007 a review by the RPSGB of the education of prospective pharmacists incorporated links with pharmacy technician education and stressed the need to involve the whole range of stakeholders in the invitation to be part of the review process.

In 2009 the following two important developments took place:

(1) The Medicines (Pharmacies) Responsible Pharmacist Regulations came into force on the 1st of October 2009. The new regulations meant that the requirement for personal control will be replaced by a requirement for a responsible pharmacist to be in charge of the business relating to the supply of medicines at all premises where a retail pharmacy business is carried on.

(2) Privy Council approval of the Health Care and Associated Professions (Miscellaneous Amendments and Practitioner Psychologist) Order 2009. This order changed the landscape for pharmacy support staff in the UK. From July 1st 2009 the RPS would regulate pharmacy technicians in GB. A two year “grandparenting” period allowed for individuals with relevant work experience or vocational qualifications to register. From 1st of July 2011 individuals wishing to be registered as a pharmacy technician need to hold specific qualifications to do so. Several new qualifications for pharmacy assistants at level 2 and pharmacy technicians at level 3 were accepted into the QCF in 2010**.**

**Support Staff Qualifications in GB**

Currently to practice in GB, pharmacy technicians must be registered with the GPhC.

The GPhC is the independent regulator for pharmacists, pharmacy technicians and pharmacy premises in GB since the 27th of September 2010. It regulates pharmacy technicians by approving qualifications for pharmacy technicians, accrediting education and training providers, maintaining a register of properly qualified pharmacy technicians, setting standards for professional fitness to practice and ethical standards, setting and promotingstandards for the safe and effective practice of pharmacy at registered pharmacies, ensuring all registrants maintain their knowledge by completing continuing professional development, monitoring pharmacy professionals’ fitness to practice and dealing fairly and proportionately with complaints and concerns.

To register with the GPhC as a pharmacy technician a person must have completed both a competency qualification and a knowledge qualification, and provide evidence of having completed a minimum of two years relevant work-based experience in the UK under the supervision, direction or guidance of a pharmacist to whom they have been directly accountable for not less than 14 hours per week.Anyone who is not registered with the GPhC but practises as a pharmacy technician, or refers to themselves as such, is breaking the law and can be prosecuted. The GPhC also sets standards for other pharmacy support staff, including dispensing assistants and medicines counter assistants.

A study (TNS-BMRB, 2011) carried out by the RPS and the PSNI to assess the impact of the responsible pharmacist regulations on pharmacy practice reported that confusion arises in relation to job titles for support staff. It recommends that clarity be provided on this and on the role of the technician and their liability in relation to dispensing errors. Many respondents in the study felt that in practice, responsibility for dispensing was shared among staff such as accuracy checking technicians and other pharmacists, but opinions were divided as to whether regulators or criminal courts would take this view. In an initial response to this study the RPS stressed the importance of working with the GPhC on the scope of practice of registered pharmacy technicians and their responsibilities within the medicines supply function. They want to ensure that the responsibility of all players in the pharmacy, from the owners, the area managers, the superintendents, the pharmacists and all of the staff are understood and that mutually supportive systems are created.

The PSCN report on the implications regarding terms of service issues following the introduction of the Responsible Pharmacist Act advises that for both NHS and non-NHS pharmacy there is still a requirement set out in the medicines legislation for supervision by a pharmacist. Dispensed and checked prescriptions cannot be handed to a patient nor can they be handed to a delivery driver if there is no pharmacist present.

**United States of America**

**General Background**

Initially in-the-workplace experience rather than formal education and training was accepted as enabling a staff member (other than the pharmacist) to work in a pharmacy. This was confirmed in a 1981 survey of non-federal hospitals in the USA where it was found that the majority of technicians appeared to be informally trained on the job (Stolar, 1981). However from the early 1980s this approach began to change and calls for formal training programmes and certification were made.

The hospital sector was a main driver for change. The ASHP approved an accreditation standard for pharmacy technicians’ training programmes in 1982. Surveys of pharmacists in hospital and community settings confirmed that opinions on the ground were changing when it was reported that most respondents in the surveys considered that technicians should receive formal training and should be certified (Phillips *et al*, 1988; Govern *et al*, 1991). However the type of training and the type of certification that should be provided was an issue that challenged the profession.

A number of pharmacy bodies took an active stance on the matter. In 1993 the ASHP proposed a set of criteria for the accreditation of pharmacy technician training programmes and a model curriculum for the training was provided. In the same year the NABP called for the establishment of a national technician competency examination and site-specific training. In 1995 the PTCB launched a national voluntary certification examination. Although a significant development this was a voluntary examination and did not specify the type of training that should be provided for pharmacy technicians. The ASHP published a white paper in 1996 which urged uniform national standards for pharmacy technician training. The desirability for such uniformity was stressed in a study by Manasse and Speedie (2007) where they considered that in the absence of standardised educational requirements and accredited training programmes the profession had not been able to develop a consensus on what should and could be done by pharmacy technicians.

The CCP White Paper on Pharmacy Technicians in 2002 stressed the importance of determining the most appropriate education and training for each level of pharmacy supportive personnel. It urged the development of standards for technician education and training, and an appropriate system for accreditation of education and training of pharmacy technicians.

A survey (LoBuono, 2002) of certified pharmacy technicians in which all pharmacy setting were represented found that some respondents in the survey received on-the job training others received their training at a community college or vocational school and 1% did not receive any formal training. In the survey the technicians themselves expressed concern as to whether their educational qualification equipped them for certain roles. A profession wide debate led by the ACPE in 2003 on whether national standards and accreditation for technician training were necessary also noted that current training varied considerably. The debates led to calls from some groups for national standards but there were dissenting voices raised in particular by many employers at the time, among them chains and independent pharmacy owners. The employers had concerns that the educational and training requirements for technicians are not the same for all practice settings and that more costs could come from educational requirements for technicians in order to meet standards that may be impractical. The prevailing sentiment of the employers was that the ACPE should not set mandatory standards but leave it up to employers to provide on-the-job training. Cahill (2003) concerned at the role of employers, noted that while the profession vests technicians with the provision of direct service to the public, training and education requirements vary dramatically from state to state. Employers often mandate in-service training to introduce new technicians to their roles but this was at the discretion of the employer, creating great variations. In 2005 a second national examination for the certification of pharmacy technicians was launched. This is known as the ExCPT examination. This examination was not universally accepted across the profession and familiar dividing lines began to open between the institutional and retail sectors. Gebhart (2006) noted that opposition to the ExCPT examination came from hospital pharmacy groups who were concerned that the examination might not adequately test skills important to institutional settings. The NABP having studied both tests concluded that only the PTCB got a passing score. However the ‘retail’ associations NACD and the NCPA stated that “both examinations are appropriate for all practice settings”.

In 2009, the Council on Credentialing in Pharmacy published a guidance document for policy development. An NABP Task Force on Pharmacy technician education and training programmes also issued several recommendations in the same year. The main thrust of these publications is that pharmacy technician education programmes should meet standardised national guidelines, that technicians be required to complete nationally accredited programmes that meet these guidelines and pass a national competency-based examination as a condition of certification.

**Support Staff Qualifications in USA**

The pharmacy profession as a whole in the USA has been unable to agree upon the necessity of required standardised training for its pharmacy technicians. Currently the approach is a complex mixture of procedures and practices as confirmed in studies by Cassano (2010) and Scheckelhoff (2010).

Since 2004, candidates for PTCB certification have been surveyed about their training. They received training from educational institutions (35.6%), a formal on-the-job training program (25.8%), an informal method on the job (26.3%), the military (1.1%), and other sources (11.1%) (Cassano, 2010). ASHP national survey data show that 25.6% of hospitals required newly hired pharmacy technicians to be PTCB certified. One third of hospitals required the individuals to become certified within a specific time frame (Scheckelhoff, 2010).

**3.3 Summary**

This chapter has detailed the results of the analysis of a defined section of literature over a specified time period. It focused on the issues of job titles, role definition, regulatory mechanisms, and qualification requirements for pharmacy support staff in the ROI, GB and the USA. The purpose of such cross-country comparison was to find answers to sub-question 3 of the research questions which sought to find out: In what way do the converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery impact the regulation, education and training of pharmacy support staff going forward? Converging trends, common problems and issues for policy were all identified. The totality of evidence from the literature review does allow some substantial general conclusions to be drawn in respect of changes to the pharmacy practice model and its effect on pharmacy support staff.

First, the studies from all three countries register the evolving nature of pharmacy practice from supply of product to patient-centred service delivery and the consequent effect of this on pharmacy staff. The studies on role development are consistent with the view that role expansion, particularly for pharmacy technicians, is taking place across all the countries.

Second, there is evidence from across the countries that they have responded to such expansionary pressures albeit, in different ways. This is perhaps understandable as although converging trends were taking place each country had its own individual starting point to consider when introducing reforms. A common response identified in studies was calls for the statutory regulation and registration of pharmacy technicians and for defining the different levels and responsibilities of pharmacy support personnel. In 2007 the ROI introduced the Pharmacy Act, 2007 which brought many significant changes to the regulation of pharmacy in Ireland. One such change was the registration and regulation of retail pharmacy businesses which includes a pharmacist management structure of superintendent and supervising pharmacists. The Act placed responsibility for ensuring that staff have the requisite education and training on individual pharmacy owners and superintendent pharmacists. This assignment of responsibility had I suggest an unintended outcome of failing to provide for a policy setting body to set requirements and ensure compliance in relation to regulation, standardisation of job titles and defined scope of practice to be associated with each pharmacy support job title. GB likewise introduced legislation in 2007 and in subsequent years which also made significant changes to the regulation of pharmacy. Their changes provided for the statutory registration of pharmacy technicians.

Evidence from national debates taking place across the USA suggests that while strong proposals have been made for policy development regarding regulation of pharmacy technicians there remains as yet no consistent agreement on the statutory registration of pharmacy technicians across the states.

Third, there is evidence that ad hoc, informal on-the-job training and lack of formal qualifications was common among many pharmacy support personnel in the early years covered by the review. This situation changed as reforms were introduced following calls for the setting of educational standards for support staff. In the ROI the pharmacy regulator issued guidance to academic institutions for the development and delivery of a pharmaceutical technician course in 2004. It withdrew from assessment of pharmaceutical technicians in 2006. The 2007 Act did not directly address the issue of standard setting for pharmacy support staff education and training. Legislation in GB from 2007 moved to set mandatory education and training standards for persons wishing to be registered as a pharmacy technician. Several new qualifications for pharmacy assistants at level 2 and pharmacy technicians at level 3 were accepted into the QCF in 2010**.** In the USA strong proposals were made for policy development regarding the education and training of pharmacy technicians but there is as yet no common requirements across states.

Finally, the above findings provide answers to sub-question 3 by revealing how pharmacy in each of the countries researched is responding to the move towards patient-centred service delivery in respect of the regulation, education and training of their pharmacy support staff base.

The next chapter continues with a focus on education and training by firstly discussing the role of this in professional/vocational formation. This is followed by an exploration of the significance of workplace learning and the importance of connecting college learning and workplace learning.

**Chapter Four**

**Education, Training and Learning in the Workplace**

**4.1 Introduction**

This chapter addresses, through a literature review, sub-question 4 of the research study by considering the role of education and training in vocational/professional formation and the place of informal workplace learning, commonly referred to as ‘participating in practice’ in professional work environments. It also considers the key question of how best to connect college and workplace learning.

The first section on analysis of the literature (4.3.1) focuses on the role of education and training in vocational/professional formation. Initially it considers discourses around divergent development patterns for education and training systems at national levels and for their role in economic growth. It identifies a range of socio-economic and political conditions that are considered necessary in order to achieve high levels of skill formation in national populations. It then considers the idea that development of professional competence in vocational/professional education can be achieved by enhancing practitioners’ ability for ‘reflection in action’. This involves learning by doing and developing the ability for continued learning and problem solving throughout the practitioner’s career. Next it studies the relationship between key constituents of education and training. Finally it moves to consider concerns that have arisen in relation to the way that vocational/professional education has developed, particularly in Anglophone countries in terms of out-comes based programmes and their failure to recognise the importance of knowledge. This discourse links to analogous matters raised in Chapter 2 of this thesis in relation to pharmacy support staff education and training. Developments in the sociology of knowledge are proposed to distinguish the kind of knowledge that people can acquire at college/university from the knowledge that they acquire at work. The importance of incorporating theoretical disciplinary knowledge, along with the technical and practical knowledge needed to practice a particular occupation, in a vocational/professional curriculum is stressed as a way of ensuring that students are not only prepared for particular occupations but are also enabled to participate in society’s conversation and in influencing their field by partaking in its discussions and disagreements.

The second section of the literature analysis (4.3.2) focuses on discourses around informal process of learning commonly referred to as ‘participating in practice’. Initially the section highlights the importance of participatory practices in fostering learning at work. It then discusses the expansive and restrictive features of work environments for workplace learning. Next it considers studies on the ways in which biography and individual employee dispositions are relevant to learning at work. Finally the importance of learning from mistakes is identified as an important feature of workplace learning.

The third section of the literature analysis (4.3.3) considers the importance of connecting college and workplace learning. Initially the section examines issues around the complex process of transfer of learning between vocational/professional educational institutions and the workplace. It then considers discourses on connecting college and workplace learning in a pharmacy context. Curricular integration of didactic college coursework and workplace learning experiences are suggested as ways to ensure linkage in pharmacy education. Finally it moves to consider the establishment of formal integrative relationships between colleges and host workplaces to provide appropriately timed student placements.

**4.2 Literature review: Selection criteria**

This review seeks to identify literature on education and training for professional /vocational formation and on informal workplace learning in professional environments. The procedures used in selecting the publications studied are discussed in the following section.

**Method**

**Search Strategy**

A series of well-regarded texts (Schon, 1987; Ashton and Green, 1996; Winch, 2000; Young, 2007 and Wheelehan, 2010) published between 1987 and 2010 formed the basis of section one of the review on the role of education and training for professional/vocational formation. For sections two and three of the review the following key databases including the British Education Index (BEI), Educational Resources Information Centre (ERIC) and PUBMED were consulted. In addition reference lists of relevant articles were searched. Copies of all the evidence included in the review were obtained and kept on file. The criteria for inclusion were that the literature related to education and training for professional/vocational formation and to workplace learning. The review excluded non-English language literature.

**4.3 Analysis of the literature**

**4.3.1 The role of education and training in vocational/professional formation**

In a world of increasing globalised change and technological development, it has been argued that education and training are crucial for national competitiveness. The constituents of vocational and professional formation have, however, been considered differently in parts of the literature and are by no means unproblematic. There has been a concern that professional education doesn’t always prepare students for competent practice, that the constituents of such formation, education and training have a symbiotic relationship and that the nature of vocational knowledge has needed clarification in recent decades. In this section, the need for high skills formation to meet global demands for competitiveness will be examined first. Then what Schon regarded as a crisis in professional education will be explored before examining the relationship between the key constituents of education and training. Finally, the question of the increasingly problematic nature of vocational knowledge will be explored. Each of these issues has implications for work in the pharmacy and this will be considered at the end of the section.

The need for high skills formation to meet global demands for competitiveness was argued for in Ashton and Green’s (1996) study of *Education, Training and the Global Economy*. They proposed six institutional requirements necessary for high levels of skill formation. The objective of this was to specify an institutional framework, against which normative judgments about the adequacy of any country’s education and training system may be made. These institutional requirements the first of which is that the State must be committed to the goal of achieving a high level of skill formation and provide a solid educational base in order to facilitate this. Secondly the educational system itself must produce high levels of basic competence in language, science, mathematics and IT among school and college leavers. This was considered essential if future workers are to be in a position to develop their work-based skills further. Thirdly groups of leading employers must be committed to the goals of high level skills formation as skill formation cannot be divorced from the workplace. Employers must both demand high skills from their workforce and provide the means for acquisition of workplace skills on-the-job. Fourthly there must be some form of regulation and accountability in the process of skill formation at the workplace. Systems must be in place to ensure the quality of the training provided. Fifthly workers must themselves become committed to the goal of skill formation and continuous development at work. Finally there must be a system in which work-based (on-the-job) learning can be complemented by off-the-job training in the knowledge base of the skills.

The above conditions were found to exist in countries that followed a high skills route to capital accumulation. In Germany, for example the political powers of the state were used to stimulate and guide economic growth and the efforts of state, employers and unions were directed at extending the process of skill formation down from the professions to the level of intermediate skills. An apprenticeship system was developed as the basis for the system of worker training. This involves off-the-job and on-the-job training. The off-the-job training, which is funded by the state, provides the theoretical knowledge necessary for the vocation/profession and also a basic education in the requirements of citizenship. The on-the-job training is systematic and defined by a syllabus. A Meister, who is trained in the art of teaching, guides the apprentice through on-the-job training. There is a sophisticated system of checks and balances at the national, state, municipal, and company levels to ensure educational and economic goals are met.

In terms of their six institutional requirements Ashton and Green considered that Britain was firmly located on the low-skills route. Reasons for this were considered to be rooted in historical developments. Political and leading factions of capital did not commit themselves and the nation to the high skills route to accumulation. Basic primary and secondary education was dominated by the need to fulfil functions other than those associated with the transmission of skills required for modern forms of production. While central control of education was increased this did not remove educational inequalities in the system. Regulatory mechanisms which might have produced a high level of skill formation at the workplace were dismantled. Companies were left ‘free’ to organise training as they wished as employers were subsequently put in charge of the administration of permanent ‘training’ through their control of the Training and Enterprise Councils (TECs) and Local Enterprise Companies (LECs). A system of individualised credentials in the form of NVQs was introduced with the promise of opening up all jobs to any person who could demonstrate their competence in a particular field. However the system was criticised by the professions and many employers with the result that much of the training was directed at the certification of lower level skills. Concerns around NVQs were previously discussed in Chapter 2 of this thesis. Educational participation and achievement has increased in Britain but Ashton and Green considered that this still leaves it well behind other advanced European nations. They also make the point that it is possible to run a low-skill profitable economy.

That a crisis of confidence in professional education was arising in relation to a crisis of confidence in professional knowledge was claimed by Schon (1987:8). He noted that many educators were expressing their dissatisfaction with a professional curriculum that cannot prepare students for competent practice particularly in relation to the complex and unpredictable problems of actual practice. He considered that the question of the relationship between competent practice and professional knowledge needed to be turned upside down and should start by asking what we can learn from a careful examination of the competence by which practitioners actually handle zones of practice that are areas of uncertainty, uniqueness and conflict. The question of professional education also needed to be turned upside down as we should likewise examine the various ways that people actually acquire professional artistry, which Schon describes as an exercise of intelligence, a kind of knowing how to perform. He advocates for the place of a ‘reflective practicum’ in professional education in order to develop professional skills. A practicum is described by Schon (ibid: 37) as a setting designed for the task of learning a practice. In a context that approximates a practice world, students learn by doing, although their doing falls short of performing at which they seek to become adept, and they are helped to do so by senior practitioners who initiate them into the traditions of practice. It is different to an apprenticeship which offers students direct exposure to real conditions of practice and patterns of work. However in the apprentice model there is often insufficient time for the challenging tasks of student induction, education and training and in addition mistakes in real settings can have very serious consequences. Schon suggests that the practicum model offers an alternative intermediate space between the practice world, the “lay world” of ordinary life, and the impenetrable world of academia. It is reflective in two senses: it is intended to help students become proficient in a kind of reflection- in-action and when it works well it involves a dialogue of coach and student that takes the form of reciprocal reflection-in-action. There is a combination of students leaning by doing, interaction with coaches and fellow students and a more diffuse process of “background learning”. Opportunities for practice in applying the theories and techniques taught in professional formation curriculum are frequently provided for at the end of such programmes but Schon considers that a reflective practicum occupying a central role in professional formation curricula would bring learning by doing into the core of these programmes and provide for improved professional development.

The relationship between key constituents of education and training were raised in *Education, Work and Social Capital* (Winch, 2000). While accepting that education and training are different processes education being concerned with preparation for life and training being concerned with the inculcation of technique the study considered that the two kinds of process are of a logically different order, but relate to each other in quite specific ways. Education may consist of episodes of training, but is not training itself. An episode of training may contribute towards education but is not a complete education in itself. Training is a key feature of education. In respect of the type of vocational preparation processes that can be adopted it was noted that historically different forms of production have been associated with different forms of such preparation. The term ‘formation’ was suggested as a better way to describe vocational preparation processes because they involve, in some sense the making of a person into a worker that is a human being with particular skill, attitudes and virtues. Assessment was considered an essential part of vocational formation and it needs to take a variety of forms, including extended exposure to the occupational situation. Methods of formation mentioned in the research study were the apprenticeship model, various forms of on-the-job instruction and training, the use of an older worker as a mentor, and formal instruction outside the immediate work environment. Competence Based Education and Training (CBET) was cited as an alternative to vocational education based in educational institutions and the formative kinds such as apprenticeship. However CBET was considered to be more of a system of accreditation rather than vocational formation. Problems identified with CBET- based forms of accreditation like NVQs was that although they have a hierarchy of levels relating to the complexity of the skills assessed; these levels do not have a provision for assessing proficiency within the skill level. As CBET focuses on a very limited aspect of assessment, namely, the successful performance of a range of centrally specified, occupationally specific tasks it was evaluated as not being designed to assess either knowledge in breadth (through an examination) or knowledge in depth (through extended workplace application). It was therefore considered that CBET is only suitable (if indeed it is even suitable for this) for occupations that require limited propositional knowledge, little variety in work tasks and little need for occupationally specific moral virtues.

The increasing problematic nature of vocational knowledge was highlighted by Young, 2007 in *Bringing Knowledge Back In.*  He stated that the type of vocational education and training provided depends on social and political contexts. When considering the provision of vocational education and training in England he noted that the focus in the past decades had been almost entirely on the supply side of the ‘VET’ market. Little attention had been given to the lack of employer demand for improved skills and knowledge and the dependence of demand on the dominant forms of work organisation and product strategy adopted in different sectors. He was particularly concerned with the question of vocational knowledge and the VET curriculum. The following separate chronological approaches to the vocational curriculum were identified by Young with some tension considered to exist between them:

1. College-based are expressed in terms of subjects and disciplines. Academic and professional/vocational variants of the college-based approach share the following features

1. They provide clear progression routes between lower and higher level qualifications
2. They depend for their validity on the understandings and values shared within different communities of specialists
3. They maintain quality by relying on a combination of established external examinations and trust within specialist communities.

2. Standards-based approach to vocational knowledge which rejected the knowledge-based approach and aimed to replace examined syllabuses agreed by groups of specialists with criteria for national standards common to all fields (and in principle, all subjects) defined in terms of outcomes at five levels and specified by employer-led sectoral bodies. In the early days of the approach it was assumed that all vocational knowledge was implicit in competent workplace performance and there was no need to consider knowledge separately at all.

3. Connective approach associated with the introduction of technical certificates. The certificates aim to strengthen the knowledge-based component of programmes at the same time as enhancing its relevance to the demands of the workplace. They try to give more importance to off-the-job learning and its links with on-the-job learning. Their introduction implicitly recognised that the knowledge acquired at work is insufficient on its own and that there should be systematically organised off-the-job learning. The responsibility for identifying this knowledge remains the responsibility of the employer bodies.

Young considered that each of the above approaches neglected the question of vocational knowledge. He reasoned that in order to identify what is unique about vocational knowledge a more rigorous way of differentiating between types of knowledge is necessary. He suggested that the sociology of knowledge developed by Durkheim (1996:1912) and Bernstein (2000) offer useful insights into the type of knowledge that should be acquired on vocational/professional formation programmes. Durkheim distinguished between profane and sacred orders of meaning and emphasised the distinctive roles and purposes of each. The profane refers to people’s response to their everyday world – it is practical, immediate and particular. It is considered to have parallels with on-the-job learning. The sacred was a collective product of a society, and not related directly to any real world problem. It is considered to have parallels with off-the-job learning that is not constrained by the immediacy of practical problems or getting the job done. He is asserting that there are different types of knowledge with different purposes that are based on different forms of social organisation. One cannot be reduced to the other. They are therefore not interchangeable, or in competition with each other, they are complementary. His distinction between profane and sacred provides a way of analysing the differences between theoretical and everyday (or workplace) knowledge.

Bernstein reconceptualised Durkheim’s distinction between sacred and profane orders of meaning by distinguishing between vertical and horizontal discourses. He considered horizontal discourses to be local, segmental and context-bound. Work-based or on-the-job knowledge was seen as a form of horizontal discourse and usually acquired experimentally without relying on any overt pedagogic intervention or following any explicit rules or sequences. In contrast vertical discourses are general, explicit and coherent and expressed in bodies of codified knowledge and typically acquired off-the-job and for Bernstein, in accordance with principles of recontextualisation and strict rules of distribution associated with specific subjects and academic disciplines. Bernstein’s analysis allows distinctions to be made between types of theoretical knowledge and types of everyday (or workplace) knowledge, as well as the problems of bridging the gap between them through the process of reconceptualisation. Young considered that any attempt to conceptualise vocational knowledge requires equal attention to the given to varieties of vertical knowledge and to the differentiation of horizontal discourses and knowledge structures across different occupational sectors and types of work (Young 2007:150).

Leesa Wheelahan in her 2010 study of *Why knowledge Matters in Curriculum* also focused on the structure of vocational knowledge. She too uses the work of Basil Bernstein (2000) to help theorise the relationship between theoretical knowledge and workplace practice. The way knowledge is ‘classified’ and ‘framed’ has implications for pedagogic discourses and the nature of pedagogic practices. Bernstein called the classification of knowledge the *voice* of power and the framing of knowledge the *message* of power. Boundaries refer to the way in which contexts are defined, differentiated and insulated from each other. Power is concerned with the relations between boundaries (Bernstein, 2000:5). Classification determines what can be expressed and framing determines how it can be expressed. Different relations between classification and framing are possible. Academic disciplines are considered strongly classified bodies of knowledge because they have strongly insulated boundaries between them. Strongly classified knowledge means that knowledge learnt within the educational institution is strongly distinguished from knowledge of the everyday world and knowledge is presented in disciplinary frameworks that are distinguished from each other (Wheelahan 2010:29). Knowledge that is strongly classified and framed provides signals to students that help them to develop the recognition and realisation rules they need to navigate the boundaries between different kinds of knowledge effectively. The implications for curriculum arising from Bernstein’s analysis are that students need access to disciplinary knowledge as the means by which they are provided with access to powerful knowledge (ibid:35). Knowledge needs to be structured in the curriculum so that students ‘recognise’ different types of knowledge and consequently demonstrate that they can do so through producing or ‘realising’ the required outcomes of learning (ibid 2010:14).

However, despite the above guidance Wheelahan (2010:106) argues that there is a crisis of curriculum. This arises because knowledge is being displaced from the centre of curriculum by current models of curriculum namely, conservatism, instrumentalism and constructivism. Each of these models downplays the significance of knowledge and subordinates it to other curricular goals. Each precludes a debate about knowledge in its own right. In conservatism this is because it is primarily concerned with a return to basics, traditional disciplines and the selection of social elites by processes of rankings. In instrumentalism it is because it is primarily concerned with the needs of the economy. It focuses on the way in which education contributes to the formation of human capital. In constructivism emphasis is on the cultural basis of skills, tasks and practices, but to the exclusion of the knowledge that is used to inform these practices and the knowledge that is produced as a consequence of these practices. The relationship between constructivism and instrumentalism is considered to have structured the development of competency-based training which is now the basis of VET qualifications in many countries. The appropriation by instrumentalism from constructivism of progressive discourses of student-centred learning; a focus on situated learning and the contexualised nature of knowledge contributes to the legitimation of CBT and to its continuing theorisation and development. As a consequence, knowledge is displaced from the centre of curriculum in CBT qualifications thereby denying students access to the theoretical knowledge that they need in the workplace, even though the purpose of CBT qualifications is to prepare students for the workplace (ibid:127). As none of the dominant models of curriculum were considered adequate for vocational/professional curriculum Wheelahan outlines the social realist alternative model of curriculum and argues that the disciplinary basis of academic and vocational/professional qualifications needs to be restored and made explicit. It argues that vocational and professional qualifications should include two outcomes: the first is to prepare students for a field of practice; the second is to provide students with the basis for educational progression within their field to underpin occupational progression (Lolwana, 2005; Allais, 2006). These dual outcomes provide students with the capacity to contribute to debates shaping their field of practice and to contribute to society’s conversation more broadly (Wheelahan, 2010:6).

