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**THE VALUE OF INFORMATION LITERACY:
CONCEPTIONS OF BSc NURSING STUDENTS AT A UK
UNIVERSITY**

ANTONY OSBORNE

A thesis submitted to the University of Huddersfield in partial fulfilment
of the requirements for the degree of Doctor of Education

The University of Huddersfield

Submission date: July 2011

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ABSTRACT

This study investigates the conceptions of information literacy held by student nurses on a BSc Nursing Studies course and asks whether the information skills sessions taught are successful from the students' viewpoint. Additionally, it compares attitudes to, and use of information literacy within the artificial environment of the university and the 'real world' of the nurse as perceived by participants on their clinical and community placements. The inquiry introduces the concept of information literacy and charts its development before discussing it in relation to the changing context of nurse education and evidence-based practice.

The research adopts the interpretive paradigm with phenomenography as its methodology. It uses focus groups and twenty-one individual interviews to obtain rich data from a purposive sample of students across the three years of the course. Such data were analysed to produce categories of description representing the collective experience of information literacy across the sample.

The thesis questions whether learning to nurse effectively is best achieved through training along traditional lines, education, or a combination of both. For the latter it is imperative to find an appropriate balance between academic and clinical skills.

The findings reveal a tension between the academic and clinical aspects of learning to be a nurse which some students struggle to resolve. The study concludes that while information literacy is perceived as part of a nurse's professional role in supporting evidence-based practice, participant observations suggest that its use is context dependent and variable. The thesis recognizes that the adoption of evidence-based practice may depend on the presence or absence of particular personal and organisational barriers.

Suggestions for further research include the relationship between academic and clinical learning, the importance and influence of informal learning, and the nature of the transition from student nurse to autonomous practitioner.

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GLOSSARY

Bracketing

Bracketing is a method used in qualitative research to mitigate the potential effects of preconceptions that may taint the research process.

Category of description

These are used in phenomenography to describe the features that distinguish one conception from the other. They are made up of referential and structural elements (what the subject is conceived as, and how it is conceived).

CILIP (Chartered Institute of Library and Information Professionals)

CILIP is the main professional body for librarians, information specialists and knowledge managers in the UK. Its functions include accreditation of education programmes and registration of qualified practitioners.

Constructivism

Generally attributed as being theorized by Piaget. The theory of constructivism suggests that learners construct knowledge out of their experiences.

Epoché

A view of the world as a world of essences that are free from any contamination that presuppositions of conceptual framework might contribute. The concept is very similar to bracketing.

Intentional analysis

The intentional analysis consists of three steps. The first step is identifying what the individuals conceive as their reality. The second step is to identify how the individuals conceive that reality. The last step is to examine the constitution of the conceptions.

Life-world

There are various meanings depending on discipline. For this thesis the author used the Husserlian definition that each person's consciousness is already embedded in a world of meanings and pre-judgements that are socially, culturally, and historically constituted. As part of phenomenology and phenomenography, the researcher attempts to enter the life-world of his/her subjects.

LIS

Library and Information Science or Services.

Meaning structure

For each category the author captures the underlying meaning of the different conceptions based upon the participants' perceptions of its meaning.

NICE (National Institute for Health and Clinical Excellence)

NICE is an independent organisation in the UK responsible for providing national guidance on promoting good health and preventing and treating ill health. It produces guidelines for treatment and clinical interventions in a number of diseases and illnesses

NMC (Nursing and Midwifery Council)

The NMC is the successor to the UKCC as the regulator for Nursing and Health care professions.

Outcome space

The outcome space uses the categories of description to show the inter-relationships between the variations in experience of information literacy.

Phenomengraphy

This is a qualitative research methodology that emerged in the field of education in the 1970s. Much work on its development is attributed to Ference Marton.

Phenomenography takes a second order perspective to examine variations in perceptions of phenomena across specific groups.

PREP (Post- Registration Education and Practice)

The registration of nurses, midwives, and specialist community public health nurses is a prerequisite of their employment as registered practitioners. They maintain their registration by meeting the post-registration education and practice (PREP) standards set by their regulatory body, the Nursing and Midwifery Council (NMC) formerly the UKCC.

Referential aspects

A referential aspect focuses on what the participant has experienced and describes the overall meaning assigned to the experience. This aspect generally consists of initial responses to interview questions and tends to reflect the surface content of awareness.

SCONUL (Society of College, National and University Libraries)

SCONUL is an institutional membership organisation covering the Higher Education and National Library sectors in the UK and Ireland.

Structure of awareness

The structure of awareness deals with how the referential aspect is understood. It describes firstly, the different elements comprising the experience and the phenomenal meaning assigned to the elements. Secondly, it looks at the way that the elements are organised or arranged in awareness. Finally, it examines how the experience is delimited from other phenomena. As a consequence, the structural aspect illuminates deeper phenomenal understanding and the variations in experience.

UKCC (United Kingdom Central Council for Nursing, Midwifery and Health Visiting (1983-2002))

The core functions of this body were to maintain a register of UK nurses, midwives and health visitors. It provided guidance to registrants and handled professional misconduct complaints. It was replaced by the NMC in 2002.

Ways of experiencing

Different ways of experiencing phenomena can thus be understood as variations in referential and structural awareness while the interrelated and hierarchical nature of meanings can be determined by analysing the complexity (i.e. the breadth and depth of the structural aspects across experiences).

CHAPTER 1: INTRODUCTION

Information literacy: the concept

The concept of information literacy may mean very different things to different people. In the academic world it has received an increasing amount of attention during the past thirty years. The information explosion coupled with the advent of more powerful searching tools has highlighted the need to be able to search, retrieve and evaluate such information in order to inform decision-making. Such attention now incorporates the use of information in the workplace and its importance as something that has both social and cultural values. In her work on information literacy, the Australian author Christine Bruce suggests that:

The concept of information literacy has its roots in the emergence of the information society, characterised by rapid growth in available information and accompanying changes in technology used to generate, disseminate and manage that information....The concept of information literacy has been widely adopted by the information and education professions. This interest in information literacy is largely a result of its close association with the idea of lifelong learning.

(Bruce, 1997:2)

While many have attempted to define the concept, a universally acceptable definition of information literacy has proved elusive as meanings and understandings change over time. Consequently, the term that was first used by Zurkowski in 1974 meant something very different to the term as it is understood today. He described the process of retrieving and applying information to solve problems and make decisions, particularly in the workplace. Since then it has been written about extensively and the core definition has expanded to include related and more abstract concepts which both influence and co-exist with

information literacy. These concepts include computer literacy, learning to learn, IT literacy, information and library skills (Bruce, 1997).

While these can be differentiated from information literacy, they are sometimes incorporated either wholly or partially into it and on occasion, information literacy is used as a substitute term for one of the other concepts. In 2002 a working party of CILIP (The Chartered Institute of Library and Information Professionals) was formed to try and provide a definition, with supporting material to demonstrate why information literacy is important to individuals. The reason behind this working party was that the term was not used consistently or understood by all educational sectors in the UK. A partial explanation for this lack of consistency and understanding is the relatively short period of time that the concept has existed. Bruce summarises this in her statement that 'Our lack of understanding is partly due to the recent and continued emergence of both the phenomenon itself and scholarly understanding of it' (Bruce, 1997:11). The CILIP group finally produced its definition in December 2004 as reported by Armstrong et al (2005). The definition is as follows:

Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner.

(Armstrong et al, 2005)

This definition, while acknowledging many facets of the concept, continues to see information literacy as a series of skills or competencies that can be gained within a traditional educational context. It stops short of setting information literacy within the wider context of work and lifelong learning.

A further dimension to the definition of the concept is added by Cheek and Daskatsch (1998), who use the analogy of a kaleidoscope whose pattern changes according to the perspective of the person turning it. A similar proposal is put forward by Lombard who states that:

Information literacy is both a process and state of mind. As process it is usually non-linear; as state it is subjective to individual and topic. Therefore, roles and relationships between information seekers and providers and the information itself all decide information literacy at a given time.

(Lombard, 2010:5)

Using such analogies this pattern may now incorporate analysis, critical thinking and re-purposing of information depending on the use for which it is required. Information is no longer solely located within the traditional library and information framework.

The notion of information literacy in a wider context is something that has been explored during the early years of the 21st century by a growing number of writers (Lloyd, 2005; 2006; Bury et al, 2006; Watson, 2006; Andretta, 2007a; Cheuk, 2008; Moch et al, 2010). Lloyd is of the opinion that:

Information literacy should not be defined according to its skills-based characteristics, nor as a series of decontextualised skills because reducing the phenomenon to this level limits our conception of the phenomenon and our understanding of what it means to be information literate.

(Lloyd, 2006:570)

She continues by suggesting that information literacy acts as a 'connector between codified, embodied and social knowledge' (Lloyd, 2006:571), which can play a role in the transformation from novice to expert practitioner. She holds the

belief that information literacy, as learned purely within an educational framework, effectively silences other complex forms of learning that are valued outside the educational domain. In this, she echoes the suggestions of Breivik (1998) who believes that educators need to move towards real-world information environments characterised by their multiple and complex sources of information. The implication is that such a move will assist in problem solving and reflect the problematic process of coming to know multiple environments. Thus, the whole concept is raised beyond a suite of skills acquired to pass an academic course to one which promotes a collective understanding of practice and profession.

Much of the original research was carried out in Australia and there is a dearth of research that has been carried out at any UK university examining information literacy skills for student nurses within the context of the wider educational setting. This wider setting includes both curricular and practical experiences which form dual aspects of their overall educational process. Arguments about whether nursing should be taught in Higher Education are well rehearsed (Watson, 2006). The trend in nursing seems to be towards increasing professionalisation in terms of the academic qualifications required to be a nurse. One of the key attributes of any profession is to have its own body of professional knowledge with its practitioners knowing how to access and use it effectively. The next section will examine the rationale behind the need for the information-literate nurse.

The information literate nurse

The discussion so far has considered some of the broader aspects of information literacy but it would be useful to reflect briefly what it means to be an information literate nurse, and why it is considered to be so vitally important. Essentially, its importance has grown in parallel with the emphasis on evidence-based practice in the National Health Service.

The links between evidence-based practice and information literacy within Higher Education in relation to the information-literate nurse have been discussed by a number of writers (Wallace et al, 1997; Cheek and Doskatsch, 1998; Shorten et al, 2001; Bailey et al, 2007; Bembridge et al, 2011). These authors discuss the changing healthcare environments, which demand that nurses be information literate professionals who can solve complex patient problems through accessing and evaluating the best available evidence. Information literacy skills are the key to achieving this and their value continues once students have left the university, since newly qualified nurses need such knowledge and skills to contend with the information landscape of their profession and become lifelong learners (Gopee, 2001; Nimon, 2002; Gilmour, 2009; RCN 2011).

The author has been providing information literacy sessions to large numbers of nursing students for many years with a view to assisting them in their quest to become information literate. It is interesting to note that while the clinical nursing competencies which are learned as part of the practical side of nurse education can be assessed in a relatively straightforward way by the academic staff, the question of whether or not students have become information literate is considerably more taxing. With this in mind a number of authors have tried to

provide skills-based criteria against which to measure the acquisition of information literacy skills. Some espouse the argument that this leads to a method of assessment that encourages surface as opposed to deep learning (Whitson, 1998; Johnston and Webber, 2003; Maybee, 2006; Lloyd, 2006).

The difficulties in defining the concept and in deciding what and how to measure successful learning has meant that little evidence is available regarding the effectiveness of information literacy teaching for health professionals. Brettle (2007) points out that despite the amount of time spent teaching information literacy in health libraries, studies that purport to measure effectiveness of teaching lack reliability and validity. She concludes that there is scope for developing and validating measures to demonstrate the impact of information literacy teaching particularly on practising health professionals. The opportunity afforded by this thesis enabled the author to ask students about their conceptions of information literacy and its perceived value to them. It also enabled him to gain a viewpoint on whether their conceptions changed as a result of both the information literacy teaching in the university and their observations of how it was used in the clinical settings which make up the other part of their education.

Before moving on to the main Chapters of the thesis, it may be helpful to outline major changes in the philosophical and practical aspects to nurse education which have brought it to the point where it is today. Discussions about how and where nurses should be educated are beyond the scope of this thesis which is concerned with a specific aspect of their education process related to information literacy. The precise objectives will be delineated later on in this introduction.

The broader picture however, is essential for the reader to be able to place the subject of the thesis into its proper context.

Nursing and Higher Education

Since the nineteenth century many authors have tried to define nursing. It did not seem to fit neatly into either the arts or the sciences and perhaps one of the most vexed questions of all is regarding the worthiness of nursing to be described as a profession. Davies reminds us that according to Florence Nightingale, the qualities of a good nurse were:

Restraint, discipline, and obedience. She should carry out the orders of the doctors in a suitably humble and deferential way. She should obey to the letter the requirements of the matron and the sister.

(Davies, 1977:481)

These ideas permeated the training of nurses, which was primarily carried out under the jurisdiction of doctors. The image and perception of the nurse as handmaiden was thus something which became established in the public mind. Between the 1860s and the end of the 1960s, nurse training followed an apprenticeship model with vocational values which stressed bedside manner and care of the patient in a very task-oriented way. Bradshaw suggests that the traditions of this model were shaken after the publication of the Briggs Report in 1972 which went some way to freeing the profession from the control of the government and the vocational aspects of care. The report suggested that nurses should be educated in a way that separated service from education and that the education they received should not be so dominated by doctors. The author of the report, Lord Briggs, wished to provide an education for nurses which drew more

widely upon the broader educational world. The decline of the apprenticeship tradition continued after the passing of the Nurses, Midwives and Health Visitors Act in 1979 whereby nurses became more autonomous practitioners and nursing leaders sought to redefine nursing, particularly in the context of nursing philosophy, individualised care and accountability.

As the 1980s progressed, a report from the Royal College of Nursing Commission on Nursing Education (1985) recommended that nurse education should be based in Higher Education where the trainees should have both supernumerary and student status. This idea was nothing new in the United States where nursing had been represented at Ivy League Universities from the late nineteenth century (Watson, 2006).

Despite arguments both for and against the move to Higher Education which came from inside and outside nursing, by the late 1980s it had moved away from 'hierarchy, prescriptions, rules and examinations into a collegiate, self-reliant, flexible and self-directed method of learning' (Bradshaw 2001:45). Additionally, the nurses themselves had to take on responsibility for educational standards and self-development. New codes of conduct were issued for Nursing, Midwifery and Health Visiting which emphasised the concepts of autonomy and accountability.

From 1989, nurse education commenced its gradual transition into Higher Education with the advent of Project 2000 pilot sites which had been proposed by the UKCC (United Kingdom Central Council on Nursing and Midwifery) in its document, 'Project 2000: A new preparation for practice'. This document

recommended that student nurses receive a sound academic education in nursing with supernumerary status while on their placements. The mid-1990s saw the development of the internal market in the NHS and the new form of nurse education was criticised for producing over-academic nurses who felt that the basic elements of caring for patients should be done by non-nursing staff. The government responded by producing its strategy paper '*Making a difference*'. This proposed expansion of the workforce included new high-tech equipment on which to base clinical decisions, a wider entry gate to the profession (part-time, accreditation of prior learning, problem-based and enquiry-based learning) and better research appraisal skills. All pre-registration nurse education is now provided from within Higher Education.

Evidence-based practice in nursing

Earlier in this introduction the author alluded to the link between information literacy and evidence-based practice. According to Smith et al, the evidence-based medicine movement first developed in the early 1990s at McMaster University in Canada when it was compared to the eighteenth century enlightenment in promising to emancipate practitioners from 'outworn, often undeserved and sometimes tyrannical authority that is based on little more than hierarchical position and tradition' (Smith et al., 2004). Another contender for the invention of evidence-based practice was the Scottish physician Archie Cochrane. (Clarke, 1999).

Despite evidence-based practice starting with doctors, nurses also were exhorted to consider the potential value of the process. Firstly, nurses and doctors generally

worked collaboratively as members of a team. If doctors were to be guided in their practice by the findings of research then nurses needed to know and understand this. Secondly, nurses needed to think carefully about whether they should adopt the principles of evidence-based practice to guide their own practice.

There were ethical, legal, economic and humane imperatives that indicated that evidence-based practice was becoming one of the key factors in developing nursing research, practice and education.

In Australia, Wallace defined nursing practice of the time as a 'mixture of research, anecdote, tradition, theory and hunch' (Wallace et al., 1997). She admitted that while some nursing practices were effective, others actually did harm.

In the UK as early as 1981, Hunt outlined the following reasons why research was not always put into practice despite the suggestion in the Briggs Report which recommended that nursing should become a research-based profession.

She set out the following five statements why nurses did not use research findings

They do not know about them.
They do not understand them.
They do not believe them.
They do not know how to apply them.
They are not allowed to use them.

(Hunt, 1981:192)

Hunt continued with explanations of why she felt the above were true and put forward suggestions as to how they could be rectified. Among these came the

suggestion that each nurse should care enough about their own practice to ensure that it was based on the best possible information.

The UK moved into line with what had been suggested in Canada (Smith et al, 2004), and it became apparent that the main sources of influence on clinical decision making were largely experiential, particularly in community nursing. The quest began to see what could replace this seemingly outdated way of working and it became clear that the old regime would be replaced by one which challenged each individual practitioner to use their own judgement to use interventions that had been shown to work. These would be based upon the best available scientific evidence (Mulhall, 1998). The next question focused on how nurses would be able to access this scientific evidence.

Cheek and Doskatsch summarised the situation in Australia in the late 1990s when the information literacy movement was just beginning to grow.

Today's nurses must have the capacity to access information, both physically and intellectually; that is, they must be information-literate. Nurses need to be discerning information consumers in order to acquire knowledge and skills in relation to their jobs and social roles and as participants of a democratic society.

(Cheek and Doskatsch, 1998:243)

Objectives of the study

As has been seen in earlier discussion, the literature on the evaluation of the impact of information literacy teaching in the United Kingdom, United States and Australia tends to focus on what students have learned from specific information literacy sessions which have been run by either their lecturer or more generally by

a librarian (Johnston and Webber, 2006; Lloyd, 2006). It concentrates on specific skills which have been acquired within the artificially constructed environment of an information literacy session in the university. This, however, does not take into account other factors which influence student perceptions of the usefulness of information literacy. This may include their past experiences, its place in the curriculum, the way information literacy is taught, peer attitudes, and its relationship to the 'real world' of the nurse. This thesis asks how information literacy contributes to the overarching learning experience during their degree and whether it forms a part of their lifelong learning process. Finally, it examines whether information literacy assists in their transition from novice to expert practitioner.

Nurses form by far the largest group of health professionals in the UK and as indicated earlier there is little research into their conceptions of information literacy. This piece of research was conducted with nurses because the author has been involved in teaching information literacy to them for many years.

Historically, the journey from the apprenticeship model of training to one situated within Higher Education has been a long and somewhat troubled one. While library input has been evaluated via module and course evaluations on numerous occasions before, the methodology has been very much a 'tick-box' approach. This study is intended to shed new light on the perceived value of information literacy teaching in nursing by asking the students to reflect upon it themselves in relation to their overall educative process. Therefore, the objectives of this study are:

1. To explore BSc Nursing students' conceptions of information literacy and its perceived value as part of their overall learning experience during the three year period of their university course.
2. To examine the value and relevance of information literacy in searching for evidence-based materials within their placements as an indicator of its place in the 'real world' of the nurse.
3. To evaluate the usefulness of information literacy currently taught on this course in the light of the results of the research and make recommendations as to how it should be taught in the future.

Context of the study

The University of Brownfield (fictional name) is situated in the north of England and has 23000 full time equivalent students. Its largest faculty with 4300 students is that of Health Sciences, which includes approximately 540 students studying nursing at undergraduate level.

The three years of study are divided up as follows:

Year One

All students follow the Common Foundation Programme, which is designed to facilitate learning across all four branches of nursing. Examples of the content of modules studied during year one include: Introduction to Nursing Practice involving the learning and development (in both practice and in the skills laboratory) of core nursing skills such as hand washing, safe administration of

medicines and basic nursing observations . Theory modules during this year include bio-psychosocial perspectives in nursing, communication studies, law, ethics and research, pharmacology, infection control and nutrition.

Year Two

The nursing practice modules involve further development of more technical skills in relation to drug administration, infection control, nutrition, wound care, client assessment, care planning, care delivery, and evaluation of care.

Students experience practice both in the community and in the hospital or private sector. Theory modules include nursing concepts, ethics, law, professional awareness, research, bio-psychosocial needs of the person with a long term condition such as heart disease, diabetes, cancer, and holistic care for the acutely ill person.

Year Three

The final year includes Nursing Practice modules involving the development of managerial and leadership skills, team co-ordination, delegation, infection control, nutrition, and wound care with more responsibility for client assessment and care delivery. Theory modules include leadership and management theory, ethical, political, social, legal, religious and cultural influences on health care provision as well as the needs and care of the highly dependent person. Year 3 also includes a dissertation on a topic chosen by the student.

In order to comply with Nursing and Midwifery Council regulations and to be admitted onto the professional register, all students have to attend clinical

placements throughout their course. These are varied and students nurse clients with a range of needs. The placements include acute medical and surgical ward areas, specialist highly dependent environments such as accident and emergency, intensive care, outpatient departments, community health centres and hospices.

The role of library and information staff

In the academic environment, librarians usefully contribute to the teaching of information literacy as was identified by Nimon, who suggests that in planning information literacy strategies, libraries should use the following baseline principles:

Librarians need to deliver information literacy skills into core teaching and learning activities and be involved from conception to delivery. Librarians need knowledge of and skills in teaching and learning. Academic staff and librarians need to forge effective working relationships to enhance student learning.

(Nimon, 2002:16)

In the University of Brownfield, the author has been involved with the design and delivery of the information literacy aspects of the course and has worked closely with the academic staff to ensure that it is placed in what is felt to be the most appropriate place in the curriculum. For the nursing students this means that they receive a library induction during the first two weeks of term, three two hour sessions on information literacy as part of the Law, Ethics and Research module (approximately six weeks into their course) during their first year; a two hour update on information literacy at the beginning of their second year; and a two hour session prior to the commencement of their dissertation in their third year.

As well as these formal sessions there is open access to subject specialist library staff and students are able to make appointments to discuss library aspects of their assignments. Despite module evaluations, the author had doubts about the usefulness of some of the sessions and sought to find out whether this was in relation to content, context, place in the curriculum, or other factors.

Research methodology and approach

Phenomenography is a qualitative research methodology within the interpretivist paradigm that investigates the diverse ways in which people experience a phenomenon or perceive something. This thesis uses phenomenography as its research approach as it provides the most appropriate method of exploring different conceptions due to its exploratory nature. Additionally, this approach seemed to offer the best way of obtaining useful data which can then be interpreted in a meaningful way (Entwistle, 1997).

The approach emerged within educational research during the early 1980s and came from an empirical rather than theoretical or philosophical basis (Akerlind, 2005). Its emphasis is on description and its importance is related to an understanding of the way people experience phenomena collectively, despite the fact that the same phenomena may be perceived differently by different people under different circumstances (Akerlind, 2005).

Clarification is dependent upon focusing on the meaning of the conceptions with the object of study being the relationships between the actors and the phenomenon as opposed to the phenomenon itself (Bowden and Walsh, 2000). The product of phenomenography is to arrive at 'categories of description' which

are revealed from the interview transcripts. These categories are the researcher's interpretation of the experiences of others as derived from the interview transcripts. The categories of description are arranged into an outcome space reflecting how each category is structurally related. Together with the outcome space they represent the collective experience as analysed and described by the researcher.

Method and sample

Data were gathered using what are described as 'piggyback' focus groups (Krueger and Casey, 2000:75) which are added on to another pre-arranged event. In this case they were run after a lecture/information skills session. The six focus groups comprised between ten and twelve students per group drawn from pre-existing tutorial sets from each of the three years of the course. While Krueger and Casey advise that a focus group size should be six to eight people, the author chose to have a slightly larger group since they were all part of the same student community with a shared interest in the subject. Also, the use of pre-existing groups afforded the author greater opportunity to gain insight into their collective conceptions given the limited availability of participants, and the short timescale of the research. The focus groups were held on a voluntary basis over a period of weeks during the time after research and information skills sessions. Participants were studying adult, mental health and learning disability nursing.

As explained above, the participants from each year all knew each other to a greater or lesser extent and while Barbour raises the issue of representativeness in relation to the composition of such groups, she also states that the use of

tutorial or other natural groupings may be beneficial 'when seeking to illuminate the processes involved in acquiring knowledge and developing competence in reasoning and clinical skills' (Barbour, 2005:746). Following the focus groups, volunteers were sought for follow-up semi-structured interviews. This resulted in twenty-one interviews which were recorded, transcribed and analysed by the author according to the phenomenographical framework. Further details of the methodology will be discussed more fully in Chapter 3.

Prior to the research taking place, the interview schedules were piloted with six students from a different but related discipline to test for understanding and the order of the questions. As a result some of the questions were amended, some re-ordered and two removed. The research employed a cross-sectional study to give a 'snapshot' of student conceptions of information literacy across the three years of the nursing degree course. Data were gathered from students in different cohorts in order to maximise the diverse learning experiences that influenced their conceptions. Following the advice of Collier-Reed et al, the author tried to ensure that the sample was both appropriate and relevant to the central research question. Gender and age considerations were thus taken into consideration in choosing the interviewees from the volunteers who came forward in an effort to ensure that they would be as representative as possible of the nursing students on this course. The author felt that this complied with the advice of Ashworth and Lucas (2000) who suggested that:

The selection of participants should avoid presuppositions about the nature of the phenomenon or the nature of conceptions held by particular 'types' of individual while observing common-sense precautions about maintaining 'variety' of experience.

(Ashworth and Lucas, 2000:7).

The author was of the opinion that such advice in aiming for a variety of experience was sufficient in terms of representativeness given that phenomenographic results are not necessarily generalisable to a wider population in that they represent the collective experiences of a particular group. That notwithstanding, the results may well be of interest to similar groups.

Use of the first person

In writing up this thesis there are some areas where the author has expressly chosen to use the first person, notably in the data analysis Chapters. This was for the following reasons. As both researcher and author it was helpful to follow the advice of Ashworth and Lucas who suggested that in order to enter the 'second order' conceptions of the students' life-world, the researcher must set aside their own pre-suppositions and assumptions (Ashworth and Lucas, 1998:418). Also, in order for the categories of description to emerge, it is incumbent on the researcher to interpret the differences in conceptualisations of the phenomena as described by the actors. In this way the researcher is responsible for ensuring that the voices are heard. With this in mind, the author judged that in certain areas the use of the first person was most appropriate since interpretation formed an important aspect of the research.

Organisation of the study

This introduction has given some background to the research and the reasons why the author wished to pursue it. Chapter 2 is a critical literature review from the fields of education and information studies since the 1980s which contextualises this research within the framework of what had been done previously. Additionally,

it extends the scope of the literature to include that which has been written in the 21st century. Chapter 3 deals with the study design and methodology. It describes the process of constructing the research framework as well as the mechanics of how the study was actually conducted. Chapters 4, 5, and 6 report the findings of the research as revealed by the focus groups and interview transcripts. They discuss the categories of description which have emerged. Finally, Chapter 7 draws together the conclusions of the research and makes recommendations about the way that information literacy could be taught on this course in the future. Additionally, it suggests areas for further research and assesses the contribution that the research makes to new knowledge.

CHAPTER 2: REVIEW OF THE LITERATURE

A great deal has been written about the subject of information literacy and therefore the author presents below a selective review. This examines a number of themes that emerge from the literature as main strands of the topic which are relevant to the current thesis. According to Aharony (2010) the literature of information literacy can be broken down into four phases. The first of these (1980s) relates back to the work carried out by the information skills and bibliographic instruction movements and is primarily represented by the work of Kulthau. The second stage (1990-1995) saw the stabilisation of the term 'information literacy' and increasing research about it within the educational and LIS sectors culminating in the work of Doyle (1992). Aharony characterises the years 1995-1999 as the third and exploratory phase where research moved away from purely education to information technology (Rudasill, 1998), community, (Jones, 1997; Weiner, 1997) and workplace (Spitzer et al, 1998). Finally, the fourth phase (2000s) is described as the evolving phase whereby research moved from the educational, community and workplace settings into other contexts as exemplified by the work of Lloyd and Williamson (2008) and Andretta (2011).

A literature search was carried out on a number of databases including the Web of Knowledge, Emerald Insight, InformaWorld, British Education Index, ERIC, Australian Education Index, and Index to Theses. The keywords used were: information literacy, user education, nurses, health care professionals, conceptions, evidence-based and nurse education. In the introduction to this thesis, the author alluded to the difficulties in defining the concept of information literacy. Despite this, there is a substantial part of the literature that attempts to do

so. An example of this is by Snavely and Cooper (1997), who comment on the lack of clarity on the subject. They discuss various alternative names yet return to information literacy as the most appropriate, as does Bawden (2001). In general, information literacy has remained the most-used term in the professional literature through the 1990s and 2000s. Ten years later, Andretta (2011) asks again whether the term 'information literacy' is one whose time has passed and concurs with Bruce and Hughes (2010) who prefer the term 'informed learning' which links the idea of information literacy and learning. In their opinion:

Informed learning is about simultaneous attention to information use and learning, where both information and learning are considered to be relational....Informed learning also relies heavily on reflection as a strategy for bringing about learning.