The above research studies have implications for education and training in pharmacy workplace settings. Applying Ashton and Green’s institutional framework to the systems in place for pharmacy support staff in the ROI allows us to identify if a high level of skills formation is being pursued. Involvement of the state could be seen as the Pharmacy Act 2007 which as stated previously (Chapter 2) gives no explicit requirement for standards of education and training for pharmacy support staff neither does it require their regulation and registration. The education and training system (again as outlined in Chapter 2) has responded to the needs of the sector by providing several routes and levels of courses for non-pharmacist staff. Some of these routes have no minimum requirements for entry and limited potential for advancement upon completion. One route uses the competency based approach which Ashton and Green noted was much criticised and often led to certification of lower level skills. Another route is a college based qualification which incorporates a system in which college-based (off-the-job) education provides the theoretical knowledge necessary for the vocational/professional education and is complemented by work-based (on-the-job) learning. Ashton and Green identify this type of route as a marker for high level skills formation. Employers are also actively involved in training this category of staff, be it in providing in-house training programmes or workplacement opportunities. However this is often limited to initial qualifications with minimal involvement thereafter. There have, to date, been no major initiatives from the political powers of the state or from the profession of pharmacy itself to extend the process of skill formation down from the pharmacist to the level of intermediate skills in the sector. Based on Ashton and Green’s criteria the characteristics required for high skills formation are absent in some of the provision for pharmacy support staff education and training in the ROI. Winch’s evaluation of CBET-based forms of accreditation like NVQs as being at best only suitable for occupations requiring low levels of skill formation also suggests that a low level skills formation route is being pursued in some of the education and training provision for such staff.

Young’s assertion that the recent introduction of technical certificates to such qualifications implicitly recognised that the knowledge acquired at work is insufficient on its own thereby reiterating concerns about the original qualifications. Young’s advice that conceptualising vocational knowledge requires equal attention be given to varieties of vertical knowledge (typically acquired off-the-job) and to the differentiation of horizontal discourses and knowledge structures (typically acquired on-the-job) is I consider important for pharmacy support staff educators in the ROI to consider. Wheehan’s social realist alternative model of curriculum, which argues that the disciplinary basis of academic and vocational/professional qualifications needs to be restored and made explicit is also worth considering when the much needed review of the sector takes place. Schon’s advocacy of a practicum as a setting designed for the task of learning a practice in a context that approximates a practice world, where students learn by doing, has much relevance to vocational/professional formation in pharmacy. Such a learning space would provide learners the opportunity to become adept at practice with the help of senior practitioners in a setting where mistakes would not have serious consequences for public safety. Most pharmacy educational institutions now provide ‘mock pharmacies’ which could be considered to approximate a practicum. In order to fully meet Schon’s concept of a practicum they need to occupy a central role in the professional formation curricula to ensure that learning by doing is brought into the core of their education programmes.

The next section considers the role of workplace learning in professional practice.

**4.3.2 Workplace learning**

Over the last three decades there has been much research into learning in workplaces that arises from the experience of participating in practice. Among the first researchers to significantly rethink learning theory in the late 1980s and early 1990s along these lines were Lave and Wenger (1991). Others such as Stephen Billett, 2004; 2008; 2009 and Fuller and Unwin, 2004 also recognise the importance of participatory practices in fostering learning at work and the need to appreciate that there is a distinction between the extent to which the organisational and pedagogical context affords access to diverse forms of participation and the extent to which individuals ‘elect’ to engage in those opportunities, through the exercise of individual agency. Expansive and restrictive features of workplace environments for workplace learning have been identified by Fuller and Unwin, 2004, Fuller *et al*, 2007 and by Evans *et al*, 2004. Harteis, 2003 and Harteis and Gruber, 2004 showed that the degree to which staff develop and use their skills in performing their job depended on whether the occupational environment offers appropriate conditions and incentives. Harteis and Billett, 2008 identify learning through work as a means to bring together learning for workplace and personal-professional development and Harteis *et al, 2008* recognised learning from mistakes as a particularly strategic source of workplace learning. Evans and Kirsch, 2004 suggest that that there are several overlapping and inter-linked ways in which biography is relevant to learning at work and Hodkinson and Hodkinson, 2004 stress the importance of individual learner perspectives in workplace learning. In this section of the review the work of the above researchers will be analysed to provide an insight into the developing role of workplaces as learning spaces. The implications of this research for the pharmacy workplace will be considered at the end of the section.

Lave and Wenger, 1991:29 proposed a model of situated learning where learning involves a process of engagement in a ‘community of practice’. Learning viewed as situated activity had its central defining characteristic a process that they called ‘legitimate peripheral participation’. In this model situated learning activity is transferred into ‘legitimate peripheral participation’ in communities of practice which is considered an integral and inseparable aspect of social practice. The term ‘community of practice’ is considered to involve a shared practice. It implies participation in an activity system about which participants share understandings concerning what they are doing. It involves much more than the technical knowledgeable skill involved in the shared practice. Lave and Wenger saw it as a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. The social structure of the practice, its power relations, and its conditions for legitimacy define possibilities for learning, that is, for ‘legitimate peripheral participation’. (ibid: 98)

In their model Lave and Wenger propose that learning is a process of participation in communities of practice. New practitioners start at the periphery of a community of practice. Their legitimate peripherality provides them with more than just a viewing position it crucially involves participation as a way of learning the culture of the practice. The practice of the community creates the potential “curriculum” that may be learned by the new practitioners with legitimate peripheral access. A learning curriculum unfolds in opportunities for engagement in practice. Rather than learning by replicating the performances of others or by acquiring knowledge transmitted in instruction, learning is considered to occur through centripetal participation in the learning curriculum. Viewpoints from which to understand the practice evolve through changing participation in the division of labour, changing relations to ongoing community practices, and changing social relations in the community (ibid:96). In this model learning is located in the increased access of learners to participating roles in expert performance. It is through the interactions between the new practitioners and experts that Lave and Wenger propose that new practitioners create a professional identity. New practitioner’s participation gradually increases in engagement and complexity and they shift from peripheral participation to full participation. Denying access and limiting the centripetal movement of new practitioners and other practitioners limits the learning curriculum (ibid: 123).

In *Communities of Practice* (Wenger, 1998) the discussion of the concept of communities of practice was expanded and consideration given to how it might be approached within organisational development. Instead of a focus on new practitioner-expert relationships the concept shifted to a community of practice being considered to be a group that coheres through sustained mutual engagement on an indigenous enterprise, and creates a common repertoire (ibid:125-6). Here the focus is very much on socialisation and learning with three connected elements at play in the community namely, mutual engagement, indigenous enterprise and a shared repertoire. Mention is also made for the first time of the significance of trajectories through different levels of participation within a group, and the tension of individuals belonging to numerous groups that are cooperating or are rivals, or have no dealings with each other.

In *Cultivating Communities of Practice* (Wenger *et al*, 2002) the authors suggest that communities of practice can be cultivated within organisations, despite the previous view that they should arise spontaneously. Here they consider them as groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (ibid:4). The focus is on the use of communities of practice as a managerial tool for improving an organisation’s competitiveness. To enable this to be done they revised the three characteristics of communities of practice and named them ‘domain’, ‘community’, and ‘practice’. The domaincreates the common ground, the communitycreates the social structure that facilitates learning through interactions and relationships with others and the practice is a set of shared repertoires of resources. The roles of leaders and facilitators were introduced with leaders being responsible for spreading the word about the group, recruiting members, and providing resources for group activities and facilitators being responsible for the day to day activities of the group.

In line with the idea, advocated above by Lave and Wenger, that participation in social practice is analogous to learning Stephen Billett also promotes the case for learning as participation. In *Workplace Learning in Context*, 2004:111 he suggests that through the need to engage with others, and in activities that have social genesis and because of associations between change and this engagement, the process of learning can be understood through the concept of participatory practices. When individuals engage in activities in workplaces they access knowledge that is socially sourced and situationally constructed. Seeing learning in this light, may it is suggested, broaden our understanding of learning through work. Importantly he advises that this learning is interdependent between the individual’s participation and workplace affordances. Workplace affordances relate to (i) how the opportunities to engage in work are provided (2) the kinds of tasks individuals are permitted to participate in and (3) the guidance provided.

Although participatory practices offer a fresh way of considering workplaces as learning spaces these practices are complex, contested and negotiated. Complexity arises because of the multifaceted nature of most workplaces and the resulting type of learning experiences that they can provide. These experiences are often not deliberately focused on individual learning rather they are purposely structured with precise procedures and concepts developed in order to maintain the continuity of the workplace itself. Nonetheless they can be pedagogic. Contestation can arise around many issues. As Lave and Wenger (1991) pointed out it can arise between new practitioners who are seeking to participate more fully and old timers who fear displacement. It can also arise between full-timers and part-timers; between workers and management; around worker status and work demarcation lines to name but a few. The nature of the contestation, the exercise of power relations and the negotiating strategies adopted affects how opportunities for participation are distributed and thereby shapes learning.

When discussing the understanding or standing of workplaces as legitimate learning spaces in their own right Billett (2004:118) considers that describing them as informal, non-formal or unstructured learning environments is negative, imprecise and ill-focused. Such descriptions are criticised because, as discussed above, rather than being unstructured workplace activities are often highly structured with integral pedagogical qualities focussed on continuity of the workplace through participant learning. Lave and Wenger, 1991 referred to some components of this structuring as the ‘learning curriculum’. Workplaces are therefore not entirely considered informal learning spaces and describing them as such, with its connotation of inferiority, when compared to the formalised learning spaces of educational institutions is unhelpful. Billett (2004:121) suggests the need for terms other than ‘informal’ and ‘formal’ to describe the relations between the circumstances in which individuals engage in activities and the consequences for their thinking, acting and learning. He also suggests that in order to enhance workplaces as environments for individuals to learn the provision of opportunities to engage in activities and be in receipt of support to access hard-to-learn knowledge should be brought centre stage. Recognising the interrelationship between such provision and individuals’ agencies is also considered central to the process of learning through work.

In an article on ‘Learning throughout Working Life’, Billett (2008) further explored instances of relational interdependences in learning through work. The findings were based on analyses of various types of workers’ experiences in a variety of small and medium sized enterprises. The relational interdependence between the workplace setting encountered by individuals and their personal foundations for learning was again highlighted as central to the inter-psychological processes that constitute learning through work. In this process the affordances of the workplace are conceptualised as the social contribution to learning and individual agency, subjectivity and intentionality are the personal contributions and learning lies in the relationship between the two contributions. The social suggestion is premised on cultural, social and situational factors. Individuals’ agency and intentionality is premised on their history of life experiences, their cognitive experience and how it is deployed. The relationship between the two contributions is negotiated and relational, rather than being equal or reciprocal (ibid: 2). The contributions and mediating role of individuals to learning through work must be acknowledged. It is suggested that these contributions are often absent or under-represented in contemporary conceptions such as explanations offered by activity systems, communities of practice (discussed previously) and distributed cognition which tend to privilege the immediate social suggestion (ibid:5).

In Conceptulalising Learning Experiences, Billett, 2009a emphasised the role of personal epistemologies and agency when conceptualising learning for professional practice. As a consequence an important goal for learners’ preparation and ongoing development must be to develop their capacity to be agentic, that is, be proactive and critical in their practice. Integrating practice experiences in university and practice settings is proposed as a way to develop agentic learners in higher education (Billett, 2009b).

In their research into workplace learning environments in *Workplace Learning in Context*, Fuller and Unwin (2004) recognised the importance of participation in fostering learning at work. They drew on Lave and Wenger’s (1991) situated learning theory, discussed previously, to explain the process by which new entrants to an occupation or workplace gain knowledge and skills that enable them to become old timers. However, they considered that little mention of the relevance to learning of structural constraints and inequalities and the tendency of situated learning theory to dismiss the role formal education institutions can play in employees’ learning were shortcomings in Lave and Wenger’s perspective. They developed a framework for categorising approaches to workforce development according to their expansive and restrictive features. They argue that the framework addresses the shortcomings identified in Lave and Wengers’s perspective by recognising the importance of (1) the way work is organised, jobs are designed and skills are treated, and their relevance for both opportunities and barriers to learning, and (2) the configuration of informal and formal learning, and qualification options for understanding the uneven quality of the learning environment they encountered. They also contend that an approach to workforce development characterised by the features listed as expansive will create a stronger and richer learning environment than one consisting of features associated with the restrictive end of the curriculum (Fuller and Unwin, 2004: 129). Like Billett, 2004 (discussed above) they recognise that there is a distinction between the extent to which the organisational and pedagogical context affords access to diverse forms of participation and the extent to which individuals ‘elect’ to engage in those opportunities, through the exercise of individual agency. They caution against overemphasis on either the structural character and environmental features of organisational context or on the individual. What is important in their view is facilitating the integration of personal and organisational development. This they advise can be assisted by organisations creating an ‘expansive’ learning environment and by practicing an expansive approach to learning. Their research also clarifies the relationship between work and learning in relation to the following three participatory dimensions: (1) access to multiple communities of practice, including off-the-job learning (2) access to a multidimensional approach to the acquisition of expertise through the organisation of work and job design and (3) the opportunity to pursue knowledge based vocational qualifications (Fuller and Unwin, 2004: 126).

Fuller *et al* (2007) identified a range of pedagogical and organisational factors, each locatable on what was termed the expansive-restrictive continuum. From their analysis of the differential nature of productive systems they found that what is learned in each type of system, how it is mediated and applied through the social relation of production, is highly relevant not only to gaining a better understanding of workplace learning, knowledge(s) and knowing, but also to their relationship with the organisation and distribution of work and organisational outcomes. They used this research to strengthen the analytical capacity of their expansive–restrictive framework in two particular ways namely its ability to conceptualise the significance of, and relationship between, forms of workplace learning and knowing, and forms of learning undertaken in ‘specialist educational settings’ and in terms of its ability to draw attention to the range and configuration of sources and types of knowledge in use in particular workplaces and by particular (groups of) of employees. They also argue that it is important to breakdown conceptual hierarchies that presuppose that knowledge is restricted to certain types of employee and/or parts of an organisation.

In *Workplace Learning in Context* Evans *et al* (2004) also identified expansive-restrictive workplace environments while researching tacit dimensions of knowledge and skills in the workplace. Their research showed that employees may have an input into the expansiveness or restrictiveness of their immediate workplace environment. They can facilitate it being or becoming an expansive environment by taking initiative in various projects, enquiring about opportunities for their professional development and training and learning from their colleagues. However, the researchers also suggest that such co-construction of expansive workplace environments is probably more likely to be facilitated when there is representation and channels for employee ‘voice’ than for individuals trying to act alone, and on their own behalf. The research also showed that adult learners gain tacit skills through various life experiences and supports the view that these skills often become a central part of a learning process when they are deployed and developed in new learning environments.

Progressing this idea further Evans and Kersch (2006) following analysis of data from a series of their research projects on adult learning in work environments, suggest that that there are several overlapping and inter-linked ways in which biography is relevant to learning at work. Firstly employees bring prior knowledge, understanding and skills with them which can contribute to their future work and learning. Secondly their dispositions towards work, learning and their personal lives influences the ways in which they construct and take advantage of opportunities for learning at work. Thirdly their values and dispositions involve them in personalising the work environment for themselves while contributing to the co-production and reproduction of cultures where they work. While accepting that other researchers such as Billett (2004) (who examined the way in which different workers react to the affordances for learning that the workplace offers) and Evans, 2002 (who developed the concept of bounded agency as a conceptual tool) have considered issues around peoples’ knowledge, belief and identities that are rooted in experience they consider that these responses to the significance of biography in workplace learning is only partial. They advise that in order to ensure that employees engage in purposeful learning the learning should be well situated in biographical terms, as well as in the context and culture of the workplace.

The occupational conditions of the workplace were shown to be relevant to individual employee learning in a research study by Harteis (2003). On the basis that learning organisations are considered places that concentrate on fostering and requiring individual employee competencies he set out to establish the extent to which employees from companies which perceive themselves as learning organisations experience the introduction of competence-boosting work conditions. The degree to which staff develop and use their skills in performing their job was shown to depend on whether the occupational environment offers appropriate conditions and incentives including but not limited to: assistance with problem solving from superiors and peers; project work; decision making scope and participating in continuing training; feedback sessions and interdepartmental task forces. In addition as work and occupational requirements constantly change Harteis and Gruber, 2004 also consider that the workplace and workplace experiences are central to the need for ongoing developments throughout working life. Harteis and Billett (2008) recognise that learning through work can bring together learning for workplace and personal-professional development and identify this as a central and growing field of education. Consideration of workplaces as learning environments in their own right has brought into sharp focus the theoretical and procedural considerations of the pedagogical qualities of different kinds of work. Examples include the active role of the learner (Billett, 2006b) and the complex relationships between personal interests and capacities and those of the workplace (Hodkinson, and Hodkinson 2004). Harteis *et al* (2008) stressed that learning from mistakes is a particularly strategic source of workplace learning. Contemporary work often is so complex that mistakes cannot be avoided and a workplace culture of learning from mistakes stands to maximise them as effective learning experiences.

The above research studies have implications for the pharmacy workplace. Wenger’s interacting components of community, meaning, practice and identity can be applied to pharmacy as a profession and individual pharmacy workplaces thereby identifying them as communities of practice with attendant learning potential. Gifford (2008) argues that as members of the profession of pharmacy, pharmacists have a shared understanding of the world in which they practice, which occurs due to their shared meanings and a common perspective, which then inherently gives them their professional identity. Pharmacists learn from the world around them and from each other. The learning potential of communities of practice for pharmacy was also recognised by Duncan-Hewitt and Austin (2005). They proposed that if pharmacy education is reconceptualised within a “communities of practice” framework, a collaborative educational strategy is revealed that can help the profession and its educational institutions deal successfully with many social and professional issues that have led to a foundering sense of shared identity and meaning.

Findings similar to those of Billett (2004) and Fuller and Unwin (2004) in relation to learning at and through work, discussed in detail above, were reported in a study of workplace learning in companies which included a pharmacy chain (Paloniemi, 2006). In the study learning from success and learning from mistakes, new and challenging job tasks and problem solving situations were listed by employees as possible situations for meaningful learning experiences at work. The list resembles Evans and Kirch (2004) expansive workplace environments that facilitate competence development and deployment of skills. By including both individual life histories and shared communities it was considered possible to better capture the phenomenon of learning and development in work settings. Harteis *et al* (2008) advice that mistakes are a particularly strategic source of workplace learning has long been applied in the pharmacy workplace. By following errors and reviewing them periodically the dispensary team learns from mistakes and thereby strives to prevent them from recurring.

**4.3.3** **Connecting college and workplace learning**

Numerous complexities can arise in relation to the transfer of learning between vocational/professional educational institutions and the workplace. Many researchers have examined issues around this complex process and suggest a range of methods by which transfer of learning might be encouraged. Guile and Griffiths (2001) focus on the concept of ‘context’ and the learning which occurs within and between the different contexts of education and work. They propose a model which embodies the concept of ‘connectivity’ and suggest this as a basis for a productive and useful relationship between formal and informal learning. Macaulay (2000) and Cree (2000) also consider context as one of the important elements involved in learning transfer and identify features of programmes which facilitate such transfer. Eraut (2004) stresses the importance of recognising transfer of learning as a learning process in its own right and advocates for more integrated programmes and a staff development role to improve the impact of education on the workplace. Both Eraut, (2004) and Hoskin and Anderson-Gough (2004) report on the favouring, by many aspiring professionals, of practice experience over academic courses in facilitation of their learning. Hoskin and Anderson-Gough (2004) promote use of more integrative or trans-disciplinary learning both within and between qualification focused learning and work-based learning arenas. Flowers *et al* (2010) and Karimi *et al* (2010) suggest methods to facilitate linking college and workplace learning in the pharmacy profession and Wuller and Luer (2008), Duke *et al* (2008) and Guile and Ahamed (2011) discuss ways to structure pharmacy workplacements. In this section of the review the work of the above researchers will be examined to provide an insight into transfer of learning and ways to connect college and workplace learning. The implications of this research for pharmacy support staff education in the ROI will be considered at the end of the section.

Guile and Griffiths (2001) consider that supporting students to relate their vertical development (which normally occurs through formal study in an educational context) and horizontal development (which refers to the process of change and development which occurs within an individual as s/he moves from one context (e.g, a school) to another (e.g., a workplace) constitutes a pedagogic challenge for teachers in educational institutions as well as those with responsibility for development in the workplace. They use the term connectivity to define the purpose of such a pedagogic approach and propose a connective model of work experience which involves taking greater account of the influence of the context and the organisation of work upon student learning and development, the situated nature of that learning and the scope for developing 'boundary crossing' skills. It also entails developing new curriculum frameworks which enable students to relate formal and informal, horizontal and vertical learning. The authors suggest that their 'connective model' of work experience may provide the basis for a more productive and useful relationship between formal and informal learning since it addresses how work experience can enable students to take explicit account of the learning which occurs within and between the different contexts of education and work. By acknowledging the influence of context, resources and people upon the process of learning, transfer of learning is facilitated.

Macaulay (2000) also addresses the issue of transfer of learning and maintains that the ‘idea’ of transfer attracts attention because it is necessary. Learners have to be able to transfer what they have learned in earlier situations to new situations. Within professional education and work settings, the process of transfer of learning is considered to involve the appropriate selection of knowledge to assess and deal with new situations. Elements identified in the transfer process are learner, task and context. To facilitate transfer, professional education should foster approaches that encourage deep learning and use a variety of teaching methods. By so doing they enhance learning and cognitive flexibility leading to an ability to select a suitable strategy for dealing with the task in hand. It is not considered enough to teach students knowledge of practice; students have to learn to use knowledge in practice. The integration of theory, and practice and learning and applications is important both within the institutional context of learning and within practice placements. Within educational institutions the role of the teacher/facilitator is crucial and methods suggested for use to encourage learning transfer include enquiry and action learning, PBL role playing, critical incident analysis, video simulations and vignettes. Within practice placements the role of the supervisor is crucial in enabling the students to see links between the theories they have constructed and the reality they encounter. Methods that specifically encourage the process of reflection including learning logs, journals, reflective diaries, and intentional observation are recommended.

Cree (2000) like Macaulay emphases that transfer of learning is a complex process in which the individual consciously and subconsciously makes sense of the world by relating previous experiences to a new situation. She suggests that transfer is influenced by a similar range of factors, including specific characteristics in the individual learner, the learning and transfer tasks and the learning and transfer environments. When seeking evidence for transfer of learning it is suggested that this is likely to be found in the continuous relationship between student and the practice teacher/tutor, between the student and the practice agency, and between the student and the educational institution. The use of direct observation of practice incorporating debriefing and feedback, learning logs/reflective diaries, process recordings, creation of portfolios as an ongoing record, single moment assessments including case vignettes or critical incidents and self-assessment are all proposed as ways to promote transfer of learning.

The complexity of learning transfer is also discussed by Eraut (2004). He stresses the importance of recognising that transfer of knowledge between different settings is a learning process and one which is often underestimated. He mentions at least four variables that are considered important influences in the transfer process. These are the nature of what is being transferred, differences between the contexts, disposition of the transferee, the time and effort devoted to facilitating the transfer process. In particular, he considers that transferring specific concepts from an educational setting to a workplace setting to be particularly difficult, because of the considerable differences in context, culture and modes of learning. Recognising what theories of knowledge taught in educational settings are needed in any particular workplace situation is considered to be mainly learned through participation in practice and getting feedback on actions. It is suggested by Eraut that little time is set aside to support such learning and that although professional preparation programmes include both theory and practice; few of them give serious attention to the issue of knowledge transfer. Indeed he notes that in vocational programmes there are now qualification frameworks that separately specify knowledge and competence, without giving any attention to the linkage between them or to how knowledge use may be assessed. More integrated programmes and more appropriate staffing including, the introduction of a practice development role that incorporates responsibility for both students and new staff and the facilitation of continuing learning in the workplace by experienced staff are suggested as ways to improve the impact of education on the workplace.

Another interesting finding reported by Eraut (2004) was that research into professional education, in particular, suggests that one effect of occupational socialisation is that most aspiring professionals come to value practical experience more highly than academic courses. In a somewhat similar finding, Hoskin and Anderson-Gough (2004) report on a dichotomy that they consider is, not only widely disseminated in professional practitioner fields, but also reflected in the research literature on professionalisation, wherein there is a strong tradition of seeing qualification focused learning as ritualistic, rote and virtually meaningless and work-based learning as real, relevant and meaningful. They recognise a need to think in tandem and across both arenas about modes of teaching, learning and assessment and the various interrelations between them. They judge that the new professional must be competent not just across a range of disciplinary specialisations but at the level of making connections across them.

A number of research studies focus specifically on identifying methods to link workplace and college learning in the pharmacy profession. Flowers *et al* (2010) trialed highly accessible standardised interactive Web-based multimedia training vignettes prepared by experts for use by students prior to and during their workplace pharmacy practice experiences. These were found to lead to increased knowledge of essential pharmacy competencies on the part of the students and to provide a connectedness to their pharmacy college irrespective of how dispersed the placements were from the college. Karimi *et al* (2010) created the Learning Bridge Programme to better integrate the didactic material students learned in college courses into their pharmacy practice experiences. Learning Bridge assignments required students to interact with their workplace tutors and answer questions relating to material concurrently covered in their didactic courses. Such curricular integration was found to increase their learning and promote students' interaction with their workplace tutors as well as development of active learning, self-directed learning, and critical-thinking skills. Wuller and Luer (2008) designed a series of Introductory Pharmacy Practice Experiences (IPPE) to correlate didactic coursework to practice experiences. Doing this was found to not only be of benefit to learners but also to educators by ensuring the applicability of lecture content to contemporary practice. Focusing on the workplace enables participants to learn from their daily routines encountered at work. The challenge is to help them demonstrate learning from experience within the workplace, by developing their ability to think at a higher level. Finding appropriate pharmacy settings for experiential education was identified as a challenge in this review. Turner *et al* (2007) devised a strategy to develop a broad base of Advanced Pharmacy Practice Experiences APPEs by forming partnerships with different pharmacy settings willing to provide the broad range of experiences required for current and future pharmacists.

The above research has implications for pharmacy support staff education in the ROI. By clearly demonstrating that learning transfer between education and work is complex and requires planning the research identifies the need to provide structures both within and between educational institutions and workplaces to ensure that learning transfer takes place. For college educators this requires ensuring that they are using teaching and assessment techniques that allow students to gain experience in use of different learning contexts which will facilitate transfer of learning. For host workplaces they must actively provide opportunities for students to learn by observation, discussion and participation in practice and be given the time and support to link their college and workplace learning. A formal integrative relationship needs to be established between the colleges and host workplaces to provide appropriately timed student placements and an interactive relationship needs to be established between college educators and workplace supervisors wherein joint assignments and assessments are put in place to assist students to see links between college and workplace learning. It can no longer be assumed that workplaces automatically provide stable and transparent environments in which students can easily learn and develop. This latter point is also very relevant for courses which solely provide a work-base only route. Following on from Eraut’s (2004) observation they must give attention to ensuring linkage of the knowledge and competence components of their courses.

**4.4 Summary**

This chapter has, through a literature review, analysed the work of many of the main researchers concerned with vocational/professional education, learning and work. The purpose of such analysis was to find answers to sub-question 4 of the research study by considering the role of education and training in vocational/professional formation and the place of informal workplace learning, commonly referred to as ‘participating in practice’ in professional work environments. It also addressed the key question of how best to connect college and workplace learning. Cross-country comparisons of education and training systems, along with the complex realities of workplace learning and methods by which transfer of learning between college and workplaces might be encouraged were all identified. The totality of evidence from the literature review does allow conclusions to be drawn in respect of education and training for high levels of skills formation and for how workplaces can provide opportunities for learning. This allows for reflection on how educators, employers and policy makers in the ROI are addressing these issues with regard to pharmacy support staff.

First, studies from a number of countries register a new consensus evolving among politicians, academics and others that the forces of worldwide integration and technical change were linking nations’ education and training systems to their national competitive processes. The studies advanced a consistent view that in order to develop high levels of skill formation the state, the educational system, employers and workers must all be committed to the goals of high level skill formation and systems must be in place to provide a mixture of off-the-job and on-the-job learning and to ensure the quality of this through regulatory mechanisms. A key theme running through many studies was increasing concern about current approaches to vocational/professional formation. Much of these concerns centred around competency based education and training approaches and were particularly concerned with a side-lining of theoretical knowledge in this type of approach. Strong recommendations were made that the disciplinary basis of academic and vocational/professional qualifications needs to be restored and made explicit.

Second, there is evidence from studies on workplace learning that participation is central to understanding learning at work. The studies highlight the range and types of participation available but acknowledge the role of work organisation in affording access to participatory practices that involve ‘good learning’. Fuller and Unwin (2004) demonstrate that learning environments can be characterised on a continuum between expansive and restrictive. By highlighting the contested nature of participatory practices attention has been drawn to the potential for some workers to be excluded or sidelined. Individual dispositions and biographies are identified as central to how employees engage with participatory learning practices available to them.