(Bruce and Hughes, 2010:1)

At the same period Mackey and Jacobson (2011) are of the opinion that the term information literacy should be reframed as a meta-literacy supporting multiple literacies beneath it. This could include media literacy, digital literacy, visual literacy, cyber-literacy, and information fluency. The views espoused by Mackey and Jacobson have been formed in response to advances in technology generally, as well as the emergence of social media and online communities that have again highlighted the increasingly multi-faceted nature of 'information literacy'.

The author believes that prolonged discussion of definitions of the subject would not be helpful in this thesis, which deals for the main part with conceptions of information literacy rather than information literacy per se. Consequently, he has taken the position evinced by Owusu-Ansah who believes that the:

Continued debate over appropriate definitions and descriptors after such extensive exploration and agreement promises no practical benefits. Such activities can however, become an unfortunate drain on precious time and

energy. That time and energy could be more meaningfully spent on actually working to improve student capabilities.

(Owusu-Ansah, 2005:373)

The above notwithstanding however, appropriate references to this argument will be made to illustrate the issue that defining the concept is central to its development in political, historical and educational contexts.

With the exception of some seminal works from the 1970s and early 1980s the literature covered in this review is from 1989 to 2011 given that the development of the subject was partially a response to the 'cultural, social, and economic developments associated with the information society' as described by Johnston and Webber (2003:336). Such development accelerated greatly in the 1980s mainly due to advances in technology (Behrens, 1994; Bruce, 1997; Bond, 2004; Oberprieler, 2005; Burhanna et al, 2009; Pinto et al; 2010). Additionally, 1989 was the year in which the American Library Association first published its definition of information literacy, which marked the point at which information literacy as a concept became more widely accepted (Bruce, 1997). Also in the same year, Breivik and Gee gave the subject a more political slant with the publication of their book '*Information Literacy: Revolution in the Library*'. Both of the above were among the first to acknowledge the importance of information literacy at a national level in education and championed the partnership of both educationalists and librarians in teaching information literacy. This approach to information literacy started in the United States and Australia with developments in the United Kingdom and Europe occurring more slowly (Behrens, 1994; Bruce, 1997; Virkus, 2003; Johnston and Webber, 2003; Webber, 2008). Despite that, its effects have

been one of the crucial indicators which have helped to steer the development of the subject.

This review concentrates on four inter-related thematic areas that the author feels are pertinent to the objectives of this thesis. They and the sub-sections within them are all mutually inter-dependent. The author has chosen to arrange them in this way in order to help the reader comprehend the individual facets that make up the whole of this complex area.

The literature review ends with a brief retrospective summary of the main developments within information literacy during each decade since the 1970s. It draws together the main themes according to their chronology. In this way the author provides a reminder of where the concept originated, how it developed and where it is now located.

Introduction to the key themes

Theme 1-Teaching information literacy

Theme 1 links to the third objective of this thesis in that it compares various viewpoints on how best to teach information literacy in order for it to be most effective. In addition, it comments on the arguments that took place as to whether information literacy is a skill or a personal attribute. It goes on to examine the discussions around the issue of whether information literacy should be embedded into the curriculum or whether it should stand as a discipline in its own right. Lastly in this theme the author considers the changing role of the librarian as an educator.

Theme 2 – Information literacy in a wider context

Theme 2 considers the emerging discourse in the early 21st century when the literature began to yield articles situating the concept away from its traditional educational settings and proposing that it could be beneficial in the wider context of work and social landscapes. The author examines briefly its relationship to lifelong learning and the different 'ways of knowing' through informal and non-formal ways as well as formal methods. Such approaches are relevant to the second objective which examines information literacy in the 'real world' of the nurse as perceived by the participants. Furthermore, this theme goes on to include the wider context of information literacy in the workplace.

Theme 3 - Information literacy and evidence-based practice in nursing

Theme 3 examines the relationship between information literacy and evidence-based practice in nursing which forms the background to the second objective as described above. As a part of the discussion the author considers some barriers to the use of evidence-based practice with particular attention paid to the impact of library and information anxiety as a factor on student conceptions of their information literacy skills and attitudes.

Theme 4 - Conceptions of information literacy

Finally, in Theme 4 the author discusses conceptions of information literacy from a variety of viewpoints including those of librarians, academic staff and students. This theme links to the first objective of this thesis.

Theme 1 - Teaching information literacy

In the literature of the 1970s and early 1980s, the concept of information literacy struggled to define itself (Behrens, 1994; Owusu-Ansah, 2003; Aharony, 2010). As discussed earlier, the publication by the American Library Association of its final report on information literacy established a framework as a structure against which the subject could develop within the parameters evident at that time. Grafstein noted that:

Much of the IL literature emphasizes the teaching of generic skills related to the general process of retrieving and evaluating information, as opposed to the skills required for acquiring knowledge or doing research in a specific subject area.

(Grafstein, 2002:197)

Implicit within this statement are the two key areas that will be examined. Firstly, whether information literacy is a set of skills or a personal attribute and secondly, whether or not information literacy needs to be embedded into the curriculum. In dealing with the first of these, the author cites the work of Bruce who is regarded as a key player in the development of the subject in the late 1990s and 2000s.

In 2004, Bruce retrospectively summarised the three main models and two sets of standards, which she felt had been most influential in the way that information literacy is interpreted in educational settings. These were the Big6 information skills (Eisenberg and Berkowitz, 1990), Doyle's attributes of an information literate person (Doyle, 1992), Bruce's seven faces of information literacy (Bruce, 1997), Information Literacy Standards for Student Learning (ALA and AECT, 1998) and the ALA (ACRL) Information Literacy Competency Standards for Higher Education (ALA, 2000). The content of these models and sets of standards demonstrate the

two opposing arguments to which the author refers as the generic skills versus personal attributes debate. This debate was well documented in the literature (Grafstein, 2002; Kapitzke, 2003; Bruce, 2004; Owusu-Ansah, 2005; Johnston and Webber 2003; McDonald, 2004; Limberg and Sundin, 2006; Maybee, 2006; Andretta, 2008; Bent and Stockdale, 2009). The two aspects of the discussion focus on whether information literacy is a set of measurable skills or part of an individual's personal attributes and behaviours.

Both the ALA statement and also Eisenberg and Berkowitz (1990) focus on a skills approach and generally this was at the forefront of thinking in the 1980s and early 1990s, particularly in the United States and Australia. The beginning of a shift occurred with the work of Doyle in 1992 who, while acknowledging the skills aspect as described in the ALA statement and the work of Eisenberg and Berkowitz, went on to isolate ten attributes which were deemed necessary to acquire and demonstrate a person becoming information literate. In 1993, Kulthau interpreted information literacy as a way of learning rather than a discrete set of skills. She proposed a more process-oriented approach stating that:

Although the standards are useful for defining information literacy, as specific objects for instruction they may not accomplish the intended purpose of developing information literate students.

(Kulthau, 1993:11)

In 1996, Mutch was concerned that the concept of information literacy was too tightly bound to specific skills and competencies rather than a much broader mix of attitudes, behaviours and skills. In short, he felt that its value lay in its importance as a strategic concept. The outcome of these developing arguments

was that a much more holistic approach to information literacy was encouraged and embodied in the work of Bruce and her relational model in 1997. She built upon previous work but her approach differed in that it placed the users' conceptions of the subject at the centre of the study and proposed seven experiences to represent the ways in which users viewed information literacy. These seven conceptions were: the information technology conception, the information sources conception, the information conception, the information control conception, the knowledge construction conception, the knowledge extension conception, and the wisdom conception (Bruce, 1997). The importance of Bruce's work is in its assimilation of previous knowledge to include both the skills and the process approach but viewed through the lens of the user and their experiences. This resulted in a new facet to information literacy whereby it could be shaped via the conceptions and experiences of its users. The evidence in the literature indicates that this approach was to be the one that influenced the path of information literacy in the late 1990s and into the next century.

Despite the prevalence of the skills approach and the preoccupation of the library profession with developing models and standards, the skills-based approach was not without its critics. Some of the more vociferous were Johnston and Webber (2003) and they were supportive of Bruce's work in saying that:

Bruce's work is significant in providing a counterpoint and challenge to the more limited "skills" accounts of information literacy.....her relational model has been confirmed by Catts (2000). By contrast to American approaches, the Australian experience seems to provide a broader base for determining the nature and content of the potential curriculum for information literacy.

(Johnston and Webber, 2003:339)

Limberg and Sundin (2006) also concurred with this view where they comment that the phenomenographic approach espoused by Bruce demonstrates that traditional information literacy education only really focuses on two of her seven conceptions. This provides another criticism of the skills approach. Referring back to an earlier theme they recognise the work of Kulthau and her process approach which led directly to Bruce and the relational model. Along with other writers, Limberg and Sundin felt that these two authors should be recognised as major catalysts for change in promoting alternative views and models of information literacy (Maybee, 2006; Limberg and Sundin, 2006; Bellard, 2007).

In the United Kingdom, SCONUL (Society of College, National and University Libraries) produced its Seven Pillars of Information Literacy in 1999 which was highly influenced by work carried out in the United States and Australia. This framework shows how the user progresses through competency to expertise via the steps described in it. Mindful of the criticism that had been levelled at a purely skills approach, the SCONUL approach reflects the two strands of the competent information user and the information literate person. In order to achieve the latter higher level, it places emphasis on the contribution of information skills and IT skills as sub-sets of a wider notion of information literacy (Virkus, 2003). In 2011 the original Seven Pillars model was updated to better reflect the changing information world and the variety of literacies subsumed under this wider notion of 'information literacy'. The revised version defines the skills and competencies as well as the attitudes and behaviours required to encourage information literacy in Higher Education and is intended to be adapted to meet the needs of different groups of learners in a range of different contexts (Bent and Stubbings, 2011).

In 2009, Bent and Stockdale also rejected the skills approach in saying that information literacy is 'a recursive learning process rather than a simple ladder of skills'. They put forward the idea that if information literacy is simply a set of skills then it can be achieved by training. If, however, it is viewed as 'a personal and individualised corpus of knowledge and an attitude of learning then a broader educative approach is needed' (Bent and Stockdale, 2009:44). This viewpoint resonates with earlier discussion about education versus training (Cheek and Dorskatsch, 1998) which was explored later by Watson (2006) who questioned the role of Higher Education in the preparation of nurses depending on whether this preparation was viewed as training or education. Ultimately this led to the question of whether or not nursing should be viewed as a profession. The United Kingdom followed the Higher Education route for nurse education and this development; coupled with the trend towards evidence-based nursing saw more new opportunities arise for information literacy to play a greater role in nurse education than ever before.

As has been discussed, moving forward in time through the literature has revealed that the ideal of information literacy has developed from the initial separation between the skills and attributes and behavioural approaches towards a more holistic one that places the student at the centre of the learning process and includes varying methods of delivery and different forms of learning. If information literacy was to be included as a key part of the learning process, one of the areas felt to be of importance in the literature was in its full integration into the various university curricula. This idea will be explored in the next section.

Embedding information literacy into the curriculum

In discussing the place and role of information literacy in Higher Education, a highly visible thread in the literature in relation to the skills approach is the discussion by various authors as to whether the teaching of information literacy should be embedded within subject curricula or whether it should stand as a subject in its own right. This discussion developed in the late 1990s and 2000s when the earlier terms of user education and bibliographic instruction merged and were subsumed into the broader concept of information literacy. This broader concept included a wide variety of information sources and formats, many of which were accessible outside the traditional boundaries of the library thanks to the technological advances of the 1990s (Bruce, 1997; Grafstein, 2002; Bond, 2004; Smith and Oliver, 2005; Bond, 2010). As well as the traditional library skills, the ever-expanding definition of information literacy began to include areas such as lifelong learning, critical thinking, student-centred learning, learning styles and 'ways of knowing' (Andretta, 2007a; 2011; Bruce and Hughes, 2010).

Chen and Lin (2011) make the point that information literacy was becoming more recognised as a learning issue as opposed to simply a library issue.

Such recognition had been growing from the early 2000s and the literature reveals a number of case studies about how best to teach it to students. Many of these support the embedding of information literacy into the curriculum. Ambrose and Gillespie (2003) are one such example and below they explain why they feel that this is a sensible approach to take where they conclude that:

There is a body of literature in the field of information science which suggests that skills associated with the use of information are best taught as a process and in the context of a real task. This task is usually one

associated with the content of the curriculum. The most effective way of delivering information skills is for all stakeholders in the process to work collaboratively, and for information skills to be integrated into the curriculum. A collaborative and integrated approach to curriculum design is needed, and delivery of courses must be based on close co-operation between academics, librarians and staff-development colleagues.

(Ambrose and Gillespie, 2003:2)

On examining the literature it would seem that the majority of authors are generally in agreement with the move to integrate information literacy into the curriculum for a variety of reasons. For example, Shorten et al (2001) note the relationship between increased nursing student confidence and the curricular integration model while a number of authors (Klem and Weiss, 2005; Schulte, 2008; McGuinness, 2009; Mavodza, 2011; Sun and Chen, 2011) emphasise the need for librarians to be involved in developing, teaching and evaluating such courses. Brown et al (2003) extend the theme originally seen in Breivik (1998), which suggests the need for material that is relevant to the students' life-world and that proficiency in computer use does not equate to skills in information literacy.

In the United Kingdom in 2001, the Joint Information Systems Committee (JISC) commissioned a report known as the 'Big Blue' to clarify the state of information literacy in post-16 education and Higher Education in the United Kingdom. Its principal objective was to ensure an information literate population. This stated explicitly that:

For information skills programmes to be successful, a collaborative approach by all involved in the process must be adopted. This includes library, computing and academic staff. Information skills should be integrated into the curriculum rather than taught as a separate entity

(Big Blue, 2002:8)

Gannon-Leary et al (2003), Bailey et al (2007), Arndt (2009), Hegarty and Carbery (2010), and Ross (2010) shared this viewpoint in their studies, which dealt specifically with information literacy education for student nurses. These studies also expressed the need for curricular embedding as a way of keeping information literacy teaching relevant to student needs. Later in the 2000s Secker and Coonan (2011) produced a major report based on expert evidence that supports the embedding of information literacy into the student curriculum stating that:

The need for the curriculum to be embedded into the academic curriculum was mentioned by almost all experts. The idea that information literacy could or should be taught in isolation from an academic discipline was not advocated. Linked to this was a discussion around who should teach information literacy. Collaboration between academics, teachers, learning developers and librarians, not only in terms of drawing up the curriculum but also teaching it, was suggested.

(Secker and Coonan, 2011:5)

By the mid-2000s, several authors had taken the embedded curricular idea and extended it in new and lateral ways. Lebbin (2006) linked an information literacy module with several subject areas through a learning community in an effort to solve the issue of de-contextualization. This issue led to a renewed interest in the learner's perspective first identified by Kulthau in 1993.

Andretta (2007a) and Lupton (2004) echo the work of Bruce (1997) and her relational approach thus affirming the connection between information literacy and learning by examining the intent of searching for information as the driving force behind information literacy practices rather than focusing on the measurement of competencies in information seeking and use.

The work of these authors helped to move the debate forward towards perceiving information literacy from the user's perspective as will be seen in Theme 4.

Not all authors were as enthusiastic about the embedded approach and in the United Kingdom, Johnston and Webber (2006) put forward a case in order to:

Justify information literacy as a discipline; specifically a soft applied discipline rather than as a set of personal attributes.

(Johnston and Webber, 2006:109)

In contrast with the majority of the literature discussed so far, they attempted to set information literacy education as a concept with a broader social relevance beyond traditional library and education arenas. This involved focusing around three core elements which linked information literacy to citizenship, economic growth and employability. Similar ideas have been explored in later literature by Stevens and Campbell (2006) and Cheuk (2008). This was a very different way of thinking to that of the embedded approach as part of a discipline. Rather than strengthen information literacy however, Johnston and Webber felt that the embedded approach would 'Underplay the complexities and be prone to compromise and dilution of effort' (Johnston and Webber, 2006:118).

They postulated that an additional consequence would be that tailoring the information literacy education to the needs of one particular discipline would not adequately prepare students for the three core elements outlined above. Their work provides a useful outline of the changing background of Higher Education against which information literacy teaching has to be viewed. They believed that:

It emphasizes the importance of developing a robust and enterprising approach based in a sense of disciplinarity with a view to establishing the most effective curricular formation of the discipline in the academy

(Johnston and Webber 2006:118)

Their model suggests a fusion of library-centric, social requirements and personal attribute approaches. This theme was extended in 2009 by Bent and Stockdale who questioned the need for information literacy to be either embedded or standalone and they suggested that it was possible to blend these teaching and learning approaches by using both generic and subject specific materials.

In 2010, while considering teaching information literacy to nursing students, Hegarty and Carbery reported on their information literacy programme at the Waterford Institute of Technology Library which used:

a workshop approach to incorporate a theoretical as well as a practical and interactive focus. Students take centre stage within the library classroom: they are provided with the opportunity to interact with their peers and to be scaffolded in their learning by a librarian.

(Hegarty and Carbery, 2010:513)

This approach encapsulates many of the facets that reflect where the literature of the latter part of the exploratory phase was leading. Specifically this comprises student-centred learning, theoretical learning that is related to practice and learning from peers under guidance from a librarian who designs and assesses the course (Arndt, 2009; Aharony, 2010; Crotty, 2010; Chen and Lin, 2011; Secker and Coonan, 2011).

In 2011, Secker and Coonan addressed several of these issues when considering a new curriculum for information literacy. They concluded that the way in which it was implemented was equally as important as its content. From their data they identified six areas felt to be critical to its success, regardless of content. These were: the format and structure of the curriculum, the timing of the interventions,

the teaching style and the method of delivery, the role of audits and assessment, the marketing and promotion of the curriculum (including barriers to implementation) and key drivers. Lastly, they urged that considerations around technology be included.

With this increased recognition about the importance of information literacy being taught in the curriculum, the literature began to explore the teaching role of the librarian. This role began to evolve in line with information literacy being seen as an underpinning aspect of learning and a facet of lifelong learning (Singh, 2009). With this in mind, the next section looks at the role of the librarian in teaching.

The role of librarians in teaching

As was mentioned in the introduction to the literature review, the publication in 1989 of Breivik and Gee's book '*Information Literacy: Revolution in the Library*' raised the prospect of librarians contributing actively to the education process along with academics. Behrens summarised the situation succinctly in 1994 stating that:

Information literacy had become a general educational issue, with librarians as library skills teachers playing a lead role. By the end of the decade, the role of library skills in teaching critical thinking was being explored, and user education programs were expanding to encompass the wider implications of teaching information literacy

(Behrens, 1994:314)

Behrens (1994) characterised the 1990s as the time when librarians were beginning to evaluate the role that they could play in teaching information literacy. The educative role of the librarian had formerly been confined to bibliographic

instruction and user education within the library environment. In the United Kingdom, Morgan (1996) argued that the traditional role of the librarian had to change if it was not to be replaced and set out the core skills for the academic librarian as being: credibility with academic staff; teaching and training, IT-related skills and management skills. (Morgan,1996:42). He went on to suggest that the librarian's educational role forms the central tenet of the academic librarian function, around which other roles and responsibilities are clustered.

This theme was taken up and expanded by the Australian writer Nimon (2002) who suggested that:

Reference librarians will become key educators in the teaching and learning environments of the future, working in professional partnerships with faculty teaching staff

(Nimon, 2002:1)

Nimon also reported that, while improvements on collaborative teaching were very common, more could be done to enhance relationships between library and academic staff in order to correct the collision of conceptions about what the librarian's teaching role should actually be. While the need for good communication and integration between library and academic staff featured heavily in the literature (McGuiness, 2009; Schulte and Sherwill-Navarro, 2009; Mavodza, 2011) and generally agreed that collaborative working with academics was beneficial, a number of contributors identify that in reality this did not always happen (McGuiness, 2009; Derakhshan and Singh, 2011). The chief causes of this appeared to be conflict of role status, professional territoriality and mutual misunderstanding between the two groups (Wallace et al, 2000; Doskatsch, 2003;

Jenson, 2004; Weetman, 2005; Bellard, 2007; Andretta, 2008; Derakhshan and Singh, 2011).

McGuiness (2009) also notes that the lack of organisational and strategic support also contributed to librarians' difficulties in establishing information literacy teaching as an educational priority.

Sundin (2005) is more explicit in making the same point as Morgan about librarians deliberately extending their pedagogical role by suggesting that:

The very act of establishing the concept of information literacy and of providing it with content, which in turn leads to a novel and distinct expert role for librarians, can equally be interpreted as a means of increasing the occupation's status.

(Sundin, 2005:26)

Owusu-Ansah (2005) was in agreement with this point about the perceived unique contribution that librarians could make and believed that it would afford them greater participation in the educational process. The literature is clear that the way to demonstrate this unique contribution to the educative process was to enable librarians to work in partnership with academic staff and other key personnel in a shared responsibility for teaching and learning (Behrens, 1994; Grafstein, 2002; Ambrose and Gillespie, 2003; Bruce, 2004; Bellard, 2007; McGuiness, 2009; Schulte, 2009; Secker and Coonan, 2011). It is interesting to note however, that those calling for this proactive role change came from the library and information profession and not the teaching profession. The literature highlighted potential conflict between librarians and academic staff as described by Nimon (2002), who argued that there is a clear difference in viewpoint between librarians and

academic staff about the educational goals of the university. In many cases, the academic view of what librarians can offer, while desirable, is also supplementary. One fierce critic of the partnership model was Curt Asher who, in 2003 argued against the trend of librarians taking a greater role in teaching saying that:

One of the most destructive trends in library science in the past decade has been the floundering effort to fit librarians into subject disciplines as teachers. While librarians are trained in information retrieval as part of their graduate education, the idea that this knowledge qualifies them to intrude into the classrooms and share teaching in literature or biology or mathematics or any other subject discipline is simply illogical.

(Asher, 2003:1)

In similar vein, the issue was raised by McDonald (2004) who questioned library-based pedagogical practices and the changing role of the librarian, believing instead that:

Pursuing information literacy instruction does little to secure or assure the future of the profession of academic library practice. Although professional survival is not the most creditworthy motive for enhancing or changing professional practice, the chances for the survival of the academic library profession are better served by activities that do not compete with established classroom activities

(McDonald, 2004:2)

He went on to argue that effective teachers were already dealing with issues such as those outlined in the ACRL definition of information literacy (ACRL 2000) and that the involvement of librarians was unnecessary duplication. His criticism concluded by stating 'information literacy is a poor substitute for sound teaching and learning' (McDonald, 2004:11).

While these viewpoints are certainly against the tide of the majority of literature examined, they have limited support in the results of one controlled study carried

out by Koufougiannakis et al in 2005 that evaluated the impact of librarians in problem-based learning groups of medical and dental students. This study concluded that:

The impact of librarians was not sufficient to warrant continued inclusion and use of librarian time.

(Koufougiannakis et al, 2005:194)

The author of the study admitted that their research had challenged their assumptions on impact and reversed the decision that they had intended to make in continuing to use librarians in small problem-based learning groups. The reliability of this research is questionable however, given that the sample size was very small and therefore not necessarily generalisable to a larger population.

The pervasive trend in the literature was towards partnership working between library and academic staff (Brown et al, 2003; Gannon-Leary et al, 2003; McGuinness, 2009; Massis, 2011). It is clear however, that the reality and the theory were not necessarily the same. In 2008, Andretta summed up this subject with a warning that:

The spirit of collaboration between library and faculty can only be established when the inequality of the relationship between these two professional groups is tackled, and when the librarians' role as educators is widely acknowledged

(Andretta, 2008:49)

The question of how to effect greater collaboration with academics and the benefit of securing the academic librarian's role within teaching and learning is one that has been rehearsed on a regular basis in the literature since 2000. It links closely

with the idea of integrating information literacy into the curriculum and information literacy as part of the wider learning process. Secker and Coonan (2011) suggest an ideal collaborative scenario in one institution whereby:

Academics are involved in developing a curriculum to meet the University's learning and teaching strategy, assisted by librarians and educational developers. The academics are embedding it in the curriculum with advice from the librarians. This means that students don't see something separately labelled "information literacy" as opposed to academic learning.

(Secker and Coonan, 2011:5)

The need for increased collaboration between librarians and academics is of particular importance in nursing especially in relation to the role that librarians can play in the successful implementation of evidence-based practice (Schulte, 2008; 2009; Nayda and Rankin, 2009; Hegarty and Carbery, 2010). Similar concerns have led other authors to re-evaluate the role, and education for the role of an academic librarian who can operate within the transformed information landscape (Bell and Shank, 2004; Corral, 2010). The term 'blended librarian' was coined (Bell and Shank, 2004) to describe someone who could demonstrate library, information technology and educational design skills. Such skills constantly have to be updated as librarians grapple with technological advances in the Internet, social media and virtual learning environments (Mackey and Ho, 2005; Jones and Conceição, 2008; Burhanna et al, 2009; Godwin, 2009; Corral and Keates, 2010; Gumulak and Webber, 2011).

This theme has demonstrated some the arguments for and against the librarian's role in teaching and some of the conflicts that arose as part of this discussion. It has looked at the concept of embedding information literacy into curricula as a

way of making it relevant to students and linking it more directly with the educational process. Latterly, while the librarian's teaching role has generally been accepted, its success varies according to the support within individual organisations and contexts. More recent literature concerns itself with the changing pedagogical role of the librarian in response to the advance of technology and social media. Increasingly, authors have begun to explore the concept of information literacy in a more contextualised way and in settings far removed from the traditional educational arena. These issues will be explored in Theme 2.

Theme 2 - Information literacy in a wider context

The literature examined in this section covers three main areas. The first looks at information literacy as part of the lifelong learning agenda which assumed greater prominence in the 1990s. The second became more evident in the early 2000s and explores the idea of information literacy as part of a wider social and workplace contextualisation of learning outside library and academic environments. The third area examines the importance of different ways of learning whether formal, informal or non-formal. The following sub-sections will deal with each in turn.

Lifelong learning

For several writers the notion of lifelong learning and its associated critical thinking skills are consequences of the information society, the information explosion and the technological advances associated with them. These began to receive greater coverage in the literature of the mid-1990s (Rader and Coons, 1992; Behrens,

1994; Cheek and Doskatsch; 1998). Breivik (1998) called for a restructuring of the entire learning process of information literacy away from the dominant paradigm of pre-packaging information for students in favour of active learning and problem-solving, saying that:

Education needs a new model of learning. Learning that is based on the information resources of the real world and learning that is active and integrated, not passive and fragmented. What is called for is not a new information studies curriculum, but a restructuring of the learning process. Textbooks, workbooks and lectures must yield to a learning process based on information resources available for learning and problem solving throughout people's lifetimes.

(Breivik, 1998:127-128)

Grafstein (2002) pointed out that this concept was not new and asserted that:

The emphasis in the IL literature on the necessity for promoting critical thinking skills and developing the capacity for lifelong learning would suggest that the significance of these skills has only recently been recognized, spurred on by the digital information explosion. However, considerably older works on the philosophy of liberal education have advanced both critical thinking skills and the capacity for independent learning as important goals of a good education.

(Grafstein, 2002:198)

Bruce (1997) believed that part of the interest generated in information literacy stemmed from its ultimate goal which was to teach people how to learn. This was made explicit in the aim of the influential ALA Presidential report of 1989 which proposed that:

Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how information is organized, how to find information, and how to use information.

(American Library Association, 1989:1)

A number of others also emphasise this link between lifelong learning and information literacy (Kurbanoglu, 2003; Bruce, 2004; Ambrose and Gillespie 2003; Pravikoff, 2006; Beetham et al, 2009; Singh, 2009; Secker and Coonan, 2011). In 2004 for example, Bruce accounts for this link between the two concepts with her theory that:

The significance of information literacy education lies in its potential to encourage deep rather than surface learning, and in its potential to transform dependent learners into independent, self-directed lifelong learners

(Bruce, 2004:5)

From a library and informational professional viewpoint this envisages information literacy being transformed from an optional add-on service into a key constituent of the mainstream pedagogy of education. Such a transformation is noted by Sundin (2005), who characterises four distinct approaches taken in teaching information literacy via web-based tutorials. These are: a source approach, a behavioural approach, a process approach and a communication approach. While it is not within the remit of this thesis to consider each of these in detail, the very fact that four discernible styles can be recognised is surely testament to the development of the subject, the voluminous amount of literature devoted to it, and the amount of professional interest therein.

On a national and international level the link between information literacy and the information society was reiterated by the Prague Declaration (2003) which linked it to the lifelong learning process and gave it the status of a human right with the words:

Information Literacy encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand. It is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning.

(UNESCO, 2003:1)

In 2005, the Alexandria Proclamation 'Information Literacy and Lifelong Learning' bolstered the societal and enabling role of information literacy with its statement that:

Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nation. Lifelong learning enables individuals, communities and nations to attain their goals and to take advantage of emerging opportunities in the evolving global environment for shared benefit. It assists them and their institutions to meet technological, economic and social challenges, to redress disadvantage and to advance the well being of all.

(UNESCO, 2005:3)

This proclamation defines lifelong learning (with information literacy as a constituent part) as a human right. Additionally it asserts the need to interact ethically with the many information environments that have been created through emerging technologies.

The comparison between these and earlier definitions of the subject show just how much the subject had gained momentum during the 1990s, particularly with regard to its increasing importance as a pre-requisite for lifelong learning and its transition towards a wider definition. The very fact that both the Prague and Alexandria statements are broad declarations rather than specific models or frameworks demonstrates that information literacy had become a concept that was

increasingly recognised at national and international levels. Stevens and Campbell (2006) use these broader definitions to link information literacy with lifelong learning and global citizenship via community and the ability to connect. They hold the view that:

Academic librarians can facilitate students' comfort level with libraries not only by teaching library and information literacy skills, but also by getting out of the library and into classrooms in a more involved and sustained way than the traditional "one-shot" session. By doing so, librarians make stronger connections with students and position both libraries and librarians as integral to the social networks of their campuses and communities, or as the World Bank puts it, as part of the "glue" that holds individuals and institutions together.