Third, there is evidence from the studies on transfer of learning between different settings that this is a complex and challenging process. Achieving successful transfer involves developing pedagogic and assessment strategies designed to support learners with the transfer process. The importance of understanding the influence of context, learner characteristics and tasks on the transfer process was stressed in many studies. Transferring specific concepts from an educational setting to a workplace setting was noted to be particularly difficult, because of the considerable differences in context, culture and modes of learning. Theory and practice, and learning and applications need to be integrated both within the institutional context of learning and within practice placements. A key theme running through studies on connecting college and workplace learning in a pharmacy context was the need to develop curricular integration of didactic college coursework and workplace learning experiences.

Finally, the above findings provide answers to sub-question 4 by revealing how education and training systems are playing a role in vocational/professional formation and how workplaces are emerging as important learning environments through their participatory practices. More integrated vocational programmes are required to ensure better connection between college and workplace learning. The research studies provide a broad perspective on these issues which can be used by policy makers, educators and employers in the ROI to think about how pharmacy support staff education, training, regulation and workplace learning can be improved.

The next chapter focuses on the methodology of the thesis. It begins by restating the study’s research questions and the guidance they provided for the study. This is followed by an explanation of the research approach and design adopted for the empirical study.

**Chapter 5**

**Research Questions and Methodology**

**5.1 Introduction**

This chapter addresses the methodology of the research study. It begins by restating the research questions and the direction they provided for the study. This is followed by examination of the qualitative methodological approach and the reason for its adoption as the method of choice for this study. Qualitative research interviews were chosen to find answers to sub-question 5 of the study which sought the views and opinions of key stakeholders in the pharmacy sector in order to inform the current situation. The chapter considers discourses around qualitative interview research and reflects on various epistemological approaches as they have practical implications for the skilful designing of research interviews. Issues of concern for knowledge production from research interviews, such as, potential skewing of the interview process by either the interviewer or the interviewee are noted. The rationale for the choice of semi-structured qualitative research interviews inspired by the aspects of phenomenology is elaborated.

Efforts to ensure that sample selection was representative of the pharmacy sector are discussed and included, firstly, identifying the categories of the pharmacy sector that needed investigating in accordance with the research question for the study. This sought to establish if the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI is facilitating or inhibiting the development of pharmacy support staff. Based on this criterion the categories chosen were education and training, pharmacy regulation, employers, national pharmacy support staff associations and individual support staff employees. Having decided on these the question of who to interview from each category needed to be addressed. The overriding decision here was on who would be best placed to provide information on relevant issues and the dynamics at play in the sector. This necessitated identifying key players from within each category through careful exploration and planning. In order to ensure that there was a wide but manageable amount of data collected not less than two but no more than six people from each of the above categories in the ROI were interviewed.

The approaches adopted to ensure the validity, dependability, confirmability and authenticity of the data gathered from the study interviews is outlined in this chapter along with how ethical issues, in particular the ethical issue associated with ‘insider’ research was handled. An overview of how interview data was interpreted is presented.

**5.2 Research questions**

The importance of the research questions in any study cannot be underestimated. They give direction to the study, limit the scope of the investigation, and provide a device for evaluating progress and satisfactory completion (Hatch, 2002). Good research questions are clear, specific, answerable, interconnected and substantively relevant (Punch, 1998).

This study set out the primary research question as:

Is the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI facilitating or inhibiting the development of pharmacy support staff?

Five sub-questions enabled this enquiry:

Q1. How and to what extent have policy makers and educators in the ROI provided for pharmacy support staff regulation and education within their current legislation and educational policies and practices?

Q2. How does the ROI legislation and educational practices for pharmacy support staff compare with those of GB and the USA?

Q3. In what way do the converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery impact the regulation, education and training of pharmacy support staff going forward?

Q4. What role does education and training play in vocational/professional formation and how do informal processes of learning, commonly referred to as ‘participating in practice’ lead to learning in professional work environments?

Q5. How do the views and opinions of key stakeholders in the pharmacy sector inform the current situation?

Sub-question 1 aimed to provide the context of pharmacy support staff education and training within current educational policies and practices in the ROI. It was also designed to establish how policy makers have provided for their regulation. Data analysis allowed for the creation of a comprehensive picture of the current situation.

Sub-question 2 aimed to compare the current situation in the ROI with that in GB and the USA. Comparative analysis afforded an insight into reforms that have been taking place across each jurisdiction.

Sub-question 3 aimed to develop a picture of converging trends in pharmacy that are taking place as a result of the move globally towards patient-centred service delivery. Through a broad literature review, converging trends, common problems and issues for policy were all identified. Substantial general conclusions were drawn in respect of changes to the pharmacy practice model and its effect on pharmacy support staff.

Sub-question 4 aimed to establish the role of education and training in vocational/professional formation and how informal processes of learning lead to learning in professional work environments. Through a literature review a broad perspective on these issues was developed.

Sub-question 5 seeks the opinions of key stakeholders in the sector. Interview schedules were framed and informed by the information and answers gathered to sub-questions 1 to 4. Themes identified in these answers and explored in the interviews are: titles and roles for pharmacy support staff; regulation and registration; education, training and CPD; workplace learning and finally pharmacy going forward.

**5.3 Methodology**

**Research approach and Design**

As the aim of this study was to develop an in-depth understanding of issues relating to the regulation, registration, qualification and training for non-pharmacist pharmacy staff a qualitative interpretative approach using a variety of data collection methods was chosen. Bryman (2012) describes the qualitative interpretive approach as an epistemological position where the stress is on the understanding of the social world through an examination of the interpretation of that world by its participants. Miles and Huberman (1994) consider that in the interpretivist line of approach there is an inevitable “interpretation” of meanings made both by the social actors and by the researcher. Cohen *et al* (2011) consider that naturalistic, qualitative, interpretive approaches of various hues possess, among others, the following particular distinguishing features: situations are fluid and changing rather than fixed and static; events and behaviours evolve over time and are richly affected by context-they are situated activities; there are multiple interpretations of, and perspectives on single events and situations; thick descriptions representing the complexity of situations are preferable to simplistic ones. Qualitative research tends to be concerned with words and in this study the words are based on documents and interviews. Wolcott (1992) describes these processes as examining and asking. Miles and Huberman (1994) suggest that one of the strengths of qualitative data is their richness and holism, with strong potential for revealing complexity and that such data provide “thick descriptions” that are vivid, nested in a real context, and have a ring of truth that has strong impact on the reader. However they add the caveat that the strengths of qualitative data rest very centrally on the competence with which their analysis is carried out.

The above descriptions of the qualitative interpretive approach with their stress on practical interest, understanding through examination of the interpretation of a situation by its participants, thick descriptions and rooting in context made it a justifiable approach for this research study. Following documentary analysis (Chapter 2) and literature reviews (Chapters 3 and 4) the study focused on interviews with key stakeholders in the pharmacy sector. Interviews were chosen as I wanted to achieve a comprehensive understanding of the experiences and views of key stakeholders reported in their own words and using their own frames of reference. I also wanted to achieve a textured analysis of the dynamics at play in the sector.

Key texts and research papers on qualitative interview research were consulted to inform the study.

Qualitative research interviews

Kvale and Brinkmann (2009, p.28) outline twelve aspects of qualitative research interviews from a phenomenological perspective. A number of these were considered useful to inform this study particularly the following: 1.) That the topics of qualitative interviews are the everyday lived world of the interviewee and his or her relation to it. 2.) That they seek qualitative knowledge expressed in normal language. 3.) That the interview attempts to obtain open nuanced descriptions of different aspects of the subjects’ life world. 4.) That the interviewer registers and interprets the meanings of what is said in the interview as well as how it is said.

5.) The interviewer should be knowledgeable about the interview topic and interviews focused on particular themes, and be neither strictly structured with standardised questions, nor entirely “nondirective”. Patton (1990) describes phenomenology as both a philosophy and a methodology. It focuses on exploring a phenomenon in depth and may include the participants’ “lived experience” (Cooper and Endacot, 2007). While once used mainly in philosophy studies it has extended beyond these to other fields such as education, sociology and it has challenged taken-for-granted assumptions and prompted new insights into what it means to live, work and learn in our world (Dall’Alba, 2009). Phenomenological research methods recognise the value of qualitative designs and methodologies, search for essences of experience and regard the data of experience as evidence for scientific investigations (Moustakas, 1994). It allows for focused interviews on particular themes.

There is potential in this type of interview for skewing of the process towards the interviewer. He/She chooses the interview topic, poses the questions, probes and prompts and decides when to terminate the interview. The interviewer interprets and reports the outcomes and could interpose their own opinions and research interests in a manipulative way. However, this is not just a one sided effect. The interviewee can also skew the process by withholding information, stray off the subject or give misinformation. That such scenarios can arise in qualitative research interviews raises concerns for the production of interview knowledge.

Knowledge production from research interviews

Different philosophies highlight different aspects of knowledge relevant to the qualitative interview. Hermeneutics is one such philosophy. It had its origins in the late 17th century and was originally an approach used for the interpretation of biblical, and law texts. However the context of text has now been extended to include discourse and even action (Kvale and Brinkmann, 2009). Many researchers believe that hermeneutics has much to offer qualitative research. Kinsella (2006) considers that given the emphasis in qualitative research is on understanding and interpretation and that the purpose of a hermeneutic approach is also to obtain understanding and interpretation of meaning the connection between them is clear. Freeman (2008) proposes that hermeneutics has influenced qualitative inquiry in three ways: ‘how both participants’ experiences and the interpretive process are mediated by language; ‘the conceptualisation of the research process as holistic in nature; and the re-conceptualisation of research as cross-cultural dialogue. Kvale (1996) considers that the hermeneutical circle and cannons of interpretation have much to offer qualitative research and advises that as the research interview is a conversation about human life world, with oral discourse transformed into texts to be interpreted that hermeneutics is doubly relevant to interview research. Firstly it elucidates the dialogue producing the interview texts to be interpreted and then it clarifies the subject process of interpreting the interview texts produced which may again be conceived as a dialogue or a conversation with the text. The interpretation of meaning is characterised by a hermeneutical circle where understanding of texts takes place through a process in which the meaning of the separate parts is determined by the global meaning of the text, as it is anticipated. The influence of the hermeneutic circle is to be found in an intuitive hermeneutic approach which entails cycles of enquiry including the researchers’ focus on the phenomenon of interest, reflection on his or her “pre-understandings” of the topic, data collection and presentation, and an iterative process in which the researcher considers emergent findings in light of pre-understanding, and contextualises findings within the relevant literature (Wertz *et al*, 2011: 250-6).

**Designing the interview studies**

Attention next turned to designing the interview studies. It was necessary to select, from a range of interview styles the one most appropriate to meet the aims of this study. Research interviews are commonly distinguished as structured, semi-structured or unstructured (Smith, 2005). Structured interviews generally follow a pattern where the interviewer reads out a list of questions and alternative responses to the person being interviewed. It may also include instructions to the interviewer to clarify responses to ensure that data collected is all-inclusive and intelligible. At the other extreme unstructured interviews allow for a non-directive style whereby the interviewee, for the most part, determines the course of the interview with the interviewer simply providing the framework. Between these two extremes there is the semi-structured style of interviewing in which the interviewer sets up the overall structure of the interview by deciding in advance on the topics and main questions to be asked but allows for a more detailed exploration of issues during the interview. The focus of this study was to investigate an issue in pharmacy education practice. Because of this I decided to opt for semi-structured qualitative research interviews.

**Conduct of the interviews**

The semi-structured format adopted allowed me to structure the interview in advance by setting up an interview schedule which consisted, not only, of guiding questions to lead through the chosen topics, but also probes to explore answers in depth and prompts to ensure broad coverage (which were used to direct towards issues not already mentioned). Some questions were of the closed type but others were open questions which allowed the interviewee a fair degree of latitude when answering them. Consideration was given to the sequencing of questions and the importance of ensuring that this did not lead to a situation whereby discussion of one question influenced later answers. I avoided leading the interviewees towards answers they may think I wished to hear. The interview questions were the mechanism to gather information to answer the research questions. Interviews were taped to allow for playing and replaying thereby permitting analysis and interpretation of the discourses that took place during the interviews.

**The** **research interviews**

Sample selection

The purpose of the research interviews was to provide rich meaningful data from a cross section of individuals who are based in a variety of key roles throughout the pharmacy sector. Selection of appropriate interviewees in order to gain such data was of critical importance. Sample selection was on a purposeful and strategic basis in order to select interviewees who it was expected would provide the maximum amount of relevant information. When considering the appropriate interviewees to speak with a table was drafted. The table identified key role categories (e.g. regulators…) involved and noted some key individuals to invite to participate. The table was reworked several times after reflection, to ensure overall coverage of the pharmacy sector and that the interviewees could, in principle, be in a position to offer the range of perspectives and detailed insights which were sought.

Representatives from pharmacy regulation, education and training, employers, national pharmacy support staff associations and individual pharmacy support staff employees were all interviewed for this study. The reason for each selection is detailed below.

**Interviews with persons from the regulatory sector:**

● The PSI to provide views from the statutory regulatory sector of pharmacy in the ROI on regulation and education policies and practices for pharmacy support staff.

● The Department of Health to provide views from the government department responsible for implementing government policy on health in the ROI on regulation and education policies and practices for pharmacy support staff.

**Interviews with educators**:

A selection of educators involved in the education and training of pharmacy support staff were interviewed. These included college based educators and those involved with distance learning programmes.

**Interviews with the following key stakeholders:**

Stakeholders such as employers, national pharmacy support staff associations and individual support staff employees were interviewed to provide views and experiences on regulation and policies and practices for pharmacy support staff education and training.

**Interview with a pharmacy regulator from outside the ROI:**

This interview was expected to provide an international perspective for the study.

Not less than two but no more than six people from each of the above categories in the ROI were interviewed to ensure there was a wide but manageable amount of data collected. Table 5.1 indicates the number of interviewees assigned to each category.

**Table 5.1: Number of interviewees’ assigned to each category**

|  |  |  |
| --- | --- | --- |
| Sub-Group Category | Number of Interviewees Assigned to each category | Identification Tags |
| Regulatory Sector | 3 | REG1, REG2, REG3 |
| Pharmacy Support Staff Employees | 5 | PSS1, PSS2, PSS3, PSS4, PSS5 |
| National Associations for Pharmacy Support Staff | 4 | NA1, NA2, NA3, NA4 |
| Education and Training Sector | 6 | EDU1, EDU2, EDU3, EDU4, EDU5, EDU6 |
| Employer Sector | 2 | EMP1, EMP2 |
| International Perspective | 1 | I |

Due to the interrelating nature of the sector some overlap does arise within the categories specified. For example, employers may also be educators, and representatives from pharmacy support staff associations may also be pharmacy support staff employees. When this situation arose this was accounted for in the interview questions posed to them.

**Criteria for evaluating the research findings**

Trustworthiness and Authenticity

Lincoln and Guba (1985) and Guba and Lincoln (1994) propose two primary criteria for assessing a qualitative study: trustworthiness and authenticity. Trustworthiness is made up of four criteria namely credibility, transferability, dependability and confirmability.

Achieving Credibility

Trust in the findings presented in this thesis will have been enhanced through triangulation. Triangulation has been described as ‘*working to substantiate an interpretation or to clarify its different meanings*’ (Stake, 1995). Mays and Pope (1995) described it as “an approach to data collection in which evidence is deliberately sought from a wide range of different, independent sources and often by different means”. Official reports, the Pharmacy Act 2007, Statutory Instruments and International documents were reviewed for this thesis. Analysis of these documents provided this thesis with details of the overall framework and practices of interventions and interpretations. Examination of such documents could not provide a complete picture of the situation taking place on the ground, particularly given the rapidly changing landscape in pharmacy. As a result any account based solely on documentary evidence would potentially be incomplete. To obtain a more complete picture, the views of key stakeholders in a variety of pharmacy sectors were sought. In addition to enabling data cumulating to produce a more complete picture of work on the ground, this strategy was adopted to add depth, rigor and richness to the research. The experiences of interviewees reflect the considered opinions of practitioners from both the front line in policy as well as those at the service delivery level. Casting the net widely to include all sectors that have a role to play allowed for triangulation of findings and thereby addressed issues of credibility which Bryman (2012) considers as parallel to internal validity.

Another issue that needs to be considered around achieving validity in interview research is what Argyris and Schon (1978) refer to as interviewees espoused theories versus their theories-in-use. Espoused theories are those that an individual claims to follow. Theories-in-use are those that can be inferred from actions. Argyris and Schon posit that people have mental maps about their actions and these mental maps guide actions rather than the theories they explicitly espouse. The problem for interviewing is that interviewees will often offer the interviewer their ‘espoused theories’ about practice or policy (i.e. what they genuinely believe to be ideas and principles that underpin practice or policy) but observation or other data reveal, in reality, their ‘theories-in-use’ (i.e. what ideas and principles can be seen to be evident in practice). While in interviews one may be more or less confined to the interviewees’ espoused theories I tried to ensure that I would learn about their theories-in-use (or try to bring them to the surface) by asking about specific existing situations rather than about too many general principles.

Transferability, Dependability & Confirmability

Rich accounts of the details of the background and the mores at play in relation to support staff in the pharmacy sector are provided in this study. These provide a narrative account of the opinions of key stakeholders around the professionalisation of technical staff. This situation is not unique to pharmacy support personnel and would have relevance to other settings. Lincoln and Guba (1985) argue that a thick description provides others with what they refer to as a database for making judgements about the possible transferability of findings to other milieu. Transferability parallels external validity (Bryman, 2012). In this study records were kept of all phases of the research process – problem formulation, literature survey tables, selection of research participants, interview recordings and data analysis – in an accessible manner to provide an audit trail and address the issue of dependability. Lincoln and Guba (1985) and Anfara *et al* (2002) construed the notion of reliability as dependability and to establish the merit of research in terms of this the researcher should adopt an ‘auditing approach’.

I avoided leading the interviewees towards answers that they may think I wished to hear and did not allow personal values to influence the conduct of the interviews. By doing so I attempted to ensure confirmability in this research. Bryman (2012) parallels confirmability with objectivity.

Authenticity

Lincoln and Guba (1985) and Guba and Lincoln (1994) also suggest the criteria of authenticity for evaluating qualitative research. They categorise these criteria as fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. As this study interviewed representatives from across a broad spectrum of the pharmacy sector it fairly represents different viewpoints among members of the sector thereby meeting the criteria of fairness. By presenting the views of various actors in the sector the research should help members to appreciate better the perspectives of other members of the sector and allow them to arrive at a better understanding of their social milleu thereby meeting respectively the criteria of educative and ontological authenticity. The study attempted to tease out a number of thorny issues relating to regulation, education and training of support staff in the pharmacy sector and by so doing it is hoped that it will act as an impetus and empowerment for further action thereby meeting the criteria of catalytic authenticity and tactical authenticity respectively.

**Ethical issues**

The centrality of ethical considerations needs to ‘come into play before, during, and after research’ (Sin, 2005). In compliance with this guiding philosophy ethical issues were not only addressed at the start of this research study but borne in mind throughout the entire research thesis. Firstly it was necessary to identify where I positioned myself relative to the studies participants. It has been suggested that in qualitative research positionality is inseparable from the research findings (Choi, 2006). Bourdieu (1999) suggests that from the moment a research question is conceived and articulated; positionality is bound up within it and remains so throughout the research process. Corbin Dwyer and Buckle (2009) consider that the issue of researcher membership in the group or area being studied is relevant to all approaches of qualitative methodology as the researcher plays such a direct and intimate role in both data collection and analysis. Innes (2009) describes insider-researchers as those that conduct research about home communities, such as one’s own profession, workplace, society or culture. Jenkins (2000) defines an ‘insider’ as a member of an ‘in-group’ with access to its past and present, who shares experiences with the research participants. As I was conducting research about my own profession the issue of insider research arose and needed to be addressed. My position in the research can be clearly recognised as having an overall commonality with my interviewees through a shared involvement in pharmacy. There were other commonalities which I shared with some of the interviewees such as educational experiences and work roles and responsibilities. DeLyser (2001) claims that insider researchers may face difficulties during the research process because of over-familiarity with the research context and participants. While I shared an overall involvement in pharmacy with the interviewees there was no over-familiarity with any participant or their specific role. Having a sound knowledge of the subject matter was I believe an advantage in allowing me to access in-depth information on issues of interest to the research project from my interviewees. In order to ensure that all participants were aware of my dual roles in the sector it was made known to all participants prior to the interviews that I am both a practicing supervising community pharmacist and an Institute of Technology part-time lecturer on a 3rd level higher certificate pharmacy technician course. Murray and Lawrence, (2000) advise that careful attention be given, especially when gathering data as an insider to questions about insider bias and validity. In my research this was done by paying meticulous attention to the interviewees’ views and opinions, triangulation in the methods of gathering data (discussed above) and an awareness of the issues represented in the study.

Babbie (2009) notes that sensitivity to issues should improve the researcher’s tact in delicate areas of research. This study involved interviewing representatives from the Department of Health, the PSI, the IPU, community and hospital pharmacy, employers, educators and national associations of pharmacy support staff. I was aware of the sensitivity of many issues in the complex set of relationships, both within and between the various stakeholders interviewed. In addition issues of commercial sensitivity, professional hierarchies, competition among educators and educational institutions, regulatory responsibilities, government policies and public safety all required addressing. This was done in so far as possible by using understanding, tact and discretion. Being a practitioner and educator in the field it was anticipated that some of the interviewees would be known to me. This in itself need not pose a difficulty. James and Busher (2006) suggest that the existence of a pre-existing professional relationship with participants make it ‘less necessary to build a scaffold for developing trust, needed if participants are unknown to researchers’. Bourdieu (1999) stated in a series of accounts presented in *Weight of the World:*

*We left investigators free to choose their respondents from among or around people they knew or people to whom they could be introduced-by people they knew. For social proximity and familiarity provide two of the conditions of ‘nonviolent’ communication* *p.907.*

Notwithstanding these positives for interviewing known participants it is important to recognise that, even in these situations, power asymmetries can exist between the researcher and the interviewees and it is important to consider this and its possible effects on the potential of the interview to lead to meaningful knowledge. Bourdieu (1999) puts the responsibility on the interviewer to control the effects that power asymmetry can exert upon the situation. For most of my research interviews the subject of power asymmetry did not arise as I interviewed only adult professionals.

Ethical clearance for the study was granted by the University of Sheffield. I also gave consideration to any ethical issues that could arise during the course of an interview study such as voluntarism and vulnerability particularly in relation to interviewing students and patients. However, as this study did not involve interviewing either students or patients or anybody under 18 years of age and the subject matter did not pose any issues of a personally sensitive nature none such issues arose.

Access to representatives from the regulatory bodies and their informed consent was straightforward. Access to other interviewees was also uncomplicated with each interviewee when approached readily giving their consent. In order to ensure informed consent was obtained prior to the interviews, information about the study was provided in an information sheet to interviewees along with a formal request for interview. This information sheet outlined what the thesis was about, why they were being asked to take part, what their participation would mean for the researcher, what topics would be covered in the interviews and where they could get further information about the study if they required it. The information sheet drew attention to the fact that the research was being conducted for a dissertation for a Doctorate in Education (EdD) at the University of Sheffield. Written agreement for the interviews was obtained as was permission to record the interviews. Confidentiality was guaranteed and at no time is the identity of the interviewees disclosed. Quotations from interviewees are simply attributed to the particular pharmacy sector they come from. Participants were informed that they could withdraw from the research at any time should they wish. They were also offered a copy of the interview recording and a summary of the discussion on request. The BERA guidelines were used to inform the ethical consideration of this thesis.

The interviews were conducted in a variety of settings. Some were the relevant workplaces of the interviewees and others mutually convenient situations. Once the proposed schedule for the interviews was completed an experienced colleague was asked to look at it and provide a detailed critique on the wording used and the questions asked. Criticisms were taken on board and changes made. The schedule was tested by conducting a pilot interview to ensure the questions worked and to find out how long the interview as planned would take.

**Interpretation of data**

Interpretation of data from the interviews was based on a thematic descriptive approach. The key stages in the analysis were: (i) listening to the interview recordings and making preliminary observations to get a feel for the data; (ii) a more detailed listening and re-listening and exploration of the key themes from the interviews which included devotedly extracting from the recordings the interviewees’ views and opinions on regulation and registration, titles, developing roles and pharmacy going forward, as well as experiences and views on education, training, CPD and informal workplace learning for pharmacy support staff; (iii) from these descriptions I obtained insights and awareness of interviewees’ lived experiences, their understandings and positions on issues and teased out any thorny matters that arose in relation to regulation and registration and identified any contradictions and ambiguities that arose in the complex set of relationships both within and between the various stakeholders interviewed. Patterns of agreement and disagreement across themes were identified; (iv) all of this information was used to draw out meaningful conclusions from the data to provide a comprehensive account of the situation on the ground in relation to pharmacy support staff. Chapter 6 presents the views and opinions of the interviewees and Chapter 7 explains in detail how data was interpreted and evaluated.

**5.4 Summary**

This chapter delineated the methodology used in the study. It considered discourses around a number of philosophical approaches to qualitative research. It explained the choice of a qualitative interview research approach in order to answer the overarching research question and the research sub-questions. The choice of a semi-structured interview strategy allowed for questions to be prepared in advance of the interviews but also allowed interviewees the freedom to express their views and opinions in their own way and for the follow up of specific answers given in the interview. Interviewees were selected from across the pharmacy sector in order to ensure overall coverage of the sector. Strategies for ensuring trustworthiness and authenticity of the results included but were not limited to triangulation in data collection, efforts to ensure that the theories in-use of the interviewees were given in the interviews, an auditing approach in all components of the study and sample selection to represent different viewpoints. Ethical considerations in relation to participants and my positionality as an insider researcher were addressed through making known to all participants my dual roles in the sector, by methodically recording the opinions and views of the interviewees and by treating issues of a sensitive nature with tact and understanding. Stages used in data analysis were outlined briefly and are discussed further in Chapter 7. The next chapter presents the views and opinions of the interviewees based on exploration of key themes from the interviews.

**Chapter 6**

**Results: Data Presentation and Analysis**

**6.1 Introduction**

Following an examination of the documentary evidence, including comprehensive literature reviews, the study moved to conducting in-depth interviews with key stakeholders in the pharmacy sector. The results presented in this chapter discuss key themes from the interviews. These include views on regulation and registration, titles, developing roles and pharmacy going forward, as well as experiences and views on education, training, CPD and informal workplace learning for pharmacy support staff. The chapter looks at the current situation on the ground, the satisfaction of the players with the status quo and the issues arising in relation to the promotion of change in the ROI. As interviewees were assured of anonymity of their responses, quotations from these interviews are attributed simply to the regulatory sector, the education/training sector, employers, voluntary pharmacy support staff associations and individual pharmacy support staff employees.

**6.2 Data presentation and analysis**

**Views on regulation and registration**

The subject of regulation of pharmacy support staff, in particular pharmacy technicians, was raised in most of the interviews and the discussions indicate that the situation is complex with many forces at play.

**Voluntary staff associations of pharmacy technicians**

There was strong agreement among interviewees from the voluntary staff associations that technician regulation and registration is necessary and very much linked to their recognition with one interviewee suggesting that:

We [*technicians] are not going to be recognised for the amount of jobs we are undertaking until registration does come in. (NA3)*

Another interviewee linked regulation and registration to the recognition and development of technicians and to patient trust and patient safety:

*Patients must know the technicians role in order to trust us… we are going to*

*have to be working towards a standard where we are going to have to be*

*regulated… these standards must be reached and maintained and*

*consideration must then be given to the question of entry into the profession*

*… accountability and responsibility must be accepted but then it will also*

*allow for a more structured approach for us to develop our careers and to*

*provide a structured approach to education so it will have those benefits.*

*We would always put the patients at the centre of what we do but that is the*

*focus of why we would go down the road of regulation and registration*

*because we would be doing that for the public and they have a right to that. (NA1)*

When the interviewees’ views on the level of support for technician regulation and registration among the entire cohort of pharmacy technicians in the ROI was sought mixed responses were given. One commented:

*… like anywhere you have some people who want to come into work, go home and go sure I am being paid the same … but generally I do feel many want it and are saying …I have been doing this for years and I think we should have recognition. (NA1)*

Among others there was a sense that not many technicians in the wider pharmacy sector know about technician regulation and registration with comments such as the following being made:

*From the recent conference there is very little knowledge out there about regulation and registration in the community. Techs are feeling fed up and feeling undervalued and underutilised because they could be doing so much more in the dispensary. I think that until there is more publicity about it [regulation and registration] I feel that an awful lot of technicians do not know and won’t know about it because I did not know anything about registration until last year and nobody in my pharmacy knew anything about it either. (NA3)*

In addition to there being a lack of knowledge about regulation and registration among technicians the interviewee considered that employers are cautious about it. It was mentioned by the interviewee that when it was explained to a pharmacy manager that when regulation and registration for technicians comes in they would not be able to have X working in the dispensary if they are not trained and registered the manager said:

*That is crap and I do not want to know about it. (NA3)*

The interviewee noted that*:*

*They are the people we need to convince that this [regulation and registration] is better for the business and for the patient. Yes it is going to ruffle an awful lot of feathers. (NA3)*

When discussing ways to bring about regulation and registration interviewees spoke of the pharmacy technician associations’ current campaign to promote registration and regulation and efforts being made to bring this forward. One advised that:

*It is still being put out for debate and discussion… all I can do is keep putting those arguments out there. We have been bringing it up at our annual conferences for the past number of years. We have had top speakers over from the UK to comment on their experiences so I want the discussion, I want people to disagree or to debate it and to give them an awareness of what it is... (NA1)*

The interviewees discussed the Associations’ approaches to the PSI in relation to technician regulation and registration with one interviewee stating:

*… We are working through it with the PSI at the moment and the first part is to do the evaluation study of what is currently out there. (NA1)*

Another interviewee stated:

*… at the meeting [with the PSI] they said that they are very aware of registration for technicians, they are pro registration for technicians. … They [PSI] are happy for us to work with them. I said this would be going into the papers-‘are you happy for us to say that you are working with us?’ and they said ‘yes’. So I think 2012/13 will see us with a lot more meetings… (NA3)*

In relation to the way that regulation and registration could/should be introduced in the ROI it appeared that there was as yet no clear definitive view on how this should be approached.