(Stevens and Campbell, 2006:538)

Moving into the 21st century, networks were becoming increasingly virtual with the availability and quantity of information as well as the burgeoning use of social media proving to be key factors in the renewed interest in relation to information literacy as part of the lifelong learning agenda. Singh suggests that:

With the introduction of computers and communication technologies, there is a shift from general library orientation to instruction in a set of new skills, which aims at teaching the critical thinking skills to make users independent lifelong learners and effective information consumers.

(Singh, 2009:166)

The wording of the above quotation highlights the shift away from pure information skills to information literacy being an enabler of other concepts such as critical thinking and independent learning that enable the individual to become an effective information consumer. Coupled with technological advances and an emphasis on student-centred learning a plethora of new opportunities and possibilities for information literacy emerged. Martin suggests that:

The explosion of new media and information sources is not only a reason to reinvent information literacy instruction but also provides an ideal place to research actual practices and explore information literacy practices in depth.

(Martin, 2011:273)

Reflecting this, the years from 2000 have seen the emergence of a number of distinct but linked 'literacies'. In its Media and Information Literacy Curriculum for Teachers (2011), UNESCO brought together examples such as media literacy, information literacy, library literacy, computer literacy, Internet literacy and games literacy. UNESCO held the opinion that such conflation builds on the principles of lifelong learning as embodied in the Alexandra Proclamation (2005) as they explain:

Media and information literacy embodies essential knowledge about (a) the functions of media, libraries, archives and other information providers in democratic societies, (b) the conditions under which news media and information providers can effectively perform those functions, and (c) how to evaluate the performances of these functions by assessing the content and services they offer. This knowledge should, in turn, allow users to engage with media and information channels in a meaningful manner.

(Grizzle and Wilson, 2011:17)

In the UK, similar conclusions are drawn in the revised version of the SCONUL Seven Pillars model (2011) which makes specific reference to the range of different terminologies and concepts that the revision took into account, along with the need to ensure that information literacy reflected the needs of specific groups of learners. During this period, the LIS profession was active in examining the role of libraries and information professionals within the new information landscapes that had formed as a result of the variety of 'literacies' and the exponential growth

in social media. The literature reflects this activity ranging from the wisdom of harnessing such technologies to enhance information literacy teaching (Burhanna et al, 2009; Godwin, 2009; Secker and Coonan, 2011; Corral and Keates, 2010; Gumulak and Webber, 2011) to the assumptions made by librarians about the information skills and behaviours of the 'web generation' (Beetham et al, 2009; Godwin, 2009; JISC, 2011; Secker and Coonan, 2011).

The final quotation in this section comes from one of the experts who contributed to the 'New Curriculum for Information Literacy' (2011). It articulates thoughts about the LIS profession, information literacy and lifelong-learning in saying:

As a profession, we need to think about what students need to know and be able to apply in the information environment. Our commitment should be to life-long learning rather than the longer life of our library resources. The UK is ahead of the US in this way, at least as far as I can tell from attending LILAC 2009 and 2010. Many institutions in the US continue to cloak bibliographic instruction as information literacy. Students need instruction on more than the library. They need instruction that enables them to make smart information decisions in a variety of contexts.

(Secker, 2011:28-29)

This acknowledges a broader definition of information literacy and the need for it to work within a myriad of contexts. Interestingly, it also notes that the United Kingdom, rather than following the United States and Australia had by now become a leader in the developments of this area. Some of these contexts will be explored in the next section.

New information landscapes

From the early 2000s, the preoccupation with trying to define the concept of information literacy and the role of the librarian was displaced somewhat by another aspect of the literature that began to consider the function of information literacy as an aspect of learning within social and workplace environments.

Parallel with this is the concept of information literacy as something that can help in transitions. Examples may include that from school to university and from 'novice' to 'expert' in terms of professional development (Kirk, 2004; Hoyer, 2010; Secker and Coonan, 2011). The idea of information literacy as part of a wider context was not new, however, and this was particularly true in nursing where nurses have always learned from colleagues in practice as well as in theory.

As early as 1984, Benner introduced the concept that nursing knowledge is embedded in nursing practice and that nurses develop skills and understanding through a sound educational base in conjunction with a variety of clinical experiences. She believed that experience is a prerequisite for becoming an expert in nursing knowledge and articulated the various stages of clinical development while placing greater emphasis on clinical experience. According to Benner, nurses start out at the novice level and move upwards through advanced beginner, competent, proficient and expert levels. Each level consolidates and extends the knowledge from the level before with the result that the student gains knowledge, skills, perceptions, intuition and experience in their field of practice. Although the work of Benner pre-dated the evidence-based practice movement in nursing, it articulated the link between nursing theory and nursing knowledge as embedded in clinical practice. This paved the way for evidence-based practice to

assume the prominence that it did later on. Cheek and Doskatsch (1998)

developed this theme in talking about nurses becoming:

Discerning information consumers in order to acquire knowledge and skills in relation to their jobs and social roles, and as participants in a democratic society.

(Cheek and Doskatsch, 1998:243)

O'Sullivan (2002) took a different although related path by acknowledging that information literacy discourse had primarily taken place within the domain of education. She discussed the role of information literacy within the context of the knowledge economy and argued that librarians should indeed be presenting ideas that did not simply promote a library viewpoint, but which stemmed from a wider and more holistic perspective which could then be viewed as more relevant to the corporate world. This reflects the thoughts of Breivik (1998) who argued that educators needed to move towards real world information environments rather than stay within artificially constructed and limited information environments. She felt that such a move would facilitate better understanding of other information landscapes. Further development of this idea came in the early 21st century by a key author who developed this theme to a much greater degree (Lloyd, 2005; 2006; 2007; 2008; 2010). Lloyd presented an alternative view of the concept which included a broader and more holistic definition of the emerging information landscape. She attempted to redefine information literacy as:

A phenomenon more deeply connected with peoples' formal and informal meaning-making activities in all contexts than has been previously articulated. It suggests that information literacy should not be defined according to its skills-based characteristics nor as a series of de-contextualised skills

(Lloyd, 2006:570)

The evolution of Lloyd's work on information literacy and the information landscape can be traced back through the relational model of Christine Bruce (1997) and the process approach of Carol Kulthau (1993). Both of these are in direct contrast to the earlier generic skills approaches that were prevalent in the early literature as was demonstrated in an earlier section of this thesis.

The bridge between the ideas of the earlier writers and those of Lloyd is an article by Lizzio and Wilson (2004) whose study investigated first year students' conceptions of their capabilities across a number of generic skills and attributes. They talked of the construction of personal and professional identities which anticipated the work of Lloyd in relating information literacy to the construction of professional identity. Their article asserts that one of the strongest motivators for further learning is the relevance of the learnt skills to students' future job roles. Lloyd took this a step further with discussion about the transition from novice to expert, thus paying homage to the work of Benner (1984). As a part of this, Lloyd felt it imperative that librarians engage with other contexts outside a traditional educational setting in order to explore the nature of information literacy as a:

Connector between codified, embodied and social knowledge. Information literacy emerged as both a culturally produced practice and transformative process that underpins the transition from unembodied novice to embodied expert

(Lloyd, 2006:571)

Her assertion extended the understanding of the holistic nature of information literacy that was no longer merely concerned with textual and electronic information but with the social, cultural and physical contexts in which it was located. It related to 'knowing' an information landscape in its very broadest sense.

In conjunction with different 'ways of knowing' an information landscape came an acknowledgement in the literature that people learn through a variety of different methods. This may include formal, informal and non-formal methods and this recognition links the work of Benner, Kulthau, Lloyd and Andretta in considering different ways of learning in different landscapes and environments. It is important to be aware of this difference within the context of nurse education as discussed in this thesis since the consideration of different methods has a bearing on the overall learning experience of the students concerned. With this in mind, the author wishes to clarify the definitions of three of the main ways of learning in the next sub-section.

Formal, informal and non-formal learning

Since 2001, the European definition of these three areas has been as follows:

- *Formal learning is typically provided by education or training institutions, with structured learning objectives, learning time and learning support. It is intentional on the part of the learner and leads to certification.*
- *Non-formal learning is not provided by an education or training institution and typically does not lead to certification. However, it is intentional on the part of the learner and has structured objectives, times and support.*
- *Informal learning results from daily activities related to work, family life or leisure. It is not structured and usually does not lead to certification. In most cases, it is unintentional on the part of the learner.*

(European Commission, 2001:32-33)

This thesis explores the nature and type of education received by student nurses at the University of Brownfield and includes the formal aspects as taught in the university coupled with informal, non-formal and informal aspects as experienced by students on placements via their interaction with qualified nursing staff. The

way that a nurse learns is linked to his/her professional development and evolving perception of the professional role of the nurse (Benner, 1984).

Despite Benner's recognition of the importance of knowledge as gained through being part of a community of experience, Eraut (2011) reports in his research across three professional areas that:

Over a wide range of professions and workplaces, informal workplace activities provided between 70-90 percent of the learning but informal learning was treated as only an occasional by-product. Hence, most discussions of learning dealt only with formal, organized events; and appraisals lacked collaborative dialogue.

(Eraut, 2011:12)

Rennie (2009) singles out the importance of non-formal and informal learning in nursing in saying that:

Recognising the volume and importance of non-formal/informal learning in clinical practice further develops a 'learning organisation'. A desirable goal in today's rapidly changing healthcare environment.

(Rennie, 2009:3)

Toledano O'Farrill (2010) makes similar observations about the importance of people as sources of knowledge and information as well as their contribution to workplace collaboration and sense-making in a work context. The literature notes that increasingly, social networking tools may be used to foster effective informal learning amongst communities of practice (Godwin, 2006; Jones and Conceição 2008; Secker, 2008; Martin, 2011).

Traditionally, under the 'apprenticeship' model of nurse education, the students gained much of their knowledge by observing qualified colleagues and being a part of the ward or community team for blocks of time during their training. This

was coupled with theoretical teaching in the School of Nursing. With the advent of Project 2000 and its supernumerary status along with the emphasis on evidence-based practice, students' formal learning was intended to take place within the university setting. Placement time was to be used primarily for learning by observing rather than participating as a 'pair of hands' on the ward team. Despite the recognition of the benefits of evidence-based practice and formal learning however, the literature notes the continuing importance of informal and non-formal learning for both students and qualified staff (Crotty 2010).

Moch et al (2010) take this a stage further by discussing the role of students as enablers of practice change in clinical settings with the suggestion that meaningful interaction between student and qualified nurses may help to mitigate some of the barriers that prevent the adoption of evidence-based practice by some qualified nursing staff. The significance attributed to informal and non-formal learning and some of the attitudes displayed by students and qualified staff in this research will be discussed in Chapter 5.

While initial consideration of the broader context occurred in Australia and the United States, Virkus (2003) as well as Johnston and Webber (2006) noted a similar shift towards a broader contextualization in the European literature. This linked information literacy with citizenship, personal empowerment, lifelong learning and the knowledge economy. Despite the broadening definition, Lloyd criticises library professionals whom she felt were very much bound by educational context, discourse and setting in their conceptions of information literacy. She concluded that:

By trapping information literacy within the discursive practices of librarianship, the phenomenon's ability to act as a pre-requisite for lifelong

learning and as a catalyst for the development of social capital becomes limited.

(Lloyd, 2005:84)

Johnston and Webber (2006) use the broader perspective outside traditional educational boundaries to support their justification for information literacy as a discipline rather than a set of attributes. Similarly, Watson (2006), when discussing the role of Higher Education in preparing nurses, holds the opinion that 'Not all we learn is taken in the academy, a great deal is learned "on the job".' (*Watson, 2006:622*).

The lasting importance of Lloyd's work in this discussion is that it uses a constructivist approach within a qualitative framework to study two groups of workers (fire-fighters and ambulance crew) situated outside traditional educational and library settings. These studies did not concentrate on the skills possessed by the participants, but rather on a re-conceptualization of information literacy as:

A way of knowing the many environments that constitute an individual's being in the world.

(Lloyd, 2007:4).

Andretta et al (2008) support Lloyd's statement that information literacy in one context cannot be assumed to equate to information literacy in another. When talking about students' conceptions of information literacy, Andretta suggests that:

They think of information literacy purely as applicable in the academic world. Not as being relevant to the real world.

(Andretta et al, 2008:42)

As was discussed earlier in the section dealing with lifelong learning, the variety of contexts requiring information skills now includes not only educational settings but also leisure, mainly due to the availability of the Internet. Martin (2011) comments on possible ways of harnessing leisure to encourage information literacy and gives her views on the need for people to become information literate. The position she takes is that:

Information literacy has been demonstrated to be an essential skill in online affinity spaces that are used as leisure spaces by people of varying age and education. A more feasible way to approach information literacy is to explain and demonstrate it as a framework to help students specifically, and more generally all people, cultivate and develop new practices in order to create an information literate society.

(Martin, 2011:271-2)

This comment in effect restates the strategic importance of information literacy in a national and international context as seen in the Prague Declaration (2003), the Alexandra Proclamation (2005), as well as UNESCO's Media and Information Literacy Curriculum (2011). It shows how the two formerly separate arenas of information literacy in an educational context and in leisure and recreation now intersect via social media and communities of practice. This has led to a number of projects examining how students use leisure and social media and whether it is acceptable to use these for information literacy teaching (Secker, 2008; Godwin, 2009; JISC, 2009; Holderied, 2011; Secker and Coonan, 2011).

Theme 3 - The link to evidence-based practice.

In the introduction to this thesis, the author referred to the evidence-based health-care movement that started in Canada and the United States before moving across to Europe. The accepted definition in the United Kingdom literature is generally recognised as that proposed by Sackett et al (1996) which states that

Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research

(Sackett et al, 1996:7)

As was discussed in Theme 2, the literature reflected increasing emphasis in nursing towards lifelong learning linked to evidence-based practice as well as the need to recruit nurses from hitherto neglected areas of society. This push came from Government initiatives such as that detailed by Gopee:

In both the review of the National Health Service 'The New NHS: Modern, Dependable' (NHS Executive 1997) and the subsequent document, 'A First Class Service – Quality in the New NHS' (DoH 1998), there is emphasis on the importance of lifelong learning for health care practitioners and it is seen as an inherent component of key endeavours such as clinical governance and clinical effectiveness.

(Gopee, 2001:2)

The new statutory study for nurses which stemmed from the PREP (Post-Registration Education and Practice) report meant that continued professional development (or lifelong learning) was no longer an option but 'a professional obligation' (Pravikoff, 2006:254). The Royal College of Nursing (1997) encouraged its members to see it as a way of life rather than simply a way of gaining professional qualifications. Through the late 1990s and 2000s evidence-based

practice began to emerge in the library literature related to medicine and nursing in discussing the importance of information literacy as a way of finding appropriate evidence (Page, 1997; Wallace et al, 1997; Mulhall, 1998; Clarke, 1999; French, 1999; Shorten et al, 2001; Straus et al, 2004; Pravikoff, 2006; Arguelles, 2011; Eizenberg, 2011; Glasper, 2011; RCN, 2011).

In 2011 Glasper noted its importance to the UK nursing profession with the launch of the RCN information literacy competencies saying that:

The RCN recognizes that nurses need to develop information literacy competences to boost their skills in harnessing information from a wide range of sources to make a difference to their delivery of safe and effective care based on the best available evidence. The initiative has a clear mission of supporting an individual practitioner's abilities to source, interpret and synthesize information for the ultimate benefit of patient care.

(Glasper, 2011:188)

This makes a direct link between information literacy and evidence-based practice as a way of improving patient care, thus reinforcing the link between information literacy as an academic practice and information literacy as a lifelong skill that can transform procedures, processes, and ultimately lives. At a general level the consensus across the literature suggests that evidence-based practice in nursing is the way to improve nursing practice with information literacy being a crucial factor in its success. Indeed, Eizenberg notes that:

Evidence-based nursing practice was more likely where there was access to a rich library with nursing and medical journals, and opportunities for working with a computer and for searching the Internet in the workplace.

(Eizenberg, 2011:40)

Despite the prevalence of evidence-based practice however, the literature identifies a number of physical, organisational and attitudinal barriers that need to be overcome. The next section identifies some of the main barriers to the adoption of evidence-based practice in nursing as described in the professional literature.

Barriers to the adoption of evidence-based practice

Klem and Weiss (2005); Tannery et al (2007); and Majid et al (2011) noted some possible barriers to the adoption of evidence-based practice, namely that nurses had difficulties in locating clinical evidence through a lack of time and lack of Internet access. Also, nurses did not know how to search effectively for research literature and struggled with its critical appraisal. Such findings were surprisingly close to those of Hunt (1981) who identified that nurses were often not able to find, understand, apply, or use research findings. Mulhall (1998) questioned why the same barriers were still being reported so many years later and concluded that it was partly related to the nursing profession's suspicion of quantitative research and their lack of skills in retrieving and critiquing information. Brown (2003) identifies that part of the skills gap noted in students may be caused through their perceptions that their use of the Internet for information retrieval is synonymous with information literacy skills. The root of this issue, however, may be traced further back in the past.

Since the 1980s, technology had become a major contributor to information retrieval although the terms information skills/literacy and computer skills/literacy were often used interchangeably. In their literature review, Cheek and Doskatsch (1998) recognised that a sizeable amount of the literature relating to the

information needs of nurses dealt with how to use technology to meet their information needs. They also make the important point that:

Literature in this group emphasizes technical computer competence rather than information literacy

(Cheek and Doskatsch, 1998:246)

By the late 1990s and 2000s, the notion that computer literacy and information literacy were the same began to change in the literature (Bruce, 1997; Ambrose and Gillespie, 2003; Pravikoff, 2006) and a new structural hierarchy emerged as described by Kurbanoglu who suggested that:

Computer literacy, a general understanding of what computers can do, and the skills necessary to use them as an effective tool is a part and prerequisite of information literacy.

(Kurbanoglu, 2003:635)

The literature warned that the advances in technology did not necessarily mean that students' information skills had increased correspondingly (Pravikoff, 2006; Bond, 2004; Godwin, 2009; Bond, 2010). As technology has progressed, some students continue to be reported as over-confident in their information skills in that the ubiquity of the Internet meant that they did not feel the need to concern themselves with more traditional library skills (Brown, 2003; Wallace, 2007; Badke, 2008; Gross and Latham, 2009; Secker and Coonan, 2011). This seemed to be a particular issue with the 'Google generation' who had grown up in a world dominated by the Internet. This self-confidence in their abilities was seemingly not borne out by the evidence, as shown in the CIBER report (2008) on the information behaviour of the researcher of the future, which concludes that:

There is little direct evidence that young people's information literacy is any better or worse than before. However, the ubiquitous use of highly branded search engines raises other issues.

(CIBER, 2008:12)

The same report goes on to suggest that young people do not have a sophisticated mental image of the Internet and are often unaware that it is made up from information from a myriad of different providers. Similarly, they find library resources less intuitive to use and prefer the much simpler search strategies of Google or Yahoo to fulfil their information needs.

In nursing, Bond (2010) concludes that in comparison with her earlier work in 2004, student nurses used the Internet for searching more frequently and were more successful in basic tasks. They were however, unable to apply their limited skills to more complex information literacy tasks and struggled to deal with irrelevant information. A similar skills gap was noted at a more general level in the JISC report on digital information seekers which points out that:

Information literacy has not kept pace with digital literacy levels, there is an identifiable need for training, support and improved systems to help people find the information they need.

(Connaway and Dickey, 2010:1)

By 2009, Whitworth put forward a suggestion that demonstrated the difference between the information literacy and ICT skill in saying that:

The essential difference between ICT skills and IL is illustrated by the distinction that can be made between receiving and transmitting information and the process of transforming information to create new knowledge (IL) before transmitting the new information.

(Whitworth, 2009:96)

Ironically, having tried to differentiate between IT and information literacy in the 1990s, the literature of the 2000s showed greater awareness that a host of other digital 'literacies' now related in various ways to information literacy.

Consequently, defining the subject became more fluid once again (Beetham et al, 2009; Connaway and Dickey, 2010; Mackey and Jacobson, 2011; Secker and Coonan, 2011). Each of the new 'literacies' had a potential role to play in the increasingly complex information landscape that the students inhabited.

As well as external barriers discussed above, several pieces of literature mentioned the importance of personal barriers related to education, role, and attitude to research (Eizenberg, 2011; Majid et al, 2011). Despite the discussion in the professional literatures of both LIS and nursing since the 1990s, similar institutional and personal barriers are still being reported (Ross, 2010; Majid et al, 2011). While Thompson et al (2005) are critical of several other reports about barriers, in that they deal with self-reported behaviours which often differ greatly from observed behaviours, there is no doubt that barriers still exist. Additionally, new barriers have emerged including difficulties of dealing with the vast and increasing literature of nursing (Majid et al, 2011) and nurses' preference for consulting colleagues rather than looking up information or asking a librarian (Hunter, 2008; Crotty, 2010; Eizenberg, 2010; Moch et al, 2010; Majid et al, 2011). This point confirms the importance of informal learning in nursing and indicates that this arises when they are students.

The literature of nursing pedagogy is generally in agreement that one key factor in ensuring that evidence-based practice is taken up in clinical settings relies on

gaining commitment to it while nurses are still students (Moch et al 2010). In attempting to do this, librarians often encounter the chief barrier in the path to information literacy. This is the concept of library anxiety and is very relevant to any thesis dealing with student nurses and one that did not gain full recognition until the 1980s. The next section gives a brief introduction to it with further discussion in relation to this thesis in Chapter 4.

Library and information anxiety

The concept of library anxiety was first identified by Mellon (1986) who described it as psychologically and emotionally related barriers to effective library use. She identified four primary reasons for this as follows:

The students were intimidated by the size of the library, lacked knowledge about where everything was located, lacked knowledge about what to do, and lacked knowledge about how to initiate the research process.

(Mellon, 1986:161)

Mellon felt that these barriers could become overwhelming for students and formed part of a destructive cycle that left them unable to function within the library context. In addition, her research revealed that students tended to over-estimate the competence of their peers with the result that they avoided asking for help so as not to expose their own perceived inadequacies. Finally, Mellon identified that many academic staff had unrealistic expectations about the level of library and information skills possessed by their students, and consequently did not emphasise the library and research aspects of academic work in their classes.

Further to the work of Mellon, Bostick (1992) developed a library anxiety scale which identified five areas of library anxiety. Such barriers included barriers with staff, affective barriers, comfort with the library, knowledge of the library, and mechanical barriers. Using these areas of library anxiety, Jiao et al (2008) looked at the role of library anxiety on co-operative group learning in a group of research students. They concluded that there is a statistically significant relationship between poor group performance and high levels of library anxiety.

This thesis deals with students from several cohorts across the three years of the course. One of the common factors in these cohorts is the diverse age range and educational background that make up each one. Some have followed a traditional educational route into the profession, whereas other more mature students have come into nursing later on in life. Speaking specifically of adult learners, Cooke (2010) suggests that many of them have particular library anxieties in as much as:

Many adult learners are not familiar with the numerous information resources, print or electronic, and have not, if ever, conducted academic research. There may also be a certain level of library anxiety experienced by adult learners who are afraid to ask questions, who do not want to appear unknowledgeable, or who are just overwhelmed by the entire academic research process.

(Cooke, 2010:210)

Such anxieties as cited by Cooke replicate those identified by Mellon and other authors in this area. Additional barriers she notes also include negative self-image and a lack of confidence, a fear of achieving poor grades, and competition with younger more traditional undergraduate students. Cooke suggests that where adult learners are concerned, librarians should adopt an andragogical rather than

pedagogical approach. In her article, she refers to the five andragogical principles which state that adult learners are:

Self-directed

They possess life experience which informs their learning

They have a desire to participate actively in the learning process

Their learning needs to be relevant to their lives

They are highly motivated to learn

(Cooke, 2010:208)

Cooke continues by suggesting that library anxiety may be alleviated in such students by creating content that is relevant to them and which they can use effectively in an interactive way. Such an approach ensures that librarians and students each contribute to the learning process.

It would appear from the literature that the increasing importance of evidence-based practice in nursing indicates that it is regarded, at least in theory, as a key skill underpinning the whole process of improving patient care. For librarians, it has provided opportunities to enhance their teaching role in health and nursing-related subjects to equip nurses with the skills that have been identified as lacking. Later literature takes a much more holistic approach to the subject and brings together the transferable skills required for lifelong learning and the recognition that people learn in different ways within a variety of different contexts.

With the emergence of digital literacies and social media, notions of what should be taught and who should teach it have been brought under scrutiny. Barriers to the adoption of EBP have been identified along with suggestions of how to overcome them, with examples including students becoming enablers of change with their qualified colleagues (Moch et al, 2010) and LIS staff taking information

literacy out to the teaching units within the nurses' work areas rather than expecting nurses to come to the library (Arguelles, 2011). Finally in this theme, the author would like to quote from the RCN competencies (2011) which appear to indicate the way that information literacy in nursing is moving.

The competences are relevant for practitioners and managers involved in evaluating professional standards, for students, tutors, and for information managers in higher education and the workplace. In addition, these competences can be used to inform team and individual learning and development. Online resources will soon be developed which will demonstrate how these competences can be used in practice by different members of a nursing team.

(RCN, 2011:2)

The above quotation shows how the most recent competencies link with both the NHS Knowledge and Skills framework and Skills for Health competencies which form part of the 'Integrated core career and competence framework' for registered nurses. The competencies cross the boundaries of both Higher Education and clinical teaching and deal with the individual needs of different members of the nursing team within the context of their own workplace. In this way the competencies attempt to deal with some of the barriers discussed earlier.

Theme 4 - Conceptions of information literacy

Student conceptions

The author's observations of the literature indicate that there is a dearth of articles dealing with conceptions of information literacy from a student perspective. Those articles that do explore it generally do so from the viewpoint of either library or academic staff. One reason for this lack of material may relate to the perception of students as passive recipients of information literacy skills as delivered by a library 'expert'. Since the advance of technology and a shift towards student-centred pedagogies in the 1990s, information literacy has become more associated with the learning process and is increasingly seen as a way of 'fostering learner-centred pedagogy' (Andretta, 2011:1). Coupled with this is the fee paying culture now prevalent in Universities and the concept of student-as-customer. Not unreasonably, students need to feel that they receive value for money from their library service and that their views and requirements are taken into account when developing the service (Rose, 2009).

As early as 1997, Morrison carried out a study using focus groups to explore students' thoughts on information literacy and the ways that libraries contributed to its development. The results suggested that students did not believe that recognising a need for information was a skill, although Morrison commented that:

Locating information is particularly challenging today because of the recent technologies and the abundance of sources. They also identified an attitudinal factor in locating information, in that one must put some effort into seeking it.

(Morrison, 1997:7)

One of the key features of this study was that it emphasised emotional and attitudinal factors hitherto unexplored in the literature as well as issues such as library anxiety and fear of technology. The small-scale nature of the focus groups (7 students in total) meant that while its results are interesting, they cannot be generalised across wider student groups. Nevertheless, this is one of the first studies which attempts to deal with the topic from a user perspective. Maybee (2006) is critical of Morrison and argues that her study pre-empts the students' conceptions by presenting them with only one very specific definition of information literacy (in Morrison's case the ALA definition). The results then do not appear to add up to a better understanding of students' conceptions of information literacy, but rather how they view and understand the ALA guidelines thereon.

At the same time, the work of Bruce (1997) and her relational model shifted emphasis away from a behavioural approach based around skills and attributes, towards a model which was constructed from the conceptions of information literacy held by Higher Education practitioners. This links with the recognition in the literature that information literacy could and should be viewed from a wider educational development perspective as well as that of the library and information professional which had dominated until that point (Kurbanoglu, 2003; Lizzio and Wilson, 2004; Smith and Oliver, 2005; Maybee, 2006; Schulte, 2008; Burhanna et al, 2009).

Kurbanoglu (2003) concentrated on students' conceptions of self-efficacy within the context of information literacy and acknowledged that there were few articles which dealt with these two aspects. The main message in his article was that

perceived self-efficacy is one of the psychological factors to influence information literacy. Therefore, those students with high self-efficacy expected to succeed and were more persistent and resilient in their searching. Those with low perceived self-efficacy expected to fail and were less likely to persist in their searching. Both Kurbanoglu (2003) and Lizzio and Wilson (2004) concur that conceptions of self-efficacy are context-dependent between student, task and situation as opposed to a clearly defined position on a pre-determined list of skills or attributes. In this sense, these two articles migrate from the skills model to the relational model advocated by Bruce, which tends to dominate the literature during the first decade of the 21st century. This model is again cited in the work of Maybee (2006) who advocates the relational model and agrees with Webber and Johnston's assertion that trying to design information literacy instruction without taking into account the perspective of the user leads to 'inappropriate pedagogic strategy' (Webber and Johnston, 2000:381). Maybee concurs with Bruce (1997) who puts forward the idea that information literacy is:

An intricately woven fabric, revealing different patterns of meaning depending on the nature of the light cast upon it.