One interviewee when discussing the possible introduction of a grand parenting arrangement similar to that introduced in GB expressed their view as follows:

*The association hasn’t formally discussed this… Personally I favour it [grand parenting] … the other guys on the committee all favoured it as well. I think it is very important that you cannot just turn around and say you all need to be at this standard, if you are not at this standard then forget it. (NA3)*

However there was some confusion as to how grand parenting would work and whether or not there was a need for bridging. An interviewee from the education sector spoke of matters that are arising in GB following their procedure of using a grand parenting arrangement for in-situ pharmacy technicians at the time of the introduction of regulation and registration:

*GB are now running into problems when the pharmacist is absent for two hours (under the responsible pharmacist regulation) as to what techs could do because it is being said that even though techs had been grand parented and registered that maybe their standard was not high enough so then maybe they should have bridged them.(EDU1)*

The following comment was made by an interviewee from a technician association:

*Maybe a combination of both [grand parenting and bridging] could be used. I think a bridging course is necessary for people who were in college say 10-15 years ago, people who did the Trinity course which has been looked at now and is the same qualification as the IPU course… So I think a bridging course could be very important but also grand parenting will be good or else you are going to have huge rejection of the process. There is a lot to learn from what GB has done maybe a combination of both should be used and say right ok we can grandparent from a level and if the bridge is a six week course then that’s life and we [techs] just have to do it because we need to set the standard. Bridging then with a small degree of grand parenting to prevent the revolt.* *(NA3)*

When the evaluation study of what is currently out there is completed another technician association interviewee advised:

*We are going to step it up to look at where we would like to see ourselves to be and to try to get the colleges to bridge that for us… they [the colleges] are working closely with us. (NA1)*

The issue of support from pharmacists was raised by a technician association interviewee who considered that:

*Pharmacists, some of them are afraid of us because of what they have heard from the UK, because they feel that the technicians are taking over their jobs which is never going to happen. We are going to have to be the technical support for them especially if their roles are changing all the time with the morning after pill, vaccinations etc so we are not a threat to them…(NA3)*

**Pharmacy support staff employees**

From interviews with staff currently working as technicians their interest in regulation and registration seemed to be linked to factors such as how long they were qualified and whether or not registration would bring a pay increase. A technician who qualified 15 years previously said:

*It is not something which would interest me. My job would not change and I think it would just be another hoop to jump through. I would consider it a waste of time, the younger ones might want it though. (PSS1)*

A more recently qualified technician had no knowledge of the subject and commented:

*Before now it is not something that anyone has ever brought up. I mean I am only qualified a year but at the live training days no one was talking about anything like that. It sounds like a good idea though especially if it means only us can call ourselves pharmacy technicians and we could get a pay rise that would be good. (PSS2)*

Other dispensary support staff employees interviewed had little or no knowledge or understanding on the matter of regulation. One stated:

*No, I do not know anything about that. (PSS3)*

Another stated:

*Sure that will not affect me, isn’t it only for pharmacists. (PSS4)*

**The regulatory sector**

On the question of who in the pharmacy needs to be regulated an interviewee from the regulatory sector expressed the view that:

*Obviously the pharmacists must be regulated and that has been the case for well over one hundred years…it is a really good question …we do have other people in the pharmacies who are providing advice to and care for patients and I suppose until now we have always relied on the fact that they would be adequately supervised by the pharmacist present and I suppose that is something that we will have to look at going forward. (REG2)*

When asked if the move to development of pharmacy services would necessitate a look at people who would be in-filling in the dispensary for some of the pharmacist’s role, but obviously not the clinical role, in relation to their regulation and following on from that their education and training standards the interviewee said:

*An awful lot of it hinges on what pharmacists should be doing and how they can be used to best effect both in Ireland and in other countries… people who are providing dispensing services need oversight, and I think they probably do need a level of regulation even if they are still doing that under the ultimate supervision of the pharmacist. You know the pharmacist cannot be standing there looking over their shoulder every moment of the day particularly in a hospital pharmacy. Pharmacy technicians have quite an extensive scope of practice and I suppose a level of regulatory oversight is needed. (REG2)*

The influence of GB and Canada on the issue of regulation and registration in the ROI was referred to by several interviewees:

*I think they [the technicians] are very keen to make progress definitely in that domain [on regulation and registration] and I suppose they are looking at their colleagues across the water in GB. (REG1)*

and

*I am very aware that the UK and other countries have moved to regulate pharmacy technicians and that is very understandable and …the reason that we haven’t done it here probably is not because there is any view that there shouldn’t be regulation I suppose just the case hasn’t been made for it yet. (REG2)*

Interestingly when asked if lack of regulation of other staff in the pharmacy in the ROI could be considered an Achilles heel for the developing role of pharmacists and pharmacy services going forward an interviewee from the sector commented:

*It is connected, I would not say that would be the key reason or the key thing that might hold pharmacy back or the expansion of pharmacy services back but it is definitely something that needs to be looked at, particularly in the hospital where the number of pharmacists is very limited…you can see that in how hospital pharmacy has developed and has had to work around resources that are available so it is definitely a concern but it is one of a number of concerns to be honest. (REG2)*

Another interviewee believed that the issue of how committed the entire body of pharmacy technicians is to becoming a regulated profession was a matter for the pharmacy technicians themselves to consider as:

*… regulation brings benefits but it also brings great responsibilities and accountabilities in terms of CPD and fitness to practice and paying a registration fee and all that goes with it. So that is a work in progress on their [pharmacy technicians] side as well. (REG1)*

In answer to the question of who ultimately in the ROI sets policy, establishes standards and requires compliance for pharmacy support staff an interviewee explained that the Oireachtas sets policy e.g. The Pharmacy Act 2007. The Minister of Health implements government policy. The Department of Health assists the Minister and the PSI, the statutory body for Pharmacy, has a responsibility to provide the Minister with advice and information.

The relationship between the PSI and the Minister of Health was further delineated as follows:

*The PSI have a responsibility to provide the Minister with advice and information so the PSI has a role in saying to the Minister…‘Minister this regulatory structure is not working’ or ‘Minister having looked at issues we feel that this is an area that needs to be regulated etc’, so it is their responsibility, they can’t sit there and expect the Minister to know everything, that is part of their job. And in the pharmacy act [2007] it says that their job is to improve the profession of pharmacy in the interest of patients, it is also to provide information to the Minister if the Minister asks or to advise the Minister if they feel that a regulatory system or something is needed. (REG2)*

That the national association of hospital pharmacy technicians consider the PSI to be the body that should be responsible for their regulation was noted by an interviewee who spoke of their approaches to the PSI. It was explained that the NAHPT came back to the PSI in 2010 following up on an initial approach circa 2004/2005, and again wanted to explore the possibilities in the future of pharmacy technicians being a regulated profession. The interviewee stated:

*The executive of the Association indicated that they were very keen to progress the issue. The Council [PSI] considered this … and they agreed that what they would look at in the 1st instance is commissioning a review of all existing pharmacy technician education and training programmes because in order to at any point in the future think about regulating the profession it is necessary to start with looking at the education level of those using the title of pharmacy technician. (REG1)*

However it was also pointed out in the interviews that difficulties may arise in relation to the role of the PSI and pharmacy support staff. At present the situation is that the PSI has no statutory role in relation to the registration of non-pharmacist pharmacy staff other than their historically derived obligation to regulate a particular category of support staff namely, Pharmaceutical Assistants, who qualified through a specified route. An interviewee commented that:

*So when the Pharmacy Act of 2007 came into being there was no statutory provision in that for the PSI to have any hand, shape or form in any of the standards setting to do with the education and training of pharmacy technician. (REG1)*

Another interviewee also mentioned the lack of reference in the Pharmacy Act 2007 to pharmacy technicians stating that:

*When the Pharmacy Act went through in 2007 obviously the decision was made at the time not to consider pharmacy technician registration that is not to say that it could not be considered again. (REG2)*

That legislative change would be necessary if the status quo was to change and that this would be difficult to bring about was raised by a number of the interviewees.

They commented that:

*…because there would have to be something in the primary legislation and it’s a much bigger deal to get primary legislation amended than amending a statutory instrument.(REG1)*

Another interviewee considered that although the PSI has no statutory obligations in relation to technicians, changes could be brought about through changes in the Pharmacy Act. It was suggested that:

*They [the PSI] don’t at the moment [have a statutory obligation] … there is amendments to go in under the educational requirements, powers of the PSI … there is a big list… that we are trying to get in as an amendment to the Pharmacy Act and it will include …the pharmacy technician definition, and definitions around even pharmaceutical assistant as this is not properly defined. So there is a lot of work from that perspective we have to get the title legally registered as well … (REG3)*

The issue of the current heavy workload of the PSI was also raised in the interviews and that because of this it was considered unlikely that much developments will occur in the near future in relation to pharmacy technician regulation. The following comments were made:

*The PSI is developing a core competency framework for pharmacists at the moment… There would be quite a way from looking at competencies for pharmacy technicians. (REG1)*

*The PSI have started to address CPD for pharmacists and that’s at an initial stage because that’s an activity that the Institute of Pharmacy will be focusing on so I think the Institute of Pharmacy can also in time have a greater input into providing programmes for the pharmacy team.(REG1)*

…*The PSI at the moment - they have spent the last five years with the pharmacy act getting it implemented just for pharmacists alone and they just have so many resources… (REG3)*

On the matter of what arrangement for technician registration and regulation might be introduced in the ROI the interviewee suggested:

*You can’t argue with the registration issue … but considering the way the Pharmacy Act was implemented around the MPharm and the PRE I could see it going a similar structure for techs - that we will examine them [pharmacy technicians]. (REG3)*

A former member of the pharmacy regulatory sector of a Canadian Provence that had recently introduced regulation and registration for pharmacy technicians explained that the process of introducing it was protracted. The process began in 1998 when the Council agreed that creating this class of member with the appropriate training could enable registered technicians to take responsibility for certain dispensing activities within the pharmacy and allow pharmacists to expand their services and scope of practice to improve patient care. The process came to fruition in December 2010. A significant issue raised by the interviewee on the decision making process was that:

*As requirements for registration were being put in place the regulators did not believe that the type of technician who could take on this new and accountable role actually existed. This raised the issue of how to deal with those who were working as technicians and who would wish to become registered. Calls for a grand parenting clause were made. This was rejected as it was considered that none of the existing technicians, irrespective of their practice experience or education, were trained to do what was now required of them. The matter of existing staff was dealt with through a bridging education programme. (I)*

Entry to bridging programmes was explained as follows*:*

*...To go into bridging if you were an existing pharmacy technician you have to have worked in a pharmacy in a technician capacity or assistant capacity for a minimum of two years, have a fluency requirement and I think some letters of recommendations from people you have worked with.(I)*

The interviewee explained that because of this situation two streams were introduced for those wishing to be registered as pharmacy technicians in the province:

*New entrants take a 3 year accredited college course. Graduates from both routes then follow the same path undertaking structured practical training, the national licensing examination incorporating an OSCE and do jurisprudence. Following successful completion of these they can apply for registration. (I)*

When questioned about who had called for the regulation and registration of technicians the interviewee commented:

*I think the push came from us the regulator and then… there was a group that really said yes we want this and they joined on with us and then the hospitals really pushed for it. (I)*

However while the hospitals were in the main very proactive in pushing for regulation the interviewee explained that it was not all smooth sailing as within hospitals problems arose when management gave their technicians a time period to get registered or be unable to continue working as pharmacy technicians. Hospital pharmacy technicians are unionised and there were objections raised to the setting of this specified time period for registration. The interviewee explained that the regulator took the view that:

*If they [the hospitals] want registered technicians that’s their prerogative. …they [the hospitals] have different liabilities, and technicians are doing all kinds of things without supervision through delegation protocols that technicians in community practice have never been able to do so I think that was something that the superintendent pharmacists across the board that work in hospitals were absolutely unified on that if they are going to have pharmacy technicians working in their hospitals doing all of these things they want the comfort level that they[pharmacy technicians] are (A) trained and (B) registered and accountable for what they are doing.(I)*

Interestingly when asked to identify the barriers encountered to the setting up of technician registration the interviewee noted that:

*The biggest barriers were the pharmacists not the technicians, they were very eager, there were some that were very eager to be regulated because they saw it as a status and a professional thing. (I)*

The interviewee went on to explain that despite new roles for pharmacists being discussed over a considerable number of years the objectors could not see that changes were coming fast enough and so they wanted to hang on to what they have.

**Education and Training sector**

On the issue of registration for pharmacy technicians a college educator commented that:

*Until registration comes in there isn’t a definitive skill set required for pharmacy technicians. (EDU2)*

A lack of support from pharmacists for the further education of technicians was also noted by this interviewee:

*I feel that there is a fear among pharmacists that by ‘over-educating’ our technicians we are setting them up to take over the role of the pharmacist. There has been a very negative response among pharmacists towards add-on courses for pharmacy technicians and this needs to be addressed. (EDU2)*

Another interviewee made reference to a lack of knowledge on the issue of regulation and registration among pharmacy technicians:

*They [the technicians] don’t know about it [regulation] unless they are involved with the associations. Mostly I don’t think they know about it but I am sure they are aware the UK has got registration and one thing we are great at doing is following the UK. (EDU5)*

On the issue of a possible arrangement for the introduction of regulation and registration in the ROI it was suggested that for GB grand parenting was relatively straight forward and an interviewee from the distance learning sector wondered if this would necessarily be the case in the ROI:

*They went grand parenting because most of their courses were BTECs and NVQs anyway... There has been NVQs since what ’95 or ’96 so the UK was coming from a place where they knew there was a good structure, we [ROI] could argue the same with the four colleges and the NVQs. The structures are sound so do we grandparent? You would have to grandparent I am just thinking 200 students for the last 8 years. (EDU5)*

This interviewee made reference to the possibility of some form of examination system for regulation and registration suggesting that:

*…I can see the PSI insisting there would be some form of examination. If it doesn’t happen in terms of the original 3 years… from voluntary to compulsory register it is going to have to happen fairly soon afterwards where there is an OSCE assessment of technician skills because once they land and it is a compulsory register then there will be compulsory OSCEs and QA around… the register. (EDU5)*

**Employers**

Employers interviewed expressed either general support for some form or regulation or questioned the need for it.

One interviewee commented that**:**

*I think regulation should come down to the fact if you are working on the OTC you should have a minimum qualification. I don’t care you can’t put somebody from cosmetics up working the OTC. (EMP1)*

Attention was drawn by the interviewee to the current economic climate and the future employment prospects of pharmacy technicians:

*…But now pharmacist wages are such that … I know pharmacists who are making the decision well why would we want a technician when an extra 10 grand gets me a pharmacist? (EMP1)*

Another interviewee stated:

*I really don’t see a long term role for technicians, the pharmacy graduate numbers will increase, supply with overtake demand, wages will fall for pharmacists and you will employ more pharmacists, maybe a dispensary assistant and your healthcare staff. Regulation of technicians would seem misplaced now. (EMP2)*

**Views on titles, developing roles and Pharmacy going forward**

**Titles**

Several interviewees spoke on the large number of titles to be found in the sector for pharmacy support staff. An interviewee from the regulatory sector addressing the issue expressed the view that:

*…there are a myriad of titles and people don’t always understand the difference between them, I mean a pharmaceutical assistant is something quite different to a pharmacy technician. (REG2)*

This interviewee also spoke of the need to:

*Be able to define what the scope of practice associated with certain titles is, and I think that is what we probably need to be clear about … so then in fairness members of the public know well I am speaking to a pharmacy technician and that means X or I am speaking to a pharmaceutical assistant and that means something different. (REG2)*

An interviewee from a pharmacy technician association commenting on titles stated:

*It is confusing for the public because the only thing that is recognised is the pharmacist. People are not really sure of those girls working behind the counter what do they really do, what do they really know? I think until registration comes in it is going to be down to the individual employer and the titles cover what they are going to pay. (NA3)*

An interviewee from Canada outlined what happened there around the question of titles:

*They were traditionally called everything like they are here so they were called pharmacist assistant, dispensary assistant, pharmacy technician or just support personnel- they can be called a number of things and when we were going down the road of regulation, that’s one thing the government wanted to know - what are you going to call these guys so we said they were going to be registered as ‘pharmacy technicians’ so that’s now a protected title which means that anyone who doesn’t proceed to registration has to call themselves something else. (I)*

A pharmacy support staff interviewee remarked:

*The wide variety of job titles is a confusing situation for pharmacy staff as roles so easily overlap I mean I spend half my day on the OTC counter and half in the dispensary. I have done a healthcare course but not any dispensary course as yet. Sure the girls on the beauty counter who have no healthcare training also come down and serve on the healthcare counter if it is busy. (PSS4)*

**Developing roles and Pharmacy going forward**

It became clear in the interviews that roles and role definition was a fundamental issue for pharmacy going forward.

Not surprisingly perhaps the feeling of interviewees’ from the associations in relation to pharmacy going forward centred not only on technician development but also on the development of the role of the pharmacist and pharmacy services.

A comment was made by an interviewee that:

*We [technicians] need to develop because we are there to support the pharmacists and as the pharmacist is taking on more roles and is going to be out with the patients doing all the vaccinations and all the new services that have been brought in we need to adapt with them to answer the phones, deal with the doctors, deal with the customers... (NA3)*

There was also mention that some roles of technicians had already expanded due to demand and that there is a need to catch up in terms of recognising this, particularly in the hospital setting. An interviewee considered that technicians should seek to have their roles develop in the flow of hospital pharmacist restructuring because:

*We have to see where they are going because our role is changing because of the changing role of the pharmacist…well not just because of the pharmacist but because of the service that we are delivering… I mean if the whole patient care, medicines management is driving change you are taking pharmacy out of the pharmacy and up onto the wards*. *(NA1)*

Mention was made by the interviewee of the following developments that had taken place in the UK:

*…where you would have maybe a pharmacist going up [to the wards]and having a big increase in the clinical end of things and the technicians were leading the pharmacies and running it and you expect that then to happen here…(NA1)*

Interestingly the interviewee was not in agreement with this expectation and expressed the view that:

*… no why do we have to go the same steps as them because now they are wanting to leave the dispensary also and get out onto the wards, so we would rather do the jump completely because automation is coming along.(NA1)*

Developing service roles in the light of possible automation was stressed by the interviewee as an objective of the association:

*This is one thing we [the association] hammer on about that we aren’t going to be overtaken by automation so we do have to establish what our niche is, and that is what gives you the professional status doesn’t it? … many parts of our job are overlapping with the pharmacist because we are all doing the same service and we would hope that we would be going down the road and having a bigger involvement in patient counselling whether it be anti-coagulation or inhaler use… (NA1)*

When discussing the need for role definition and the future of pharmacy an interviewee currently working as a technician and who had qualified many years ago curtly commented:

*I know what my job is, I do it every day. I don’t need someone to tell me what my role is. Yes pharmacists will move out of the dispensary more into the consultation room but I will still have to have my work checked by them. (PSS1)*

A newly qualified technician interviewee commented:

*Once my IPU technician course was completed that’s it, I cannot move up to a higher level so there is no way for my role to develop. (PSS2)*

An interviewee from the regulatory sector commenting on the issue of role definition and titles stated:

*… If people meet a certain standard of education and training then probably pharmacy technician is a title that should be used. (REG2)*

This interviewee when questioned about roles which may have already developed for pharmacy technicians, particularly within the hospital sector, recognised that:

*… certain activities are happening now and that probably one might not have started from this point but it has to be borne in mind that we do not want to overly limit the expansion in practice … and the reality is that you know pharmacists are needed and their expertise has to be used where it is really needed and maybe decisions are made that the checking can be done elsewhere. While that might be valid I think the concern is then if something goes wrong and a patient is harmed then unfortunately that is when big problems arise.(REG2)*

When this interviewee was asked about the position of pharmacy support staff in the vision for pharmacy going forward the following opinion was expressed:

*… I suppose it hasn’t necessarily featured in the future of pharmacy but that is not to say that it shouldn’t… (REG2)*

The interviewee considered that the development of the role of pharmacy support staff going forward would be linked to the development of pharmacy itself:

*I think there is a lot of work that needs to be done about where pharmacy is going and how do you make sure that you have the appropriate staff with the appropriate skills to deliver what pharmacy is needing to deliver. I think probably the next few years will be really crucial in light of the government commitments to universal healthcare and universal primary care and access to GPs, you know there is going to be increasing demand on GPs which means then that certain services are going to have to be provided in other ways so I think there is an opportunity there to look at how could we better deliver services to patients and you know pharmacy technicians are a part of that because they would free up pharmacists to do certain other things. (REG2)*

College educators also raised the issue of the lack of role definition and linked it to the current economic situation. One interviewee felt that:

*The biggest problem at the moment is a lack of definition around the role of pharmacy technician. I feel that we are all doing our best but until registration comes in there isn’t a definitive skill set required for pharmacy technicians. The lack of recognition of the qualification here in Ireland is having a negative impact on the mobility of our technicians and with the rates of emigration increasing it may be putting people off doing the courses.(EDU2)*

Another educator referred to the lack of definition of roles, stating that:

*If we don’t define the roles of the various staff in the pharmacy and their scope of practice it will be very hard to put our hand on our heart and know we are covering all the requirements. Defining a scope of practice and core competencies will be the only way the colleges can accurately review what they currently have in place and move forward. (EDU1)*

A different educator believed there was limited need for the expansion of the technician’s role in some settings stating that:

*Currently I can’t see a role for advanced level pharmacy technician qualifications in community practice, in industry yes and hospital yes. (EDU5)*

This interviewee was also quick to highlight the variety in the tasks pharmacy technicians were currently undertaking:

*You could go into technicians and ask for a job role and you will get 20 different stories and it depends on the organisation and its location, hospital, community etc. (EDU5)*

**International perspective**

The interviewee from Canada delineated how pharmacy and particularly technicians’ roles have moved there. In the new model the traditional workflow pattern, where the pharmacist checks prescriptions at the end of the dispensing process, has changed. The pharmacist now is the first point of contact in the process and receives the prescription and checks all cognitive clinical aspects to it. They ask the patients questions, gather information, make sure that the right patient is being dealt with, ensure the drug and dose is appropriate for the patient, that there are no potential harmful interactions, engage in dialogue with the patient, answer their queries, counsel them on their medication and other clinical matters that arise. They then sign off that the clinical check has been completed on the prescription, ask the patients to wait and pass the prescription to the new class of registered pharmacy technician who deals with the prescription from that point onwards. They select the appropriate medication and dispense to the patient. They are accountable and liable for all of this technical aspect of dispensing. Registered technicians are able to verbally receive prescriptions from physicians, transfer prescriptions from one pharmacy to another and receive transferred scripts and transcribe them. They can independently check the accuracy of another dispensary assistant or registered technicians work (referred to as an independent double check.)

The interviewee felt it was important to stress that:

*The new model is not mandatory and the reason for this was because it would not have been possible to get all pharmacy members support. However there are a huge number of pharmacists that want to move into a new scope of practice such as prescribing and administering substances by injection, inhalation, ordering laboratory tests and doing medication therapy management. This cannot be done if one has to constantly check off all other matters so these pharmacists were really keen to have registered and accountable technicians. It is envisaged that the old model will eventually be replaced by attrition. (I)*

**Experiences and Views on education, training and CPD**

Both formal and informal patterns of learning were identified from the interviews. The responses indicate that formal learning is understood to be that which leads to formal qualifications and that in the ROI for pharmacy technicians this can be undertaken either in Institutes of Technology, whose courses incorporate pharmacy workplace learning experiences (IT - courses) or be undertaken entirely in the workplace (IPU- distance learning course). Recurring references were made to the fact that the IT courses and the IPU course ultimately lead to a different qualification level. IPU graduates currently receive a City & Guilds NVQ Level 3 Pharmacy Services Certificate which when mapped to the NFQ framework is considered a FETAC level 5, whereas the Higher Certificate awarded to IT graduates is at NFQ HETAC level 6. It was explained by a pharmacy technician staff association interviewee that:

*We have five colleges now bringing out technician courses and they kind of acted on the blueprint [PSI Blueprint Document] well four of them did and then there is the IPU which runs their distance learning course and that is in relation to the UK NVQ and they are City and Guilds so it is not accredited by anybody in Ireland like our national qualifications. (NA1)*

The blueprint document referenced above relates to a guidance document for academic institutions for the development and delivery of a Pharmaceutical Technician Certificate/Diploma Course produced by the PSI in 2004. This document was commented on by an interviewee from the regulatory sector:

*The PSI did actually at the time [2004] … develop a blueprint which was issued to all academic institutions where there was a school of pharmacy and to all institutes of technology around the country - it’s a blueprint document for delivering a pharmaceutical technician certificate or diploma course. The council approved it and this was in 2004… and it gives a high level indicative syllabus on the types of areas that should be covered … (REG1)*

The same interviewee recognising the time that has passed since the production of this document suggested it may be something that should be reviewed:

*…so it was perhaps written in late 2003 and you know things have changed so much … it would be something good to put in the service plan so it can be reviewed …(REG1)*

Referring to this PSI document an interviewee from the education/training sector said:

*Ohh that’s prehistoric so they put out a syllabus in 2004 … they [the PSI] can’t argue with the IT’s doing what they do when they based it on their document. Obviously they [the PSI] went a bit over the top in some of the subject areas and in fairness at the time they did that the NVQ would have been at the early enough stage and they probably weren’t aware of it anyway. (EDU5)*

Referring to the variation in the qualification levels of pharmacy technicians another educator commented on the confusion this can create:

*In essence the alternate routes produce graduates who all use the title pharmacy technician but who are at different qualification levels. Is this not confusing? (EDU1)*

On a more fundamental level an interviewee from a technician association recognised that the difference between the two routes was a bone of contention among technicians:

*… there is huge snobbery between graduates of the IPU course and graduates of IT courses. IT courses because they are college qualifications, they [graduates] feel they have that extra edge and they know more. So it is throwing up the argument of whether experience is better than being fresh out of college. I think they both have their place (NA3)*

An interviewee from the regulatory sector acknowledged that differences between the routes could be a problem for possible future regulation and registration of pharmacy technicians:

*The thing we are going to come into problems with obviously is the NVQ is a level 5 and the colleges are a level 6, there is going to have to be some matching. (REG3)*

The Canadian interviewee explained that they had encountered a similar type problem and resolved it by having the following route to registration:

*You go to a community college, three year programme or you would go to the bridging programme and then you would come down to the same place where you would do your structured practical training, you would do your national licensing exam with an OSCE and then you do jurisprudence and then you would get your license.(I)*

The different minimum academic entrance level to each route was also highlighted by an educator:

*The ITs are mostly entry from the leaving certificate. In terms of the NVQ it could be offered to anybody and in the beginning there was a combination of recognising the skills of people who had been working in the pharmacy for 20 years. There is still a number of those going through. Graduation each year is always at least a 20-30% cohort that have been in pharmacy that long and who felt they wanted some recognition and employers are happy to support them. So you can’t say what [entry] level. (EDU5)*

When discussing what would be considered a suitable entry level qualification to the workplace for pharmacy technicians an interviewee from the regulatory sector felt the issue was complex and should be related back to the tasks of the job:

*It goes back to what you expect pharmacy technicians to do, if a decision is taken that pharmacy technicians are to have a particular scope of practice then that would definitely have to be looked at to see whether level 6 is appropriate. (REG2)*

This interviewee also felt the importance of stressing that a clear line must be drawn as to the practice of each role:

*The one thing I will say is I think we need to be very careful in not confusing the different roles. If we are going to go for a graded system we need to make it very clear as to what a pharmacist does and what a pharmacy technician does so you don’t end up in situations where there is the potential of those qualifications to be confused so I think we need to be clear as to what levels they are at and what different learning requirements are to be achieved for those. (REG2)*

An educator felt that a level 6 qualification is suitable based on the current role of the pharmacy technician:

*I would be happy with level 6 at the moment; having spoken to other pharmacists the consensus seems to be that that level is sufficient for students to be competent to fulfill the role as it stands at the moment. (EDU2)*

In terms of the learning paradigms within the two very different education and training routes for pharmacy technicians perhaps unsurprisingly mixed views were expressed.A contentious issue identified by educators was whether the students should learn before they do or as is the case with distance learning courses, do as they learn.

One educator felt the latter route was beneficial as the students were getting real experiences:

*Real patient, real time, real task not lovely glossy laboratory driven stuff used in colleges that have a defined outcome. (EDU5)*

Another interviewee argued that these situations may not be ideal as the students are already performing the tasks of the job which they are there to learn how to do, thus they are (at least initially) doing tasks without the underpinning knowledge:

*But they are also doing the job they are learning to do, which is different to standard educational practice. Surely best practice is to ensure knowledge, skill and competence. This needs to be done in a stepwise manner, with knowledge being the first step. This is not only important for student learning but also for patient safety. (EDU1)*

The importance of staff having an underpinning knowledge of the tasks they carry out was also stressed by an interviewee from the regulatory sector:

*There is a strong element of the practical aspect of it in that people know practically how to do things from day to day but I think we* *can’t escape from the fact that for what goes on in a pharmacy there is an element of academic learning needed to do with that. So while I wouldn’t take away from the person who has thirty years’ experience probably what their experience is in is actually the dispensing process other than necessarily, I may be wrong, rather than necessarily thinking about the broader implications of what they are doing. (REG2)*

A technician from a pharmacy technician association felt that more emphasis should be placed in college courses on practical training:

*…I would like to see an awful lot more focus placed on the part of them [IT – courses] where there has to be a lot more training because it is technicians it is a technical job…(NA1)*

Another interviewee from a technician association concurred commenting:

*They have done a lot of reading, a lot of book work and the whole lot but they are still green. There is a lot of training still to do. (NA2)*

In contrast a college based educator made reference to the ability of the college courses to allow students the opportunity for a well-rounded education which could be taken further if they wished:

*College provides a good all round course which prepares students for, community, hospital and industry and also provides a route to other courses. (EDU3)*

Both groups of educators recognised the need to cater for different learning styles by incorporating various teaching and learning methodologies in their respective courses. Interviewees from college courses listed the following as examples of the variety of learning methods included in their courses: Group problem solving and collaborative tasks, discussions, case based strategies, mock prescriptions, simulations and role plays, blended learning, blogging, interlinked education with other healthcare workers, observation, written reports, MCQs, practical dispensary examinations and formal written examinations.

An interviewee from a distance learning course also acknowledged the importance of attempting to accommodate different learning styles:

*Accommodating different student learning styles is one of the ones we are always on the watch out for… (EDU5)*

Reference was made by this interviewee to their use of case studies, calculations, information days, MCQs, contact by email or phone as ways in which they try to do this.

A college educator was of the opinion that distance learning courses have significant limitations in that the student is confined to the specific environment of the community pharmacy in which they trained:

*Exposure of students on courses like the IPU is restricted to the specific environment they have been signed up in for their training. The location of their community pharmacy will dictate their learning opportunities whereas college courses allow coverage of a much broader context of pharmacy practice. (EDU1)*

Interestingly another college educator expressed the view that:

*In an ideal world, I think the perfect course for a pharmacy technician would be a combination of the two models – college and distance. By setting up appropriate learning resources on and off site blended learning would be of great value on the course. (EDU2)*

A number of issues unique to the college courses concerning aspects of their workplacement programmes arose in interviewees, including when they should be undertaken, who should organise them, their duration and how they should be linked and integrated into the colleges.

A college educator stated:

*For us we have taken the decision to arrange the workplace learning experience as a block at the end of the second year of the course thereby ensuring that the students have the required underpinning knowledge and laboratory practice learning sessions completed prior to commencing in the workplace. (EDU4)*

Alternatively a different college educator considered that:

*…A block between first and second year I* *feel that* *this* *works well to underpin the knowledge from first year and sets them[the students] up for new-learning in second year. In an ideal world, I would love to have every student get 1-2 weeks in hospital pharmacy over the course of the two years as well. (EDU2)*

Commenting on how workplace learning and college learning can be seamlessly integrated this interviewee believed the best way was to have:

*Regular contact between college and workplace, continuous assessment – marked regularly, and feedback sessions with groups of students. Possible provision of some e-learning modules while students are on placement... (EDU2)*

On the question of how workplace learning can be tracked, assessed and evaluated the interviewee commented*:*

*Portfolios, regular assignments to be handed up, contact with tutors, competency sheets, and have the learning outcomes linked in with other subjects so we can see the students putting workplace learning into practice. (EDU2)*

It was also suggested by the interviewee that workplace learning practice:

*Needs to have a clear structure in place - pharmacies must be run in accordance with the 2007 Pharmacy Act, as a result of the work of the PSI, I feel that all learners have access to quality workplace learning practices I am just not convinced that the learners are always bothered to access them. (EDU2)*

Another college educator raised the perennially difficult matter of sourcing workplacements for student technicians:

*Some college courses take on the task of finding and scheduling the workplacement component of the course themselves while others require and encourage the students to obtain their training places independently. Neither route is easy particularly given the current economic climate. (EDU1)*

The main points raised in interviews in relation to education and training related to pharmacy technicians and these have been discussed above. However some discussions did take place around other pharmacy support staff. An interesting point was raised by an interviewee from the regulatory sector in relation to the broader context of pharmacy support staff when commenting that:

*…if you look at the terms of reference for the professional development and learning committee that is one of the advisory committees under council, what it has set as part of its terms of reference is to look at the professional development of not just pharmacists but the entire pharmacy team, so the pharmacy team is considered important because after all a pharmacist is only as good as their support team around him or her and that is the best way to ensure that patients get the safest and best care possible…(REG1)*

The interviewee also noted that:

*…While there is no statutory requirement, that is a duty of the PSI to ensure the standards of education and training but within the wider brief of the regulation of retail pharmacy businesses and those regulations where pharmacy superintendents and supervising pharmacists have to be able to ensure the maintenance of the competence of their entire team, so by default there does fall a responsibility on the PSI but it is not a hard regulatory requirement but it is certainly something that it considers important… (REG1)*

In a discussion around the education and training of support staff it was explained by the interviewee that a high level of guidance has been developed within the context of the roles and responsibility of superintendent pharmacists and that superintendents are going to be best placed to judge what kind of training should be provided for their practice environment, their patients and their own practice setting in order to make sure that their staff are safe. It does not direct that there are particular programmes that should be completed.

The central role of superintendent pharmacists in judging that their staff have the requisite knowledge was echoed by another interviewee from the regulatory sector:

*…What is envisaged by that is that the owner of a pharmacy and a superintendent pharmacist, who is probably the most senior and most responsible pharmacist in a pharmacy have a duty to make sure that anyone who is working with them is able to do … the job that is being assigned to them …(REG2)*

When questioned on whether leaving things to the discretion of pharmacy owners and superintendent pharmacists could result in much variation the interviewee considered that there is a huge potential for variation. This goes back to whether a time will come where it is necessary to set out what the scope of practice is for a pharmacy technician.

An interviewee from the employer sector took issue with the use of the term ‘appropriate’ education commenting that:

*The word ‘appropriate’ in this context is ambiguous. (EMP2)*

The interviewee went on to explain that the company’s response to this situation is to:

*Provide a very high standard of education and training for pharmacy technicians, dispensers and healthcare assistants even if this is at a higher level than is actually required. (EMP2)*

**CPD and Further developments**

The hot topic of CPD was cited as an issue of interest by several interviewees. There was definite agreement among pharmacy technician association interviewees that CPD was necessary and something that they support:

*I …am for CPD. I mean medicines are changing all the time so if you have been out of college ten years you need to actively go and learn it yourself otherwise you fall behind and there is just a new box on the shelf. I think it is very good for the risk management of the patient, it should be mandatory which hopefully with registration it will come in. The IACPT are really for continuing education and aim to have maybe one CPD event per quarter…it will probably go twice a year at the moment until established, it is really important. (NA3)*

Another pharmacy technician association interviewee also stressed that:

*We are very interested in the CPD of our members…We have our annual meetings …we address CPD there and we have our newsletter which we send out...We are trying to get people to use the website more. We have made a decision to break it down into forums. (NA1)*

People who have attended conferences or courses are encouraged to share their learning experiences online. Some dismay was expressed about the lack of formal recognition for CPD programmes for pharmacy technicians in the ROI:

…*unfortunately there isn’t any kind of bodies that will accredit any CPD or any further education here in Ireland at the moment any standards like that but we looked to the UK to see do they have any kind of set up or forms which they recommend to capture CPD because they are now regulated and registered so our association is looking at forms like that to encourage hospitals to give some samples of things that they could do*. *(NA1)*

It was recognised by the interviewee that there is in addition a lack of available modern teaching and learning methodologies for pharmacy technician CPD such as blended learning, podcasts or e-learning programmes and this the interviewee considered can probably be related back to the lack of regulation and registration of technicians:

*there is nothing like that out there at the moment…there are NHS ones…because they[GB]have registration and regulation there is attention towards CPD and everyone is jumping on and wanting to provide it. When that comes along for us because there isn’t demand for it at the moment we would hope that things would change…(NA1)*

Another interviewee from a pharmacy technician association also made reference to possible formats for CPD including use of e-learning:

*I know that in the UK they have a system where they log how many hours they have spent on CPD. I think the pharmacy assistant magazine has CPD each month which is fantastic. I think anyone that has a career rather than a job is going to be looking at that magazine…you know people will make time to do the questions at the end which is really important. (NA3)*

An interviewee from the regulatory sector explained that the Pharmacy Act places the responsibility for the continuing education of pharmacy support staff on pharmacy owners and superintendent pharmacists commenting that***:***

*In the pharmacy act… regulation of a retail pharmacy business that’s where the duties of …pharmacy owners and superintendent pharmacists have a duty under section 18 regulations to ensure that all the pharmacists and all the staff engaged by him or her have the requisite skills including language skills and be fit to perform the work for which they are to be responsible… (REG1)*

It was explained by the interviewee that in the pharmacy owner statement the arrangements that are in place for registered pharmacists to obtain appropriate experience and undertake appropriate CPD must be included. It just limits it to registered pharmacists but there is that other responsibility on the pharmacy owner and superintendent pharmacist to ensure the competence of all the staff. In response to a question on whether the PSI have a list of approved training courses for pharmacy support staff the interviewee noted that:

*…as far as I know we are not asked for guidance on training programmes for pharmacy support staff it’s not a commonly posed question. Certainly it’s not one ever that has crossed my desk … (REG1)*

However the interviewee did explain that the Institute of Pharmacy will be focusing on CPD for pharmacists and that this is at an initial stage but that in time the Institute could also have a greater input into providing programmes for the pharmacy team.

On the question of what further developments could be envisaged for pharmacy technicians another interviewee from the regulatory sector expressed the view that:

*I would not be surprised if further courses and further modules and ECTs for pharmacy technicians were developed. It is not surprising and in fairness in some areas what they are doing is really quite specialist. Some of the hospital technicians who are doing aseptic compounding that is really complex so I wouldn’t be surprised that they would be looking for qualification recognition for some of that work. … (REG2)*

An interviewee from the distance education sector explained that changes are taking place to the IPU NVQ Level 3 pharmacy technician course. The current NVQ Level 3 is phasing out and the QCF is taking its place. The new course has a knowledge section and a practice based section and leads to a level 3 diploma in pharmacy service skills and the provider will be Edexcel. The interviewee advised that:

*It is a level 5 on FETAC but we are pushing for a level 6…because the learning hours have massively increased…* *(EDU5)*

Athlone Institute of Technology have introduced an advanced course for pharmacy technicians. The course is 1 year full-time and leads to a BSc in Clinical Pharmacy Practice at NFQ level 7. A number of interviewees’ expressed some reservations about an advanced course of this type in terms of its title which could cause confusion as to where the graduates are going and what their expectation is from the course It was acknowledged that maybe from an employer’s point of view taking the course would indicate that a person is dedicated to their career and so it could probably further a graduate’s job prospects. However it was noted by these interviewees that as things currently stand in the ROI graduates of the course would fundamentally be doing the same job as others who had basic qualifications.

**Informal workplace learning**

Informal workplace learning was considered by many interviewees to be central to how knowledge, skills and competencies are built up by all staff in the pharmacy. The various ways for ensuring that it takes place and then for capturing and sharing it were discussed. Interestingly somewhat different views were expressed on how much employers support this tacit form of learning and how they recognise and take it into consideration in their plans and staff learning programmes. Perhaps unsurprisingly different methodologies operate across organisations based on their size and type. The importance of the active participation of staff in self-directing their informal learning was raised by a number of interviewees.

An interviewee from a large pharmacy employer highlighted the importance their organisation places on both formal and informal workplace learning linking it to the provision of safe and effective patient care as follows:

*Do I think work place learning is important? – absolutely from a perspective of making sure that our staff regardless of role are giving the right accurate information to our customers*… *(EMP2)*

It was pointed out by the interviewee that while the company has a suite of formal learning programmes that are assessed and accredited for all staff they also provide other workplace learning opportunities. Some of these are short tutor programmes that adopt a structured approach to how to undertake learning especially for people at the beginning of their careers in whichever role they occupy. There is also the informal or on-the-job or through life experience development that is on-going through interactions with patients and with peers that the staff will learn from. It was pointed out that often the informal or unformal type of learning feeds back and will lead on to development of a formal approach because it is recognised by the employees that there are knowledge gaps that need addressing. The methods available for capturing informal workplace learning and for sharing it within the organisation appear to be related to individual roles within the company. For pharmacists there is a network which comprises a professional forum where they can share their experience and knowledge and a pharmacy panel to represent pharmacists’ viewpoint on the subject of developments that are planned for implementation across the organisation. The interviewee noted that:

*There is a scheme whereby all roles within the organisation can participate in dialogue and provide feedback on operations. Where useful feedback has been provided this can prompt the development of e-tutor or other learning programmes by the learning and development department for dissemination of the information to staff. (EMP2)*

That informal learning often provides the impetus for development of more formal/structured learning programmes appears to be an approach that is widely adopted within this organisation. The recording of individuals’ informal workplace learning was also discussed and it was mentioned that while consultations and conversations are on-going within the company the interviewee advised that:

*There is not a formally structured procedure for recording informal learning for all roles. (EMP2)*

Interviewees linked informal learning with ongoing CPD and outlined procedures that are in place for pharmacy technicians to engage in, capture and share their informal learning across a large hospital complex. Actions in place to assist learning include voluntary weekly meetings on topics of pharmacy interest with lectures and pharmacy interns and MSc student presentations. Pharmacy technician slots are included in the meetings; presentations on conferences attended are incorporated. There is a journal club to encourage discussion and a technician focus group where areas of interest are identified. The recording and capturing of learning is through a monthly report system where staff in the pharmacy department records their different types of learning for that month. A free text section is incorporated within the reporting system. The organisation’s strong commitment to education is demonstrated by the appointment of a chief pharmacist in education. However it was stressed by an interviewee that:

*It is up to each [individual] to identify their needs. (PSS5)*

The interviewee explained that when gaps are identified the hospital can support them in filling that gap. Some learning is tutor led or one can CPD cycle themselves and can be involved in giving talks to others.

**6.3 Summary**

This chapter has detailed the results of the analysis of a series of interviews conducted with key stakeholders from across the pharmacy sector in the ROI. It also incorporates the analysis of an interview conducted with a representative from the pharmacy sector in Canada. Difficulties identified as particularly relevant for pharmacy support staff were: confusion around their job titles and the scope of practice and competency requirements associated with each title; the variation of teaching and learning paradigms and qualification levels within the sector; and the slow evolution of their roles despite the rapidly changing role of pharmacists and pharmacy services. The lack of statutory regulation of pharmacy support staff, in particular pharmacy technicians, in the ROI was constantly referred to by interviewees when these matters were discussed and it was considered by some of the interviewees’ to be a contributory factor to such difficulties. Attention was drawn to the different approaches that have been recently adopted in GB and Canada to the registration and regulation of pharmacy technicians and proposals were put forward for how regulation could be implemented in the ROI. Ways used to ensure CPD and to capture informal workplace learning in the pharmacy were chartered in a number of interviews. While some employers were praised for their support for this, disappointment was expressed by some interviewees at the lack of official support for CPD from the pharmacy regulatory sector. The next chapter will focus on discussion and reflection on the findings of the study.

**Chapter 7**

**Interpretation and Reflection on Findings**

**7.1 Introduction**

This chapter seeks to evaluate the evidence presented in the study and reflect on the themes and issues raised. It considers how themes and concerns identified in the literature studies as relevant to the education, training and regulation of pharmacy support staff are reflected in the interviews conducted with a cross section of stakeholders in the ROI pharmacy sector. The study, for the first time, placed issues relating to pharmacy support staff in the ROI at the centre of interviews with a comprehensive cross section of participants. The chapter begins with the theme of regulation and registration of pharmacy technicians and then moves to the related themes of education, training and CPD. It then progresses to consider the development of new roles for pharmacy support staff and finally addresses the recognition of workplace learning in the pharmacy.

**7.2 Discussion on findings**

**Regulation and Registration**

The topic of regulation and registration of pharmacy support staff, in particular pharmacy technicians has been an on-going issue over many years for the pharmacy profession in the counties examined in this study (Lemon, 2009; CEPT Report, 2011; Myers, 2011). The interviews confirmed this as a topic of interest in the ROI and highlighted the existence of a challenge whereby the national associations of pharmacy technicians are actively seeking explicit statutory regulation and registration of pharmacy technicians but the status quo is one of an implicit regulation for support staff contained within Regulations 18 of the Pharmacy Act 2007 which places the responsibility on the superintendent pharmacist and pharmacy owner. An interviewee from the regulatory sector judged that this was the appropriate place for this responsibility as these persons are best placed to know and understand the requirements of theirparticular practice setting. However an interviewee from the employer sector disagreed believing that the term ‘requisite’ is open to differences in interpretation and this can lead to variation in standards across the sector. Other interviewees from the education sector considered that without well-defined knowledge, skills and competency requirements for definitive roles it is difficult to develop programmes to produce graduates who can work across the various sectors of pharmacy.

The interviews revealed that there was cross sectorial support for some form of regulation of technicians in the ROI however they also revealed there was no agreement as to what construct it should take; how it might be introduced and how quickly it could be done. Interviewees from the pharmacy technician associations indicated that they were very anxious for regulation and registration to be introduced as soon as possible and were actively seeking this with the PSI. However there appeared to be some significant differences of opinion between them and interviewees from the regulatory sector in terms of how far advanced the process is. In relation to how regulation and registration could be introduced for current practicing technicians the association interviewees favoured a full “grand-parenting” arrangement or minimal bridging and grand-parenting and the evaluation of current initial entry courses with an understanding that they may require revision. They were also very keen for advanced courses for pharmacy technicians to be provided, as well as accredited CPD programmes. Reference was made to the grand-parenting arrangements introduced in GB prior to their now statutory regulation of pharmacy technicians. GB uses the NVQ/QCF awards system as the standards they require for support staff. These qualifications, while they are used and recognised here do not form an integral part of our national framework qualifications and an interviewee from the education sector believed that we should think long and hard about whether they are the most applicable ones for use in an Irish setting. Another interviewee from the education sector pointed out that in light of difficulties now arising in GB relating to how they grand-parented, their arrangements may not be best suited for the ROI. Another interviewee from this sector commented that if regulation was to be introduced then because of the substantial number of graduates involved the regulator would have to grand-parent. A technician interviewee suggested that some form of grand-parenting would be necessary to prevent rejection of the process by practicing technicians. An interviewee from the education sector considered that best practice would dictate a definition of the scope of practice, the knowledge, competence and skills needed to perform the desired role and then to work back in terms of identifying if the current courses, be it the IPU or the ITs meets those standards. If they do not then the current course will have to come up to the required standard and their previous graduates may be required to undertake some further training and assessment. A 2002 white paper by the CCP advocated for a somewhat similar approach in the USA when it called for a definition of the responsibilities and functions for pharmacy technicians and standards for their education and training.

An interviewee from the education sector mused on the introduction of an OSCE style examination as part of a possible future regulation process. OSCEs offer the opportunity to assess students in their handling of real life pharmacy practice scenarios, and allow students to develop and hone communication and problem-solving skills (Evans *et al*, 2011). A second interviewee from the education sector pointed out the challenges of the OSCE method of examination and advised that these would have to be considered along with the need to familiarise current practicing technicians with such a radical change to their assessment procedures if such a methodology were to be introduced.

Interviewees from the regulatory sector directed that introduction of statutory regulations for support staff would require amending legislation and referred to the challenges and difficulties this brings. Interviewees from the regulatory, education and employer sectors questioned whether there was wide support for regulation and registration among the wider cohort of pharmacy support staff, pharmacists and employers. The need for agreement across the profession was reflected in the literature when in 2009 in the US the CCP Pharmacy Technician Credentialing Framework pointed out that it is incumbent on the entire profession to provide uniform and specific direction for the training and credentialing of this component of the profession’s workforce. Because of the lack of statutory regulation the study found that a situation has been allowed to develop where two very distinct education and training routes are producing staff with the same title performing the same role in the pharmacy. An interviewee from the education sector mentioned the need for qualification matching.

An assertion made by a number of interviewees was that the development of roles for pharmacy support staff is contingent on the developing role of the pharmacist. Studies in GB and the USA also link the development of pharmacy technician roles to the evolving role of the pharmacist (Herrera, 2007; Manasse and Speedie, 2007). Evidence from the literature survey showed that the community pharmacist’s role has already evolved considerably in the ROI and that pharmacists wish to continue along this trajectory (PSI Baseline Study, 2011; Hughes *et al*, 2010). In hospitals many pharmacists have moved out of the dispensary and up onto the wards. Clinical and antibiotic pharmacists are successfully influencing prescribing and infection control policy (Gallagher and Gallagher, 2012). Hospital pharmacy technicians interviewed confirmed the trend and outlined a number of initiatives taking place in their institutions and their role within them. An interviewee from the regulatory sector pointed out during an interview that the next few years are critical with the move towards universal healthcare. When teasing out this issue the interviewee acknowledged there would be a need to analyse where pharmacy is going and make sure that there is appropriately trained staff to deliver what pharmacy needs to deliver. The PSI baseline report, 2011 corroborates this noting that there is a common perception among pharmacists that there is no national vision for pharmacy and how it could and should fit into the wider healthcare delivery system. It found that there is a strong sense within community pharmacy that the various bodies act in isolation and that there isn’t a coherent strategy.

The trend in GB and Canada has moved towards regulation and registration and more prescriptive education and training requirements for pharmacy support staff (Schafheutle *et al*, 2012; Lynas, 2011). An interviewee from Canada confirmed this trend and provided a compelling insight into the challenges and barriers that arose on the long road to regulation and registration and the issues that remain following its introduction.

**Education, training and CPD**

An issue identified in the literature review and discussed in the interviews was education and training paradigms and pedagogies for pharmacy support staff. This section deals first with the issue of qualification focused learning. The importance of setting national standards for education and training for pharmacy support staff, in particular pharmacy technicians, and for having an appropriate accrediting body for the education of pharmacy support personnel was raised in a number of studies (Cahill, 2003; Wykes, 2003; CCP, 2009 Pharmacy technician credentialing framework; Myers, 2011). The interviews for this study established that there is a desire for an appropriate pharmacy body to become involved in standard setting for pharmacy support staff in the ROI. Interviewees from the national associations of pharmacy technicians expressed a desire for the PSI to become involved with this matter believing that they are the appropriate body to move on the issue. Interviewees from the regulatory sector, while understanding the technicians’ position, were more circumspect in relation to the current powers of the PSI under the 2007 Pharmacy Act for pharmacy support staff education and training. However an interviewee from this sector did point out that the PSI has a responsibility to inform the Minister of Health if they consider that changes to regulations need to be made. A further interviewee from the sector suggested that the new Institute of Pharmacy could in time have an input into providing programmes for the pharmacy team.

In the absence of uniform national education standards a complex mixture of procedures and practices can arise (Myers, 2011; Cassano, 2012). The interviews conducted for this study corroborate this contention revealing that in the absence of an overarching pharmacy accreditation body for pharmacy support staff education and training and nationally agreed standards for this in the ROI there is a complex mixture of practices. This finding is explained in the following section.

**Pharmacy technicians**

The interviews showed that having two different teaching and learning paradigms for initial pharmacy technician education and training with their distinct pedagogic approaches and different qualification level is a somewhat contentious issue. Perhaps unsurprisingly interviewees from the education sector tended to favour their particular educational paradigm but all did acknowledge that there are strengths and weaknesses in each route. College educators considered that the college courses which incorporate workplace learning experiences offer the students the chance to pursue a third level knowledge-based course and qualification. The opportunity for innovative curricular design with theoretical and conceptual underpinning; use of a range of teaching and learning modalities including laboratory and mock pharmacy based practical’s as well as learning support and feedback practices such as tutorials and workshops afforded through the college structure were cited by these interviewees as the strengths of such courses. In addition it was noted that the college qualification at level 6 on the NFQ provides graduates with a third level status, mobility, employability and a comparable and transparent Irish education qualification. An interviewee from the distance learning sector considered that college courses were overeducating for a role that did not require it. Weakness cited for the college courses were centred on their still being based mainly on a traditional didactic model of teaching. Some technician interviewees considered that there was too much book learning and not enough practical experience in the college courses. Difficulties in securing workplace learning experiences for students was mentioned as an on-going challenge by college based educators as was maintaining close contact between college and workplaces during student placements.

The distance learning course lets students learn as they do. Entrants to this course are already working in a pharmacy and the student will therefore often already have a relationship with the pharmacist who will ultimately be their tutor throughout the course. An interviewee highlighted that the course can allow for recognition of the skills of people who have been working in the pharmacy for a long time. While the modules covered are the same for all students on the course a college educator interviewee considered that it could not be ignored that the student’s exposure to a wide variety of situations would be limited by the particular environment in which they train. The qualification level itself was also something that was mentioned in interviews and it was noted by a technician interviewee that the qualification did not provide a ladder from which they could go further with their education. In a related comment a technician also mentioned that it was considered by some that the IPU distance learning course is very much a service for its members i.e. pharmacists and pharmacy owners allowing them the dual benefit of having trained staff and to be in a position to tick the box of Section 18 regulations and not necessarily designed to provide for career progression for its graduates. Issues relating to the status of the qualification were also raised by a technician interviewee who made the point that there was a perception that those with college based qualifications considered their education to be of a higher standard and that there was connotations of educational snobbery arising around the existence of the two different levels and that this was somewhat of a divisive issue among technicians.

An interviewee from the college education sector when reflecting on the pedagogies of both courses suggested that a course which would combine the strengths of college-based education and extensive structured workplace learning and incorporate blending learning techniques would be a good practice approach to adopt going forward. Interviewees from the regulatory sector did not promote either route but one interviewee from the sector recognised that having the different levels has the potential to create problems going forward and that at some point qualification matching will be necessary. Another interviewee from the sector considered that establishing the particular scope of practice of technicians was an essential prerequisite to qualification standard setting. These interviewees along with technician and education sector interviewees acknowledged that prior to introduction of any changes to pharmacy technician status a detailed analysis of current courses would be a necessary first step. It was reported by an interviewee from the regulatory sector that this was in the planned work programme of the PSI.

The interviews revealed that there is concern about the level of support any changes to the education and regulation of pharmacy technicians would receive from employers in the ROI. That differences in viewpoints can arise between employers from different sectors of the pharmacy profession on changes to technician education was shown in the ACPE 2003 profession wide debates in the USA. An interviewee from a national association of pharmacy technicians in this study believed that a campaign to garner employer support for changes would be vital. Winning the support of pharmacists was also a concern. Interviewees from the national associations of pharmacy technicians and an educator raised this matter and the interviewee from the Canadian regulatory sector confirmed that winning the support of pharmacists was one of the main challenges they faced when introducing changes to pharmacy technician status.