(Bruce, 1997:151)

This echoes the metaphor used by Cheek and Doskatsch (1998) cited in the introduction, which likens information literacy to a kaleidoscope whose pattern changes depending on the perspective of the person turning it. McDonald presents the same sentiment in 2004 by stating that information literacy means different things to different people. Smith and Oliver (2005) in their study on student conceptions of information literacy use Bruce's framework for their analysis and conclude that:

When explaining in their own words, the students reveal that they hold multiple perspectives. Consequently, while their responses and behaviour fit into the Bruce framework, it is not possible to categorise them in relation to just one conception. In other words, Bruce's categories cannot be used to delineate "types" of student.

(Smith and Oliver, 2005:61)

During the first decade of the 21st century, the literature reflects the gradual recognition of the need to understand information literacy from the viewpoint of the user. (Seamans,2002; Lizzio and Wilson, 2004; Dee and Stanley,2005; Lebbin, 2006; Maybee, 2006; Bellard, 2007; Sundin et al, 2008; Andretta, 2008; Callaghan et al, 2009; Burhanna et al, 2009; Gross and Latham, 2009; Rose, 2009). Of these, perhaps the key example for discussion is that by Gross and Latham in that it deals with student perceptions of how they define, attain and self-assess their skills. Additionally, it continues to use Bruce's relational approach in line with the examples discussed earlier in this section. In their summary of the findings, the authors reveal that:

A general view of information literacy focused on product rather than process, a perception of achieving information skills on their own, a preference for people over other information sources, and an emphasis on personal interest as key to successful information seeking.

(Gross and Latham, 2009:336)

In interpreting these findings, it would appear that they reflect issues that are prevalent across the rest of the literature including confidence in their skills, a preference for informal learning, and the need for relevance within their own educational or work context.

In examining the literature since 2005 the pervasive trend seems to have been to move away from student perceptions of information literacy in a general sense to one that deals with specific aspects of it. Examples of this include the perceived information needs of students on placement (Callaghan et al, 2009), student perceptions of Web 2.0 and the academic library (Burhanna et al, 2009), and student perceptions of library staff (Bickley and Corral, 2011). This could be argued as a further broadening of the subject or alternatively the fragmentation of the subject. The author would suggest that rather than either of these, it is a natural evolution of the subject in response to external factors that have a direct bearing on its development.

So far in this section, the author has dealt with the literature dealing with student conceptions of information literacy and will now discuss library professional and academic conceptions of the subject and also their assumptions about the skills of their students in this area.

Conceptions of library professionals and academic staff

A number of authors do recognise that in general, information literacy is of interest principally to library professionals who retain their own assumptions about what students require in order to use information effectively and what students should/do already know in this area (Seamans, 2002; Limberg and Sundin, 2006; Saranto and Hovenga, 2005; Smith and Oliver, 2005; Wallace, 2007; Majid et al, 2011; Stokes and Urquhart, 2011; Secker and Coonan, 2011). This point is borne out by Webber and Johnston (2005) who cite several frameworks and models of teaching information literacy that reflect the conceptions of information

professionals. The importance of the assumptions made by library and academic staff has again become very relevant in dealing with the 'Google Generation.'

Secker and Coonan are critical of the literature in that area in feeling that it:

Has vastly over-rated info skills of young people, and also they may think they have better skills than they do. At the same time you have to appreciate that some students will be highly skilled online and any introduction that begins at too basic a level will put them off.

(Secker and Coonan, 2011:18)

Wallace (2007) blames the development of such assumptions on the lack of communication between library and faculty staff, stating:

These libraries have made assumptions about the skills and experiences that their students possess upon arrival and from those assumptions developed clear expectations of what they want students to achieve while at their institution. The assumptions drawn and expectations created may be the work of a single academic librarian, a team of academic librarians, or a team of academic librarians and teaching faculty. Despite the fact that the term "life-long learning" is often associated with information literacy there is a surprising lack of dialogue between those developing information literacy programs at colleges and universities.

(Wallace, 2007:1)

Once more, the emphasis is placed on partnership/collaborative working and although academics agree that it is a good idea, the reality may often be different.

The engagement of academic staff with information literacy is seen as crucial in engaging with students and also has significance for the deeper integration of information literacy into the learning process as Webber and Johnston (2005)

propose. They suggest that:

The extent to which academics engage with information literacy may illuminate the ways in which notions of an information society are being translated into pedagogical practice.

(Webber and Johnston, 2005:10)

Schulte and Sherwill-Navarro (2009) talk about nurse educators in their study who, despite recognising the librarian as an information expert found that there was:

A disconnect between valuing librarians' searching expertise and seeing how it might be applied in instructional settings, as few respondents mentioned providing instruction as a role for librarians in EBP.

(Schulte and Sherwill-Navarro, 2009:60)

Similarly, Derakhshan and Singh (2011) found that:

Academics do not consider librarians as collaborative partners and co-instructors; they are not aware that librarians can help them to embed information literacy into the curriculum. Collaboration between them is essential to provide information literate citizenry.

(Derakhshan and Singh, 2011:218)

Examining a different although related issue, Bellard (2007) criticises academic staff for believing that students could easily translate what traditional library skills they possessed into an electronic environment. She comments on their propensity to simply add one library session at a relevant point in the curriculum instead of embedding it properly within the course design. In her opinion, both these practices reduce information literacy back to technological skills sets that ignore the critical thinking which became so important in the new and wider definition of the subject.

Andretta et al (2008) surveyed the conceptions of information literacy within a United Kingdom Higher Education institution from four distinct viewpoints, the institution, the faculty, the library staff and the students. Participants were presented with lists of statements about information literacy and invited to rank their first and second choices. The first choice for academic staff was:

Passing on facts, strategies of what to do or how to find information – how things work in the library, familiarity with IT, use of the Internet, library and electronic resources.

(Andretta et al, 2008:40)

This choice reinforced the view of information literacy as a set of skills which in turn complements the view taken by the library staff who also saw the phenomenon from a traditional behaviourist viewpoint. In the case of both academic and library staff the view taken seems to suggest that they continued to perceive information literacy as being related to but separate from the learning process. In the ensuing years a number of publications have begun to differentiate between information literacy as a series of skills to be acquired and information literacy that is a part of learning within a variety of contexts (JISC, 2009; Nayda and Rankin, 2009; Singh, 2009; Connaway and Dickey, 2010; Lombard, 2010; Bent and Stubbings, 2011; Chen and Lin, 2011; Grizzle and Wilson, 2011; RCN, 2011; Secker and Coonan, 2011; Sun and Chen, 2011).

This changing perception is neatly summarised by Bruce and Hughes where they elaborate on what they term ‘informed learning’ as something that:

Envisages that learners in social, workplace, and academic contexts will experience different information concepts and practices, thereby learning about and learning with information. Through a reflective process, they explicitly turn their attention towards their learning about those practices, and so become able to transfer their learning to new contexts. Rather than focussing on separate information skills, informed learning aims to promote critical and strategic approaches to solving complex problems in differing contexts. Informed learning is therefore integral to the learning process, rather than simply proposing an additional set of information skills to be mastered.

(Bruce and Hughes, 2010:3)

Information decade by decade: chronology

In summary, it may be helpful to remind the reader of the themes discussed in this Chapter in chronological order as a way of gaining an overall view of the subject. Several authors have provided useful summaries of key themes including Behrens (1994), Virkus (2003), Pinto (2010), and Aharony (2010).

1970s

The 1970s saw the term “information literacy” first used by Zurkowski (1974). Burchinal (1976) discussed the ways information literacy could be used in both problem-solving and decision making. Taylor (1979) used the term when referring to librarianship, the variety of sources available and the ways of acquiring and using information. The zeitgeist of the decade is usefully summed up by Behrens (1994) stating that:

The definitions of the 1970s highlighted a number of requirements for information literacy, but did not reach the point where they identified the actual skills and knowledge required for information handling at the time
(Behrens, 1994:311)

1980s

The 1980s saw an explosion in information technology, and with it came changes in the definitions of information literacy. The publication of the ALA definition (1989) and similar ones in several other countries was a turning point in the development of information literacy in so much as it became placed within a wider and more educational role. Practitioners questioned the 1970s definition and devised new definitions which included the information divide, a connection between user education and Information literacy, a more politicised angle to the

changing role of librarians' higher order critical skills, and a link with citizenship and the concept of the information society. Behrens (1994) sums up the 1980s by stating that:

By the end of the 1980s, information literacy was no longer an embryonic concept. It had been defined with clarity, and its realm comprehensively delineated by the identification of the actual skills and knowledge that are required for information handling in an information-permeated, technologically advanced society

(Behrens, 1994:317)

1990s

The 1990s saw the debate around skills and attributes with librarians also pointing out the relevance to lifelong and resource-based learning. The librarian's role began to develop and library instruction/user education became increasingly recognised. Digital information sources grew and the amount of information available increased. By this time the conversation was not around the importance of information literacy but focused on how it could be effectively incorporated in the education process. In 1997, Bruce began the move away from the 'skills' approach with the publication of her relational model, the 'Seven Faces of Information Literacy'. This was developed laterally from the process approach advocated by Kulthau and was one of the first studies to incorporate user conceptions into a framework for information literacy.

Despite the various differences and approaches to the subject that were identified in the literature, Owusu-Ansah (2003) claims that these differences were 'much ado about nothing' (2003:225) and that the definition used by Kulthau and Bruce was not substantively different from that used by the ALA (1989) and Doyle

(1992). This opinion however, was in a minority and certainly the majority of the literature in the 2000s emphasises the difference between the relational model and what had gone before.

2000s

By the 2000s, the earlier more simplistic definitions, such as the 1989 ALA definition were being criticised for not setting the subject within the social context of information. The work of Lloyd (2005), Andretta (2008), and Cheuk (2008) tried to address this by moving information literacy out of the artificially constructed environment of Higher Education and into the workplace. The whole issue of information literacy within a variety of different contexts was a major feature of the literature at this time.

Bent and Stockdale (2009) identified authors (Keen, 2007; Brabazon, 2007; Rowlands and Fieldhouse, 2007) who raised serious concerns about information overload. Also, concerns were raised about the difference between the perceived and actual skills of the Google generation (Beetham et al, 2009; Godwin, 2006; 2009; OCLC, 2010; Martin, 2011; Secker and Coonan, 2011).

In their review of the literature of the last three decades, Markless and Streatfield (2007) identified five key issues which emerge from research and related pedagogical work in Higher Education. These suggest that it has a basis in learning not in libraries; the transfer of information literacy skills and strategies; the sequential approach of existing strategies; achieving and impact: showing the

difference; the nature of collaboration. Support for these issues is also seen in the review carried out by Aharony in 2010.

From this selective review, it is apparent that the whole notion of information literacy has developed in diverse ways since its inception and that there have been numerous discussions about different approaches, models, and frameworks that are well represented in the literature. The 1990s saw it becoming more tightly defined only to see this definition challenged again in the 2000s through the development of numerous other 'literacies' during which time the nature of the subject and the librarian's role were once again placed under scrutiny.

The linear and sometimes tangential developments that occurred through the work of Kulthau, Lupton, Bruce, Andretta and Lloyd are major influences in the positioning of this thesis as part of the wider research into information literacy from a user perspective. Their concentration on the relational aspect and user perceptions are certainly facets that the author has espoused in order to carry out research which has appropriate methodological attributes and yet can contribute to educational research in a very practical sense while informing the practical development of the subject.

CHAPTER 3: RESEARCH METHODOLOGY

In dealing with any research, the researcher has to make a number of decisions, not least of which involves the type of approach to be taken that is most appropriate for the nature of the specific piece of research and its objectives. The origins of phenomenography as a research approach lie in the need to investigate students' experiences of learning, particularly within the Higher Education sector (Booth, 1997).

In the following sections, the author will discuss the phenomenographical approach from both a theoretical and practical point of view, addressing the research methodology, the research approach and the research design. The author will explain why this approach was chosen in relation to the objectives of this thesis and comment on any ethical issues involved in the process. Firstly however, it would be helpful to discuss the choice of qualitative rather than quantitative methods and then examine the chosen approach of phenomenography; what it is; and how it originated.

Qualitative versus quantitative approaches

Corbin and Strauss (1998) define qualitative research as:

Any type of research that produces findings not arrived at by statistical procedures or other means of quantification. It can refer to research about persons' lives, lived experience, behaviours, emotions and feelings as well as organisational functioning, social movement, cultural phenomena and interactions between nations.

(Corbin and Strauss, 1998:10-11)

Qualitative research studies people in their natural setting and attempts to preserve the complexities of their behaviour by taking a holistic perspective. The aim is to gain insight into phenomena and the meanings people bring to them. In the case of phenomenography, it is the variations in their experience which form the object of study.

Heaton notes the work of Bryman (1988) who identifies six key features of qualitative research whereby:

The emphasis on 'seeing through the eyes of' the people being studied; the description of the social setting being investigated; the examination of social behaviour and events in their historical and social context; the examination of the process by which social life is accomplished, the adoption of a flexible and unstructured approach to social inquiry, allowing researchers to modify and adapt their approach as need be in the course of the research; the reliance on theories and concepts that have been derived from the data rather than defined in advance.

(Heaton, 2004:55)

As has been discussed in Chapter 2, the 1980s saw new definitions of information literacy and interest in its wider educational role. This coincided with a move away from the more quantitative approaches of existing educational research towards one that is more qualitative and reflective. Svensson (1997) accounts for this as follows:

The explorative and interpretative character of the data collection and analysis meant a radical shift from the quantitative methodological tradition. This shift was inspired by hermeneutic, ethnographic and phenomenological methodological tradition within a general concern for paradigms and methodological traditions.

(Svensson, 1997:164)

In education, health care, and health care education, Miller (2004) noted the move towards qualitative research methods. This coincided with an increased willingness to accept that the results of this type of research, while different from the more traditional quantitative approach were equally as valid and useful to health and education professionals. As noted in the introduction, the drive towards evidence-based health care brought into question the nature of the evidence that should or could be used and the methods used to obtain it.

Looking specifically at information literacy research, as early as 1986, Dervin and Nilan identified two paradigms that influenced it. The first of these was the more traditional positivist approach while the alternative took a constructivist viewpoint. The former characterised information as an external objective phenomenon which existed outside the individual. The second viewed information as being constructed by the user and therefore in need of interpretation. The key elements of the alternative paradigm focused very clearly on the user rather than the system. Dervin and Nilan posit that in trying to achieve this, the researcher should ask:

How do people define needs in different situations, how do they present these needs to systems, and how do they make sense of what systems offer them?

(Dervin and Nilan, 1986:16)

As was also discussed in Chapter 2, the information literacy research interest in assessing learning from the users' perspective caused it to gravitate towards the alternative paradigm in the 1990s and beyond, thus reflecting the parallel interest

held by educational researchers in students and their perceptions of learning. The constructivist influence on phenomenography became more apparent in the 1990s when Biggs (1999) concluded that phenomenography and constructivism share the basic proposition that knowledge cannot be constructed in a meaningful way unless it is created by successful approaches to learning on the part of the students.

Lloyd (2005) also spoke of viewing her research through a constructivist lens which acknowledged the multiple realities of everyday life and recognised that knowledge is a construction between individuals, often the researcher and the participants. The constructivist grounded theory approach that she used is very closely related to phenomenography. In choosing a qualitative approach for this thesis, the author was of the opinion that it would be the most appropriate to the exploratory nature of the research and its objectives.

What is phenomenography?

Phenomenography is a qualitative research methodology within the interpretive paradigm that investigates the diverse ways in which people experience a phenomenon or perceive something. The approach emerged within educational research during the 1970s and early 1980s and is derived from an empirical rather than a theoretical or philosophical basis. It looks at conceptions of a phenomenon as experienced by people and not the phenomenon itself (Svensson, 1997; Akerlind, 2005).

One of the most quoted descriptions of phenomenography is by Marton(1986), one of its founders, who describes it as:

A research method adapted for mapping the qualitatively different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around them.

(Marton, 1986:31)

Its emphasis is on description and its importance is related to an understanding of the way people experience phenomena collectively, despite the fact that the same phenomena may be perceived differently by different people under different circumstances (Akerlind, 2005). Clarification is dependent upon focusing on the meaning of the conceptions themselves with the object of study being the relationships between the actors and the phenomenon as opposed to the phenomenon itself (Bowden and Walsh, 2000). The various ways that people experience a phenomenon are expressed as 'categories of description' which emerge from the interview transcripts and are interpreted by the researcher. The structural relationships between these ways of experiencing form an inter-linked representation called the outcome space (Akerlind, 2005). Phenomenography proposes that the relationship between ways of experiencing will be related through the phenomenon which is experienced. By the same token, this leads to the core premise within phenomenography that categories of description form hierarchical relationships which demonstrate their connection to each other.

Sandberg (1997) contends that phenomenography is an empirical qualitative method that developed in response to the failure of the dominant research methods in education at the time. As has already been discussed in the literature

review, much traditional research was written from the perspective of the researcher rather than the researched, with the view of the student's life-world seen from the perspective of the library and information professional. Marton and Svensson were very much aware of this and argued that it was necessary to see the student's life-world from the student's perspective, explaining that:

In this perspective the world as experienced by him [sic] becomes visible. His experience of the world is a relation between him and his world. Instead of two independent descriptions (of the student on one hand and of his world on the other) and an assumed relationship between the two, we have one description which is of a relational character.

(Marton and Svensson, 1979:472)

Ontology and epistemology

Phenomenography is a relatively new approach in educational research. Indeed, Akerlind (2005) recognises that:

It is only recently that epistemological and ontological assumptions, a theoretical basis and specification of methodological requirements underlying the approach have been more clearly developed

(Akerlind, 2005:321)

Consequently, phenomenography articulates no metaphysical foundation, and does not make any assumptions about the nature of reality. The reason for this is as suggested by Svensson (1997) is that:

It is an empirical research tradition. This means that metaphysical beliefs and ideas about the nature of reality and the nature of knowledge do not come first. What comes first are more specific assumptions and ideas directly related to the specific character of the empirical research.

(Svensson, 1997:164)

Phenomenography takes a non-dualist approach in that it recognises only one world which is simultaneously subjective and objective. That is to say that the only reality is the one that is experienced. Marton and Booth describe it in the following way:

There is not a real world 'out there' and a subjective world 'in here'. The world [as experienced] is not constructed by the learner, nor is it imposed upon her; it is constituted as an internal relation between them.

(Marton and Booth, 1997:13)

This assumption poses a direct challenge to Cartesian dualism which argues for a real objective world on the one hand and a second subjective world of mental representations on the other. Säljö believes that such separation:

Leaves the fundamentally social and material nature of human actions and activities inexplicable. The idea of an entity such as Cartesian mind-stuff that can be studied per se and outside human practices is a paralysing burden for the human sciences to bear, and phenomenography is admittedly an attempt to provide a perspective in which the person perceiving and his/her conceptions of the world are reintegrated. Thus, potentially, there is a striving towards studying mindful action and meaning.

(Säljö, 1997:174)

The research literature reveals some attempts to place phenomenography in the phenomenological tradition, and it would be true to say that methodological issues connected with the process of entering into the student life-world are prevalent in both. However, Hasselgren (1997) and Limberg (2000) reject such attempts and argue that phenomenology is more theoretical than empirical and is concerned with the essence of a phenomenon. On the other hand, phenomenography wishes to investigate and describe phenomena through the variations in the actors' experiences of it.

While Uljens (1993) regards the relationship between phenomenology and phenomenography as unclear, Hasselgren (1997) argues that of the five ways of carrying out phenomenographic research amongst the Gothenburg phenomenographers (discursive, experimental, naturalistic, hermeneutic and phenomenological) only two (hermeneutic and phenomenological) demonstrate development stemming from a research base that is grounded in phenomenological philosophy.

Svensson (1997) summarises phenomenography as having:

Its roots in the general scientific tradition and not in philosophy or some specific School of thought. It represents a reaction against, and an alternative to, the then dominant tradition of positivistic, behaviouristic and quantitative research. It makes its own ontological, epistemological and methodological assumption with inspiration from and similarities to several older and concomitant traditions without agreeing entirely with any of those.

(Svensson, 1997:171)

Furthermore, he comments that the idea of a conception as a way of describing knowledge meant a step away from the objectivistic and inter-subjectivistic view to one which was more subjectivistic and relative. Phenomenography takes a second order perspective, which is to say that it focuses on the way that phenomena appear and are experienced by people, as opposed to first order perspective which focuses on what people do and how they act (Limberg 2000)

Ashworth and Lucas (1998) characterize this perspective as a concentration on:

The experience-as-described, rather than on either the psychological process generating the experience or the 'objective facts' themselves.

(Ashworth and Lucas, 1998:415)

They comment on the difficulties of gaining entry into the student's life-world since the phenomenographic approach requires that the researcher renounces assumptions and suppositions. This is akin to the bracketing (or the epoché) as described by Husserl in his work on entering the life-world (1973). Firstly, Husserl talks about the need to bracket known facts which may distort descriptions of the life-world, and secondly points out that the researcher must not doubt the validity of the life-world into which he/she is trying to enter, since external validity becomes irrelevant when dealing with conceptions.

Reasons for choosing phenomenography

The approach focuses on the variations in conceptions of information literacy rather than information literacy itself via the second order perspective it provides. Additionally, the nature of this study resonates with what Marton (1988) called the three lines of phenomenographic research. Firstly, content-related studies of more general aspects of learning. Secondly, the study of learning within a particular content domain. Lastly, knowledge interest as depicted by the way that people conceive of various aspects of their reality.

Further justification for use of this approach was in the number of previous research studies in information literacy that have successfully used a phenomenographical approach (Bruce, 1997; McKenzie, 2003; Webber and Johnston, 2005; Maybee, 2006; Andretta, 2007b). The choice of phenomenography meant that the author was able to take a methodological position that concentrated on experiencing the phenomenon from the perspective

of the person experiencing it. At the same time, its use ensured that it was underpinned by an appropriate theoretical base.

The research approach of this thesis is what Bowden (2000) described as developmental phenomenography, which is to say that:

It seeks to find out how people conceive of some aspect of their world, and then enable them or others to change the way their world operates, and it usually takes place in a formal educational setting.

(Bowden, 2000:3)

The research took as its point of departure the author's desire to improve current practice in the arena of information skills teaching to student nurses in an educational setting while ensuring its relevance in their eventual work landscape. Consequently, the relational nature of the approach and its previous success in effecting change within the 'real world' suggested that, on a pragmatic level, this would be a suitable way of working. This viewpoint is supported by Trigwell (2000) when reflecting on his reasons for the use of this approach, where he states:

It is conducted in a real setting. It looks at issues through the eyes of the key players, not an independent and therefore uninvolved observer; and it is somehow able to better represent the complexity of educational settings and situations to produce meaningful and useful conclusions

(Trigwell, 2000:65)

The process of research design and implementation was guided by the practical guidelines produced by Ashworth and Lucas (2000) and their first advice was to be clear about the objectives of the research which are outlined below

1. To explore BSc Nursing students' conceptions of information literacy and its perceived value as part of their overall learning experience during the three year period of their university course.
2. To examine the value and relevance of information literacy in searching for evidence-based materials within their placements as an indicator of its place in the 'real world' of the nurse.
3. To evaluate the usefulness of information literacy currently taught on this course in the light of the results of the research and make recommendations as to how it should be taught in the future.

The relational approach

Barnard et al (1999) discuss at length the nature of conceptions as relational knowledge and argue that it assumes that individual conceptions are formulated in various ways depending on the context of their individual experience. This is particularly true of developmental phenomenography and is supported by Bowden (2000) in stating that:

In every sense the research is relational and thus the full range of methodological issues becomes relevant.

(Bowden, 2000:4)

Entwistle (1997) talks in a wider sense about the relational nature of learning and the phenomenographic view which assumes that learning takes place through an interaction between the student, the content of learning material, and the overall learning environment. Svensson adds to this by pointing out that one of the fundamental assumptions of phenomenography is that:

Knowledge and conceptions have a relational nature. Conceptions are dependent both on human activity and the world or reality external to any individual.

(Svensson, 1997:165)

With regard to information literacy, Bruce (1997) proposes a relational model which rejects the hitherto dominant behavioural model concentrating on personal attributes in favour of one which consists of an outcome space derived from categories of description. In choosing phenomenography as a research approach, the author came to the decision that such a relational approach would be the most appropriate one to take.

The Researcher's Role

In addition to phenomenography dealing with the relationship between a person and a phenomenon, there is also the question of the part played by the researcher's perspective in terms of influencing the participants, interpreting the results and constructing the categories of description. In most cases with phenomenographic research the method of collecting data is through the use of interviews which are generally conducted by the researcher. Akerlind observes that:

Phenomenographic interviews are typically audio taped and transcribed verbatim, making the transcripts the focus of the analysis. The set of categories or meanings that result from the analysis are not determined in advance, but 'emerge' from the data, in relationship with the researcher.

(Akerlind, 2005:4)

Walsh (2000) questions whether the process of data analysis is one of construction or one of discovery and puts forward two options. The first is that the

researcher uses his/her own prior knowledge and assumptions to consciously construct categories from the data. The second is that the researcher discovers categories as they emerge from the data. These questions have led to phenomenography being accused of researcher bias. Walsh suggests that these accusations may be overcome by either using a group of researchers, or for the solitary researcher to be explicit about their input into the results to enable them to be checked by other researchers. This issue is one which is noted in other qualitative research approaches and May (2002) suggests that impartiality is not necessarily a pre-requisite to the researcher playing a key role in the construction of results in qualitative research. May takes the view that:

Particular ideas of neutrality, such as the maintenance of objectivity through positioning the researcher as nothing but a passive instrument of data collection, are now exposed as falsehoods that seek to mask the realities of the research process. The knower (as researcher) is now implicated in the construction of the known (the dynamics and content of society and social relations).

(May, 2002:13)

Phenomenography however, attempts to deal with the role of the researcher by the use of bracketing (or the epoché). Barnard et al take this to mean that:

Each interview and subsequent analysis of data must be guided by the rule of epoché (bracketing), the rule of description focus (rather than explanation focus), and the rule of horizontalization (the ascribing of equal value to all description and experience).

(Barnard et al, 1999:222)

The researcher must bracket all prior assumptions and knowledge in order to enter the second order conceptions of the students' life-world (Ashworth and Lucas, 1998). Additionally the researcher must resist the temptation to construct

hypotheses and use evidence from other seemingly authoritative sources. When working with the students' life-world, the researcher must be careful not to assume that student conceptions are merely defective versions of an expert viewpoint (as possessed by the researcher). Their conceptions as described must be seen as interesting in themselves and worthy of explanation.

Hasselgren (1997) is critical of phenomenography and suggests that potentially, the data, constructs, and the object of research could be reflections of the researcher's own ideas or simply products of the interview process. Ashworth and Lucas (1998) outline the dilemma whereby the bracketing of previous knowledge on the part of the researcher means the setting aside of concepts which would prevent entry into the student's life-world. Conversely however, it is only through the researcher having knowledge of the subject that he/she can interpret what the student reports. Francis suggests that in order to resolve this issue:

Some pre-determined leading experiences and leading prompts are required to focus the interview appropriately for the objectives of the study in question.

(Francis, 1993:7)

Akerlind (2005) is of the opinion that that there are variations and commonalities in accepted practice and that the data are the product of the interaction between researcher and researched.

Ethical aspects of the research

A research project using qualitative methods has its own particular ethical issues which have to be addressed. According to Orb et al:

The nature of ethical problems in qualitative research studies is subtle and different compared to problems in quantitative research. For example, potential ethical conflicts exist in regard to how a researcher gains access to a community group and in the effects the researcher may have on participants..... Embedded in qualitative research are the concepts of relationships and power between researchers and participants. The desire to participate in a research study depends upon a participant's willingness to share his or her experience.

(Orb et al, 2000:93)

The principal ethical areas to consider for this project were those of autonomy and respect for the rights of the participants as well as anonymity and confidentiality. Also, the author reflected upon issues such as power relationships in research, interview ethics, beneficence and representation. In order to comply with the need to inform participants adequately about the background and nature of the research and to explain the ethical framework in which it was placed, the author ensured that prior to being asked to participate in the focus groups, potential participants received a letter of introduction (see Appendix 1). This gave details about the author, described what the research was about and the reasons for it being carried out. Participants were assured of confidentiality in all areas along with reiteration that their participation in the research was voluntary and completely separate from their course-work. They were informed that they had the right to withdraw at any time.

The letter of introduction, the research objectives and an outline of the research methodology were approved by the Head of Nursing and relevant lecturers on the

course. Those students who indicated a willingness to participate in follow-up interviews were asked to provide contact details and sign their informed consent. Those who went on to this second stage of the process were reminded of the objectives of the research and the confidentiality and anonymity of any data which might be derived from the interviews. They were also given the opportunity to receive the results of the project once they became available. In the introductory letter and the verbal introductions to both focus groups and interviews, the author explained the nature of the research and its objectives. Ultimately, given that this project was a piece of educational research, the intention was to use the data to gain insight into the information literacy section of the module as perceived by the students by following the basic principles of developmental phenomenography as outlined by Bowden who stated that:

The insights from the research outcomes can help in the planning of learning experiences which will lead students to a more powerful understanding of the phenomenon under study, and of similar phenomena. The outcomes from these research studies can also be used to develop generalisations about ways to organise learning experiences in the particular field of study.

(Bowden, 2000:5)

Its potential importance lay in the fact that the results could have several outcomes for future cohorts in terms of what they would be taught (Objectives 1 and 3). Additionally the author wished to explore the relevance of information literacy teaching in the 'real world' of the nurse (Objective 2) and to find out whether what was taught in the artificial educational setting of the university actually transferred into the workplace. Also, on a more general level the results might have wider relevance to other librarians teaching information literacy, particularly in the health care professions.