**Other Pharmacy support personnel**

Education and training in the pharmacy does not stop with pharmacy technicians. Other pharmacy support staff also undertake various levels of training and education and a variety of courses have been developed for this purpose. An interviewee from the employer sector noted that in the absence of set national standards in the ROI their training could be over and above what would be required.

The offering of courses by some further education colleges and the Irish National Training and Employment Authority was raised by an interviewee from the education sector who considered that it is challenging for employers/pharmacists to fully understand the education and training context of each of the different course structures. This reflects a somewhat similar situation to that reported by Cassano (2012) in relation to the variety of courses provided in the USA.

**CPD/CE:**

The GPhC sets standards for CPD for pharmacy technicians in GB and all pharmacy technicians there must undertake and record CPD as a condition of their registration with the GPhC. Certified Pharmacy Technicians in the USA are required to recertify every two years in order to maintain their certification. Although not mandatory at present in the ROI the interviews established that engagement with CPD activities is taking place. However when the topic was discussed with pharmacy technician interviewees a considerable gap between hospital and community practice was identified. The hospital technicians with the backing of their employers had a well-developed system to facilitate their CPD. Community technicians did not appear to have the same level of exposure to such a variety of training. Interviewees from the technician associations expressed regret at the lack of formal accredited CPD programmes for technicians.

It was raised by interviewees from the regulatory sector that a requirement for mandatory CPD would inevitably arise if registration is brought in. In this context the interviewees questioned whether pharmacy technicians as a whole understand that there will be this requirement and whether there would be widespread support for it. An interviewee from the education sector pondered whether they may assess the technicians with the use of OSCE examinations but as Evans *et al* (2011) point out there are logistical issues around staging OSCEs and another interviewee from the education sector considered that introduction of OSCEs would have to be considered carefully as this type of assessment would be totally unfamiliar to the vast majority of practicing technicians.

**New roles for pharmacy support staff**

Many new and expanded roles are developing for pharmacy technicians (Muenzen *et al*, 2005; Woolfrey, 2006; Thomas *et al*, 2008; Mirczuk, 2008; Carter, 2009; Scheckelhoff, 2010; Schommer, 2010; Myers, 2011). The ideal technician roles enable pharmacists to devote additional time to direct patient care and it is therefore important to continually look for opportunities to expand technician responsibilities or even create new roles for technicians that permit pharmacists to then work to the top of their license (Cassano, 2012). An interviewee from the regulatory sector in this study echoed this sentiment making reference to the importance of using the expertise of pharmacists where they are really needed. The interviewee considered that pharmacy technicians, by freeing up pharmacists, to do other duties could help pharmacy to look at how it could better deliver services to patients.

As pharmacists take on additional clinical activities and move out of the dispensary the trend internationally has been for support staff in particular pharmacy technicians to in-fill in the dispensary taking on roles previously carried out by the pharmacist. While the possibility of a move to such an increased supporting role in the ROI was accepted and welcomed by some technicians interviewed other technicians did not necessarily agree with this trend and wished for more active clinical involvement of their own. An interviewee from the regulatory sector when discussing developing roles for pharmacy technicians acknowledged that expanded roles for technicians was already happening in the ROI and that these developments were happening due to demands on pharmacists, particularly in hospitals. Roles in some areas are quite specialised and the interviewee recognised that technicians could be looking for qualification recognition for this work. However it was stressed that caution needed to be exercised when considering expanded roles as concerns can arise if something goes wrong and a patient is harmed. Such concerns were also raised in the literature in relation to the expansion of roles for support staff (Manasse and Menighan, 2010; Thompson, 2009; Myers, 2011). With the development of expanded roles for technicians the importance of avoiding qualification and role confusion between pharmacists and pharmacy technicians was stressed by an interviewee from the regulatory sector who advised that clarity around learning requirements, levels and roles is essential.

**Recognition of workplace learning in the pharmacy**

Johnson and Boud (2010) judged that work practices can become learning practices and thereby recognised the importance of the workplace as a site of learning. For workplaces to become effective learning places expansive forms of organisational support and engaged communication is necessary (Fuller and Unwin, 2004; Horgan, 2010) and for workplace learning to be successful it is essential to take account of individual learners perspectives (Billett, 2006; Evans and Kersh, 2006; Hodkinson, 2006). The interviews in this study established that in the case of a major hospital complex, a large community pharmacy employer and the national association of hospital pharmacy technicians, workplace learning is been recognised and supported through provision of expansive learning environments (as conceptualised by Fuller and Unwin, 2004) where staff experience diverse forms of participation to foster learning at work. Recognising that social interactions are at the heart of workplace learning collaborative/ collective approaches that are situated within the workplace and that take into account the experiences and background of the participants are employed by this hospital.

An interviewee from a large community pharmacy organisation outlined their strategies for supporting and capturing informal workplace learning which include on-the-job or through life experience development through interactions with patients and with peers. However it was pointed out by the interviewee that some provision is restricted to pharmacists. Reference to restrictive situations was mentioned by a support staff interviewee from this sector who complained that access to workplace computers was very restricted and that they felt that they were low on the pecking order with most company emphasis being placed on pharmacist support. Interviewees from the national association of hospital pharmacy technicians stressed their commitment to the support and fostering of workplace learning. Strategies adopted include setting up peripheral participation and communities of practice and interactive website forums to share and debate issues. A support staff interviewee from a smaller community pharmacy organisation while initially hesitant about whether there was recognition and support for developing and capturing workplace learning in their organisation on teasing out the issue further did note that discussions, observation and feedback from experienced colleagues were features of their workplace. An interviewee from the education sector considered that while many workplace learning initiatives are now available in pharmacies the degree of staff engagement with these is unclear.

**7.3 Summary**

The evidence presented in this chapter shows that statutory regulations for pharmacy staff in the ROI has focused to date on the pharmacist. In relation to pharmacy technicians it demonstrates that there is cross sectoral support for regulatory oversight. Differences arise around the type of regulation that is necessary and how it could be introduced for practising staff. It is clear that there is a need to look at other regulatory models and to establish the scope of practice of technicians and to address the variation in current qualification levels and education by setting a national standard for the education and training of pharmacy technicians. The national associations of pharmacy technicians are frustrated at the slow pace of developments in relation to their quest for regulatory change. It is also clear that regulators and others in the profession insist that no qualification or role confusion should arise between pharmacists and pharmacy technicians from any new regulatory arrangements that might be introduced. Standardisation guidelines need to be put in place for other pharmacy support staff. Both the interviewees and the literature highlight a strong view that developing roles for pharmacy support staff going forward will be linked to the provision of new services by pharmacists and pharmacies. While there are expansive pharmacy workplace organisations supporting workplace learning, opportunities need to be available to pharmacy support staff as well as pharmacists.

The next chapter will reflect on the conduct of this study and discuss how the research objectives have been met. The chapter will end with a number of recommendations for the future of the regulation, education and training of pharmacy support staff in the ROI.

**Chapter 8**

**Conclusion and Recommendations**

**8.1 Introduction**

This thesis set out to answer the question:

‘Is the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI facilitating or inhibiting the development of pharmacy support staff?’

With the introduction of the Pharmacy Act in 2007 and inspired by a desire to ascertain if I was meeting the needs of my pharmacy support students I considered it an opportune time to undertake a systematic research study of the pharmacy sector in order to answer this question. Policy documents, reports and statements, course structures and pedagogic strategies, global trends in pharmacy practice, workplace training and workplace learning were examined and the opinions and views of key stakeholders explored. This chapter begins with the conclusions drawn from the research data and considers how the research will benefit the research community, policy-makers and practitioners in the field. It reflects on the conduct of the study and how if I were to do it again I would do it differently. Finally the thesis ends with suggestions for possible areas for future research.

**8.2 Conclusion**

The study explored underlying issues that are relevant to pharmacy support staff. These included the main legislation governing their regulation, their titles, the policies, practices, and provision of their education and training, and the theoretical frameworks that underpins this education. The centrality of workplace learning in pharmacy and the importance of developing a better understanding of learning at, for and in the workplace were also investigated. Based on analysis of the data gathered the following conclusions were drawn:

**Regulation**

Currently statutory responsibility for pharmacy support staff under the Pharmacy Act 2007 rests with superintendent pharmacists and pharmacy owners. Only pharmacists and pharmaceutical assistants are required to register with the PSI. This study found that an unintended outcome of this system is that it is leading to marginalisation and lack of support for development of pharmacy support staff. The system is not working well and causing concern particularly among pharmacy technician associations and educators. On-going discussions on the possible regulation and registration of pharmacy technicians in the ROI were noted and a review of the current training courses for pharmacy technicians being added to the PSI service plan attests to the emerging interest in this category of staff. However the interviews established that there is not an agreed view on the issue of regulation of pharmacy support staff and that there is no specified timeframe or modality for its introduction. In view of this the pharmacy profession in the ROI needs to develop a vision for pharmacy that fully integrates pharmacy support staff and sets out a clearly defined scope of practice, titles and education and training for them. Developing such a vision would be an essential prerequisite to inform future decisions regarding regulation. Getting the process correct from the start is very important and needs careful planning.

**Education and Training**

The research found that there are good practice courses in place for the education of pharmacy support staff in the ROI with interesting approaches to teaching, learning and assessment. However there are differences in fundamental pedagogic strategies and entry level qualifications for pharmacy technicians and diffuse practices in place for other support staff. The quality assurance of training exists only where formal qualifications are used. NVQ/QCF distance learning courses for technicians are accredited under the UK system for these courses and include trained assessors with internal and external verification mechanisms. They are a work-based further education qualification and awarded on the demonstration of requisite competences in the pharmacy workplace. The Institute of Technology courses for technicians have quality assurance systems of HETAC/Institutes of Technology. They are a higher education level college-based qualification and include both didactic and experiential components. Having two different entry level qualifications for pharmacy technicians was identified in interviews as a matter of concern in the profession. While fully appreciating that there is a historical dimension to this situation it nonetheless is one that needs to be addressed.

MCA courses are run by the IPU and dispensing assistant and HCA work-based distance learning courses by some large pharmacy chains. It was found that there are opportunities for career progression for health care assistants to progress to dispensing assistants and for MCA to progress to NVQ/QCF level 3 pharmacy technicians. There is however then a discontinuity between progression opportunities for holders of the NVQ/QCF level 3 qualification and technicians who hold a Higher Certificate in Pharmacy Technician Studies. The latter group can avail of opportunities to progress up the third level education system to undertake ordinary degrees and have possible entry to pharmacy and other honours degree programmes. Holders of the NVQ/QCF qualification complained that their qualification afforded them little opportunities for progression. In view of the apparent discontinuity of progression opportunities there is a need to develop a clear vertical ladder system for pharmacy support staff qualifications.

The studies on education and training advanced a consistent view that in order to develop high levels of skill formation the state, the educational system, employers and workers must all be committed to the goals of high level skill formation and systems must be in place to provide a mixture of off-the-job and on-the-job learning and to ensure the quality of this through regulatory mechanisms. Formal mandatory continuing education requirements were non-existent for pharmacy technicians. Consideration must be given to addressing this and a structure provided to ensure that CPD is a requirement for this role.

In view of the findings, discussed above, in relation to education and training the main conclusion drawn is that what is missing for pharmacy support staff education is a coherent and robust over-arching policy which would integrate education and training and impose uniform standards across the sector. Such a policy must address how best to teach the underpinning knowledge and develop core skills that are relevant to pharmacy practice. Accreditation requirements must be set and curricula designed and implemented to meet these requirements. Key steps to delivering such an education and learning agenda are:

1. A national task analysis of support staff in all pharmacy work settings in the ROI. The analysis should also establish the education and training qualifications of all support staff.
2. Based on the outcomes of the task analysis a knowledge, skills and competency map for each group of pharmacy support staff should be delineated. This map should include all current and developing functions and indicate all types of skills including generic and occupational skills and personal characteristics, required to deliver a first-rate pharmacy service.
3. A review of the current training courses for pharmacy technicians and other support staff.

Completion of these steps would inform curriculum design, support development of appropriate teaching and assessment methods for support staff qualifications and allow for consideration of more specialised support staff roles and advanced pharmacy technician courses. The PSI would be the appropriate body to lead these initiatives but as PSI interviewees have stated there is no statutory requirement for the PSI to oversee, approve or accredit the education and training of pharmacy technicians. There is therefore a need for the regulatory powers of the PSI to explicitly include pharmacy support staff and for them to be provided with the necessary resources to bring this about. In the absence of regulatory oversight there is a possibility for developments to take place without due consideration of the wider or longer term progress of the profession. As an example of this, concern was expressed in interviews about the recent introduction of a clinical pharmacy practice advanced technician course and its potential to cause role confusion between its graduates and pharmacists.

The statutory regulatory/registration practices and education and training requirements that have recently been put in place in GB and Ontario for pharmacy technicians and those that have been proposed for the USA offer contrasting models for consideration. These routes are summarised in Figures 8.1, 8.2 and Figure 8.3 respectively.

**Figure 8.1 Summary of the pathway to registration as a pharmacy technician in GB**

Apply for registration as a Pharmacy Technician with the GPhC

Complete both a GPhC-approved competency-based qualification and a knowledge-based qualification & a minimum of 2 years consecutive work-based experience

Future Pharmacy Technicians

Find a pre-registration training place and commence or register for one of the two required qualifications (listed below) within three months of commencing contracted, relevant work experience

Step 1

Step 2

Step 3

Now closed

Applicants not holding GPhC approved qualifications may have to undertake further qualifications and work experience before they can apply

2 year grand parenting arrangement for trained & experienced technicians not holding a new GPhC approved qualification

GB does not register dispensing assistants or medicine counter assistants but sets training requirements for them.

**Figure 8.2 Summary of the pathway to registration as a pharmacy technician in Ontario**

Entering the profession

After 1st Jan 2012

In the profession

Now closed

Graduate from a CCAPP accredited pharmacy technician education programme programme

Complete OCP certificate examination or PEBC evaluation examination by Jan 1st 2012

Eligibility for advanced standing is up to the CCAPP college

Step 1

Completion of PEBC qualifying examination with written & practical components

Pre-registration with OCP

-Complete an approved bridging programme by 2015

-Structured practical evaluation

Complete structured practical training programme over 12 weeks

Step 2

Step 3

Completion of OCP jurisprudence examination

Step 4

Step 5

Apply for completion of registration with OCP

**Figure 8.3 Components of the CCP guidance framework for the education, training, certification and regulation of pharmacy technicians in the USA**

State boards of pharmacy will develop a ‘pharmacy technician in training’ category

Trainees will complete a nationally accredited education and training programme and pass a nationally accredited, psychometrically sound competency based examination

Apply for regulated pharmacy technician status to the state board of pharmacy

State boards of pharmacy will develop a method of reciprocity between states for pharmacy technicians.

**Workplace learning**

Evidence from studies on workplace learning concludes that participation is central to understanding learning at work. The studies highlight the range and types of participation available but acknowledge the role of work organisation in affording access to participatory practices that involve ‘good learning’. Expansive pharmacy workplace organisations supporting a wide range of workplace learning opportunities were identified in the study. These tended to be large hospital complexes and large retail pharmacy chains but good practice examples of workplace learning opportunities in smaller establishments were also identified. However there is a need to ensure that such opportunities are available in all pharmacies and for all pharmacy support staff. There was a perception among some support staff interviewed that workplace learning opportunities are available mainly for pharmacists and not for them.

In summary the main conclusion of this study is that the education, training, workplace learning and regulation of non-pharmacist pharmacy staff in the ROI is not facilitating the development of pharmacy support staff. The situation in relation to each of these matters needs to be comprehensively addressed. Figure 8.4 suggests an alternative plan for the sector to move forward that is firmly grounded in analytical conclusions. Section 8.3 gives detailed recommendations that are desirable, practical and hopefully politically feasible to assist with this process.

**Figure 8.4 Proposed routes for pharmacy support staff in the ROI**

-Taskforce Analysis of Pharmacy Support Staff

-Review current courses

- Standardisation of Titles

-Definition of the Scope of Practice for Each Role

Medicine Counter Assistants

Dispensing Assistants

Pharmacy Technicians

Complete accredited MCA training course in stipulated timeframe

Complete accredited training course in appropriate timeframe

Complete accredited dispenser training course in stipulated timeframe

Complete accredited training course in appropriate timeframe

Training can be

Current Pharmacy Technicians/ Pharmaceutical Technicians

Future Pharmacy Technicians

In house accredited training programme

External body delivering accredited course

Choose not to register

Complete accredited training course in stipulated timeframe & structured practical training

Bridging Programme (if deemed necessary)

Pass appropriate assessment leading to trained staff with standardised title

Recognition of prior learning & experience - assigned title of dispensing assistant

Complete National Qualifying Examination & Apply for Registration

**8.3 Recommendations**

The following recommendations for the future of the regulation, education and training of pharmacy support staff in the ROI, are based on wide-ranging data analysis, suggesting a way forward for development of a policy wide programme for support staff

• The regulatory powers of the PSI should explicitly incorporate pharmacy support staff. The necessary legislative changes to do this should be sought along with the necessary resources

• The PSI should set up a pharmacy support staff consultative committee to advise them on matters relating to all pharmacy support staff including the nature of their work, their education and training requirements, the accreditation of their courses in line with formal quality-assurance processes, their continuing education, and their regulation. Membership of the committee should include support staff representation.

• Regulation of pharmacy support staff should be made a topic for national debate and discussion at annual pharmacy conferences and other forums. Pharmacists, educators, the PSI, the IPU, employers and support staff themselves must get involved in the debate because it is important that the entire pharmacy profession takes an active interest in its support staff base

• A national task analysis of support staff in all pharmacy work settings should be conducted. This should be accomplished with the input and involvement of all interested stakeholders to ensure that its content reflects contemporary practice. The analysis should also establish the current education and training qualifications of all support staff

• All existing pharmacy support staff education and training should be charted onto a Knowledge Skills Competence (KSC) map to identify gaps and suggest how these should be addressed. All education and training should then be mapped onto the NFQ to ensure transferable qualifications for all pharmacy support staff

• A competent authority for pharmacy technicians should to be appointed to assist with EU/EEA recognition of their qualifications

**8.4 Benefit of the research for practitioners and the research and policy communities**

**The Policy community**

As this research study reviewed and evaluated current policies and practices for pharmacy support staff in the ROI and compared these with those in place in other jurisdictions and proposed alternatives, it provides information needed by policy-makers which they can use as part of policy planning and development. It gives them the conceptual tools to help their decision-making as well as to analyse critically the assumptions and strategies of current policy. Raffe (2002) identifies this as an important role for research with regard to policy.

The thesis provides an academic study which is open and unencumbered by any specific sectoral interest. The research could form part of evidence-informed policy development. The study found that regulation as currently structured is not working well and causing concern particularly among technician associations and educators. It also found that the education system for pharmacy technicians is confusing and in need of reform. The research makes a case for the regulatory powers of the PSI to explicitly incorporate pharmacy support staff in order to bring about desirable changes in both these areas. It also points to the need for introduction of statutory regulation and registration of pharmacy technicians but stresses the need to involve all stakeholders in developing an agreed strategy to bring this about. In light of the evidence gathered from the USA and Canada it might be anticipated that such a move could be opposed by some sectors and be difficult to implement.

It is to be hoped that definite decisions will be made to provide a clear comprehensive route for pharmacy support staff development and that there will not be a temptation to remain with the current status quo which is not facilitating their development. In order to future-proof pharmacy technicians who are the main category of staff after the pharmacist it will be necessary to address their two current qualification routes. Having what is considered a low-skills and a high-skills route to the same job role would need to be addressed by policy makers.

**The Research community**

The overview and analysis of the work of many of the main researchers concerned with vocational/professional education, undertaken in this study provides the professional learning community with a comprehensive account of how this matter is being deliberated in the literature. Cross-country comparisons of education and training systems advanced a consistent view that in order to develop high levels of skill formation the state, the educational system, employers and workers must all be committed to the goals of high level skill formation and systems must be in place to provide a mixture of off-the-job and on-the-job learning and to ensure the quality of this through regulatory mechanisms. This comparison allowed for bench marking of the ROIs pharmacy support staff education and training system. Recurring concern around the side-lining of theoretical knowledge in current approaches to professional/vocational formation particularly in competency-based programmes identified in the literature highlights an issue that will be of particular interest to educators and education researchers alike. By considering the professional development of pharmacy technicians within the wider context of professionalisation of technical staff the study can contribute to the growing debate that is taking place across the healthcare sector in relation to professionalisation. The research identified that the processes of professionalisation and regulation of healthcare staff including nurses and medical scientists has led to a shift from work-based routes to full-time education pathways. While the study considers that regulation of support staff is in the best interests of patient safety and the pharmacy profession the professional learning community would need to give careful consideration to a move which could involve loss of the currently available work-based route. Such a move might lead to reduction in technician numbers and loss of the social diversity that currently exists among this cohort of staff.

**Practitioners**

One of the main findings emerging from the study that will be of particular relevance to practitioners is the increasing importance attached to providing an integrated approach to connect college and workplace learning. Proposals for curricular integration of didactic college course work and workplace learning experiences incorporating early exposure to practice along with suggestions for collaboration between higher education institutions and employers through formal partnership arrangements would undoubtedly affect practitioners who will be crucial to the success of any such changes. They would of necessity become more engaged in providing and managing student workplace learning experiences and in collaborative mentoring and assessing of students with college educators. They would in effect have what Felstead *et al* (2009) describe as a “conjoined working-teaching role”. Methods identified in the study to assist the process of transfer of learning between vocational/professional educational institutions and the workplace will be useful in assisting them with these activities. Guile and Ahmed’s (2011) proposal for the development of industry educators in pharmacy who could provide a way for employers to enhance the teacher/practioner role by establishing a career pathway and in the process, help to consolidate links between universities and the workplace clinicians who may be involved as tutors/mentors has interesting implications for practitioners. Although this is suggested for the professional formation of pharmacists it could in turn be applicable to other pharmacy staff. By highlighting innovative suggestions and the trends which are taking place internationally in pharmacy the study gives practitioners an insight into how the ROI situation may change in the future and the various routes it could take.

**8.5 Conduct of the study**

**Strengths of the approach taken**

The study adopted a systematic approach where themes identified from the literature reviews and documentary analysis formed the basis for the framing of the interview questions thereby providing a good strategy for allowing the gathering of the empirical data of the study. In this research, I was fortunate in being able to interview persons from a cross-section of the pharmacy sector in the ROI. I was also privileged to interview a person from the pharmacy sector of a Canadian Province which had recently introduced regulation and registration for pharmacy technicians. By placing the emphasis on pharmacy support staff when conducting documentary searches, literature reviews and interviews and by combining the information obtained from these various sources a holistic picture of the current situation in relation to the regulation, education and training of this cohort of staff in the ROI was produced thereby meeting the objectives of the research. Comparisons were made with the situation in GB and the USA because of the proximity of GB and its relevance to the ROI education and healthcare system and because of the extensive North American literature and the national debates which had taken place there around the topic of technician education, training and regulation.

**Limitations of the approach taken**

The group of people chosen for interview included representatives from across the pharmacy sector in the ROI. I interviewed at least two people from each sub-group including employers. However, while the two interviewees from this sector represented very different sized organisations both presented views from a community pharmacy perspective. Hence an additional interview with a person to provide the views of a hospital employer might have given a more balanced view of the employer sector. On the other hand the hospital sector did not go unrepresented as pharmacy technicians from this area were interviewed and they provided comprehensive contextual information for the study.

As a sole researcher there were constraints on the number of people interviewed. Time limitations as well as being a sole researcher also restricted the possibility of setting up and running focus groups where dialogues and open discussions with members from the different sub-groups could have been brought together to debate the main issues.

Adopting a non-confrontational type of interview style had many advantages in terms of participation, gaining trust and developing a rapport. It did however mean that interviewees were not pushed hard, asked ‘awkward’ questions or pressed to explain inequities or anomalies identified.

The extended time period over which the interviews were conducted gave rise to a more protracted process than was desirable. A tighter interview timeframe would have allowed a more seamless integration of the responses as it was found that some positions appear to have moved, in particular in the case of the regulators. During early interviews with some interviewees from the regulatory sector their position was one of the regulator having no statutory role for pharmacy support staff regulation, education and training and that the responsibility rested with superintendent pharmacists / pharmacy owners. However, while the issue of the statutory regulation remains the same, in subsequent interviews with some of the other interviewees it appeared that the position being adopted was now more nuanced than when discussions first took place and it was not possible for me to confirm or probe this shift with the original interviewees from the regulatory sector.

If I was to undertake this research study again I would ensure a tighter timeframe for the interviews. I also would prioritise the inclusion of a hospital employer as an interviewee. I would ensure that my literature reviews were kept specific and focused to avoid having them dominate my time especially in the early days of the research and to avoid falling into the trap of having, initially anyway, too broad a review. I would create a realistic weekly/monthly plan rather than the overzealous approach adopted this time round.

**8.6 Areas for possible future research**

♦ Test the feasibility of developing and implementing:

1. A national qualifying examination for pharmacy technicians which would include both written and OSCE/OSPE components
2. Partnership agreements between colleges and both community and hospital pharmacies who would be willing to participate in a rotation programme of pharmacy practice experiences for student technicians

♦ Identify barriers to imposition of regulation of the wider pharmacy support team

In conclusion it is expected that by focusing on pharmacy support staff this thesis will have highlighted the need for the pharmacy profession in the ROI to develop universal titles and uniform national standards for the education, training and regulation of support staff in all pharmacy settings. Doing this would be in the best interests of public health and safety and for the profession moving forward. It would provide clarity for users of pharmacy services and avoid the situation cogently described by one interviewee:

*It is confusing for the public because the only thing that is recognised is the pharmacist. People are not really sure of those girls working behind the counter, what do they really do, what do they really know?*

**References**

ACPE-led Profession-wide Dialogue on Pharmacy Technician Education-Compilation of Comments (2003). [online] Available from: <http://www.pharmacycredentialing.org/ccp/Files/TechComments.pdf> [Accessed 15th August 2012].

Actions of the APhA House of delegates (2008) Pharmacy Technician Education and Training. [online] Available from: <http://www.aacp.org/governance/COMMITTEES/professionalaffairs/Documents/APhAPolicyStatementsonResidencyTrainingMar2008.pdf> [Accessed 15th August 2012].

Agenda for Change Pay System (2005) New Job Profile Announced for Pharmacy Technicians in the UK. *The* *Pharmaceutical Journal,* 275, 568.

Allais, S. (2006) Problems with Qualification Reform in Senior Secondary Education in South Africa. In M. Young and J. Gable (eds) *Knowledge, Curriculum and Qualifications for South African Further Education*. Cape Town, Human Sciences Research Council.

American Pharmacists Association (2008) Report of the APhA House of Delegates. *Journal of the American Pharmacists Association,* 48, 470-472.

American Pharmacists Association (2008) Report of the Policy Committee. [online] Available from:

<http://www.pharmacist.com/AM/Template.cfm?Section=Home2&Template=/CM/ContentDisplay.cfm&ContentID=14773> [Accessed 8th July 2012].

American Society of Hospital Pharmacists (1987) Illinois Council Begins Work on Technician Certification Examination. *American Journal of Hospital Pharmacy*, 44, 470-473.

American Society of Health-System Pharmacists (2007) ASHP long-range vision for the pharmacy work force in hospitals and health systems*. American Journal of Health-System Pharmacy*, 64(12), *1320–1330.*

American Society of Health-System Pharmacists (1996) White paper on pharmacy technicians. *American Journal of Health-System Pharmacy,* 53(15), 1793–1796.

Anderson, R. (1987) Technicians and the Future of Pharmacy. *American Journal of Hospital Pharmacy*, 44(7), 1593-1597.

Anderson, H. (2005) Preface: A Methodological Series on Assessment. *American Journal of Pharmaceutical Education*, 69(1), Article 11.

Anderson, S. (2007) Reconfiguring the Pharmacy Workforce – Is it Time for a Three-Tier Register? *Pharmaceutical Journal,* 278, 306-306*.*

Anfara, V., Brown, K., and Mangione, T. (2002) Qualitative Analysis on Stage: Making the Research Process More Public. *Educational Researcher*, 31(7), 28-38.

Argyris, C. and Schon, D. (1978) *Organisational Learning: A Theory of Action Perspective.* Redding MA, Addison-Wesley.

ASHP Board of Directors in 1982 approves the *ASHP* Accreditation Standard for Pharmacy Technician Training Programs Initially Developed by the ASHP Commission on Credentialing. *American Journal of Hospital Pharmacy,* (41), 333.

ASHP Policy Statement (1993) Accreditation Standard for Pharmacy Technician Training Programs. *American Journal of Hospital Pharmacy*, 50(1), 124-126.