Implicit within the objectives of this research is the concept of beneficence, that is to say doing good for those involved and preventing harm. It is arguable whether any changes made to the module would benefit those who had participated in the research but certainly it would be expected to improve the learning experiences of future cohorts. It was unlikely that participation in this research would do any harm to the participants. In case of any fears or worries about taking part, it was made clear both verbally and in written form that no participants' identities would be revealed either in the publication of the results or in any of the quotations included in the data analysis. Participants were assured that the participation or non-participation in the research would not be reported to their lecturers, nor indeed would it form any part of the assessment for the module.

Interview ethics

Having obtained details of those who had agreed to take part in the interview process, the author contacted each participant individually to arrange for a time and venue for the interview. These took place in neutral study rooms away from the usual building where student classrooms were located. The point of this was to use a neutral area where they would not be seen by either peers or academic staff in order that they would feel more comfortable with the process. Before the interview the author gave them a note which reiterated the reason for the research and asking them to give written consent to the information they provided to be used in an anonymous form in the reporting of the research results. Once again, the confidentiality aspects were stressed. All participants were asked about the use of the dictaphone which was placed out of sight. No participants expressed any worries at its use. Participants were offered tea or coffee before the

commencement of the interview during which time general conversations took place as an ice-breaker.

One of the ways used to put participants at their ease was to emphasise that there were no right or wrong answers, and that it was their perceptions that were important. They would not be judged on their answers and it was not a test of what they had learned in their class. This did have the desired effect in that it calmed the nerves of some of those who wondered whether they would be criticised for not knowing what they felt they were expected to know.

Power relationships

Richards and Schwartz (2002) talk of power relationships and the almost inevitable power imbalance in the research relationship. This was something that the author did consider, given his role as Academic Librarian to the participants. Consideration was given to using colleagues as interviewers so as to minimise any thought in the students' mind that they had to say what the author (as Academic Librarian) expected them to say. Finally however, the author did conduct the interviews, since there had been no previous teaching contact with the students. The author felt strongly that there was a need for him to be a part of the process as it facilitated a consistent overview of the raw data. Given the iterative nature of the phenomenographic research process, the fact that one person carried out the interviews allowed the questions to be adjusted or re-ordered so as to improve the whole experience and facilitate a more relaxed and productive interview.

Representation and misrepresentation

The author considered carefully the representation and possible misrepresentation of the participants' voices in the light of Richards and Schwartz's comment that:

Although all research is, to some extent, socially constructed, it is in qualitative studies that participants are more likely to feel that their views have been misrepresented or taken out of context.

(Richards and Schwartz, 2002:136)

In the case of phenomenography however, the researcher aims to represent the collective variations of experience within a group rather than individual experiences (Akerlind, 2005). Therefore, the issue of representation of individual voices was not one that needed to cause too much concern in this particular piece of research. The author followed the advice of Limberg (2000), regarding the analysis stage, where she advises that:

Analysis is conducted through constant comparison between similarities and differences of aspects of content, that is, the meaning aspect and the structural aspects of what is being said by the interviewees. I want to stress that it is not differences between individuals but between their ways of experiencing a phenomenon which are of interest to the researcher.

(Limberg, 2000:58)

Validity of the phenomenographic approach

Golafshani writes of reliability and validity in qualitative research as having two strands:

In so far as the definitions of reliability and validity in quantitative research reveal two strands: Firstly, with regards to reliability, whether the result is replicable. Secondly, with regards to validity, whether the means of measurement are accurate and whether they are actually measuring what they are intended to measure. However, the concepts of reliability and validity are viewed differently by qualitative researchers who strongly consider these concepts defined in quantitative terms as inadequate. In other words, these terms as defined in quantitative terms may not apply to the qualitative research paradigm.

(Golafshani, 2003:600)

Given the relative newness of phenomenography and its empirical rather than theoretical approach, several authors have criticised aspects of its validity and reliability (Marton and Booth, 1997; Säljö, 1997; Sandbergh, 1997; Ashworth and Lucas, 1998; Bowden, 2000). Bowden refers to its:

Perceived lack of validity, its lack of predictive power, its researcher bias and its denial of the voice of the individual through categorisation

(Bowden, 2000:1)

The process is continually evolving and there is no single prescribed method for carrying out such research. Much of the value in the approach is derived from the reflexive approach taken by researchers in conducting it. Pillow endorses this concept in saying:

Reflexivity becomes important to demonstrate one's awareness of the research problematics and is often used to potentially validate and legitimize the research precisely by raising questions about the research process.

(Pillow, 2003:179)

Säljö (1997) questions the relationship between discourse and experience in relation to the overall validity of phenomenographic research in wondering whether the description used by the participants simply reflects their discursive practices rather than their actual experience. Entwistle (1997) talks about the validity of the approach in Higher Education and comments that while it is not necessarily pure in research terms, the reason for its popularity in Higher Education is that it gives 'useful insights into teaching and learning' (Entwistle, 1997:129) This view is also supported by Limberg (2000).

Limberg feels that its basis in empirical research is a strength rather than a weakness, in discovering the relationship between subject and object from a second order perspective. Its relational nature as discussed above is 'consistent with hermeneutical or phenomenological understandings underlying much qualitative research' (Limberg, 2000:65). Walsh picks up the theme of validity and questions whether a project can be considered valid when carried out by a single researcher, on the premise that they may not be able to bracket their preconceptions and knowledge sufficiently during data analysis and the construction of categories of description. She concludes however, that:

Where a lone researcher makes explicit his or her input into the analysis and allows other researchers to check, test and probe the initial results, such bias can be overcome.

(Walsh, 2000:30)

Marton and Booth summarise their view of the validity of the approach as follows:

It is about identifying the very ways in which something may be experienced. This is the researcher's way of experiencing how other people's ways of experiencing something vary. It is experience, or rather

the nature of experience as seen from a particular perspective. We capture it in a category of description; it is a characterization discerned from that which is characterized. The validity claim is made in relation to the data available.

(Marton and Booth, 1997:136)

Reliability of the phenomenographic approach

In more mainstream social science research, replicability is one of the commonly used measures to establish the reliability of a piece of research. Marton (1986) identifies two areas that are crucial to replicability (and therefore reliability) in phenomenography. Firstly, he cites the ability of other researchers to be able to produce the same categories of description from the same data. Secondly, he asks whether another researcher would be able to recognise the conceptions of the original researcher purely from the categories of description.

Both Marton (1986) and Säljö (1988) believe that it is reasonable to require replicability for phenomenographic results in the second but not in the first of Marton's queries. The original development of the categories of description is a form of discovery and therefore need not be replicable. Once the categories have been discovered, however, they have to be described in a way that facilitates use by other researchers. This in turn can help to validate the process. In considering issues of reliability in phenomenographic research, several other authors challenge the traditional concepts of validity and reliability with the argument that the relational nature and interpretive epistemology of phenomenography indicate that other concepts such as interpretative awareness, trustworthiness and dependability offer alternative ways of ensuring academic rigour (Sandbergh, 1997; Collier-Reed et al, 2009). Sandbergh argues that the conventional inter-

judge reliability whereby other researchers are able to recognise the same conceptions from the categories of description as identified by the original researcher is based on an objectivistic epistemology, and therefore is inconsistent with phenomenographic reduction. The author was particularly interested in Sandbergh's concept of interpretive awareness given that we, as researchers, cannot escape from our own interpretations in the research process. Rather than ignore our subjectivity he suggests that it needs to be acknowledged explicitly throughout the process. Following advice by Kvale (1991), he points out that researchers need to achieve perspectival subjectivity in that they can develop an awareness of the way that their interpretations affect the whole process.

Collier-Reed et al (2009) support Sandbergh's assertion that validity, reliability and objectivity are not appropriate for interpretative research. They cite the core arguments first made by Lincoln and Guba (1985) in *Naturalistic Enquiry* (1985) to support this stance, saying:

The core of Lincoln and Guba's argument was that it is not appropriate to argue for the positivist standards of validity, reliability and objectivity in measuring the value of interpretive research, but rather that the concept of the trustworthiness of the investigation should be employed. To argue for trustworthiness, they brought in the notions of 'credibility', 'transferability', and 'dependability' as equivalent to the traditional research notions of internal validity, external validity and reliability respectively. As part of arguing for the 'trustworthiness of results' rather than a focus on validity and reliability of results as the appropriate measure of establishing rigour in research, it has been possible to judge the value of interpretive studies by a different set of appropriate criteria.

(Collier-Reed et al, 2009:342)

They develop this theme further by arguing that an essential aspect in the development of this trustworthiness is its relationship to context at different levels

within the research project, namely, the domains of the researcher, the collective, and the individual participant. The form of trustworthiness may be different according to the primary purpose of the research and will be related to aspects of pedagogical, social, and epistemological legitimacy. They identify the three main areas that influence the dependability of the findings as being the role of the interviewer during data collection, the transcription of the interviews, and data analysis. Finally, Limberg (2000) is of the opinion that the overall credibility of the approach lies in whether the categories of description do actually represent the object of research, clarity on the part of the researcher about the process of analysis, and the decisions taken through the process.

Ultimately, the researcher has to make a value judgement on the relative merits of the numerous discussions around reliability and validity. In this case, the author concurred with the pragmatic approach put forward by Patrick (2000), who takes the view that, given the genealogy of phenomenography within educational research, it is less important that the research is seen as valid and reliable than that it generates new insights into the relationship between teaching and learning. By gaining fresh insight, new developments are able to take place.

Generalisability

The notion of generalisability is not usually applied to phenomenographic research. The principal reason for this is that the research looks at the variations of experience of conceptions of a phenomenon within a specific group. Those chosen for the research are chosen in order to be as representative of that group

as possible rather than as representatives of the general population, thereby maximising the possible number of variations in experience. Akerlind notes that:

Consequently, phenomenographic research outcomes have been described as not enabling generalization from the sample group to the population represented by the group, because the sample is not representative of the population in the usual sense of the term.

(Akerlind, 2002:12)

Nguyen and McColl-Kennedy argue that generalisability of phenomenographic research results are sustainable because 'within the desired population, the range of meanings within the sample will be representative of the range of meanings within the population' (Nguyen and McColl-Kennedy, 2003:3). This view is also shared by Marton and Booth (1997) and Francis (1993).

The evidence in the literature suggests that the results of a phenomenographic study would be generalisable to a similar group to the sample group and the range of variation may still be relevant to other dissimilar groups, albeit in a less complete way. With this in mind, it is crucial that the researcher specifies the characteristics of the sample group to enable the reader to decide on the generalisability of results to other population groups. This point is reiterated by Berglund (2006) who stresses the role of the reader in judging to what extent the results from one project can be transferred to their own specific situation.

Research design and implementation

This section deals with the design and implementation of the research under the following headings

- Student Nurses as participants.
- Designing the data gathering instruments.
- Pilot testing.
- Data collection.
- Data analysis.

Student nurses as participants.

The nursing students mentioned in the objectives above were those on the BSc Nursing course at the University of Brownfield where the author worked at the time. As the Academic Librarian for their subject this meant close involvement with both the design and delivery of information literacy teaching across all three years. The Head of Nursing was keen to collaborate on the project and gave permission to progress it and carry out focus groups as part of pre-existing teaching time. The follow-up interviews were conducted outside teaching time.

Having read through the literature, the author decided upon a purposive sample which would form the basis of a cross-sectional study across the three years of the degree. This would give the opportunity of a snapshot of conceptions across the three years. An alternative would have been to carry out a longitudinal cohort but cost and time factors precluded this. Additionally, it seemed pragmatic to

maximise the different learning experiences across different cohorts in the three years and the fact that they all followed the same course enabled this to happen.

Designing the data gathering instruments

The design of the data gathering instruments was guided by the literature of the subject and in particular by the work of Marton (1986), Bruce (1997), Ashworth and Lucas (2000), Limberg (2000), and Trigwell (2000). The author opted for semi-structured interviews as the most appropriate way of retrieving rich data about the ways that the participants experienced the phenomenon. This choice also afforded them maximum freedom in description and reflection of their experiences. The questions which formed the prompts for the interview schedules were constructed following a literature search and amended after the first focus group to better reflect some of the issues which emerged. The completion of the literature search led to one of the first dilemmas for those who use phenomenographic research.

Ashworth and Lucas comment on it stating:

The phenomenographic epoché should entail a suspension of commitment to the accepted view of the subject matter in order to grasp the meaning of the material to the student, yet it is only through some knowledge of the material that the student can be understood. The key, as always, is that knowledge of the subject matter must not be allowed to impair entry into the life-world.

(Ashworth and Lucas, 1998:423)

It became clear that even at this early stage, some insight into the breadth and depth of the topic was needed. Subsequently, the author carried out a comprehensive literature review. Additionally, the information retrieved was required to facilitate the interviews successfully. Throughout the whole process

however, the author was mindful of the epoché in order to gain entry into the students' life- world.

Pilot testing

Prior to the interviews the interview schedules were tested for clarity and comprehension with six students from a different but related discipline. As a result, several of the questions were amended, re-ordered and two were removed.

Focus groups

Data were gathered using six focus groups with students from each of the three years of the BSc Nursing course. For year one there were twenty-six students (eighteen female, eight male); for year two there were twenty-two students (nineteen female, three male) and for year three there were twenty students (fifteen female, five male). Data were gathered from students in different cohorts in order to maximise the diverse learning experiences which influenced their conceptions. The focus groups were held in informal but private study areas within the School of Health. This meant that the students were familiar with the building but they were not restricted to a classroom setting which could have prevented them from speaking freely.

Focus groups were chosen as the starting point for the following reasons. They are relatively easy to assemble and helpful in obtaining rich data in participants' own words thus facilitating deeper insights into their perceptions. Participants had a common bond in studying nursing and also this fact was the area of interest to the researcher. Additionally, Barbour (2005) advises that focus groups are useful

in medical and healthcare research as they enable the questions to be easily understood, appropriate and contextually relevant. In using focus groups, the researcher aimed to facilitate 'interactional synergy' in order to maximise the interaction between the respondents (Parker and Tritter, 2006:23). Additionally, their group nature means that participants can build on each other's responses and come up with ideas they might not have thought of individually. Participants can act as checks and balances on each other and help to identify factual errors or modify extreme opinions. Conversely, the main limitations of focus groups are that the responses of each participant are not necessarily independent and without skilful facilitation, the sessions may be dominated by one or more individuals who are keen to voice their opinion. Data gleaned from the focus groups assisted further in constructing the interview schedules as the next stage of the process.

Interviews

Following the focus groups, volunteers were sought from each for follow-up sessions using semi-structured interviews. First year students were interviewed in October 2008 and second and third year students in February and March 2009. This method was chosen given that the literature describes the dominant data collection method in phenomenography as semi-structured interviews. These give the researcher the advantage of being able to collect descriptions and probe more deeply into specific areas while ensuring that they do not dictate the course of the interview. Marton (1986) indicates that the interview questions should be as open as possible so that the interviewees are able to answer the dimensions they wish since this in turn demonstrates aspects of their relevance structure. Through the

discussion the interviews reveal more about their relationship with the phenomenon under consideration. In order to provide a neutral area, the interviews took place in study rooms in the library on a one-to-one basis with the author. These took place at a time that had been mutually agreed with the participants.

The selection process resulted in twenty-one interviews with key respondents from the three cohorts of adult, mental health, and learning disability nursing. Limberg (2000) suggests that in phenomenography, the number of interviewees is customarily between twenty and fifty. Trigwell (2000) relates the optimum number of interviewees to the main phenomenographic aim which is to construct categories of description of experience from the transcripts. He suggests that ten to fifteen participants affords a reasonable chance of finding variations within the range of experience while more than twenty is limiting due to the large volume of data that is created and subsequently has to be analysed.

While the questions may be open, a phenomenographic interview retains a strong focus throughout on the way that the participants understand/relate to the concept. The need to retain a strong focus means that the exception to the non-directive nature of such interviews is where the interviewer leads the interviewee to consider a pre-determined content. Francis comments that:

Some pre-determined leading experiences and leading prompts are required to focus the interview appropriately for the objectives of the study in question

(Francis, 1993:7)

Interviews were arranged at a mutually acceptable time in a neutral room away from the students' classrooms. The opening of the interview was friendly, welcoming and intended to make the student feel at ease. The author checked that participants were happy with the use of a dictaphone to record the interviews. The starting point was a series of open questions that had been constructed from the themes emerging from the literature review (see Appendices 2 and 3). These were flexible and the nature and order of what was asked depended on the information coming from the participant. Despite the pilot testing, some of the questions which did not seem to work were amended after the first two interviews so as to be able to provide a clearer understanding of what was being asked. Such a process is suggested according to the literature (Ashworth and Lucas, 2000). The reality of conducting interviews seemed to reflect in practice what had been described in the literature. For example, Säljö (1997) argued that the phenomenographic interview actually analyses discourse rather than ways of experiencing it. Barnard et al (1999) countered this argument by positing that:

Interviews develop according to both the interviewee's discourse and his or her response to the semi-structured questions. Where appropriate, each person is invited to explain further his or her understanding, and examples are gleaned to make clear the intent and language of the interviewee.

(Barnard et al, 1999:222)

The latter advice helped to ensure that it was the experience and not the discourse that was being analysed. In addition, the questions were adjusted for the second and third year students to reflect the fact that they were at a different point in their course. At all times the author sought to achieve a 'conversational partnership in which the interviewer assists a process of reflection' (Ashworth and Lucas, 2000:302). Also, there was a requirement not to verbalise immediate

reactions to students' answers but to remain open to their comments as being of equal value to the author's own. The length of the interviews varied from twenty minutes to forty-five minutes and was dependent upon how much the students wished to say. The interviews were recorded on dictaphone and then transcribed verbatim by the author.

Data analysis

Data analysis did not commence until all the interviews had been transcribed and was carried out according to the guidelines suggested by Ashworth and Lucas (2000) namely:

The transcription of the interview should be aimed at accurately reflecting the emotions and emphases of the participant.

The analysis should continue to be aware of the importation of presuppositions, and be carried out with the maximum exercise of empathic understanding.

Analysis should avoid premature closure for the sake of producing logically and hierarchically-related categories of description.

The process of analysis should be sufficiently clearly described to allow the reader to evaluate the attempt to achieve bracketing and empathy and trace the process by which findings have emerged.

(Ashworth and Lucas, 2000:300)

The outcomes of the analysis will be discussed fully in Chapters 4, 5 and 6. The following section outlines briefly the analytical process and discusses some of the areas of potential concern that I needed to reflect upon and address in carrying out the analysis.

In addition to the above guidelines, I attempted to follow the procedural steps framed by Sandberg (1994) and cited by Bruce (1997).

Phase one: becoming familiar with the transcripts

I transcribed the interview data having gained familiarisation with the text through immersion in the interview transcripts. This familiarisation was achieved through having conducted the interview, having listened to the recording of the interview several times, and having transcribed the text and reflected thereon. At this stage, the process involved finding how the respondent understood the phenomenon and the concepts he/she used to explain it.

Phase two: intentional analysis

Phase two concentrated on the referential aspects of conceptions which describe what the participant has experienced and the meaning they ascribe to it as derived from their responses to the interview questions. For the researcher it involves identifying and coding key conceptions represented as themes and quotations. (see Appendix 4 for a sample of coded interview transcript). The emphasis here was on identifying underlying meanings through coding rather than accepting the statements at face value (Säljö, 1997). Using the model proposed by Bruce (1997), I asked the question 'In what ways is this person experiencing information literacy?' as the first step in devising the categories of description.

Phase three: structural aspects

In the third phase I compared the transcripts to examine the variations in experience that indicated the structural aspects of the relationships between the individual and the phenomenon. To achieve this, the coded key themes were sorted into groups according to similarity and difference. Again, using Bruce's model (1997), the question that helped me to do this was 'What does the

participant focus on in order to experience information literacy in this particular way'?' The information gathered at this point formed the basis of the meaning structure which described the collective variations of experience across the sample.

Phase four: constructing the categories of description

Phase four drew together both the referential and structural aspects in order to describe the subject-object relations making up the different conceptions (where the subject is the participant and the object is information literacy). The meaning structure together with the structure of awareness and the label naming the conception comprise the category of description. In carrying out the comparison and reduction process on the transcripts, I became aware that the process did not necessarily fit neatly into the steps as described, but was much more iterative. Constant revisiting of the transcripts was required in order to clarify meanings.

Phase five: establishing the outcome space

The interrelationships between the categories of description form what is known as the 'outcome space'. The assumption made by the phenomenographic approach that these categories are related is one which has been questioned by some authors (Ashworth and Lucas, 2000; Akerlind, 2005).

Laurillard (1993) identifies three different types of outcome space and in this case, the outcome space may be described as developmental since it shows the developmental progression between each category (see Figure 6.3, p197).

Methodological issues that were considered

The seemingly opposing aspects of discovery versus construction is one to which the author alluded in the section on the researcher's role and highlights the fact that phenomenographic analysis is a dynamic and developing process with a number of commonalities and variations which are equally acceptable. One of the main areas of contention is picked up by Bruce (1997) from a paper originally given by Walsh in 1994 and republished in 2000. Essentially, Walsh argues that there are two views of phenomenographic analysis with the first being a process of construction and the second a process of discovery. If the researcher were to hold the first view, then they may be in danger of imposing an unjustifiable framework on the research. If the second, they could be perceived as trying to bypass the whole analytical process. Akerlind (2005) is open about the fluid nature of what is and is not acceptable in phenomenographic research and summarises several variations and commonalities which the author sought to follow in analysing the data in line with her suggestions. In her article, Akerlind states:

Paramount is the importance of attempting, as far as possible; to maintain an open mind during the analysis, minimizing any predetermined views or too rapid foreclosure in views about the nature of the categories of description. The researcher needs to be willing to constantly adjust her/his thinking in the light of reflection, discussion and new perspectives. Maintaining a focus on the transcripts and the emerging categories of description as a set, rather than on individual transcripts and categories is also essential in order to maintain focus on the collective experience. That is, reading of individual transcripts and defining of individual categories should occur within the context of identifying similarities and differences among transcripts and relationships between categories, as a group.

(Akerlind, 2005:323)

Ultimately, Bruce (1997) makes the very pertinent point that the procedures are intended to facilitate the capturing of participant's thoughts and experiences and

during the analysis the procedures remain subservient to this intention and should not dictate analytical progress. Her observation is that:

What happens in any one study is therefore an interplay between the researcher's understanding, the nature of the phenomenon being studied and the style of the available data.

(Bruce, 1997:104)

This resolves the dilemma highlighted above by including both construction and discovery in her view of the analysis. Having conducted the interviews, the author concurred with Bruce in her assertion that:

It is a process of discovery because the conceptions reveal themselves through the data and it is a process of construction because the researcher must identify and describe these conceptions in terms of referential and structural elements

(Bruce, 1997:103)

Chapters 4, 5, and 6 discuss the results of the data analysis in relation to the three main objectives of the research. In discussing the objectives the author uses the first person to indicate his close involvement in the analytical process and the construction of the categories of description.

INTRODUCTION TO THE DATA ANALYSIS CHAPTERS (Chapters 4, 5 and 6)

The analysis Chapters (4, 5 and 6) describe information literacy as perceived by the nursing students at the University of Brownfield who agreed to take part in the study. Such descriptions are the result of the data gathering and analysis strategies as described in the methodology Chapter. It should be remembered that these represent the way that a phenomenon is experienced by a specific group rather than an attempt to describe the phenomenon itself (Marton, 1986; Svensson, 1997).

As stated in the methodology, the data analysis was carried out according to a basic set of guidelines by Ashworth and Lucas (2000) and Sandberg (1994) which were later cited and used by Bruce for her seminal work in 1997. All of these authors carried out a number of analyses of educational research using the phenomenographic method, which indicated to the author that they would be relevant and useful for this thesis. While the work of Bruce was an excellent guide, the author has not followed every aspect of it owing to the large number of categories involved in this thesis and also to the restriction on the length of this work.

The qualitative nature of phenomenographic analysis is highlighted in that it starts with the data from which the results are derived as opposed to theoretical construction then testing of a hypothesis. In this case, the interview and focus group transcripts were the only evidence that informed the analysis process. During the process, the author was mindful of the variations as well

as commonalities that can be apparent in such analysis (Akerlind, 2002). This meant having to keep an open mind throughout and not constructing the categories of description too early on to avoid pre-determining what they should be. Above all, the transcripts were considered as a whole set of data rather than individual transcripts to enable the author to consider the collective variations in experiencing the phenomenon. The following section outlines the structure and presentation of the data analysis Chapters 4, 5 and 6 in order to clarify what is a complex iterative process.

Each chapter relates the data to one of the objectives of the thesis as described in the methodology section. This means that Chapter 4 deals with the first objective.

To explore BSc Nursing students' conceptions of information literacy as part of their overall learning experience during the three year period of their university course.

Chapter 5 with objective 2.

To examine the value and relevance of Information Literacy in searching for evidence-based materials within their placements as an indicator of its place in the 'real world' of the nurse.

Chapter 6 with objective 3.

To evaluate the usefulness of information literacy currently taught on this course in the light of the results of the research and make recommendations as to how it should be taught in the future.

Each chapter begins with analysis of focus group data in relation to that specific objective. This then leads into discussion about the interview data dealing with that thematic area. The author sets out categories of description that have

emerged from the data. The referential (or global meaning) aspects of the concept are represented by the category label. For example, *Category 1: Information Searching conception: Information literacy is seen as.....*

For each category, the author captures the core meaning of the conception through use of a meaning structure based upon the participants' perceptions. This illustrates how the participants attributed meaning to the different aspects of information literacy. Also, each category has a structure of awareness that highlights the collective variations in perception across the sample. Additionally, each of these is represented in graphic form to show the links between the facets of the overall structure of awareness.

In using these, the author attempts to capture the nature of the relationships between the actors and the phenomenon. As an extra aid to interpreting the data, the nature of the inter-relationships between the categories is illustrated in a graphic form in Figure 6.3 (p197).

CHAPTER 4: NURSING STUDENTS' CONCEPTIONS OF INFORMATION LITERACY

To explore BSc Nursing students' conceptions of information literacy as part of their overall learning experience during the three year period of their university course.

As described in the methodology Chapter, data were gathered using focus groups with students from each of the three years of the BSc Nursing course. For year one there were twenty-six students (eighteen female, eight male). For year two there were twenty-two students (nineteen female, three male). For year three there were twenty students (fifteen female, five male).

Interviews were carried out with nine students from year one (seven female, two male); five students from year two (five female); and seven students from year three (six female, one male). Of the twenty-one interviewees, the age ranges were as follows:

Table 4.1: Student age ranges

Age of students	Number of students
Under 25	4
26-35	11
36-45	4
46-55	2
Over 55	0

Focus Group Themes

Prior to conducting the focus groups I had completed a literature review and the results influenced some of the questions used in the questionnaire. Not only had they been employed successfully in previous research, they also enabled me to think around the subject and formulate my own ideas about the areas and issues that would be relevant to this thesis. Particular influences were Maybee (2006) and Bruce (1997). The main areas for discussion are shown below with illustrative material from the focus group transcripts.

In relation to the first objective, these questions lent themselves well to trying to obtain information about the more general conceptions and understandings of information literacy among the participants and acted very much as prompts to stimulate discussion. I was very aware that these were intended to guide the discussion rather than dictate the outcomes so; consequently, they were presented in as open a way as possible to enable the participants to reflect on their thoughts and tell me about their perceptions.

The non-longitudinal nature of this research meant that some of the areas for discussion varied according to whether participants were first, second, or third years. The prompts used were different for the first years to reflect the fact that they were only just starting out on their course and would not have experience of clinical placements, nor in searching for information to use in their course work. That notwithstanding, I sought to discuss the results thematically and report on the variations in perception across the three years of the course. Some of the themes that emerged were further developed in the individual interviews.

What is information literacy?

The focus groups began with a general introduction from me as a researcher about the background and nature of the research. The starting point was to begin with a very general topic exploring variations in their understanding of the term 'information literacy'. The first year students put forward a variety of short answers including the following:

Looking for books.

(male, year 1)

Searching for information, using the Internet and how you find information within the University.

(female, year 1)

I think it's about trying to find your way around information.

(female, year 1)

Where we get information from. Where it's written down you know, journals and that.

(male, year 1)

If you are capable of being able to find, understand and use credible information.

(female, year 1)

I think it means how literate you are in searching from information, but I'm not really too sure.

(female, year 1)

The key areas of understanding were searching for information using the Internet, books and journals, and locating information inside and outside the university context. Participants also recognised the need for skills to find and use credible, good quality information.

The second year students identified the same areas with particular emphasis on using information effectively. They named specific databases and described whether they felt they were easy or difficult to use. One student commented that:

There is much more of an emphasis on the evidence base in the second and third year than in the first year. In the first year you use books more because you are scared of using the journals and you don't know how to find them and use them. The more you learn about critiquing them and referencing them then you feel more comfortable in doing so.

(female, year 2)

This comment also made reference to the related areas of critiquing and referencing articles thus demonstrating that their understanding of information literacy had grown to include more complex levels beyond the initial 'search, retrieve and use' answer. None of the students mentioned identification of information need as part of information literacy process which would suggest that this is something that they take for granted, despite the fact that it appears on a number of the main information literacy frameworks (SCONUL, 1999; Big Blue, 2002).

The comments from third year students indicate that as they progress and gain experience, their conceptions of information literacy became more diverse. This is illustrated by the following quotation from a third year student who refers to:

The ability to process data, images, and sounds. A bit like reading literacy but for information really, because there are different levels of information literacy. Let's use newspapers as an example. I'm not trying to be detrimental but there are Sun readers and there are others who read the Times. There are people who read Doctoral theses and reports.

(male, year 3)

Implicit within this is the student's understanding about the different levels of information depending on its audience and their needs/levels of understanding. Additionally, it shows how this particular student used the metaphor of images and sounds as well the customary books and journals as part of his overall conception of information literacy.

What is an effective information user?

Students in all three years had their own views about the characteristics of an effective information user. A second year student suggested that it could be:

A researcher who knows about different resources and so on. They are always looking for up-to-date information so they have to know which sources to look in. In fact, anyone who uses research in their work such as teachers, nurses and doctors. Even once they're qualified they still need their books and that because it affects the care they give.

(female, year 2).

This shows the link in the mind of this particular student between the concepts of research and workplace in that research/evidence can be used by practitioners in order to make them more effective information users. This included teachers as well as nurses and doctors so it appears that this student perceives all three professions as those that are likely to use research in their day-to-day work.

.Another ventured a description that fits with lifelong learning in saying:

It's all about lifelong learning. You hear all these terms bandied about and I take this to mean that you keep up-to-date with the latest developments which as a nurse, I suppose you should do shouldn't you? That's because things change all the time and new guidelines come out, for example from the NMC. There are new drugs and even new illnesses.

(female, year 1)

The idea of needing to keep up-to-date due to the constant changes inside and outside the profession is one which recurs throughout the focus group. One student recognised that the University could actually provide them with the skills to do this through information literacy in stating:

Even when you are qualified you are going to be forever learning in nursing. All areas change quickly and we need to know how to access information. The University can help us to do that.

(female, year 2)

The focus group reiterated a strand of the literature of the 1980s as discussed in the literature review by the simultaneous linking of information literacy with the use of computers. This is exemplified by one first year student who suggests that in order to be an effective information user; a certain level of expertise with information technology is required. She is of the opinion that:

I would think that you would have to be good at IT but the problem is that everything is on computers. It's absolutely wonderful if you are good with computers, but if you aren't good at computers (and in nursing you do get a lot of mature students who aren't) then it's really difficult. I'd rather carry about two bags full of paper than have it on a computer. The thought of it scares me anyway. A lot of it for people like me is that computers frighten me to death.

(female, year 1)

Additionally, the same student voices the opinion that, in order to be effective with information, reasonable computer abilities are required, which the more mature students sometimes lack. Despite the use of computers in many areas of life for a number of years, a fear of using them is still relatively common amongst mature students. This has been observed by the author on many occasions.

The perception amongst the mature students was that younger students had an advantage over them given that the younger ones had used computers all the way through school. This was challenged by a first year student who rebutted it strongly by pointing out that:

I've been brought up with computers but I've never used a database before and I hadn't a clue where to start with it. So you still need an introduction to database. Just because you can use a computer doesn't mean that you can search for journals.

(female, year 1)

This demonstrates very clearly the difference between knowing a little about using computers and using a database to search for information and contrasts with the work of Kurbanoglu (2003) who suggested a correlation between confidence in computer use and confidence in information literacy.

Tell a story of trying to be an effective information user

The answers from across the three years revealed a certain amount of anxiety in trying to be information literate. Participants reported lack of confidence in finding what they perceived as the 'right' information and also in refining their search to retrieve manageable sets of results. Several reported feeling 'overwhelmed', 'shell-shocked,' and 'blown away' by the amount of information available to them and were also concerned about plagiarism. Some of these perceptions are given voice in the following quotation from a third year student who said:

I feel like I can find it but it's just using it correctly that's the problem. At the moment I just latch onto something that looks a bit relevant and I think 'ok how can I use this?' I probably go completely off the topic. You can't always find something that is relevant. At the moment I would be tempted to use something that wasn't completely relevant just because I had found it. I think it's quite overwhelming the amount of information that's there and

you kind of look at it all and think 'well I know it is there', I've found stuff but is it the right stuff? You search for something that you think is reasonable and you get presented with 2000 articles so where do you stop?

(female, year 3)

It would seem that this student in her final year feels she can search for information yet struggles to pinpoint relevant material. The concept of narrowing a search is something that is covered in the information literacy sessions but in some cases, students still prefer to trawl through long lists of results. Consequently, as in this case, they use an item that is not necessarily as relevant as it might be.

How did the students use information effectively?

Despite their concerns as reported above, some of the students did give examples of ways in which they felt that they had used information effectively. For the second and third year students this incorporated following care plans and looking up information about a patient's past medical history. Additionally, they had searched for information to answer patients' questions and felt that they were giving them the best quality information they could. While they were aware that I was interested in where they had found the information, one pointed out that they had done quite a bit of information searching but not necessarily where they felt they should. He states that:

I've done quite a bit of information searching, but just by like going onto Google and not into like journals and things. (laughs)

(male, year, 1)

This attitude was prevalent among the first year students and yet was reversed somewhat in the second and third years when they talked about looking for what they perceived as 'good quality' information. One student makes the point that:

I think it's about making sure that the information's right. You have still got to check that it's valid and it's right. After all you can't just take things at face value. It's being able to find something you can trust rather than just random things that people have typed into Google.

(female, year 2)

Use of information in coursework and non-coursework

This discussion revolved around students' use of information outside the university and also as part of their coursework. Responses were varied across the groups, depending to a great extent on their experience before university and whether they had been employed in health-care or not. Outside the university, students used email, contacted friends, shopped online, and in many cases had used Google to assist with school and college course work. In relation to the latter they used it for:

Researching assignments and referencing. You need articles for referencing. You have to acknowledge the sources you have used in your assignments.

(female, year 2)

They were keen to let me know that they did actually use the databases for assignments and not just Google. It may be, however, that this was done in order to tell me what they thought that their Academic Librarian would want to hear. This is an aspect of the power relationship and is explored in the literature by Ashworth and Lucas (1998) who put forward the view that students respond with what they

think the researcher wishes to hear. They note the tendency of the researcher to hold a pre-conceived 'authorized view' of what he or she expects. Consequently, student representations that differ from this may be viewed as deficient, thus losing reliability and validity in the methodology. Such an idea highlights the importance of the epoché.

One third year student told of using university resources remotely to access journals and databases to help her with her coursework:

I use the Internet quite a lot because it is easier than getting into the library. I am community-based so am not in a hospital setting but we have Internet access and can access journals and stuff. It's information at your fingertips really.

(female, year 3)

This quotation suggests that Internet access in community settings may be more readily available. It reflects that fact that students and also staff in such settings could have a greater need to look up information for evidence-based practice and a greater willingness to do so.

Interview data

The interview questions were developed in part from the themes that emerged from the focus groups and also from the areas of interest stemming from the literature review (see Appendices 2 and 3)..As with the focus groups, the questions were adjusted to allow for the fact that the second and third year students would have had experience on placements whereas students in the first year would not. The interviews included open questions and were followed up with

a probing approach. In the analysis stage, the use of a phenomenographic framework and the continual revisiting of the data revealed the following themes which formed the categories of description for the objective. They are named accordingly to communicate their meaning in a straightforward way. Underneath each category label is a statement which, when combined with the label, indicates the referential component (or global meaning) of the conception. In order to illustrate the themes and varying conceptions, I have used quotations from the transcripts and each is labelled with basic information about the source. For example: female, year 1 (female student year 1).

Category 1: Information searching and understanding conception

Information literacy is viewed as a way of using books, journals and the Internet to locate information to use within both university and work contexts.

As illustrated in the earlier section from the focus groups, the majority of students had a variety of concepts of searching for information covering format, content, and level. Interestingly, many of them linked success at searching with their information technology skills thus illustrating an idea by Cheek and Dorskatsch (1998) which related to nurses using technology to meet their information needs. There were differing opinions of whether the ability to use computers and the ability to search for information were the same or different. The following quotations show seemingly opposing views that actually demonstrate the continuing lack of clarity in perceptions about information technology and information literacy. While the first quotation is unequivocal that they are different and the second states that they are both the same, the final conclusion of both is that the two concepts are interrelated.

They're totally different. Searching is a skill on its own like using keywords etc. They're related and one helps the other. Just because you can use "Word" doesn't mean you can go on and search for nursing literature. I found it difficult at first but the more I'm doing it, the better it gets.

(female, year 2)

They are the same aren't they? You couldn't search without the computer, although I suppose you could search for information in books although you use the catalogue on the computer. These days you can't really do one without the other although you can use a computer ok and yet you can't always find things successfully.

(female, year 1)

It became apparent that it was generally the first year students who felt that the two aspects were the same while those at later stages of the course were more aware of the differences. The second year student commented that her information skills had indeed improved as the demands of the course dictated that she use them more frequently.

In terms of their learning experience, students did link information literacy searching skills with overall learning and also with the need to use it in practice following their graduation as a nurse. This aspect appeared particularly prevalent in the second year students. Their self-perceptions of learning were dependent on their previous experience and education. Here, a mature student tells of her experience:

We learned what peer reviewed journals were, how to put together our searches and how to limit the searches. Before that you'd have keyed anything in and have got back loads and loads and loads. From that time you were learning to refine your search. It was a good starting point for me as I'd been out of education for quite a long time. I used to type in whole sentences.

(female, year 2)

Once again, this comment revisits the concern about carrying out and refining searches as discussed in the previous section on how to be an effective information user.

Another second year student goes on to talk about how her perceptions of being a nurse and the reality of attending university to learn how to do so were very different:

When you think of being a nurse, you think that you will be caring for people, although I knew you would have to keep up to date. Nursing is an ongoing education as it never stops, and things are changing all the time. You have to do a portfolio and prove that you are up to date to keep on the register. Your learning never ends.

(female, year 2)

The impression gained from this student is that the concepts of caring for people and searching for information are two very separate and unrelated areas. On a different level this reflects the seeming disparity between the university learning process and the 'real world' of the nurse.

Finally, a student who had not coped well with the evidence-based aspects of the course realised its importance and reported that she would:

Use what I have learned if I have to, and if I need to look something up to prove a point or to do my job better for my patients then I will. In the end it is all about better patient care.

(female, year 3)

While this student does recognise that learning about searching for information effectively can place her in a position to change practice and ultimately improve patient care, the link between the two is not one that she embraces naturally.

The issue of understanding and not understanding information is something to which students referred on a number of occasions albeit in different contexts. Some of these are illustrated individually below with quotations from the interview text and analysis about searching, retrieving and using information.

Understanding how to search for information

When I started I'd no idea that you could get all these journals and books. It was completely new to me and I could not believe how much information there is out there. Obviously, now I do know how much there is and by and large I know how to get there. If I have a topic to research then I know how to go about it and how to get hold of it.

(female, year 3)

The idea of improving understanding throughout the course was one that featured regularly in the interviews. In common with the focus groups, this student had not been aware of the vast amount of information available for their use, nor how they could access it. In this particular case, the student had learned how to recognise her information needs, choose a source, search for the information and locate it. A second year student refers to the increased awareness of, and improvement in, her information skills through her success in searching independently. She felt that:

The awareness came at the end of the first year/beginning of the second year when I had to do more research and more looking on my own for things and not as part of a group.

(female, year 2)

This importance of the difference between years one and two will be revisited in more detail in Chapter 4.

Understanding information literacy skills for nursing

Once the students were in a ward environment they became more aware of the need for appropriate information to use in evidence-based practice. A third year students commented that:

For my dissertation I'm looking for research articles, so a lot of the things I'm finding are to do with best practice. I need evidence-based things, you know experiments and studies. At the moment I'm basing it on that. One looked good but then I saw that on the reference list they were referencing things from the 1980s so that wasn't relevant to practice now. It all has to be relevant to practice because things change all the time. Evidence-based is good because otherwise you don't have a rationale as to why you are doing something.

(female, year 3)

This comment encapsulates a number of areas where the student has developed both skills and personal attributes. She recognises the need for evidence-based material in underpinning practice but is aware that it needs to be reliable, valid, and up-to-date. She demonstrates an understanding of the rationale behind the whole concept of evidence-based practice.

Knowing what to do if they did not understand

Students expressed worries about not being able to understand what was being asked of them in the information searching process. They felt that library staff had unspoken expectations about what they should understand. It was a salutary lesson therefore to hear from one third year student who had come to information

searching fearfully in her first year and had never really overcome her fear. She spoke for a number of others when she said:

I came with that fear in the 1st year and although you show us what to do, you don't really show us on a one to one basis. We don't really speak out if we don't understand because you maybe think that we ought to know it already and we don't want to look stupid.

(female, year 3)

The pressure not to appear lacking in front of staff and peers was a key concept that weighed heavily on the minds of some students. However, rather than ask the library staff they would ask each other for help. This preference for informal learning is a trait that is evidenced in the literature (Hunter, 2008; Crotty, 2010; Eizenberg, 2010; Moch et al, 2010; Majid et al, 2011). A mature second year student with more advanced searching skills found that she was able to help her colleagues in searching for information. She gave an explanation for this as follows:

There have been a number of times through the course when I have assisted people in doing searches and showed them how to look for things. Some really struggle with database searches and I know we have had a number of sessions about this on the course as we have gone through about how to search, how to use search engines, how to decide on keywords. I still notice some people on the course struggling. Sometimes it's some of the older ones, but it can also be some of the younger ones as well.

(female, year 2)

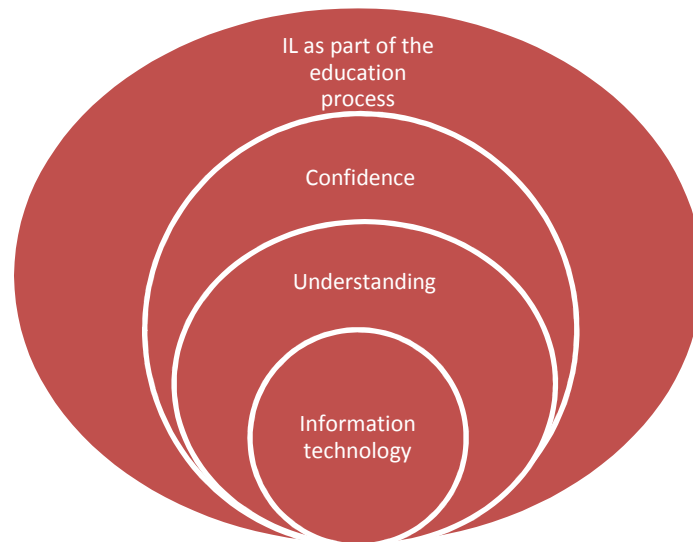
Once again, this brings into question the oft-made assumption that the younger students have the ability to use computers and IT generally to a high level. By implication, information skills are often included in this. This particular student

takes a balanced approach to the issue by acknowledging that age is not necessarily an indicator of either skills level or confidence.

Category 1- Structure of awareness

While this category is named the *information searching and understanding category*, its distinguishing feature is the use of technology in searching for information. Students felt that abilities in using information technology were essential in being able to search successfully. They either felt comfortable in using it, which led to them feeling more successful, or they found it difficult to use in which case they felt less successful. This often led to a lack of self-confidence. They were of the opinion that use of technology went some way in helping them to fulfil their information needs which led to increased confidence and a greater appreciation of the learning process. The first year students described feelings of frustration about not learning the caring skills that they believed a nurse needed to have. Despite this however, they recognised that information skills formed part of their overall learning process. Figure 4.1 illustrates their perceptions in a graphic form as a way of showing the interrelationships between these aspects.

Figure 4.1: Information searching and understanding conception



Category 1 - Meaning structure

Students perceive information technology as the key to becoming information literate. The category splits into two main sub-categories with the first being the perceptions that students who can use information technology will be successful in becoming information literate. The second is that a lack of success with information technology leads to information anxiety and therefore failure to achieve information literacy. The findings in this category mirror those of Bruce (1997).

Category 2: Information quality conception

Information is seen as something that has to be of high quality in order to be valued and useful in education and work contexts.

Learning to be critical

Students had internalised the idea that the information they used needed to be of reputable quality and during their lectures and information literacy sessions they learned how to recognise such materials. Understandably, the first year students were able to repeat what they had been taught in class about reputable sources but generally had only a relatively vague idea, as they were not very far through their course. Here, a student from the first year explains his strategy:

I tend to use CINAHL and other databases specifically for nursing because they are better suited for me. I go through lots of results and then judge which are better than the others. We've covered quite a bit about evaluation in the lectures. I use these as a guide but once you have done it a few times you pick up yourself whether it is good or not so good. I admit that I do use Google as well but it is more Google books. I don't look for research articles on there. Sometimes I start with a Google search if I'm not quite sure of my subject.

(male, year 1)

It is interesting to note this student mentions using Google in an almost apologetic way then qualifies the comment by adding that he does not look for research articles. Again, there may be an element of the student saying what he feels the researcher wants to hear and giving an authorised version. This is a criticism that has been levelled at phenomenographical interviews.

In the next illustration a third year student reviews the difference in attitude across the three years. This suggests that while the first year students do not always see

the value in what they are doing with information, its importance is revealed later on when their critical skills have been honed.

I think you become much more judgmental about literature and information because in the second year we learn about how to assess and be critical of information. You look more at the reliability. In the first year you take whatever is given and if it's in a book or a journal, then it must be right (laughs). Through the second year you do learn to be more critical.

(male, year 3)

Another third year student expands this to include information as used on the hospital wards. This demonstrates the difference between the purely theoretical perceptions about information quality held by the first years to the more mature, reflective attitudes of those from the second and third years.

I do use Google often as an initial starting point, but of course the quality of information is the issue there. By using the searching tools in the University you can assess the quality more easily. When you're on the wards there might be the evidence base that everyone is taught, but then there might be few people who have looked at the data and its quality.

(female, year 3)

In this quotation the student recognises that the searching tools within the university setting are likely to yield better quality results than simply a Google search and that there may well only be a few qualified staff on the wards who look at the evidence base in order to check its quality.

Category 2 - Structure of awareness

The distinguishing feature of Category 2 is the students' concern about the quality of the information they retrieve. They expressed an awareness of the need to be critical of such information in order to obtain the most appropriate evidence for

their need. Throughout the second and third year their critical skills develop and they are able to see the link between their learning about the quality of information in lectures and its use on placements. Also during the second and third years, they become more reflective about the whole process of their own learning.

Figure 4.2: Information quality conception



Category 2- Meaning structure

The participants showed concerns about the quality of the information they retrieve. They learn about this in their lectures and gain insight into which information sources to use to locate the best quality information. The progressive nature of their course enables them to contrast the place of information quality as an abstract concept in their lectures with a way of evaluating information in the library sessions, and the way it can influence changes to practice.

Some of them discussed the need for an effective evidence- base to aid clinical decision making in the hospital wards. As part of this discussion they questioned the extent to which ward staff thought about the quality of the data they used to aid decision making.

Category 3: Learning process conception

Information literacy is seen as part of the University education process and a point along the continuum of students' previous experience towards future knowledge. Students expressed difficulties in adjusting to the process.

Perception and actuality of the course

The lecturers and library staff attempt to integrate the information literacy components holistically into the nursing course. It is intended to lead them through the theories (for example the hierarchy of evidence) in the first year in readiness for the second and third year when they are expected to research individually and also use their skills in preparation for placements. The variations in experience expressed by the students suggest that the success of this strategy depends to a large extent on the way that individual students engage with the course and their prior knowledge and experience. It also depends on individual beliefs about the nature of knowledge and how it is acquired. Issues that arose in the interviews included irrelevance to what they were doing on other parts of the course and incompatibility with personal learning styles. In the quotation below, a first year student shows her frustration at the way the course is structured and the mismatch with her perceptions of being a nurse.

Nursing to me is anatomy and physiology and illness and looking after patients. So far we have just had research and using visual tools. I think that's probably the feeling amongst the older ones. You see you used to learn to be a nurse and learnt on the job. You got your certificate and that was you done. I know it's all different now, and I'm not against change or anything like but the way I feel now is that they want us to be researchers and IT specialists. I'm sure it's needed but.....

(female, year 1)

Conversely, a second year student reports enthusiastically that what she had learned was of great benefit. She holds the opinion that:

The whole research process has been fantastic. At the beginning I was like- 'research, that's boring'. Now I'm thinking differently and seeing how I could use research in practice. The way I search for a thing is different in that I look who it's been done by, which journal it's in and why is it there. It has been a massive learning curve and when we had to look at some studies, I had a eureka moment and thought 'wow this research is really good'. I realised that it's important. In the first year quite a few of us didn't take it seriously, but now the penny's dropping and we know we have to do something with it.

(female, year 2)

The stark difference between these two quotations demonstrates the change in views measured over a year in the light of additional practical and clinical experience and highlights where information seeking is of use in a more practical setting. The second year student has realised how much she has learned and what its relevance is. This in turn has bolstered her confidence. The need to see the relevance of information literacy to the rest of the course is paramount in the interviews with the students.

The integrated approach was appreciated at the start of the course by one first year student who felt that:

You had somewhere to apply the information you are learning like PICO in conjunction with information literacy and keywords etc. It all fits together like a jigsaw.

(male, year 1)

In the focus groups and interviews the students were very aware of the whole course as an educative process which was both self-contained and yet part

of the wider educational context involving their previous experience. It became very clear that the nature of this experience bore a direct relevance to the way they perceived the nursing course. Quite a number reported that it had been a shock to them in terms of what they were expected to do. A typical example of this is given below from a second year student:

Yes I did my A levels before I came here. We did a bit of research but that was more Google based and just covered basic things. Here I have learned how to locate correct information and also how to evaluate it. Of course there are lots more resources at a university and we are encouraged to go out and use them ourselves. Before, we were more or less given everything we needed.

female, year 2

Participants recognised that acquiring information skills was part of their educational journey. The difference in teaching methods and learning styles in the university, however, often proved to be a shock to them. This applied to the younger ones who had gone through the school system and also to the mature students who had been out of education for some time. All groups across the three years reported that they struggled to deal with this. The shock was understandably greatest in the first year. A first year student summed it up as 'massive jump' from 'A' levels to university as she here describes the difference between her expectations and the reality she experienced, saying:

I expected it to be kind of a lot more like college. We were never taught how to use journals or do referencing. We were told to go to the library and told what to use. They gave you a lot more information about what they wanted you to look at whereas here they give you a rough idea and then it's up to you.

(female, year 1)

Mature students reported a similar experience as shown below:

Yeah, I did an A level 12 years ago and also an NVQ but in these, most of the information we needed was provided by assessors. You didn't need to get a lot from libraries. Sometimes we had little booklets and we had to look on the Internet for stuff.

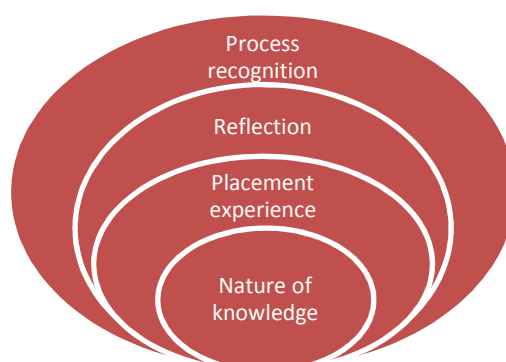
(male, year 1)

The common factors here are the guided way that the students had previously accessed information in their previous experience and the fact that searching was only carried out to a basic level. Where it occurred, it had relied heavily on the Internet. Consequently, it is understandable that the university requirements to construct search strategies, locate appropriate resources, search, retrieve, evaluate, and use information caused consternation amongst the participants. The resentment often expressed by the first year students may be linked to the very different styles of learning within the academic setting and the seeming mismatch with their expectations of learning to be a nurse.

Category 3 - Structure of awareness

The distinguishing features of Category 3 are the students' perceptions and beliefs about the nature of knowledge and the process of acquiring it. Participants exhibited surprise at the gap between their knowledge and what was required of them in their coursework as exemplified by those who admitted to being '*shell-shocked*' and stating that it had been a '*massive learning curve*'. As the students progressed through the course, the experience of clinical placements helped to position information literacy and research into its real world context. This enabled them to see the rationale behind the structure of their curriculum.

Figure 4.3: Learning process conception



Category 3 - Meaning structure

Students questioned what they needed to know to fulfil their role and how they should acquire this knowledge. Also, they were unsure about where information literacy sessions fitted as part of the educational continuum. While they demonstrated some awareness of the over-arching educational process, the discussion suggested that, not unexpectedly, many saw the individual parts of the course simply as discrete components rather than aspects of a wider cohesive whole. This was most prevalent in the first year students who did not yet have the benefit of the ensuing two years study against which to judge what they were learning.

Category 4 - Information anxiety conception

Information literacy is seen as a difficult concept which, when linked with library usage and the process of evidence-based practice may lead to anxiety.

Confidence and anxiety

Student concerns in this category fell into two main areas. The first was their general lack of confidence and second, their perceptions of the expectations that library staff and their peers had of them. On the first point, a first year student

spoke about her initial lack of confidence and her gradual realisation that it was acceptable to ask for help. In her view:

The library staff are very helpful but sometimes your confidence is so low in using that system that you daren't ask for help and you would rather struggle your way through it. This year I've learnt that if you don't ask then you don't get help whereas in your first year it all comes at once. You don't know who to ask or who to turn to. Everyone seems to be doing all right so is it just you that gets in a muddle?

(female, year 1)

This student had struggled with not knowing what to do and not daring to ask anyone. However, she later realised that perhaps she was not the only one with the same problem and decided that any perceived embarrassment would be outweighed by the need to do something about it. Another speaks of the change she felt in moving from the first to the second year, a key transitional point for many of the interviewees.

Yes, I was scared of coming to the library and looking for books and articles. I didn't use articles at all in my first year partly because it went over my head. This year it has completely changed and I am happier to use databases and look through things. Confidence is the key and the lectures in research where we have had to look for our own articles for the lit review have taught me how to search and how to identify good research and bad research. That has helped and I have definitely felt the change.

(female, year 2)

This viewpoint and other similar ones go some way to explaining why the transition from year one to year two is so pivotal. Often, students felt that their searching, critical, and evaluative skills had improved. The reasons for this were firstly, a greater need to use such skills due to the demands of the course and secondly, their clinical experience and observation imbued hitherto theoretical skills with the relevance from the nurse's 'real world'.

Moving on to confidence amongst peers, the issue is raised in the following quotations. In the example below, a second year student recalls her fears of being seen as 'stupid' in one of the large group sessions early in the course.

In the first year everyone was together and it was sometimes difficult to concentrate and you didn't always feel like asking questions. In a smaller group you gained the confidence to speak up about your problems rather than look stupid in a large group. If you don't have the confidence to do that you wonder whether you should ask, or hope that someone else will.

(female, year 2)

This viewpoint was echoed by another second year who criticised the size of the first year groups as being too large to enable those lacking confidence to ask questions and voice their opinions.

We all came in to two big classrooms full of computers and we didn't really know what to expect. There was far too many of us for the librarian to deal with and she did her best, but if you got behind then you couldn't catch up. Some people just gave up completely and thought they'd have a go later on. I'm not used to being in such big groups and we didn't really know each other as it was early on in the course. None of us felt like asking questions as it would have seemed awkward and you don't like to admit that you don't know what's going on, especially in front of the whole class. Smaller groups would have worked much better for me personally, although I know that the library staff only have limited time to fit these big groups in. I bet it's a lot of work for them.

(female, year 2)

The above quotations show the difficulty in settling into a new environment in the first year when students have not been able to form friendships or work with their peers. Their fears of seeming 'stupid' for asking questions merge with their perception of the library as being a somewhat forbidding place and loom large in the interview data across all three years but with particular emphasis in year one.

On a positive note, a student reported that the library sessions had instilled a certain amount of confidence in using the library where she recalls that:

I can remember the sessions and they gave us some confidence to come to the library because it seems like quite a scary place. It's not the staff but people all seem to know where they are going. It's big and you haven't a clue what you are doing. We knew where the nursing books were and we found it wasn't scary. A lot of people do keep away from the library as they feel quite intimidated.

(female, year 2).

Linked to the lack of confidence and the feeling of intimidation about using the library, the students believed that there was a certain expectation placed upon them in terms of what knowledge they should already have regarding information literacy. A second year student was critical of the number of sessions, their timing and also the facilitator's seemingly unrealistically high expectations. This student suggested that:

We need more sessions in the first year not just one. Last year we were given a late afternoon session after being really tired in lectures all morning and the lady presenting it thought that everyone could understand what she meant. When you are an expert in something you think everyone is the same, but we didn't really understand. You need to be fresh to concentrate.

(female, year 2).

This quotation shows to what extent environmental factors and the attitude of library and teaching staff can influence the learning process.

Category 4 - Structure of awareness

The distinguishing feature of Category 4 is the lack of confidence felt by a number of participants in their information searching and library skills. Participants felt the weight of expectations from peers, academic, and library staff with regard to information skills. Many lacked confidence in using databases and therefore in being able to carry out the tasks in the library sessions. In some cases this led to a more generalised library anxiety as they struggled to cope.

Figure 4.4: Information anxiety conception



Category 4 - Meaning structure

The meaning of this category relates to the lack of confidence felt by a number of participants in their information searching and library skills. Coupled with this is the perceived pressure of expectation from peers, library staff, and academic staff. First year students in particular were trying to adjust to a new environment and found that the library seemed to be especially forbidding. Those who exhibited lower self-confidence experienced higher levels of library anxiety. Those who were

able to deal with the new skills and environment experienced an increase in confidence.

Chapter Summary

This chapter has dealt with student conceptions of information literacy. It includes the myriad of ways in which they interact with information (Category 1) and also examined their concerns about acquiring the skills to find, evaluate, and use reliable information (Category 2). During the process some of them gain confidence while others remain unsure about many aspects of library and information use leading to information anxiety (Category 4). One of the key issues that emerged was the frustration some of them felt in relation to the structure of their course and the nature of what and how they were expected to learn (Category 3). It seemed that many had different expectations about how they would learn to become a nurse.