ASHP Professional Body Policy Statement (2008) Certification of Pharmacy Technicians. *American Journal of Health-System Pharmacy*, 65(19), 1798-1800.

ASHP. [online] Available from: [www.ashp.org](http://www.ashp.org). [Accessed 8th January 2011].

Ashton, D. and Green, F. (1996) *Education, Training and the Global Economy*. Cheltenham, Edward Elgar Publishing.

Assister, A. (1992) Skills and Knowledges: Epistemological Models Underpinning Different Approaches to Teaching and Training. In D. Bridges (ed) *Transferable Skills in Higher Education*, Norwich, University of East Anglia.

Babbie, E. (2009) *The Practice of Social Research*. 12th edition. USA, Wadsworth.

Banks, J., Shaw, A. and Weiss, M. (2007) The Community Pharmacy and Discursive Complexity: A Qualitative Study of Interaction Between Counter Assistants and Customers. *Health and Social Care in the Community*, 15(4), 313-321.

Barnett, M. (2006) Vocational Knowledge and Vocational Pedagogy. In M. Young and J. Gamble (eds) *Knowledge, Curriculum and Qualifications for South African Further Education*. Pretoria, Human Sciences Research Council.

Baseline Study of Community Pharmacy Practice in Ireland. Final report (2011). Commissioned by the PSI and carried out by Horwath Bastow Charleton. [online] Available from: <https://docs.google.com/viewer?a=v&q=cache:v2LvXjsiFkQJ:www.thepsi.ie/Libraries/Publications/PSI_-_Baseline_Survey_-_Final_Report.sflb.ashx+results+of+a+baseline+study+of+pharmacy+practice+in+ireland&hl=en&pid=bl&srcid=ADGEESgx4ITatoe1t6kYgwNuQwbGzIl9y82jyEvMRjNXjO9YXftA3_FTEydCFvmUUeBgX-Hiv5v3zH06SOh1MsV6ZnLMpIWtUoXTJLCxTyvZRCRLjgMSuqwwe7p7N66TrLswigpmkg2N&sig=AHIEtbTkKm8S7rI8LTUro3Pj7ZIUuelgLQ> [Accessed 13th August 2012].

Bell, S. (2005) From Practice Research to Public Policy—the Ministerial Summit on Health Research. *Annals of Pharmacotherapy,* 39(7-8), 1331-1335.

BERA Guidelines, Ethical Guidelines for Educational Research (2011) [online] Available from: <http://www.bera.ac.uk/publications/Ethical%20Guidelines> [Accessed 13th October 2012].

Bernstein, B. (2000) *Pedagogy, Symbolic Control and Identity*. 2nd Edition. Oxford, Rowman and Littlefield.

Billett, S. (2004) Learning Through Work: Workplace Participatory Practices. In H. Rainbird, A. Fuller and A. Munro (eds) *Workplace Learning in Context.* London, Routledge.

Billett, S. (2006) *Learning Practice: Conceptualising Professional Lifelong Learning.* Paper presented at Professional Lifelong Learning: Beyond Reflective Practice, a one day conference held at Trinity and All Saints College Leeds, 3rd July.

Billett, S. (2008) Learning Through Work: Exploring Instances of Relational Interdependencies. *International Journal of Educational Research*, 47(4), 232-241.

Billett, S. (2008) Learning Throughout Working Life: A Relational Interdependence Between Social and Individual Agency. *British Journal of Education Studies,* 55(1) 39-58.

Billett, S. (2009a) Conceptualizing Learning Experiences: Contributions and Mediations of the Social, Personal and Brute.  *Mind, Culture and Activity,* 16(1), 32-47.

Billett, S. (2009b) Learning to be an Agentic Professional: Conceptions, Curriculum, Pedagogy and Personal Epistemologies. Presentation [online] Available from:

<http://learningtobeprofessional.pbworks.com/w/page/15915037/Stephen%20Billett>

[Accessed on 28th January2014].

Boots Ireland. [online] Available from: <http://www.boots.jobs/ireland/pharmacy-roles-in-ireland/pharmacy-support-team/> [Accessed 7th March 2013].

Bourdieu, P. (1999) *The Weight of the World.* Cambridge, Polity Press.

Boyatzis, R. (1982) *The Competent Manager: A Model for Effective Performance*. New York, Wiley.

Boyce, R., Moran, M., Nissen, L., Chenery, J. and Brooks, P. (2009) Interprofessional Education in Health Sciences: The University of Queensland Health Care Team Challenge. *Medical Journal of Australia,* 190(8), 433-436.

Braddick, L. (2006) National Standards Relating to Healthcare Support Workers in Scotland: Consultation Document. Royal Pharmaceutical Society of Great Britain, Scottish Department. [online] Available from: <http://www.scotland.gov.uk/Resource/Doc/169036/0047050.pdf> [Accessed 7th March 2013].

Brockmann, M., Clarke, L. and Winch, C. (2008) Can Performance-Related Outcomes Have Standards? *Journal of European Industrial Training*, 32(2/3), 99-113.

Brown, A. (2010) Assessment in the Workplace of Performance, Developing Expertise and Competence. In P. Peterson, E. Baker and B. McGaw (eds) *International Encyclopedia of Education.* Oxford, Elsevier.

Bryman, A. (2012) *Social Research Methods*. 4th edition. Oxford, Oxford University Press.

Bureau of Labor Statistics. Occupational Outlook Handbook, 2010–11 (ed): Pharmacy Technicians and Aides. [online] Available from: [www.bls.gov/oco/ocos325.htm](http://www.bls.gov/oco/ocos325.htm) [Accessed 14th July 2012].

Buring, S., Bhushan, A., Brazeau, G., Conway, S., Hansen, L. and Westberg, S. (2009) Keys to Successful Implementation of Interprofessional Education: Learning Location, Faculty Development and Curricular Themes. *American Journal of Pharmaceutical Education*, 73(4), 60.

Byers, B. and Eilks, I. (2009) The Need for Innovations in Higher Level Chemistry Education- A Pedagogical Justification. In I. Eilks and B. Byers (eds*) Innovative Methods of Teaching and Learning Chemistry in Higher Education.* Cambridge, RSC Publishing.

Cahill, J. (2003) A Closer Look at Pharmacy Technicians. *Journal of Managed Care Pharmacy,* 9(1), 84.

Carter, H. (2009) Progress Report Suggests Stafford Hospital has Improved Medicines Management. *Pharmaceutical Journal,* Dec 18th*.*

Cassano, A. (2010) PTCB, Personal Communication, May 13. In C. Myers (ed) Opportunities and Challenges Related to Pharmacy Technicians in Supporting Optimal Pharmacy Practice Models in Health Systems. *American Journal of Health-System Pharmacy*, 68(12), 1128-1136.

Cassano, A. (2012) Expanding the Role of Pharmacy Technicians. *Pharmacy Purchasing and Products,* 9(4), 28.

CEDEFOP (2008) The Shift to Learning Outcomes: Conceptual, Political and Practical developments in Europe. Luxembourg, Office for Official Publications of the European Communities.

CEPT/EAPT (2011) Annual Report. [online] Available from: <http://www.pharmtech.ie/nahpt-news/74-european-association-of-pharmacy-technicians>. [Accessed 14th May 2014].

Choi, J. (2006) Doing Poststructural Ethnography in the Life History of Dropouts in South Korea: Methodological Ruminations on Subjectivity, Positionality and Reflexivity. *International Journal of Qualitative Studies in Education,* 19(4), 435-453.

Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education*. 7th Edition. Abingdon, Oxon, Routledge.

Cooper, S. and Endacott, R. (2007) Generic Qualitative Research: A Design of Qualitative Research in Emergency Care? *Emergency Medicine Journal,* 24(12), 816-819.

Corbin Dwyer, S. and Buckle, J. (2009) The Space Between: On Being an Insider-Outsider in Qualitative Research. *International Journal of Qualitative Methods*, 8(1), 54-63.

Core Competency Framework for Pharmacists (2013) The Pharmaceutical Society of Ireland. [online] Available from: <http://www.thepsi.ie/Libraries/Pharmacy_Practice/PSI_Core_Comp_Framework_Web_Version_Final.sflb.ashx> [Accessed 14th May 2014].

Cotter, J. (2007) National Association of Hospital Pharmaceutical Technicians. *Irish Pharmacy Journal*, May.

Council on Credentialing in Pharmacy (2003) White Paper on Pharmacy Technicians 2002: Needed Changes Can No Longer Wait. *American Journal of Health-System Pharmacy,*60(1), 37-51.

Council on Credentialing in Pharmacy (2009) Pharmacy Technician Credentialing Framework. [online] Available from: <http://www.pharmacycredentialing.org/Files/CCP%20technician%20framework_08-09.pdf> [Accessed 4th April 2011].

Cox, A. (2007) *Re-Visiting the NVQ Debate: ‘Bad’ Qualifications, Expansive Learning Environments and Prospects for Upskilling Workers*. ESRC Centre on Skills, Knowledge and Organizational Performance SKOPE Research Paper No. 71. Oxford, University of Oxford.

Cree, V. (2000) The Challenge of Assessment. In V.E.Cree, and C. Macaulay (eds) *Transfer of Learning in Professional and Vocational Education*, London, Routledge.

Criteria for National Vocational Qualifications (NCQs) July 2011. [online] Available from:

<http://search.ofqual.gov.uk/search?q=cache:uwnq38Zql4oJ:www2.ofqual.gov.uk/downloads/category/90-nvq-qualification-criteria%3Fdownload%3D953%253Acriteria-for-national-vocational-qualifications-nvqs+The+following+criteria+are+used+as+the+basis+for+the+development+and+accreditation+of+all+National+Vocational+Qualifications+(NVQs)%3A&access=p&output=xml&ie=UTF-8&client=ofqual_main&site=default_collection&proxystylesheet=ofqual_main&oe=UTF-8> [Accessed 7th March 2013].

Dall’Alba, G. (2009) Introduction to Diverse Approaches to Phenomenology and Education. In G. Dall’Alba (ed) *Exploring Education through Phenomenology*. UK, Wiley-Blackwell.

DeHaan, R. (2005) The Impending Revolution in Undergraduate Science Education. *Journal of Science Education and Technology*, 14, 253-269.

DeLyser, D. (2001) “Do You Really Live Here?” Thoughts on Insider Research. *Geographical Review*, 91(1-2), 441-453.

Directive 2005/36/EC on the Recognition of Professional Qualifications Came into Force in 2007. [online] Available from:

<http://ec.europa.eu/internal_market/qualifications/policy_developments/legislation/index_en.htm> [Accessed 7th March 2013].

Donnelly, R., McNally, M. and Barry, J. (2009) Development and Validation of Procedures for Assessment of Competency of Non-pharmacists in Extemporaneous Dispensing. *International Journal of Pharmacy Practice,* 17(1), 67-71.

Draft Statutory Instruments (2007) Healthcare and Associated Professions. Pharmacists. The Pharmacists and Pharmacy Technicians Order 2007. [online] Available from: <http://www.legislation.gov.uk/ukdsi/2007/0110754611> [Accessed 8th May 2011].

Duke, L., Unterwagner, W. and Byrd, D. (2008) [Establishment of a Multi-State Experiential Pharmacy Program Consortium.](http://www.ncbi.nlm.nih.gov/pubmed/18698386) *American Journal of Pharmaceutical Education,* 72(3), Article: 62.

Duncan-Hewitt, W. and Austin, Z. (2005) Pharmacy Schools as Expert Communities of Practice? A Proposal to Radically Restructure Pharmacy Education to Optimize Learning. *American Journal of Pharmaceutical Education*, 69(3), Article: 54.

Durkheim, E. (1912) (1996) *The Elementary Forms of Religious Life*. New York, The Free Press.

Eckel, F. (2009) So Why Are You a Pharmacist? *Pharmacy Times*, Oct.

Elmes, C. and Wynne Howells, C. (2007) Change Presents Opportunity for Technicians. *The* *Pharmaceutical Journal,* April 27th.

Eraut, M. (2004) Transfer of Knowledge between Education and Workplace Settings. In H. Rainbird, A. Fuller and A. Munro (eds) *Workplace Learning in Context.* London, Routledge.

Eraut, M. and Hirsh, W. (2007) The Significance of Workplace Learning for Individuals, Groups and Organisations. Oxford, University of Oxford, SKOPE.

Evans, K. and Kersh, N. (2004) Recognition of Tacit Skills and Knowledge. Sustaining Learning Outcomes in Workplace Environments. *Journal of Workplace Learning*, 16 (1/2), 63-74.

Evans, K. and Kersh, N. (2006) Adults Learning in, for and through the Workplace-the Significance of Biography and Experience. Paper presented at the British Educational Research Association Annual Conference, University of Warwick, 6-9th Sept.

Evans, K., Kersh, N., and Sakamoto, A. (2004) Learner Biographies: Exploring Tacit Dimensions of Knowledge and Skills. In H. Rainbird, A. Fuller and A. Munro (eds) *Workplace Learning in Context.* London, Routledge.

Evans, W., Alinier, G., Kostrzewski, A., Lefteri, K., and Dhillon, S. (2011) Development and Design of Objective Structured Clinical Examinations (OSCE) in Undergraduate Pharmacy Education in a New School of Pharmacy in England*. Currents in Pharmacy Teaching and Learning*, 3(3), 216-223.

Felstead, A., Fuller, A., Jewson, N. and Unwin, L. (2009) *Improving Working as Learning*. Abingdon, Oxon, Routledge.

FIP (2010) Pharmacy Education Taskforce. A Global Competency Framework (Draft Version) [online] Available from: <http://www.fip.org/files/fip/PharmacyEducation/GbCF%20booklet.pdf> [Accessed 20th September 2012].

Flowers, S., Vanderbush, R., Hastings, J., and West, D. (2010) [Web-based Multimedia Vignettes in Advanced Community Pharmacy Practice Experiences.](http://www.ncbi.nlm.nih.gov/pubmed/20498732)

*American Journal of Pharmaceutical Education*, 74(3), Article: 39.

Freeman, M. (2008) Types of Data and their Analysis. In the SAGE handbook of Qualitative Data Analysis. U-Flick. Thousand Oaks, California, SAGE Publications.

[Fuller, A.](http://www.tandfonline.com.remote.library.dcu.ie/action/doSearch?action=runSearch&type=advanced&result=true&prevSearch=%2Bauthorsfield%3A(Fuller%2C+A.)) and [Unwin, L.](http://www.tandfonline.com.remote.library.dcu.ie/action/doSearch?action=runSearch&type=advanced&result=true&prevSearch=%2Bauthorsfield%3A(Unwin%2C+L.)) (2004) Expansive Learning Environments: Integrating Personal and Organisational Development. In H. Rainbird, A. Fuller and A. Munro (eds) *Workplace Learning in Context.* London, Routledge.

Fuller, A. and Unwin, L. (2006) Expansive and Restrictive Learning Environments. In K. Evans, P. Hodkinson, H. Rainbird, and L. Unwin, (eds) *Improving Workplace*

*Learning*. London, Routledge.

Fuller, A., Unwin, L., Felstead, A., Jewson, N. and Kakavelakis, K. (2007) [Creating and Using Knowledge: An Analysis of the Differentiated nature of Workplace Learning Environments.](http://eprints.ioe.ac.uk/2351/) *British Educational Research Journal,* 33(5), 743-759.

Fuller, A., Turbin, J., Unwin, L. Guile, D. and Wintrup, J. (2013) Technician and Intermediate Roles in the Healthcare Sector. London, Gatsby Charitable Foundation.

Gallagher, R. and Gallagher, H. (2012) Improving the Working Relationship Between Doctors and Pharmacists: Is Inter-Professional Education the Answer? *Advances in Health Science Education: Theory and Practice,* 17(2), 247-257.

Garner, M. and Watson, M. (2007) Using Linguistic Analysis to Explore Medicine Counter Assistants’ Communication During Consultations for Non-prescription Medicines. *Patient Education and Counselling,* 65(1), 51-57.

Gebhart, F. (2006) California Accepts ‘Tech-Check-Tech’ in Hospitals, *Drug Topics* June 5th.

General Pharmaceutical Council [online] Available from: <http://www.pharmacyregulation.org/about-us> [Accessed 20th September 2012].

Gergen, K. (1994) Realities and Relationships. Soundings in Social Constructionism. Cambridge MA, Harvard University Press.

Gifford, A. (2008) An Exploration of Pharmacists’ Learning in Practice. Thesis Submitted to the University of Nottingham for the degree of Doctor of Philosophy.

Gonczi, A., Hager, P., and Athanason, J. (1993) The Development of Competency-Based Assessment Strategies for the Professions. National Office for Overseas Skills Research. Paper No. 8. Canberra, Australia, Australian Government Publising Service.

Govern, V., Birdwell, S., and Sherrin, T. (1991) Attitudes of Ohio Hospital Pharmacists towards Pharmacy Technicians. *American Journal of Hospital Pharmacy,* (48)6, 1228-1233.

Grant Thornton (2011) *Review of the Community Pharmacy Sector in Ireland.* On Behalf of the Irish Pharmacy Union, December 2012.

Grugulis, I. (2003) The Contribution of NVQs to the Growth of Skills in the United Kingdom. *British Journal of Industrial Relations*, 45(3), 457-475.

Grugulis, I. and Bevitt, S. (2002) The Impact of the Investors in People Award: A Case Study of a Hospital Trust. *Human Resource Management Journal*, 12(3), 44–60.

Guba, E. and Lincoln, Y. (1994) Competing Paradigms in Qualitative Research. In N. Denzin and Y. Lincoln (eds) *Handbook of Qualitative Research*. Thousand Oaks, CA, Sage.

Guile, D. and Griffiths, T. (2001) Learning through Work Experience. *Journal of Education and Work*, 14(1), 113-131.

Guile, D. and Ahamed F. (2011) Modernising the Pharmacy Curriculum A Report for the Modernising Pharmacy Careers Pharmacist Undergraduate Education and Preregistration Training Project. LLAKES Research Paper 26.

Harteis, C. (2003) Learning Organisations as Seen by Workers. *European Journal for Vocational Training*, 29, 15-24.

Harteis, C. and Billett, S. (2008) The Workplace as Learning Environment: Introduction. *International Journal of Educational Research*, 47(4), 209-212.

Harteis, C. and Gruber, H. (2004) Competence Supporting Working Conditions. In H.P.A Boshuizen, R. Bromme and H.Gruber (eds) *Professional Learning: Gaps and Transitions on the way from Novice to Expert*. Dordrecht, Kluwer.

Harteis, C., Bauer, J. and Gruber, H. (2008) The Culture of Learning from Mistakes: How Employees Handle Mistakes in Everyday Work. *International Journal of Educational Research*, 47(4), 223-231.

Harteis, C., Gruber, H. and Hertramph, H. (2010) How Epistemic Beliefs Influence E-learning in Daily Work-life. *Educational Technology and Society,* 13(3), 201-211.

Hatch, J. (2002) *Doing qualitative research in educational settings.* Albany, State University of New York Press.

Herrera, H. (2007) Foundation Degrees - Building on the Foundation of Experience. *Hospital Pharmacist,* 14, 311-312.

Herrera, T. (2010) A Qualitative Study of Managerial Coaching: How Critical Reflection and Experiential Learning are Facilitated within a Multi-National Pharmaceutical Company. EdD Dissertaiton, Teachers College, Columbia University.

Hodkinson, P. and Hodkinson, H. (2004) The Significance of Individuals’ Dispositions in Workplace Learning: A Case Study of Two Teachers*. Journal of Education and Work*, 17(2), 167-182.

Hodkinson, H. (2006) Divergent Perspectives on Learning At, For and Through Work. Paper Presented at the European Vocational Education and Training and Culture Networks 2006 Conference, Copenhagen.

Horgan, L. (2010) Using Activity Theory to Understand the CPD Experience. [online] Available from: <http://www.leeds.ac.uk/medicine/meu/events/pll11-docs/Horgan.pdf> [Accessed 3rd March 2013].

Hoskin, K. and Anderson-Gough, F. (2004) Insights from the Accountancy Profession. In H. Rainbird, A. Fuller and A. Munro (eds) *Workplace Learning in Context.* London, Routledge.

Hough, J., Van Damme C., Obiolos Albinana, L. and Bates I. (2010) [Framework for Pharmacy Technicians](http://www.codeg.org/fileadmin/codeg/pdf/tlf/Hough_FPT_2010.pdf). *Pharmacy Technician Journal*, 2(22).

Hughes, C., Hawwa, A., Scullin, C., Anderson, C., Bernsten, C., Bjornsdottir, I., Cordina, M., DaCosta, F., DeWulf, I., Eichenberger, P., Foulon, V., Henman, M., Hersberger, K., Schaefer, M., Sondergaard, B., Tully, M., Westerlund, T. and McElnay, J. (2010) Provision of Pharmaceutical Care by Community Pharmacists: A Comparison Across Europe. *Pharmacy World and Science,* 32(4), 472-487.

Hyland, T. (1993) *Outcomes, Competence and NVQs in HE: A Critique*. Paper presented at the HEC conference on NVQs and HE: opportunity or threat?

Hyland, T. (1995) Behaviourism and the Meaning of Competence. InP.Hodkinson, and M. Issitt (ed) *The Challenge of Competence*. London, Cassell.

Innes, R. (2009) “Wait a Second. Who Are You Anyways?”: The Inside-Outsider Debate and American Indian Studies. *American Indian Quarterly*, 33(4), 440-461.

James, S. (2006) *Adding New Ingredients to an Old Recipe: NVQs and the Influence of CATERBASE*. ESRC Centre on Skills, Knowledge and Organizational Performance, Issue Paper No. 13. Universities of Cardiff and Oxford.

James, N. and Busher, H. (2006) Credibility, Authenticity and Voice: Dilemmas in Online Interviewing. *Qualitative Research,* 6(3), 403-420.

Jenkins, R. (2000) Categorisation: Identity, Social Process and Epistemology. *Current Sociology*, 43(3), 7-25.

Jessup, G. (1991) *Outcomes: NVQs and the Emerging Model of Education and Training.* London, Falmer Press.

Johnson, M. and Boud, D. (2010) Towards an Emergent View of Learning Work. *International Journal of Lifelong Education*, 29(3), 359-372.

Kalata, C. and Abate, M. (2013) A Mentor-based Portfolio Programme to Evaluate Pharmacy Students’ Self-assessment Skills. *American Journal of Pharmaceutical Education*, 77(4), Article 81.

Karimi, R., Arendt, C., Cawley, P., Buhler, A., Elbarbry, F. and Roberts, S. (2010) [Learning Bridge: Curricular Integration of Didactic and Experiential Education.](http://www.ncbi.nlm.nih.gov/pubmed/20498741)

*American Journal of Pharmaceutical Education*, 74(3), Article: 48.

Keep, E. (1999) Britain’s VET Policy and the ‘Third Way’ – Following a High Skills Trajectory or Running Up a Dead End Street?’ *Journal of Education and Work,*12(3), 323-346.

Kinsella, E. (2006) Hermeneutics and Critical Hermeneutics: Exploring Possibilities within the Art of Interpretation. Forum: Qualitative Social Research, 7(3), Article 19.

Kirton, S. and Kravitz, L. (2011) Objective Structured Clinical Examinations (OSCEs) Compared with Traditional Assessments. *American Journal of Pharmaceutical Education*, 75(6), 111-122.

Kvale, S. (1996) *InterViews: An Introduction to Qualitative Research Interviewing.* Thousand Oaks, London, SAGE Publications.

Kvale, S. and Brinkmann, S. (2009) *Interviews*. 2nd edition. Thousand Oaks, CA, Sage.

Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*. Cambridge, Cambridge University Press.

Lemon, R. (2011) Confidential Waiting for approval at AGM 2011. [online] Available from: <http://www.aptuk.org/media/dynamic/files/2011/05/20/draft_agm_minutes_20091.pdf> [Accessed 13th August 2012].

Lincoln, Y. and Guba, E. (1985) *Naturalistic Inquiry*. Beverly Hills, CA, Sage.

LoBuono, C. (2002) Helping Hands. *Drug topics,* Aug 5th.

Lolwana, P. (2005) National Qualifications Frameworks and the Further Education and Training/Higher Education Interface, November, South African qualifications Authority, Pretoria [online] Available from: http://www.saqa.org.za/ [Accessed 14th January 2014].

Lynas, K. (2011) British Columbia Becomes Second Province to Register Regulated Pharmacy Technicians with Expanded Training and Scope of Practice. *Canadian Pharmacists Journal*, 144(4), 155-155.

Macaulay, C. (2000) Transfer of Learning. In E. Cree and C. Macaulay (eds) *Transfer of Learning in Professional and Vocational Education*. London, Routledge.

Manasse, H. and Menighan, T. (2010) Single Standard for Education, Training, and Certification of Pharmacy Technicians. *Journal of the American Pharmacists Association*, 50(2), 116-117.

Manasse, H. and Menighan, T. (2011) Pharmacy Technician Education, Training, and Certification: Call for a Single National Standard and Public Accountability*.*

*Journal of the American Pharmacists Association*, 51(3), 326-327.

Manasse, H. and Speedie, M. (2007) Pharmaceuticals and Policy Issues Shaping the Workforce in Pharmacy: Logistics of Medication Distribution in the United States and the Need for Pharmacy Leadership in Large-Scale Operations Management. *American Journal of Health-System Pharmacy,* 64(12), 30-48.

Marshall, K. (1991) NVQs: An Assessment of the ‘Outcomes’ Approach to Education and Training. *Journal of Further and Higher Education*, 15(3), 56-64.

Matthews, J. (2010) Community Pharmacy has Unique Position in New NHS Structure. *Pharmaceutical Journal* [online] Available from:<http://0-www.lexisnexis.com.ditlib.dit.ie/uk/nexis/results/docview/docview.do?start=2&sort=BOOLEAN&format=GNBFI&risb=21_T17301309488> [Accessed 10th November 2012].

Mays, N. and Pope, C. (1995) Qualitative Research: Rigour and Qualitative Research.  [*British Medical J*](http://bmj.bmjjournals.com/cgi/content/full/311/6997/109)*ournal*, 311(6997), 109-112.

Merton, R. (1936) The Unanticipated Consequences of Purposive Social Action. *American Sociological Review*, 1(6), 894-904.

Miles, M. and Huberman, A. (1994) *Qualitative Data Analysis: An Expanded Sourcebook.* 2nd edition. Thousand Oaks, CA, Sage.

Mirczuk, S. (2008) Technicians Save Pharmacists’ Time in Preadmission Clinic. *Hospital Pharmacist,* 15, 258.

Moustakas, C. (1994) *Phenomenological Research Methods*. Thousand Oaks, CA, Sage.

Muenzen, P., Murer, M., Corrigan, M., Smith, M. and Rodrigue, P. (2005) Updating the Pharmacy Technician Certification Examination. American Journal of Health-System Pharmacy, 62(23), 2542-2546.

Mullen, R. (2004) Skill Mix in Community Pharmacy: Exploring and Defining the Roles of Dispensary Support Staff. A Final Report Submitted to Pharmacy Practice Research Trust. [online] Available from: <http://www.pprt.org.uk/Documents/Publications/Skill_mix_in_community_pharmacy.pdf> [Accessed 3rd January 2011].

Murray, L. and Lawrence, B. (2000) The Basis of Critique of Practitioner-Based Enquiry. In L. Murray and B. Lawrence (eds) *Practioner-Based Enquiry: Principals for Postgraduate Research*. London, Falmer Press.

Myers, C. (2011) Opportunities and Challenges Related to Pharmacy Technicians in Supporting Optimal Pharmacy Practice Models in Health Systems. American Journal of Health-System Pharmacy,68(12), 1128-1136.

NAHPT survey in April 2010 to Identify the Training Currently Available for Pharmacy Technicians in the Republic of Ireland. [online] Available from: <http://ebookbrowse.com/eapt-annual-report-2011joint-doc-d138265342>[Accessed10th April 2012].

National Association of Boards of Pharmacy. Model Act. [online] Available from: [www.nabp.net/publications/model-act](http://www.nabp.net/publications/model-act) [Accessed 15th August 2012].

National Association of Boards of Pharmacy. Report of the Task Force on Pharmacy Technician Education and Training Programs. [online] Available from: [www.nabp.net/news/assets/TF-PharmTechEduc.pdf](http://www.nabp.net/news/assets/TF-PharmTechEduc.pdf) [Accessed15th August 2012].

National Association of Boards of Pharmacy. Report of the Task Force on Standardized Pharmacy Technician Education and Training. [online] Available from: [www.nabp.net/news/assets/08TF\_Standard\_Pharm\_Tech\_Educ\_Training.pdf](http://www.nabp.net/news/assets/08TF_Standard_Pharm_Tech_Educ_Training.pdf) [Accessed 15th August 2012].