The next chapter explores the 'real world' of the nurse as observed by the participants and seeks to discover the perceived value and relevance of information-searching skills within it.

CHAPTER 5: THE 'REAL WORLD' OF THE NURSE

To examine the value and relevance of information literacy in searching for evidence-based materials within their placements as an indicator of its place in the 'real world' of the nurse.

These questions were predominantly directed at the second and third year students given that they had some experience of placements in either acute hospitals or community-based settings. However, some information from the first year cohort is also included where appropriate. I was particularly interested in this area from my reading of the work carried out by Lloyd (2005; 2006; 2007) who showed an alternative view to the traditional information skills discourse. This traditional view relies on:

The individual developing an understanding of information as an objective entity which is accessible through print or as a digital source. The educational emphasis is on the student acquiring, developing and demonstrating individual skills and competency which will support independent lifelong learning. The practices that enable information literacy focus on the teaching of effective library and technology skills within a formal framework that claims to encourage critical thinking and problem solving.

(Lloyd, 2005:2)

The alternative she proposes moves away from the librarian's discourse and is derived from the workplace whereby:

Information literacy is viewed holistically as a constituent part of learning to work collectively and of developing a socially constructed understanding of the workplace, which is understood inter-subjectively by all those involved in the discourse. In this context information literacy enables embodiment and transformation by facilitating a connection with institutional, social and physical information through a range of knowledge sites.

(Lloyd, 2005:2)

The participants in Lloyd's research were fire-fighters and I sought to find out whether a similar broad information landscape was evident within the nursing sector. Having considered the areas I wished to cover as part of the general discussion and in an attempt to remain faithful to phenomenographic principles that the categories should emerge from the raw data, I devised prompts as outlined below. These were not necessarily asked in a particular order and where possible I used them during the discussion to focus the participants on my areas of interest. In the same way as in as in Chapter 4, the themes are discussed thematically in respect of the overlap between the questions. Some of the themes that emerge are then explored at greater length using data from the interview transcripts.

Focus Group Themes

Did you have any ideas about evidence-based practice in nursing and how you might use it?

The discussion revealed two predominant views. The first links to student conceptions of what it means to be a nurse and is demonstrated in the following quotation by a second year student. In this case she had struggled to reconcile the whole notion of research in nursing with her perception of the nursing role. When asked whether she had any previous notions about what learning to be a nurse would entail she replied that:

I did have some impression, but certainly not as much as has been portrayed so far. It's all been about getting information but not what the information tells you. It's quite frustrating really and you kind of want to learn the stuff you were expecting.

(female, year 2)

The views expressed by participants depended very much on prior knowledge and experience. Here, a student with some experience of working in the NHS shows her awareness of the emphasis placed on the evidence-base.

I was aware anyway as I already work in the NHS and the emphasis on evidence-based practice is huge it is huge [my emphasis]. You can't just say 'that's what we're going to do because that's what we've been doing for 20 years'. You've got to prove it.

(female, year 1)

Those newly arrived at the University of Brownfield exhibited the most surprise at the notion of evidence-based practice even though some did have either experience or knowledge of it. They entered the university expecting to learn what they perceived as 'nursing' functions and were surprised to find that they had numerous lectures on the research process and how to use the hierarchy of evidence to decide what was, and was not reliable material to use in support of clinical decision making. These lectures included the library sessions on how to search for information. All this happened well before they were due to have an observation placement and consequently they did not feel like they were really learning to be a nurse.

Tell me more about the use of evidence-based information by nurses on your placement

Those who had experienced clinical placements described what appeared to be a major difference in use of evidence and searching for evidence according to whether the placements were community or hospital-based. A third year student stated that:

It's more specialised in the community. I've seen it where you go out and see a patient and you know the family wants more details. Then, they'll [staff] look up stuff and take it in for them. If we want to know more about research then the other staff let us look it up.

(male, year 3)

A contrasting view of working in an acute trust is shown where a student observed that:

On the acute wards it was like 'you do it like this because this is how it's always been done'...and you do it.

(female, year 3)

However, the latter view was tempered slightly by reference to protocols on the ward whereby the research is done by the National Institute for Clinical Excellence and then implemented by the ward staff. Two students discussed this issue as follows:

Student 1:

From what I've seen on the wards, they all follow NICE guideline and protocols. There are so many protocols and they change very often, so they are rigorous in how they treat the patients. They always follow them.

(female, year 2)

Student 2:

Ah yes, they follow the protocols themselves, but they don't do the research themselves so they don't always know why they are implementing them.

(female, year 2)

Here, the second student differentiates between following research guidelines and actually doing the research themselves. She observed that the Ward Manager would either attend training or do some reading and then disseminate new information out to staff. There is a feeling that qualified staff should know the

rationale behind any change in procedures and that ideally, they should know how to find the information for themselves. This perception was not one that was necessarily shared by the ward staff. One third year student spoke of wanting to challenge a ward procedure but felt that the culture was not open to challenge. He said that:

If you are bringing new things in you have to approach your mentor/supervisor and say 'well would this help'? and try and approach it that way to bring in the research. That's the best you can do really.

(male, year 3)

The important issue surrounding the attitude of the existing staff in relation to information literacy is one that will be discussed at greater length in Category 7.

How important is it to be able to use information in your role as a nurse and why?

The responses to this crucial question were almost unanimous in believing that the main reason for using information is to underpin practice and that it should be an integral part of the nurse's role. This is illustrated in the following quotation:

Use of information is constant isn't it? It's keeping up to date with what's going on and what the current thinking is around a specific situation or topic. For my own professional development, if I am interested in something then I want to know the right places to go and find out more about it. You can carry on with research when you finish your nursing qualifications. A friend of mine is a nurse and she comes back every few months and does courses. Loads and loads of different courses on all sorts of things

(female, year 2)

Such responses came from all year groups although the second and third year students were slightly more cynical, having had experiences where their attempts

to challenge the status quo had been rebuffed by nursing staff. Seemingly, this attitude represented the ideal for those in the first year and it became a more modified reality for years two and three after having accrued more experience in the workplace.

How relevant does information literacy seem in relation to your placements?

I wanted to know whether the second and third year students felt that the information literacy sessions assumed greater relevance for them once they had actually been on placements. One from the third year group tried to explain that:

In the second year things come together more in your assignments, especially when you have been out on placement and you have seen a scenario and you have got a question that you have to answer. You have a better idea which direction to go in and which research to look at.

(female, year 3)

Two other students highlighted the synergistic relationship between practical learning and the research process

Student 1:

At the end of last year I just thought 'My God' and then I've gone out onto placement and I felt like I knew a lot more. I understand things more and I pick up on things more. Your experience backs up what you can pick up in your reading.

(female, year 2)

Student 2:

Sometimes you can experience one thing in one setting and it's not until you experience it in another setting that you realise why things happen as they do. You have actually learned more than you think you have.

(female, year 2)

Both these students seemed surprised that what they perceived as disparate strands of learning actually complemented each other to produce an effective overall learning experience. This viewpoint was echoed by other second and third year students who assured the first year group that the frustration they were feeling was just part of the learning process and that information literacy did actually contribute to their learning. The university approach and the approach in the 'real world' were very different and yet they did actually intersect. Finally, a second year student recognised that using the evidence base was a way of effecting change. Her opinion was that:

I don't know how I thought that nurses actually learnt. I thought you got trained and went on your way and didn't have to think about the evidence-base. I think it's a good thing isn't it, you know, change and that? Some of the things are difficult for the 'old school' to accept. It's good to see how things can change because if it's proven that something works better, then you can't stay back in the dark ages. If it's going to be good for clients then you have to trust it, believe it, and do it.

(female, year 2)

It is interesting that someone on a nursing course had not thought about what and how a nurse needed to learn. Nevertheless, she does see the point of evidence-based practice and the nurse's role in using it as a way of changing things for the service-user.

How have your views about information literacy changed in the light of your experience on placements?

As already demonstrated above, the students reported differing experiences as to whether evidence-based practice had a high profile within their individual placements. Some reported that it was rarely mentioned while others reported that

other nurses would look up information if they had the time. The issue of time is one which will be followed up from the interview transcripts. The above notwithstanding however, the second and third year students felt that the theory about research learned in year one was useful when they arrived at their placements. Their views on the subject were heavily influenced by the attitude of the staff already working in that area. One student cited evidence-based practice as a method of being able to:

Try out new techniques with staff who were set in their ways.

(female, year 2)

Another second year student felt that it was a way of demonstrating professional commitment and gave an example of a surgeon looking up information:

who was really interested in what he was doing. It was stroke management and he was looking up protocols. He was really interested in what was up-to-date in that area and wanted to find out whether stroke can have a genetic link.

(female, year 2)

Students in years two and three clearly stated that their knowledge and use of databases, journals and searching generally had increased year on year, partly as a result of the demands of their coursework and their need to search for more information. This helped them with the real life situations they encountered during their placements.

Interview data

As previously stated, the interview questions were developed in part from the themes that emerged from the focus groups and also from areas of interest originally conceived when developing the objectives of the thesis. Variations in conceptions about the role of the nurse were most pronounced in the first year group and raised some interesting issues and strongly held viewpoints. These reflected the continually changing ethos and culture of nursing in the 21st century.

Analysis was once again carried out using a phenomenographic framework with constant revisiting of the data in order to form the categories of description for the objective. These are described and structured in the same way as described in Chapter 4.

Category 5: Information literacy and the role of the nurse conception

The place of information literacy and evidence-based practice are juxtaposed against participants' perceptions of what it means to be a nurse.

Experience and expectations

The impression gained from the participants was that unless they had either experience of nursing or family members working in it, then their perceptions of the role did not match what they experienced upon their arrival at university. This led to some strong views which were clearly expressed. Such viewpoints are illustrated by a first year student who felt frustration at what they were expected to do in their academic work. Below, she reveals her feelings about searching for literature in saying that:

*I would never have put this with nursing. **Never.** [my emphasis] I'd have thought they would have given you the basics of nursing and then research in the second and third year. When I go on placement and somebody says: 'ooh my arm's aching here do you think it could be this', I'd feel like saying 'well I don't know but I can tell you how to search for research paper"! I don't feel anything like a nurse at all. You have to get there but they can't just give us research for three years and then send us out. It's quite deflating because you want to be a nurse and get out there and do it and then you're doing.....research. I know that everything has to be evidence-based otherwise we'd be killing people. We have to know that things work for us to continue doing them and proof that they have an effect. I just think there is a little bit too much on evidence-based stuff.*

(female, year 1)

This first year student does not feel like she is learning to be a nurse, indicating that for her, perceptions and reality do not match up. Her anger is mitigated by the awareness that she needs to learn about evidence-based practice, but that does not lessen her frustration. One explanation could be because the first weeks are spent almost entirely in theoretical work to give grounding to the students before they go on observational placements. This does not necessarily cover what they perceive they need and is particularly true where the nurse's role is perceived as a 'hands-on' caring role coupled with a much more task-orientated approach.

Similarly, a third year student recalls the surprise she felt at starting her course:

I'd no idea what to expect. I didn't know what a nurse would actually do and when I got here it was a massive shock. I can see myself doing the job but it scares me. I should hope that I will still be able to use some of the searching skills that I've learned. We do have to keep ourselves up to date with what's happening in the nursing world and these skills go towards doing that.

(female, year 3)

In comparison to the previous quotation, this student has altered her opinion in the light of her experience. She talks of the shock in starting her course but has come to the realisation that her searching skills are of help in keeping up-to-date and consequently contribute towards her professional development. This has helped to re-align her perceptions with the reality as she sees it.

As mentioned earlier in this chapter, previous experience or knowledge of the role can and does influence individual perceptions. Here, a first year student recounts her experience working as a health care assistant:

Well I have worked in this type of work before. I'm glad I have had that experience but there are a lot on this course who don't know what the real world is like. I'm about to go on my placement and I'm thinking 'well it should be a doddle', well not a doddle (laughs), but quite easy while lots of others are all worried about it. I know what to say and what not to say! It's taking it to another level really. The more you learn the more you want to learn.

(female, year 1)

In this case, the experience relates to interacting with others on the ward and a certain amount of ward politics. In practical terms however, prior experience of working can prove to be frustrating when students find that they are restricted to doing what a new student is allowed to do. Formerly, they may have been able to do much more. Here a first year student expresses her annoyance by saying:

I've worked as a health care assistant for 16 years and I was learning how to shave balloons the other week! and I've shaved real live people. It's such a waste of time. A four hour round-trip to shave a balloon and do a bed bath!

(female, year 1)

This student, in common with a number of others had worked as a health care assistant and had been accustomed to carrying out tasks that students are not allowed to do as first year student nurses. Such students equated nursing with more practical tasks and their perception of the nursing role was also very different. They viewed the emphasis on research as overly academic and not particularly relevant. This is illustrated by another second year student in her description of what, in her opinion, makes a good nurse where she states:

I think nursing is more of a practical job than an academic one and I'd rather have somebody looking after me who could do things practically than somebody that can look up a journal article. I'm not saying that we don't need to know how to look up things as I do think we need to be knowledgeable. I'm not saying we don't need to be educated but I think it's getting to the stage where there's too much emphasis placed on the evidence-based stuff and not enough on the practicalities of being a nurse. That's just my personal opinion.

(female, year 2)

Category 5 - Structure of awareness

The distinguishing feature of this category is that prior knowledge and experience of nursing do have an influence on role perceptions. Those with prior knowledge of nursing were not as surprised by the concentration on research and information literacy as those without. Those with experience of working in this area found the concentration on research as opposed to practical tasks frustrating. This led to significant levels of dissatisfaction in the first year which lessened in the ensuing years as they became more experienced in the practicalities of nursing, yet were more able to see the relevance of the theoretical underpinning.

Figure 5.1: Information literacy and the role of the nurse conception



Category 5 - Meaning structure

The meaning distilled from Category 5 suggests that prior knowledge and experience of nursing (or lack of it) do influence role perceptions. Where role perceptions and reality do not match, students can feel dissatisfaction with what they are taught on their course. Information literacy is not necessarily perceived as being part of the nurse's role so therefore students question its usefulness. This is particularly prevalent in those first year students who have worked as nursing assistants and therefore have a task-based approach to the nurse's role.

Category 6: Conception of evidence-based practice in the “real world” of the nurse.

Searching for and use/non-use of evidence-based information skills and practice by nursing staff during student placements is described by the participants.

Qualified staff attitudes to using information

The most surprising revelation that emerges in this category is that the majority of participants reported that they had observed very little searching and using of evidence-based information by staff on their placements. Despite the drive

towards evidence-based practice since the mid-1990s, a third year student reports that on her ward:

Quite a few nurses say 'well we do this like this because this is how it's always been done' and this is how we're told to do it. We don't ask why, we just do it. I can see some downfalls in this way of working, but I can't voice them yet because I'm only a student. Once I'm qualified then I will ask questions as I'm not the sort of person who'll just go with the flow. If I don't think that something is being done properly and the benefits aren't being passed onto the service user I will open my mouth. There aren't enough people who will stand up for what is right.

(female, year 3)

The balance of opinion appeared to be that community-based staff were more likely to look up information than those in a hospital setting. One third year suggests that this is because:

Nurses' roles are so wide and varied and so 'out there' in the community. I think you will see more nurses out and about with laptops instead of medicine bags.

(female, year 3)

One of the key reasons cited for this apparent difference was that the community staff had more time. Implicit within that was the suggestion that they also may have had a more open attitude to change. The wards appeared to retain more of the traditional hierarchies and reliance on experience rather than research. Taking this one stage further there also appeared to be a difference between the general wards and the more specialist wards. This is noted by a student below:

In practice both nurses and doctors will go onto the Internet and look at research that has been carried out. Or, if they have got students they say 'Well we do it this way because evidence suggests that this is the best way of doing it'. They'll have that knowledge both from their training and experience and from looking things up themselves. You always have to be aware of new guidelines and what has changed to be able to implement new things. It's not so much on general wards but certainly in specialist

wards. On the medical ward there were new guidelines on epidurals and new policies on infection control. Ward Managers and Sisters go to meetings about new policies and protocols and pass it on. Things have changed during the three years of my training. Procedures that we used to do in the first year have now been disproved and we do it differently.

(female, year 3)

While a number of students report that there are information leaflets available on the ward, these are very much oriented towards patients and do not cover the evidence-base that the students are expected to use. Some wards have print versions of academic and clinical journals which are retained in the staff room for staff to peruse. The implication in the quotation above is that the more specialised the intervention becomes; the more there are likely to be changes and refinements that staff need to know about. Using the dissemination model, it is the senior staff or mentors who learn about the changes and then disseminate them to other staff as this third year confirms:

My mentors will sometimes look things up and give us useful web sites and book details. I haven't seen them doing much searching although I'm sure they must. They go to conferences and they use guidelines etc while we are there

(female, year 3)

Also in this category, the culture of the placement and the attitudes of staff were important in the development of students' attitudes and professional perceptions. A second year student gives a startling indictment of one of her placements where she is criticised by qualified staff for her enthusiasm for research as she reports, stating:

Sometimes they say 'Oh your passion and spark will soon go. You won't want to be going home and looking at books when you're qualified'. In actual fact it's quite sad really because they just do the minimum they can get away with. I don't want to get into that mindset; especially the ones

who have been qualified longer. They just do what they have to. The more recently qualified are more up for it. I guess the others have just got ground down by the system.

(female, year 2)

The experience of this student contrasts strongly with the university ethos which reflects the aims of the original Project 2000 strategy document which intended to produce a new kind of practitioner who could use the research-base effectively to provide a rationale for the care given (UKCC, 1986). It may well be that numerous factors contribute to such negative attitudes amongst some staff, or that they have simply, as the student suggests, become 'ground down by the system'.

Some participants suggested that the older nurses were less likely to look up information. This, however, is not something that can be generalised. In the same way that age is not an indicator of student nurses' abilities and attitudes the same premise is applicable to qualified staff. Therefore we have an instance of two third year students reporting different experiences

On a recent placement, the younger, newly qualified nurses are still very in touch with how to access information whereas my mentor who has been qualified for over twenty years won't go near a computer. She quite openly holds her hands up and says 'Don't ever ask me to do anything on a computer because I've no idea'. She actually came back to university to do the next step up to be a staff nurse. She jacked it in because she couldn't get to grips with all the searching and the use of evidence. She couldn't hack it.

(male, year 3)

While another student states:

On my last ward one of my mentors was actually doing her nurse practitioner course. I'd seen her using the computer for searches and I had to help her. I couldn't believe it really. Yes, she was younger than me but I

was more familiar with searching and I don't think she had done very much since she had qualified.

(female, year 3)

Perceived barriers to using information

These varied experiences demonstrate that no assumptions can or should be made equating age with either willingness or skills in searching for information.

These traits remain very much within the focus of the individual practitioner.

Participants cited a lack of time as the main reason preventing qualified staff from searching for information, especially on the acute wards as described here by a third year student:

I don't think they always have the time, because when it comes to searching, one of the biggest things is time. I know that it's quicker with the Internet and computers but that leads to the problem of there being massively more information. I think if people have a specialist role within the ward then they will probably use it a bit more but then it will be being done outside the ward. On one ward, my mentor gave me a task to design a leaflet. I adapted it for the ward and was able to knock it up in half a night shift and she said it would have taken her weeks to do. It comes down to time, staffing and letting people have the time to do it.

(female, year 3)

This view is reiterated by another student reporting her own experience on a busy surgical ward where time seems to be an issue. She says:

No there isn't really the time on the wards. I think it tends to be in your own time. If I were interested in something then I would look it up. It depends what area you are working in. In the surgical areas I didn't have time to stop, but then when I worked on a cardiology ward then there was time to stop and look things up if you wanted to.

(female, year 2)

The second reason that students cited for a lack of information searching amongst staff was a lack of Internet access. It is unclear whether this is an actual or a perceived lack of access. The implication from this student is that if you want to gain access, then you can find out how to do so.

When you get a job you have access to the Internet, so I assume nurses will use the Internet to look for information. I wouldn't say that it's widely advertised on the ward as to where to look for the evidence base. They do have training sessions where you get new information. You tend to find that these are run by ward sisters, or a specific link member who have been to a training day. Their role is to disseminate the information to the other ward staff with focus groups etc.

(female, year 2)

The institutional barriers described above replicate those identified by Tannery et al (2007) including:

Some of the barriers nurses encounter in locating the most accurate information are: (1) lack of time, (2) lack of access to information resources, and (3) lack of skills to efficiently retrieve the information.

(Tannery et al, 2007:1)

Additionally, the findings of this study questioned whether the barriers were:

More personal in nature such as poor computer skills, distrust of technology, or a lack of professional curiosity. Did they perceive cues in the environment that discouraged the use of these resources, such as disparagement from supervisors or a perception that consulting the professional literature during work hours is wasting time?

(Tannery et al, 2007:4)

This identification of the importance of cultural and environment factors show the importance of these two areas in the lives of the participants. Lloyd (2005) also supports what Billett (2003) suggests where she states that:

For workers, learning about the landscape of practice and profession through information access may not follow the paths charted by training or study.

(Lloyd, 2005:574)

In Chapter 4 one of the issues raised by the participants was in relation to information quality. One student acknowledges that ward staff do occasionally look up information and points out that this is not always an indicator of being able to find good quality material. Her view is given below:

Yes they do, but they just Google everything. They don't necessarily use what we would consider in the University as good evidence. Sometimes I actually think that it really isn't a good thing to do and I have said 'where have you got that from?' and they have said 'Google'. This is common to wards, clinics and community. Often it's in response to questions that I've asked and they say 'let's Google it and find out'. I'm more aware of good quality academic journals now.

(female, year 3)

This quotation may illustrate how the students sometimes found contradictions in what they are taught in university and what they actually experience in the real world. Alternatively, it may show how the student concerned is voicing the opinion that she felt I would like to hear. Her concern with quality and student use of academic journals belies the findings of Craig and Corral (2007) whose research showed that:

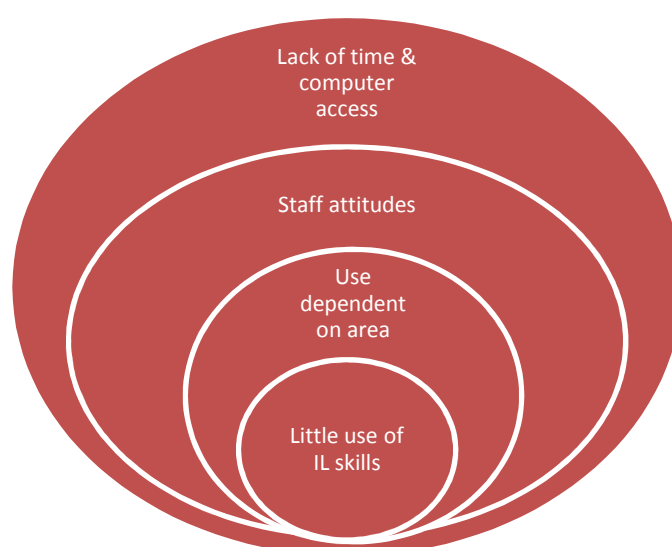
Although disappointing, this result reflects other findings that Google is often students' preferred starting point for research.

(Craig and Corral, 2007:124)

Category 6 - Structure of awareness

The distinguishing feature of this category is the suggestion of there being little evidence of qualified ward staff using their information skills to source information. This seemed to be context-dependent with community staff more likely to look up information than hospital-based staff. Similarly, specialist ward staff were more likely to look up information than those on general wards. Possible barriers to use were a lack of time to do so, a lack of computer access, and the attitudes of the staff working in that area. While information literacy appears to be acknowledged by qualified nursing staff as being integral to the nurse's role, this was not necessarily borne out in practice.

Figure 5.2: Conception of evidence-based practice in the 'real world' of the nurse



Category 6 - Meaning structure

The university environment stresses the importance of information literacy in order to support clinical decision making. However, participant observation on clinical placements reported little evidence of this in actuality. Searching for and use of

information is very much context-dependent. Some reasons cited for its non-use were a lack of time and a lack of computer access. A more covert reason discovered in this research was the ambivalent attitude towards information literacy shown by qualified nursing staff. The category demonstrated the conflicts the participants felt in working and studying across two different cultures and environments.

Category 7: Information literacy: professional development conception

Student perceptions of information literacy as part of professional development are contextualised through a variety of different experiences of its use and non-use in 'real-world' settings

As discussed in the literature review, the first decade of the 21st century saw increased discussion regarding the relationship between information literacy within an educational setting and information literacy within the workplace as part of professional development (Lloyd, 2005; Andretta, 2008; Whitworth, 2009).

In both focus groups and interviews, students cited the importance of keeping up to date as crucial since it is included in their professional code of conduct. Below, a third year student talks about her perceptions of information literacy in relation to professional role:

I think that once we qualify there will always be a need to keep ourselves updated with what's going on. It's part of your professional code of conduct. Ok, how much searching for research documents is going to be relevant I don't know, but I know that we have to do it for the academic side. I suspect that there will be much more looking at professional journals, but also there will probably be Internet searching now that there are things like Google Scholar that absolutely anybody can use and download information from. The fact that we can get journals electronically could be a great help.

(female, year 3)

It is interesting to note that the student here acknowledges using information for the 'academic side'. She is unsure of the relevance it will have for the rest of her job. This view is one that was expressed by a number of participants whereby few linked information literacy directly with their perception of the core role of being a nurse. One student made an observation relating an ability to use information with career advancement down a managerial route as separate from 'hands on' working with patients. His perception was that:

It all depends on how you personally want to advance your career. Personally, I like being a hands-on nurse on the ward and don't like the paperwork side of things, although I realise there are certain things that you have to do. I do want to climb in my career but I don't want to get to be a band 8 and spend all my time pushing paperwork about sorting rotas etc. I want to be a hands-on nurse so for me the research isn't as relevant. OK I'd like to keep up to date with new ideas, but I don't know that it would be much benefit.

(male, year 3)

The key point that this student raises is that being good at doing research is seen as synonymous with success as part of a managerial and administrative career path rather than in gaining advancement via the perceived traditional caring role of the nurse. The student goes so far as to say that for a 'hands-on' nurse, then research is not as relevant.

As already discussed in Chapters 4 and 5, a number of first year students struggled to deal with the concentration on research early on in their course. Equally, while some from the second and third years saw information literacy as being increasingly relevant, a fair proportion perceived it as something that they had to do to pass their course as exemplified by the following quotation:

I would say that generally it is seen as something that has to be done to get through the course because people haven't generally been in a job where they have to look for information and possibly because on the ward we don't actually see it happening that much. That's not to say that people don't do it at home, but certainly we don't perceive it going on.

(female, year 3)

This shows the influence that the placement ethos and behaviour of qualified staff exert on the attitudes and behaviour of students. In the above case, the fact that students do not see nurses looking up information on the wards intimates to them that it is not something that is really required in real nursing. While this is a direct contradiction of what the students are taught in the university, the power of what they see in the 'real world' of the nurse has a greater influence on them.

There are occasions in the data where students report trying to use evidence to change existing practice only to find that it creates conflict with existing staff who criticise them for so doing. It places the students in a difficult situation whereby they are mindful of not crossing their mentors and colleagues on the wards while trying to implement what they have been taught in the university. The use of information literacy within workplace contexts is not always an easy task as shown in the following quotation:

When you're on the wards there might be the evidence base that everyone is taught, but I wouldn't have the confidence to say well "current evidence says that that doesn't work anymore and we should be doing this". I would try to practice like that but I wouldn't be bolshie with the people actually doing it. It can create conflict. I'd hope that the senior members on the ward agreed with the most recent evidence base, and I'd be happy to broach it with the members of staff in a roundabout way as I'm not a confrontational type of person. There's a lot of mickey taking such as "oh, here we go, University student spouting research" I might just ask the senior member of staff for advice.

(female, year 3)

Despite these difficulties, several students spoke about occasions where their challenge to the status quo had resulted in a change to the procedures and this made them feel that they could contribute directly to improving patient care.

Whether or not students feel able to challenge the status quo depends on both their own personalities and the placement culture at the time.

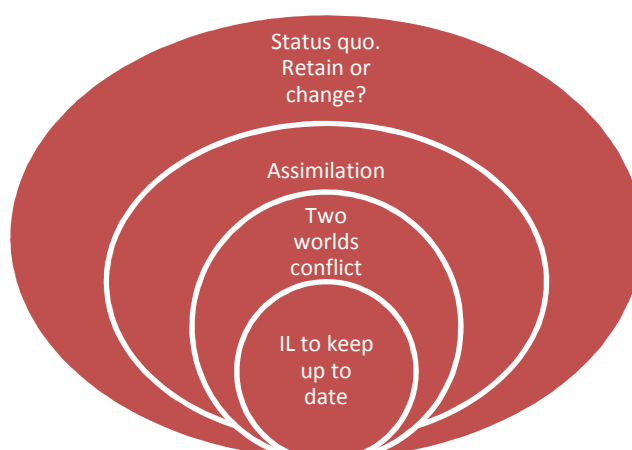
More people would benefit from reading research but it depends where you work and what your mentors have been like. You do come across older nurses who might have trained years ago and don't necessarily keep up to date with the evidence. I do challenge things on the ward because it's part of my nature. For example I saw some drag lifting a few weeks ago and I brought this up with the manager and he sent that person on a manual handling course. If I think something isn't right then I will look it up and find several relevant pieces.