National Association of Boards of Pharmacy. Survey of pharmacy law [online] Available from: [www.nabp.net/publications/survey-of-pharmacy-law](http://www.nabp.net/publications/survey-of-pharmacy-law) [Accessed 15th August 2012].

Norton, R. (2008) Unintended Consequences. The Concise of Encyclopedia of Economics. [online] Available from: [www.econlib.org/library/Enc/UnintendedConsequences.html](http://www.econlib.org/library/Enc/UnintendedConsequences.html) [Accessed 15th May 2014].

Noyce, P. (2004) Making Pharmacy Education Fit for the Future. Report of the Pharmacy Education R&D Reference Group. Lambeth High Street, London, RPSGB.

Noyce, P. (2006) Governance and the Pharmaceutical Workforce in England.

*Research in Social and Administrative Pharmacy,* 2(3), 408-419.

Nuffield Foundation (1986) Pharmacy: The Report of a Committee of Inquiry Appointed by the Nuffield Foundation. London, Nuffield Foundation.

Oates, T. (2004) The Role and Outcomes-based National Qualifications in the Development of an Effective Vocational Education and Training System: The Case of England and Wales. *Policy Futures in Education,* 2(1), 53-71.

Palmer, R. (1969) *Hermeneutics*. Evanston, IL, Northwestern University Press.

Palomba, C. and Banta, T. (2001) *Assessing Student Competence in Accredited Disciplines: Pioneering Approaches to Assessment in Higher Education*. Sterling, Virg: Stylus Publishing.

Paloniemi, S. (2006) Experience, Competence and Workplace Learning. *Journal of Workplace Learning,* 18(7/8), 439-450*.*

Patients support tech certification and training. *Drug Topics* E news (2007), Dec 6. [online] Available from: <http://drugtopics.modernmedicine.com/drugtopics/article/articleDetail.jsp?id=477650> [Accessed 5th May 2011].

Patton, M. (1990) *Qualitative Evaluation and Research Methods*. 2nd edition. Newbury Park, CA, Sage.

Pearson, P., Steven, A., Howe, A., Sheikh, A., Ashcroft, D. and Smith, P. (2010) Learning About Patient Safety: Organizational Context and Culture in the Education of Health Care Professionals. *Journal of Health Service Research and Policy* Supplemental 1, 4-10.

Pharmaceutical Services Negotiating Committee 2007. [online] Available from: <http://www.psnc.org.uk/pages/pharmacy_regulation.html> [Accessed 10th March 2012].

Pharmaceutical Society of Ireland (2004) Blueprint Document for Delivering a Pharmaceutical Technician Certificate/Diploma Course. Dublin, PSI.

Pharmacy Act 2007 [online] Available from: <http://www.irishstatutebook.ie/2007/en/act/pub/0020/index.html> [Accessed 13th March 2013].

Pharmacy Ireland 2020 Working Group. Interim Report April 2008. [online] Available from: <http://www.thepsi.ie/Libraries/Publications/Interim_Report_of_the_Pharmacy_Ireland_2020_Working_Group.sflb.ashx> [Accessed 13th March 2013].

Pharmacy Technician Certification Board Survey (2007) The Survey Shows Broad Support Among Americans For Pharmacy Technician Certification. [online] Available from: <http://www.prweb.com/releases/PTCB/122007/prweb574622.htm> [Accessed 8th July 2012].

Phillips, C., Ryan, M. and Roberts, K. (1988) Current and Future Delegation of Pharmacy Activities to Technicians in Tennessee. *American Journal of Hospital Pharmacy*, 45(3), 577-583.

Pollock, K. (2006) Policy as Outcome: Inequities Generated From Unintended Policy Outcomes. *Canadian and International Education/Education canadienne et internationale*, 35(2), 35-47.

Professional Competencies for Canadian Pharmacy Technicians at Entry to Practice (2007) [online] Available from: <http://www.napra.org/Content_Files/Files/Professional_Competencies_for_Canadian_Pharmacy_Technicians2007.pdf> [Accessed 19th March 2014]

Punch, K. (1998) *Introduction to Social Research: Quantitative and Qualitative Approaches*. London: Sage.

Raffe, D. (2002) Still Working Together? Reflections on the Interface Between Policy and Research. In Centre for Research in Lifelong Learning (ed) *Lifelong Learning, Policy and Research: Rhetoric or Reality.* Glasgow, Caledonian University, Forum Report No. 9, 5-11.

Rainbird, H. (2000) Skilling the unskilled: access to work based learning and the lifelong learning agenda. *Journal of Education and Work*, 13(2), 183-197.

Rainbird, H., Fuller, A. and Munro, A. (2004) *Workplace Learning in Context*. London, Routledge.

Rainbird, H., Munro, A. and Holly, L. (2004) The Employment Relationship and

Workplace Learning. In H. Rainbird, A. Fuller, and A. Munro (eds) *Workplace Learning in Context*. London, Routledge.

Rainbird, H., Munro, A. and Holly, L. (2004) Exploring the Concept of Employer

Demand for Skills and Qualifications: Case Studies from the Public Sector. In C. Warhurst, E. Keep and I. Grugulis (eds) *The Skills That Matter*. Basingstoke, Palgrave.

Response to the TNS-BMRB Evaluation of Impact of the Responsible Pharmacist Regulations (2011) by the RPS. [online] Available from: <http://www.rpharms.com/promoting-pharmacy-pdfs/rps-response-to-rp-research.pdf> [Accessed 19th August 2012].

Roberts, A., Benrimoj, S., Dunphy, D. and Palmer, I. (2007) *Community Pharmacy: Strategic Change Management.* Sydney, Australia, McGraw-Hill.

Roberts, A., Benrimoj, S., Chen, T., Williams, K. and Aslani, P. (2008) Practice Change in Community Pharmacy: Quantification of facilitators. *The Annals of Pharmacotherapy*, 42(6), 861-868.

Roe, P., Wiseman, J. and Costello, M. (2006) *Perceptions and Use of NVQs: A Survey of Employers in England*. Research Report 714, London, Department for Education and Skills.

Rouse, M (2008) A Global Framework for Quality Assurance of Pharmacy Education, Geneva. International Pharmacy Federation.

Royal Pharmaceutical Society of Great Britain (1990) Report of Working Party on the Education and Training of Certificate Support Staff in Community and Hospital

Pharmacy. Report to Council.

Ryan, M. (1989) The Pharmacy Technician - An Occupation in Search of Consensus. *American Journal of Hospital Pharmacy*, 46(3), 496-507.

Sargeant, A. (2000) An Exploratory Study of the Effects of Progression Towards

National Vocational Qualifications on the Occupational Knowledge and Care Practice of Social Care Workers. *Social Work Education*, 19(6), 639-666.

Savage, I. (1995) Time for Customer Contact in Pharmacies With and Without a Dispensing Technician. *International Journal of Pharmacy Practice,* 3(4), 193-199.

Schafheutle, E., Smith, C., Cutts, C., Higginson, P. and Noyce, P. (2012) Pharmacy technicians’ Views of Learning and Practice Implementation. *International Journal of Pharmacy Practice*, 20(3), 141-147.

Scheckelhoff, D. ASHP, Personal Communication (2010) April 30th. In C. Myers (ed) Opportunities and Challenges Related to Pharmacy Technicians in Supporting Optimal Pharmacy Practice Models in Health Systems. *American Journal of Health -System Pharmacy*, 68(12), 1128-1136.

Schommer, J. (2010) Pharmacists are Taking More Direct Patient Care Roles Survey Finds. *Drug Topics,* Nov 15th.

Schon, D. (1987) *Educating the Reflective Practitioner*. San Francisco, Jossey-Bass.

Seston, L. and Hassell, K. (2012) First Census of Pharmacy Technicians: 1. Demographics and Working Patterns. *The* *Pharmaceutical Journal*, 288(7691), 140-140.

Seston, L. and Hassell, K. (2012) First Census of Pharmacy Technicians: 2. Qualifications, CPD, Reasons for Joining and Plans to Change Worklife. *The* *Pharmaceutical Journal*, 288(7691), 141-142.

SI 2010 No. 231 Health Care and Associated Professions. The Pharmacy Order 2010 [online] Available from: <http://www.legislation.gov.uk/uksi/2010/231/made> [Accessed 15th August 2012].

Sims, D. and Golden, S. (1998) *A Study of Employers Use of NVQs and SVQs Across*

*Industrial Sectors.* Research Report, 51. Nottingham, Department for Education and

Employment.

Sin, C. (2005) Seeking Informed Consent: Reflections on Research Practice.

*Sociology,* 39(2)**,** 277-294.

Smith, F. (2005) *Conducting Your Pharmacy Practice Research Project*. London, Pharmaceutical Press.

Smithers, A. (1993) All Our Futures: Britain’s Education Revolution, Channel 4 Television.

Stake, R. (1995) *The Art of Case Study Research.* Thousand Oaks, Sage.

Stolar, M. (1981) National Survey of Hospital Pharmacy Technician Use. *American Journal of Hospital Pharmacy*, 38(8), 1133-1137.

Strawbridge, J., Horgan, L., Capdeville-Atkinson, C. and Lea, N. (2010) Pharmacy Education and Training in Ireland. The PHARMINE Survey of Higher Education Institutions Delivering Pharmacy Education and Training. Royal College of Surgeons in Ireland. e-publications@RCSI. [online] Available from: <http://epubs.rcsi.ie/cgi/viewcontent.cgi?article=1000&context=spharmrep> [Accessed 15th May 2014].

Sturgeon, N. (2009) Scottish e-Prescribing System to be Offered. *The Pharmaceutical Journal*, 282, 604. By-line: Editor.

Survey of Pharmacy Law (1996–1997) Park Ridge,IL: National Association of Boards of Pharmacy; 1997:32–40.

Swailes, S. and Roodhouse, S. (2003) Structural Barriers to the Take-up of Higher Level NVQs. *Journal of Vocational Education and Training*, 55(1), 85-105.

Telford, J. and Soma, N. (2005) Comparing the Role of Pharmacy Technicians in the US and UK. *Hospital Pharmacist,* 12, 379.

The Health Care and Associated Professions (Miscellaneous Amendments and Practitioner Psychologists) Order 2009. [online] Available from: <http://www.legislation.gov.uk/ukdsi/2009/9780111474907/contents> [Accessed 8th May 2011].

The Medicines (Pharmacies) (Responsible Pharmacist) Regulations 2008. [online] Available from: <http://www.legislation.gov.uk/uksi/2008/2789/contents/made> [Accessed 9th August 2012].

The Pharmacy Act 2 [online] Available from: <http://www.irishstatutebook.ie/2007/en/act/pub/0020/index.html> [Accessed 10th May 2011].

The PSCN Report on the Implications Regarding Terms of Service Issues Following the Introduction of the Responsible Pharmacist Act. [online] Available from: <http://www.psnc.org.uk/pages/responsible_pharmacist_.html> [Accessed 19th August 2012].

Thomas, M., Cross. S., Nagra, M. and Bullock, A. (2008) Empowering Technicians to Work in Extended Clinical Roles. *Hospital Pharmacist*, 15, 145.

Thompson, C. (2009) Legality of Technicians’ Involvement in Medication Reconciliation Not Clear. American Journal of Health-System Pharmacy, 66(5), 433-434.

TNS‐BMRB Evaluation of Impact of the Responsible Pharmacist Regulations (2011) Commisioned by the RPS and the professional forum of the PSNI. [online] Available from: <http://www.rpharms.com/promoting-pharmacy-pdfs/evaluationrpregs.pdf> [Accessed 19th August 2012].

Turner, C., Ellis, S., Giles, J., Maffeo, C., Hansen, L., Saseen, J., Ulrich, H., Valdez, C., Altiere, R., Bainbridge, J., Page, R., Sintek, C., Vondracek,. S., Zadvorny, E. and Fish, D. (2007) [A Strategy to Develop Advanced Pharmacy Practice Experiences.](http://www.ncbi.nlm.nih.gov/pubmed/17619646) *American Journal of Pharmaceutical Education*, 71(3), 46.

Ward, P., Bissell, P. and Noyce, P. (1998) Medicines Counter Assistants: Roles and Responsibilities in the Sale of Deregulated Medicines. *International Journal of Pharmacy Practice*, 6(4), 207-21.

Watson, M., Cleland, J., Inch, J., Bond, C. and Francis, J. (2007) Theory-based Communication Skills Training for Medicine Counter Assistants to Improve Consultations for Non-prescription Medicines. *Medical Education*, 41(5), 450-459.

Wenger, E. (1998) Communities of Practice: Learning, Meaning and Identity. Cambridge, Cambridge University Press.

Wenger, E., McDermott, R., and Snyder, W. (2002) Cultivating Communities of Practice. Boston MA, Harvard Business School Press.

Wertz, F. J., Charmaz, K., McMullen, L., Josselson, R., Anderson, R., and McSpadden, E. (2011) *Five Ways of Doing Qualitative Analysis: Phenomenological Psychology, Grounded Theory, Discourse Analysis, Narrative Research, and Intuitive Inquiry.* New York, NY: Guilford.

West, J. (2004) *Dreams and Nightmares: The NVQ Experience*. CLMS Working Paper No. 45. Leicester, Centre for Labour Market Studies.

Wheelahan, L. (2010) *Why Knowledge Matters in Curriculum: A Social Realist Argument*. Abingdon, Oxon, Routledge.

White Paper on Pharmacy Technicians (2006) A Discussion Paper for Council. College of Pharmacists British Columbia. [online] Available from: <http://library.bcpharmacists.org/A-About_Us/A-8_Key_Initiatives/5072-White_Paper_Ptech.pdf> [Accessed 5th August 2012].

White Paper, Pharmacy in England: Building on Strengths, Delivering the Future (2008). [online] Available from: <http://www.official-documents.gov.uk/document/cm73/7341/7341.pdf> [Accessed 14th January 2012].

Winch, C. (2000) *Education, Work and Social Capital: Towards a New Conception in Vocational Education*. London, Routledge.

Wolcott, H. (1992) Posturing in Qualitative Research. In M. LeCompte, W. Millroy and J. Preissle (eds) *The Handbook of Qualitative Research in Education*, 3-52. San Diego, Academic Press.

Wolf, A. (1990) Unwrapping Knowledge and Understanding from Standards of

Competence. In H. Black, and A. Wolf (eds) *Knowledge and Competence: Issues*

*in Training and Education*, Sheffield, Careers and Occupational Information Centre.

Wolf, A. (1995) *Competence-Based Assessment*. Buckingham, Open University Press.

Wolf, A. (2011) Review of Vocational Education. [online] Available from: <https://www.education.gov.uk/publications/eOrderingDownload/The%20Wolf%20Report.pdf> [Accessed 28th May 2012].

Wolf, A., Jenkins, A. and Vignoles, A. (2006) Certifying the Workforce: Economic Imperative or Failed Social Policy? *Journal of Education Policy*, 21(5), 535-565.

Woolfrey, S. (2006) Developing a Medicines Management Course for Pharmacy Technicians. *Hospital Pharmacist,* 13, 339.

Wright, D. and Morgan, L. (2011) An Independent Evaluation of Frameworks For Professional Development in Pharmacy. Report of the MPC Workstream 2 Project: Independent evaluation of competency frameworks within pharmacy education in the UK. [online] Available from: <http://www.mee.nhs.uk/pdf/Independent%20evaluation%20of%20professional%20development%20frameworks.pdf> [Accessed 8th September 2013].

Wuller, W. and Luer, M. (2008) [A Sequence of Introductory Pharmacy Practice Experiences to Address the New Standards for Experiential Learning.](http://www.ncbi.nlm.nih.gov/pubmed/19002273) *American Journal of Pharmaceutical Education*, 72(4), 73.

Wykes, V. (2003) In Making Pharmacy Education Fit for the Future 2004. Report of the Pharmacy Education R&D reference Group. London, RPSGB.

Young, M. (2007) *Bringing Knowledge Back In: Theoretical and Applied Studies in Sociology Education*. London, Routledge Falmer.

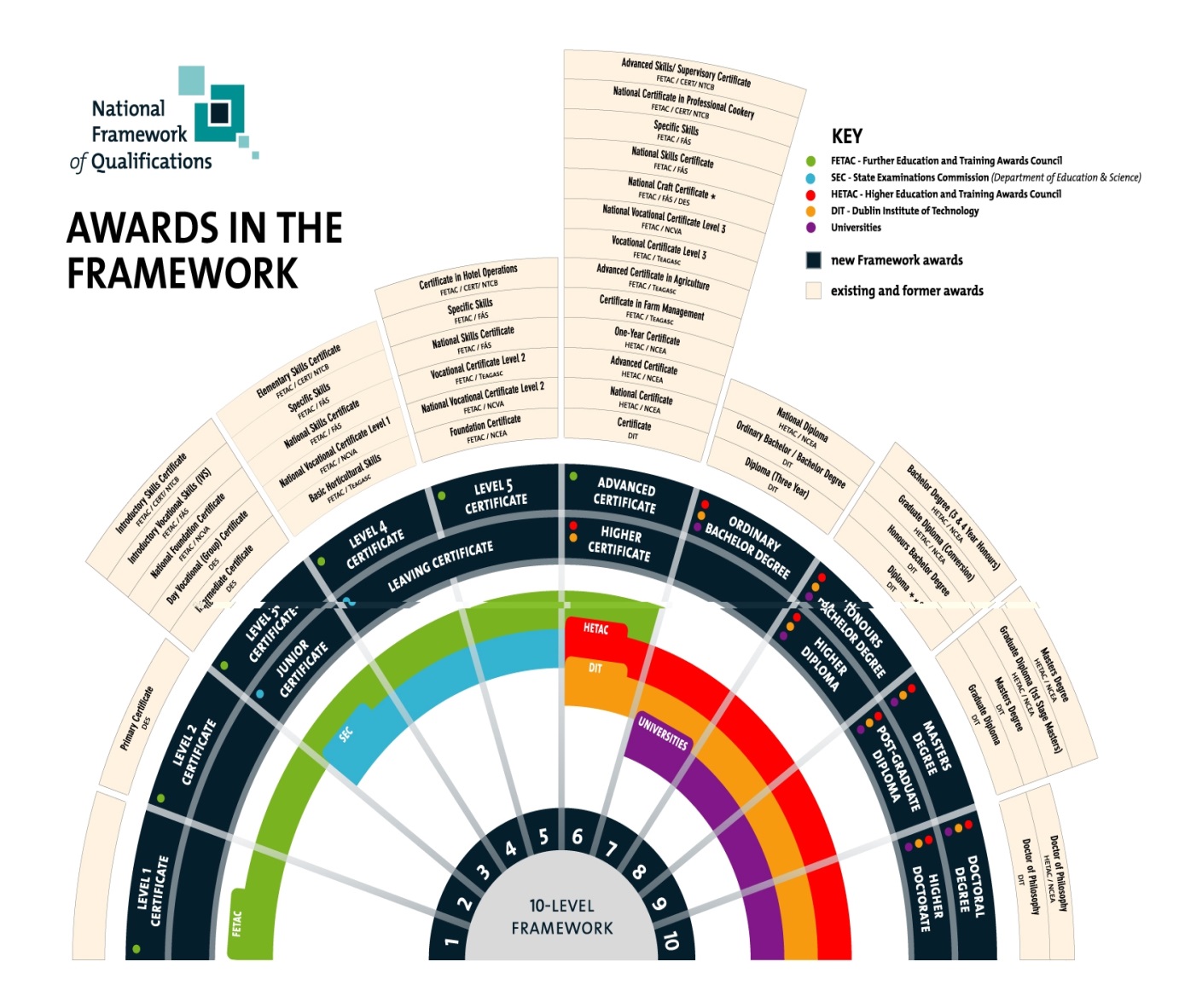
Young, M. (2008) *Bringing Knowledge Back In: From Social Constructivism to Social Realism in the Sociology of Education*. London and New York, Routledge.

Young, M. (2010) National Vocational Qualifications in the United Kingdom: Their Origins and Legacy. Geneva, International Labour Organisation.

**Appendix 1: National Qualification Frameworks**

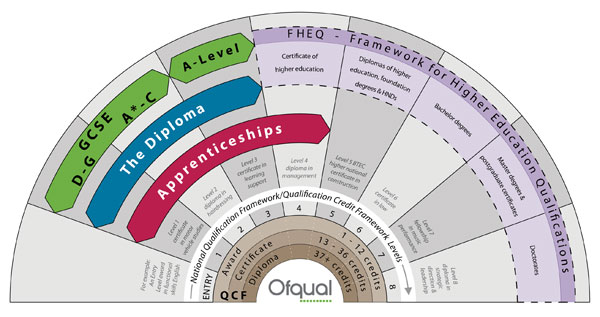
**National Framework of Qualifications for Ireland (NFQ)**

National Framework of Qualifications for Ireland (NFQ) is a system of ten levels. Each level is based on nationally agreed standards of knowledge, skill and competence i.e. what an individual is expected to know, understand and be able to do following successful completion of a process of learning. It recognises through the framework learning from the very initial stages to the most advanced stages and all such learning may be achieved in schools or colleges at work or in the home or community. A diagram of the framework is shown below:



[**Qualifications and Credit Framework**](http://en.wikipedia.org/wiki/Qualifications_and_Credit_Framework) **(QCF) for England, Wales and Northern Ireland**

[Qualifications and Credit Framework](http://en.wikipedia.org/wiki/Qualifications_and_Credit_Framework) (QCF) contains new vocational (or work-related) qualifications available in England, Wales and Northern Ireland. It is a way of recognising achievement - through the award of credit for units and qualifications. It provides a flexible routeto gaining full qualifications and enables progression to be achieved in smaller steps through the accumulation of credit.  Qualifications can be built from different units (required units plus learner choices) provided that combination rules are followed. Some in-house training can also yield QCF units. Units and qualifications also range in difficulty, from entry level to level 8 (similar to the levels in the NQF). A credit amounts to about ten hours and relates to the overall size of the qualification (award = 1-12 credits; certificate = 13-36 credits; diploma = 37 credits or more). The NQF set out levels against which a qualification can be recognised in England, Wales and Northern Ireland. There are eight levels awarded; levels 4-8 broadly compare to the Framework for Higher Education Qualifications (FHEQ), which covers those qualifications awarded by universities and other HE institutions. A diagram of the framework is shown below:



**Correspondence of levels established between national qualifications frameworks and the EQF**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | The National Framework of Qualifications for Ireland  (NFQ IE) | Qualifications & Credit Frameworks England/Northern Ireland  (QCF) | Credit and Qualifications Frameworks for Wales  (CQFW) | Scottish Credit and Qualification Frameworks  (SCQF) | European Qualifications  Framework  (EQF) |
| Level | 6 | 5/4 | 5/4 | 8/7 | 5 |

This table is a selected extract from Qualifications can cross boundries which was produced jointly by QAA, Ofqual, Scottish Credit and Qualifications Framework, CCEA, Credit and Qualifications Framework for Wales, and The National Qualifications Authority of Ireland.

**Appendix 2: Key Documents**

1. The Pharmacy Act 2007 is available at: <http://www.irishstatutebook.ie/pdf/2007/en.act.2007.0020.pdf>
2. The S.I. No. 488/2008 — Regulation of Retail Pharmacy Businesses Regulations 2008 is available at: <http://www.irishstatutebook.ie/2008/en/si/0488.html>
3. Pharmacy Act 2007: Understanding your role (ICCPE / PSI / HSE joint educational session Spring 2009). The complete document is available at:<http://thepsi.ie/Libraries/Publications/Pharmacy_Act_2007_Your_Role.sflb.ashx>
4. The interim report of Pharmacy 2020 is available at: <http://thepsi.ie/Libraries/Publications/Interim_Report_of_the_Pharmacy_Ireland_2020_Working_Group.sflb.ashx>
5. The role, responsibilities, organisation and governance, mission and values of the PSI are available at:

<http://www.thepsi.ie/gns/about-psi/overview.aspx>

1. NAHPT Annual Report 2011 is available at: <http://ebookbrowse.com/eapt-annual-report-2011joint-doc-d138265342>
2. IACPT Website is available at: <http://www.iacpt.ie/>
3. The Pharmacy Order 2010 is available at: <http://www.legislation.gov.uk/uksi/2010/231/article/39/made?view=plain>

**Statutory Instruments, 2010 No. 231**

**Health Care and Associated Professions**

The Pharmacy Order 2010

*Made - - - - 10th February 2010*

*The Pharmacy Order 2010 gives the General Pharmaceutical Council powers to make orders and rules in relevant areas, subject to approval by the Privy Council.*

*The General Pharmaceutical Council (GPhC) is responsible for the independent regulation of over 70,000 pharmacists, pharmacy technicians and pharmacy premises in England, Scotland and Wales.*

*Their remit is to protect, promote and maintain the health, safety and wellbeing of patients, the public and of all those who use pharmacy services.*

*Their role is prescribed under the Pharmacy Order 2010, and other legislation, such as the Medicines Act.*

1. General Pharmaceutical Council Standards for the initial education and training of pharmacy technician September 2010 is available at: <http://www.pharmacyregulation.org/sites/default/files/Standards%20for%20the%20initial%20education%20and%20training%20of%20pharmacy%20technicians%20s.pdf>

*Standards:*

*1. There must be clear procedures to address immediately any concerns about patient safety arising from pharmacy technician education and training involving patients and the public*

*Criteria to meet this standard*

* 1. *Supervision is in place to ensure that the practice of pre-registration trainee pharmacy technicians does not jeopardise patient safety*
  2. *Pre-registration trainee pharmacy technicians only undertake tasks in when they are competent, or are learning to be competent, under adequate supervision*
  3. *Assessment and monitoring systems are in place to ensure that pre-registration trainee pharmacy technicians are able to practice safely and effectively at a level that is consistent with their stage of education and training. Causes of concern should be addressed promptly*
  4. *Provision of appropriate support relating to health, conduct and professional progression is available* *to pre-registration trainee pharmacy technicians*

The document sets the following qualification entry level for pharmacy technicians- and establishes the commitment of the GPhC to the regulation, education and training of pharmacy technicians. The GPhC undertakes to review all of the standards on an annual basis.

*10 The programme must be delivered at Qualifications and Credit Framework level 3, Scottish Credit and Qualifications Framework level 6 or equivalent.*

The document specifies the *GPhCs-*

*(i) curriculum requirements for competency-based qualifications for pharmacy technicians and*

*(ii) curriculum requirements for knowledge-based qualifications for pharmacy technicians*

1. The GPhC policy on the minimum training requirements for dispensing/ pharmacy assistants and medicines counter assistants is available at: <http://www.pharmacyregulation.org/sites/default/files/Minimum%20training%20requirements%20for%20dispensing%20or%20pharmacy%20assistant%20and%20MCAs,%20Sept%202011.pdf>
2. The EU Directive on the recognition of professional qualifications is available at: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:255:0022:0142:en:PDF>
3. The Council on Credentialing in Pharmacy. Pharmacy technician credentialing framework is available at: <http://www.pharmacycredentialing.org/Files/CCP%20technician%20framework_08-09.pdf>
4. The International Pharmaceutical Federation (FIP) Global Pharmacy Workforce Report 2012 is available at: <http://www.fip.org/static/fipeducation/2012/FIP-Workforce-Report-2012/m/index.html#/page/8>
5. PSI Blueprint Document for Delivering a Pharmaceutical Technician Certificate/Diploma Course, September 2004

The purpose of this document was to provide guidance to academic institutions in the development and delivery of a pharmaceutical technician course. A number of excerpts from the document are shown below:

*There is a clear need for auxiliary staff trained to Certificate/Diploma level to assist pharmacists in both community and hospital pharmacy…*

*The minimum course duration is two years…*

*Suggested syllabus topic list*

*Science: Chemistry and Applied Physiology*

*Drug actions and uses*

*Medicine Production and Prescription Preparation: Theory and Laboratory Sessions*

*Customer Care*

*Practical Training*

*A period of at least one hundred days practical training over the duration of the course is undertaken in one community pharmacy or hospital pharmacy department under the supervision of a tutor pharmacist…*

*Assessment is undertaken by the students for the award of a Certificate/Diploma, as part of the academic and practical training modules… The student gains first-hand structured experience of practice… Problem-based learning is utilised as a teaching method…*

The following caveats, that form part of the document, clearly show that the PSI was not taking responsibility for accreditation of pharmaceutical technician courses based on their guidance recommendations or indeed for the accreditation of any pharmaceutical technician courses:

*The development of any pharmaceutical technician course in accordance with the recommendation of this document is not to be construed as an endorsement or approval of that course by the Pharmaceutical Society of Ireland, and no such statement or representation shall be made. No pharmaceutical technician course shall be referred to as being in compliance with, having been endorsed, approved, or in any way accredited, by the Pharmaceutical Society of Ireland.*