(female, year 2)

Category 7 - Structure of awareness

The distinguishing feature of this category is the fluid place of information literacy as part of professional development. While the majority of students recognised that keeping-up-to-date with research was part of their professional role, this was not necessarily borne out by their observations on placements. Most acknowledged that it is part of their professional code of conduct although some admitted that they saw it as something they had to do in order to pass their course. When on clinical/community placement, they quickly learned how to fit in with the ethos of the particular area in which they were based and their ability to challenge (or not) the status quo depended very much on their own confidence and personality.

Figure 5.3: Information literacy-Professional development conception



Category 7 - Meaning structure

Participants showed recognition that information literacy is part of professional development although the data revealed evidence of an alternative perception that it was simply another skill that had to be acquired in order to pass the course. On placements, the negative views of some qualified staff towards those students prepared to challenge the status quo caused conflict in participants' minds between the clinical and educational ethos. Students felt that they had to decide whether to follow the prevailing ethos of their area or to ask questions about the way procedures were carried out and risk being seen as a 'troublemaker'

Chapter Summary

This chapter has examined variations in participants' perceptions and experience of information literacy on their clinical placements. The students' observations on placements revealed institutional barriers to searching for information such as a lack of time, lack of Internet access, and lack of appropriate skills. Additionally, it identified cultural and environmental factors such as attitudes towards research by qualified nursing staff, ward culture and ethos. Students reported both positive and negative experiences in learning from their mentors and other qualified staff. The

latter sometimes conflicted with the students' view of the nursing world as seen from within in the university. In and among these mixed messages from qualified staff about the importance of research and information came recognition from the students themselves regarding the role of informal learning on their placements from mentors or other ward staff. They made reference to learning 'how things were done' in particular contexts. Hunter et al (2008) also described the tacit and codified knowledge that may also be shared as part of informal learning. As has been demonstrated in the literature, such importance is vastly under-rated and yet shows that nursing students prefer to ask other staff for help rather than ask a librarian (Eraut, 2011). The questions raised in this chapter about the nature of learning within nursing link with Lloyd (2010) who reaffirms her belief that information literacy in the 2000s needs to be seen as :

A core and critical information practice, that builds people's capacity to negotiate increasingly complex social and technological environments and one that facilitates a way of knowing about the modalities of information within an environment and how these modalities are constructed. However, in the library and information sciences (LIS) field, the complexity of this practice is often reduced, over-simplified and focused turned towards describing information skills instead of considering the socio-cultural features that enable the practice to emerge.

(Lloyd, 2010:245)

The next chapter moves away from the culture of the hospital wards and examines the information literacy sessions taught on this course in an attempt to assess their value as perceived by the students.

CHAPTER 6: USEFULNESS OF INFORMATION LITERACY SESSIONS

To evaluate the usefulness of information literacy currently taught on the course in the light of the results of the research, and make recommendations as to how it should be taught in the future.

Focus Group Themes

The focus groups were conducted in the same way as in Chapters 4 and 5. The themes are discussed thematically using some of the prompts from them as starting points. Emergent themes are then explored at greater length using data from the interview transcripts.

Discussion in relation to this objective focused on the students' perceptions of the content and context of the information skills teaching on their course and whether they perceived that their information skills had improved across the three years. Also, it was intended that the results would provide useful feedback on successes and failures of such sessions with a view to improving them for future cohorts. The themes below are grouped in relation to the prompts given by the researcher.

How would you rate yourself at searching for and using information?

The students in the interview sample were asked to rate their skills in searching for and using information using a scale of poor/average/good/very good/excellent. The table below shows the number of students for each year and their self-perceived ratings.

Table 6.1: Self-perception of information literacy skills development

Year/Total	Poor	Average	Good	Very good	Excellent
One (9)	4	3	2		
Two (5)		4			1
Three (7)		1	3	3	

This showed a perceived improvement in skills over the three years with more of the third year students rating themselves as either very good or excellent. The reasons students felt they had improved will be discussed at greater length in the section dealing with interview data.

What are your thoughts about the information literacy sessions you have on your course? Would you do anything differently, if so what?

The first year students had their focus group directly after an information literacy session delivered jointly between library and academic staff. This consisted of a lecture/introduction with demonstrations followed by a practical exercise. Having just left the session, the students were full of ideas about its usefulness. Not unexpectedly, the notion of constructing search strategies (keywords) had proved problematic for some especially since it was linked to the PICO framework, (Population, Intervention, Comparison and Outcome). This is a recognised aid to formulating clinical questions and they felt it to be over-complicated. For example one student said:

Why use PICO and not just keywords or how to frame a question? It's pretty difficult to work out. I think it was over-complicated and I needed to keep going back to check whether what I was doing was right.

(female, year 2)

Other areas of discussion included validity and relevance of results and confidence in using the various databases. They recognised that the databases should contain more reliable information than Google, but they did not necessarily know how they could establish this reliability. One stated:

I think it's making sure that the information's right. You have still got to check that it's valid and it's right. After all you can't just take things at face value. It's being able to find something you can trust rather than just random things that people have typed into Google. The library sessions help us with learning how to do that.

(male, year 1)

This first year student had deduced from his lectures that information needed to be trustworthy and from a reliable source and realised that the library sessions could contribute to equipping him with such skills. Aside from the actual content and context of the sessions, students were quite vociferous about the assumptions that both library and academic staff made in relation to their IT and information literacy skills. During this time, a conversation emerged regarding the difference in skills between mature and younger students. This led to a discussion about the gap between the students' educational experiences and what was expected of them within the university. One first year mature student commented:

I'm not scared at all about looking after patients but scared about writing. I'm not sure what to put and I've never actually seen an assignment or anything. I haven't got a clue what to do and that part really freaks me out and makes me feel at a loss compared to the young ones as it makes you feel thick. I left school at sixteen and haven't been back in education since and I just think 'God this is too daunting'. Everyone expects that I'll know what to do. I feel like I've been bombarded for the last two weeks with information in lectures and then you have to do this on the computer. I feel incredibly stressed and I could quite easily have not come this morning.

(female, year 1)

This quotation serves in part to concur with the findings of Jenson (2004) who explored assumptions made by library staff in relation to information literacy and basic computer skills. This concluded that staff tended to over-estimate students' skill levels in these areas. Such assumptions also led to student discussion about the requirement for basic IT training given that some said that they did not 'know our way round a computer'. Such comments reflect the continued conflation of information and computer literacy which dominated the 1980s and 1990s. This link still remains despite several challenges to it in the 2000s (Bruce, 1997; Ambrose and Gillespie, 2003; Pravikoff, 2006). The majority of students agreed that prior to university, there was more of a culture of tutors helping their students through course work. This was a sharp contrast to the student-centred approach they found within the university.

Knowing what you know now, have you any views on the library sessions you received during your time at university?

Suggestions for improvements showed that the students recognised the diverse learning styles and differences in baseline knowledge of members of the group. Suggestions again clustered around gaining confidence and not making assumptions about skill levels. One student combined several of these issues in making the very pertinent point that:

We need more sessions in the first year not just one. Last year, we were given one in the late afternoon after being really tired in lectures all morning. The lady presenting it thought that everyone could understand what she meant because when you are an expert in something you think everyone is the same. We didn't really understand. You need to be fresh to concentrate.

(female, year 2)

Another agreed that they needed more sessions in the first year because it would enable the learning outcomes to be covered a little at a time. She felt that:

The first year one should be a bit more basic. It's information overload. There's too much of it and too soon. I took one look at it and thought "what the hell is this" and I just had to figure it out for myself. Maybe you need to be given little homework tasks. Step by step is better. Also, you need to have it explained that you have access at home.

(female, year 2)

Confidence was something of an issue, particularly amongst the first year students when it seemed that the need to be seen to be coping amongst peers was very strong. A student in her second year spoke up about her experiences, and there were many nods of agreement around the room when she said:

Starting research is really frightening and the groups are too big. Can't you do a smaller group, take some of them into a small computer lab then people won't feel so stupid if they want to ask a question? I think the library staff are very helpful, but sometimes your confidence is so low in using that system that you daren't ask for help and you would rather struggle your way through it. This year I've learnt that if you don't ask then you don't get help. In your first year it all comes at once. You don't know who to ask, who to turn to. Everyone seems to be doing alright so you think it is just you that gets in a muddle.

(female, year 2)

From my own personal experience as Academic Librarian for Nursing, the large group sessions are often followed by groups of three or four students wanting to make appointments with library staff to refresh their memories of what was covered in the large group session. This outcome does suggest that the size of group is something that should be considered very carefully.

Can you give any examples of how skills you have learned in library sessions have helped you either in your academic or clinical work?

Students in all three year groups agreed that on the whole, they had found the sessions beneficial. In support of this they cited various examples including

We learned how to put together the search terms and which databases were better. In the first year it all went over our head but when you can apply it to something that you can use then it makes more sense. It's all about relevance.

(male, year 3)

We weren't brought up with computers in school so to some degree it's useful learning the skills at the beginning of the course, just to give you confidence to use what's out there.

(female, year 3)

Once again, the concepts of relevance and confidence were at the forefront of their thinking particularly in relation to the clinical work. Following prompting, there was further discussion which revealed that while on placement, students searched for written information but also used the experience of colleagues as described below by a third year student:

Out in practice you also use the people resources, the specialists (infection, diabetes) so you learn how to get information from them and network.

(female, year 2)

In relation to this, I remind the reader of the work of Lloyd (2007) in recasting information literacy as a socio-cultural practice whereby information is experienced within the context of a particular information landscape and where the novice learns to become a practitioner. The above would seem to be a prime example of just this type of learning.

Students across all three years expressed their concerns about topics that were mentioned tangentially to the main information literacy session. These included incorporating references into their work and plagiarism. One second year student commented:

When you read something and you understand it in a certain way and you then try and write it down in your own words, you've got that information from generally reading a journal article or a book or from seeing it on television or the Internet. How do you reference that when you're not actually quoting specific words that somebody else has written? Is that possible?

(female, year 2)

This shows the real difficulties that students experienced not only in locating databases but in retrieving and critiquing information before referencing it appropriately. Additionally, it demonstrates the breadth of information literacy in the 2000s in that it now incorporates strands such as critiquing, assessing, and referencing information which would not necessarily have been dealt with in the 1980s and 1990s. This broadening of scope is possibly as a result of the drive to embed information literacy into the curriculum in the early 2000s (Ambrose and Gillespie, 2003).

The next section will elaborate on some of the themes discussed above as they emerged from the interview transcripts and allowed a more focused discussion between myself as researcher and the participants.

Interview Data

As previously discussed, the interview questions were developed in part via the themes derived from the focus groups and also from the areas originally conceived when developing the objectives of the thesis. Analysis was once again carried out using a phenomenographic framework with revisiting of the data in order to form the categories of description for the objective. These are described and structured in the same way as in Chapters 4 and 5.

Category 8: Information skills-perceived improvement conception

Participants' levels of ability in using information skills are perceived to have improved during the three years of the course

Have my information skills improved?

One of the first areas for discussion was to try and ascertain participants' self-perceptions of the level of their information skills. As demonstrated in the focus group material for this objective, there was a perceived improvement over the three years of the course. Additionally, students were asked how they had arrived at the conclusion they had in order to gain further insight into the process of self-assessing their level of knowledge. In the first year the majority of the sample rated themselves as poor. One student gives her reasons for this as:

In trying to find journal articles on my subject, I get told how to do this here and that there and I get confused. One day I can search and think there is lots of information there. Another day I can do exactly the same (or think I have done exactly the same) and there are a lot less journals so I think it's something that I've done. I get confused with PDF files but I always seem to get the one where you just get the abstract. It is quite difficult and when I was at school we didn't have computers. At the moment I could get by, but I'm very slow at getting where I need to be. I still feel that there is a lot of information there that I'm not picking up.

(female, year 1)

Another participant represents a different view in her unfamiliarity with university systems. Consequently she has to overcome this barrier before her searching skills can improve. Unusually, this participant has already been in Higher Education so is equipped with a broader knowledge of information skills and what is expected from students as she explains here:

Well I have been in HE before. I've got a degree already so it's just trying to get my head around systems here like MetaLib. My degree in leisure and tourism was totally irrelevant to what I'm doing now, but in terms of books and journals it helped to see what scope was available. We had to use a broad range of references for our essays.

(female, year 1)

A second year student who would have said 'poor' revised her rating to 'average'. She explains this change partly due to help from colleagues and staff, but also a greater awareness on her part of what was expected and how to do searches. Here view was that:

Well. I'm saying poor because I was, and then I sought help and now I'm average. Ok I'm not 100% but I can get onto what I need. When you search for something and you keep getting nil results, my mind tells me that I need some help as I'm obviously asking the wrong questions. Now I'm more aware of what questions to ask and what keywords I should be using, whereas I wasn't before. In my first year I just wasn't aware. The awareness came at the end of the first year/beginning of the second year when I had to do more research and more looking on my own for things and not as a group. When we worked as a group, someone else did the searching and I did the analysis.

(female, year 2)

This increasing awareness at the end of the first year and the beginning of the second is a recurring feature that is mentioned by many of the participants and is perhaps one of the positive outcomes of the course structure. By this stage, they have experienced both the educational setting of the university and the learning

that occurs through clinical placements. Below, a third year student articulates a similar sentiment although her 'awakening' came a little later.

In my first year I wouldn't have known where to look although there's still probably room for improvement because personally I've only started searching the literature in depth at the end of my second year and at the beginning of my third year. I didn't do much of it in the first year. I think I'm ok at it but I could improve the way that I search. I just know where to look now and how to limit my searches a bit better. In the first and second year you find vast amounts of information and you don't really know how to limit it down. Once you go on placements you realise that you need to know how to do it. Through having sessions with the library staff and through practising you learn to look for specific research articles, how to limit to say English articles, how to get hold of full text and things like that.

(female, year 3)

Finally, another third year student reflects on her own searching skills and those of her peers by commenting that:

I think actually being taught how to use search engines is very useful. My colleagues found that helpful, but nevertheless they have struggled in getting their minds round things like keywords and actually searching. I would say that they are better now than they were in their first year. I think that's because they have literally had to do it and we have had the sessions which have taken us step by step through what we have to do. I know I've heard grouching about 'another thing on research', but if you aren't used to doing it then it is helpful. Things can seem a bit OTT when it comes to research. My perception of the course is that we're only in taught sessions half a week and of those, 25% of the time we are taught research which really cuts down what you are taught for nursing.

(female, year 3)

This student verbalises the attitude that is displayed by a number of participants in that they improve throughout the course by dint of the fact that they have to use what they are taught. At the same time, however she is critical of the seemingly large amount of time spent on research as opposed to 'nursing'. Once again, this

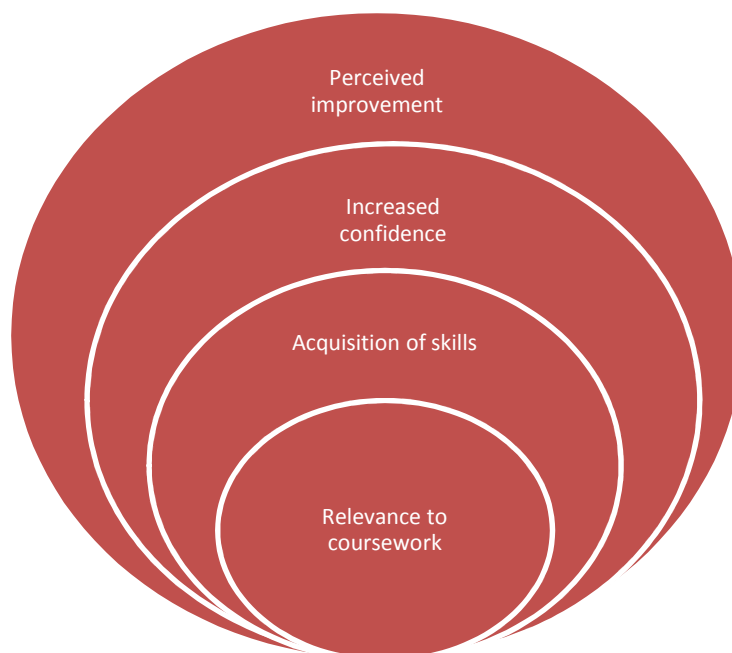
highlights the mismatch between what is perceived as the academic discipline of 'research' and what is defined as 'nursing'.

Category 8 - Structure of awareness

The distinguishing feature of Category 8 is the increased relevance of information leading to a perceived improvement in information skills (see figure 6.1).

Participants exhibited an increased awareness that information skills could be improved over a period of time and could demonstrate how this happened. The greatest increase occurred at the end of the first year and throughout the second year when information skills were recognised as being much more relevant to their coursework. This was partly accounted for by the Second Year requirement to carry out a literature review, which required the ability to search, retrieve, and evaluate information effectively.

Figure 6.1: Information skills-perceived improvement conception



Category 8 - Meaning structure

Participants agreed that the pivotal point came between the end of the first and the beginning of the second year. The nature of the course meant that while they were taught information skills in year one, they did not feel that it integrated closely enough with their course work. Several admitted that they could manage to pass the course in year one with little use of journal and other evidence-based information. Hence, the information skills they had been taught were not used until the second and third years and did not always seem wholly relevant. As they progressed, factors influencing their perceived improvement included a better understanding of university systems, recognition of the need to use information skills, and increased confidence in their skills. Additionally, their practical experience helped to align their skills with the nurse's role.

Category 9 - Information skill sessions: success conception

Information skills sessions are seen as an effective way of teaching information skills in both academic and professional educational terms.

Group size, content and timing

The participants expressed a number of different views regarding the group size, content, and timing of the information literacy sessions. These included general thoughts on the size of the group, the structure and content of the session (for example, lecture, workbook or demonstration), and the timing of the session in relation to the rest of the course or the time of the day it was held.

The large number of students on the course meant that the sessions were carried out by way of an introductory lecture to the whole group (170 students) and follow-

up practical sessions in groups with around 40 or more students in each group. The structure of these sessions included demonstrations to the class followed by hands-on exercises in a workbook. Library staff were available to answer any questions and to help the students as required. Some participants found that the size of the group did not help their learning due to disruptive students as reported here by two first year students who reported the problem:

I think it would be better in smaller groups because people do talk and that can be disruptive. The workbooks did help but I'm just not a confident person. It would have been useful to have had examples relating to the workbook

(male, year 1)

The fact that the students may have been talking about the project in hand did not make it seem any less disruptive. Another student referred back to the need for extra help with the computers although it is not clear whether this is literally in how to use the computer, or how to use some of the information sources that had been demonstrated.

We need smaller groups and more of them. You need more lessons when you're not used to computers.

(female, year 1)

The large group size did seem to be a contributory factor in exacerbating a lack of confidence amongst the students, a feeling that seemed particularly strong in the first year as described by a student below:

In a big group you don't want to look stupid in front of the rest. There were about 170 in a lecture theatre and you're trying to make new friends.

(female, year1)

A second year student also spoke about the size of the groups and her words reflected the feeling that was prevalent across many participants where she states:

There were huge groups of us in two classrooms of computers. I'm fine in learning in smaller groups and one to one, but you put me in a large group and it just goes straight over my head. They go rushing along, you've got people nodding and they think that everybody's ok with it. There wasn't enough time for (librarian) to get round everyone to see if they were ok. The sessions were far too big, so smaller groups would have given people the chance to ask for further clarification. I went away thinking "I've not got a bloody clue what I'm doing here". Also it was very early on, and we didn't know each other.

(female, year 2)

These comments encompass a number of factors that have an effect on participants' perceived ability to learn. These included group size, differing learning styles, lack of confidence in not knowing peers and being afraid to ask, as well as librarians' expectations. With regard to the content and style of the sessions most students appreciated the mixed approach to the teaching style with a definite preference for hands-on material combined with one-to-one help from library staff. A typical comment came from a second year student who recognised that the subject of information literacy is broader than first anticipated in saying:

The way it was structured was helpful with a mixture of demonstrations and a workbook. It was good that the staff were there to help us out when we got stuck. Personally, I learn best with a mixture of things. It's a big skill with a lot in it.

(female, year 2)

The participants exhibited a surprising awareness about some of the issues involved in designing and delivering educational sessions to a large and diverse

group of students. One student articulated her own thoughts in this area when she commented:

I guess the library staff have to pitch the sessions quite low really for people like me who have no idea, although I reckon that about 90% of the class wouldn't know either. There are times when I wonder if I'm actually using the system to its best effect as I tend to go straight in and try it rather than reading the workbooks.

(female, year 3)

A third year student echoed this preference for hands-on work and explains how the use of nursing examples in the exercise made the session more interesting and relevant to their work. She is critical of the use of handouts to be done outside the session and feels that students generally do not usually do it. Her opinion is that:

If you are shown what to do then you all have a go. I don't think that handouts work because you tend to get them, put them in your bag and take them home and never look at them. You forget you have them. It was good that we all searched the same topic in the lesson. If you ask people to go away and do it, they don't generally do it! The nursing examples are better to nursing students, because you don't really take it in unless you think it is going to help you which sounds a bit selfish I know but...

(female, year 3)

Information overload

With regard to the timing and nature of the information skills offered, there appeared to be two prevailing views. The first was to see the sessions as information overload too early on in the course. The second was an opposite point of view with not enough information being provided early on in the course. The following quotation illustrates the first viewpoint as described by a first year student who holds the view that:

The hands-on was better because when you first start you think 'well what's the point in this' and in a lecture you get really fed up. I'm not being rude as I'm well motivated and I hadn't really realised the relevance at that point because it was quite early on in the course. It was information overload really at an early point in the course. I'd hardly heard of research before let alone done it and to be faced with all that was a real challenge. I remember thinking 'I can't do that' and 'when will I need to do that'? You don't know what to expect.

(female, year 1)

Whether the suggestions of information overload were justified is difficult to demonstrate. This view could have been formed through the student's unfamiliarity with university systems, expectations and self-perception. To illustrate the second viewpoint, students in years two and three felt that they should have been given more information about how to search effectively at an earlier stage as the following example shows:

We do need to know more about how to access the information right at the beginning as we are left floating around. They say 'look at this book, look at MetaLib etc' and we don't know how to use it. It would have been more beneficial to fit with what we were learning at the time. The second year one gave me so much more knowledge and it gave me more confidence as an individual.

(female, year 2)

The above quotation is interesting in that the student relates the need for information literacy sessions to align with other topics they are learning at the time so that its relevance is more obvious. A similar theme is picked up by a first year student who appreciated the integrated nature of the sessions where she relates that:

The sessions were integrated so you had somewhere to apply the information you are learning e.g. PICO in conjunction with info literacy and keywords etc. It all fits together like a jigsaw.

(female, year 1)

As discussed in Chapter 4, the timing of the sessions was criticised by some of the first year students while those in their second year recognised that the library sessions that were integrated into their curriculum enabled them to build upon previous learning and thus acquire new skills. The following third year student explains that in the early part of their course, they could pass their assessments without using journal articles. This did not happen in the second year however:

I don't think I really used journal articles in the first year. In the second year we did a literature review and we had another session about MetaLib and which databases were best for which literature. Because we had to do that for our assignment we have carried on using journal references in our essays. We'd learnt how to do it and what to do. You couldn't just use books, you had to actively search and review four journal articles and explain how you had searched for them, how you had found them, how you decided what was good and bad, and how you analysed them. It really made you think how you had done it because you had to explain step by step.

(female, year 3)

The above quotation shows how the students learned to identify appropriate sources, search and retrieve information, evaluate their findings and reflect on the learning process. Perceptions about the benefits (or lack of benefits) of the sessions were diverse in nature across the groups. These were often linked very much to the 'how to do something' aspects such as how to construct search strategies, how to search for information, and how to evaluate. A considerable number expressed gratitude for learning these things. A third year student summed this up both for herself and also in observations of her colleagues in saying:

In the first year, you really wonder what you have come to. None of it seems to make much sense. Once you have got a grip on using databases though and you know what steps to go through, it's much easier. My friends

are much better now at searching and being critical of information than they were in the first year.

(female, year 3)

The other main benefit perceived by participants links closely to Category 4 (Information anxiety conception) in that their lack of self-confidence in the library and information environment could be improved through the library sessions. This lack of confidence was very apparent early on and in some cases carried through to year two. The need to acquire the skills meant that students did gain confidence in actually using them, as is shown by a second year student who describes her own personal journey from lacking confidence to gaining confidence

The second year one gave me so much more knowledge and it gave me more confidence as an individual. I struggled in the library with being dyslexic. I got to the point where I was in tears when I came in and the library staff provided me with one-to-one help. I can remember the sessions and they gave us some confidence to come to the library because it seems like quite a scary place. It's not the people, but people all seem to know where they are going. It's big and you haven't a clue what you are doing. I gained confidence that I knew what I was looking for and that I knew the right words to key in and using the right tools.

(female, year 2)

This echoes the experience of Craig and Corral in their research on the impact of an information literacy programme on pre-registration nurses (2007). In their research they tell how their study:

Revealed the influence of 'mastery' experiences on confidence provided through small-group sessions and library staff support.

(Craig and Corral, 2007:124)

There were few students who did not perceive any benefits to the library sessions and those for whom perceived benefits had been minimal. In the interviews they

went on to qualify what they felt were the reasons behind this. Reasons included group size, learning style, and not wanting to ask questions.

In some cases, they preferred to ask their peers rather than library staff for the reason that:

*I knew them and I didn't know you. To be fair, if I'd have come to the library I wouldn't know who to ask and I thought staff would think I'm totally stupid
My new set of friends on the course were prepared to help me so it was easier to do it that way.*

(male, year 3)

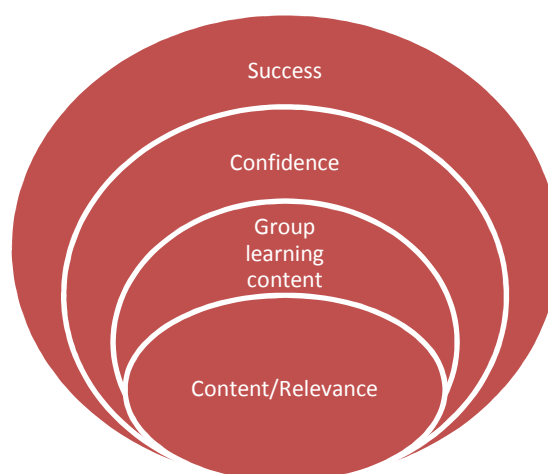
Category 9 - Structure of awareness

The distinguishing feature for this category was that in order for the session to be seen as successful, participants felt that it had to be set in context and above all be relevant to their course. The large group sizes were generally criticised as being too large for effective learning to take place. Content was felt to be acceptable with an emphasis on the need to use examples relevant to nursing. No definite conclusions could be drawn about the timing. While some of the first year students felt that they had been subject to information overload in the first few weeks, those in the second and third year suggested that the information was actually needed at that time. The end of year one and beginning of year two proved a particularly important time to revisit information literacy skills as they were required for a number of assignments. Additionally, students would also be on placements and would need to look up information .

In general, the majority of students perceived benefits to the information literacy sessions provided by library staff. In addition to the specific skills that they had acquired, students spoke in a broader sense of how the sessions had boosted

their self-confidence in using the library, thus lessening their library anxiety and enabling them to use their skills while on clinical placement as well as for academic work. Those who had not perceived many benefits were not directly critical of the aims of the session, but rather had problems with the nature of the delivery. This was in relation to the difficulties of the large group method not fitting with their learning style and their reluctance to ask questions for fear of losing face in front of their peers.

Figure 6.2: Information skill sessions-success conception



Category 9 - Meaning structure

There were three significant factors that contributed to the success or failure of the information literacy sessions. These were group size, content of the session, and the timing/relevance in relation to other aspects of their course. Information skills sessions were generally seen as beneficial and making a considerable contribution to improving student information skills as part of the overall education process. Essentially, students divided into two sub-categories, those who felt that the sessions had been beneficial and those who did not.

Chapter Summary

This chapter has shown how student perceptions of the success of the sessions depended on group size, content and timing. The majority of students found them beneficial in assisting in their coursework and those who had not found them particularly beneficial suggested that the reasons may not be in their pedagogic intent, but rather in methods of delivery and individual issues of learning style.

Finally in this chapter, the author summarises below the findings of the data analysis chapters as a brief reminder to the reader of the key points emerging from the data. This is followed by a graphic representation of the categories and an explanation of the way they relate to each other.

Summary of categories of description

Category 1: Information searching and understanding conception

Information literacy is viewed as a way of using books, journals and the Internet to locate information to use within both university and work contexts

Category 2: Information quality conception

Information is seen as something that has to be of high quality in order to be valued and useful in education and work contexts.

Category 3: Learning process conception

Information literacy is seen as part of the University education process and a point along the continuum of students' previous experience towards future knowledge. Students expressed difficulties in adjusting to the process

Category 4: Information anxiety conception

Information literacy is seen as a difficult concept which, when linked with library usage and the process of evidence-based practice may lead to anxiety

Category 5: Information literacy and the role of the nurse conception

The place of information literacy and evidence-based practice are juxtaposed against participants' perceptions of what it means to be a nurse

Category 6: Conception of evidence-based practice in the “real world” of the nurse

Searching for and use/non-use of evidence-based information skills and practice by nursing staff during student placements is described by the participants.

Category 7: Information literacy: Professional development conception

Student perceptions of information literacy as part of professional development are contextualised through a variety of different experiences of its use and non-use in ‘real-world’ settings

Category 8: Information skills: Perceived improvement conception

Participants' levels of ability in using information skills are perceived to have improved during the three years of the course

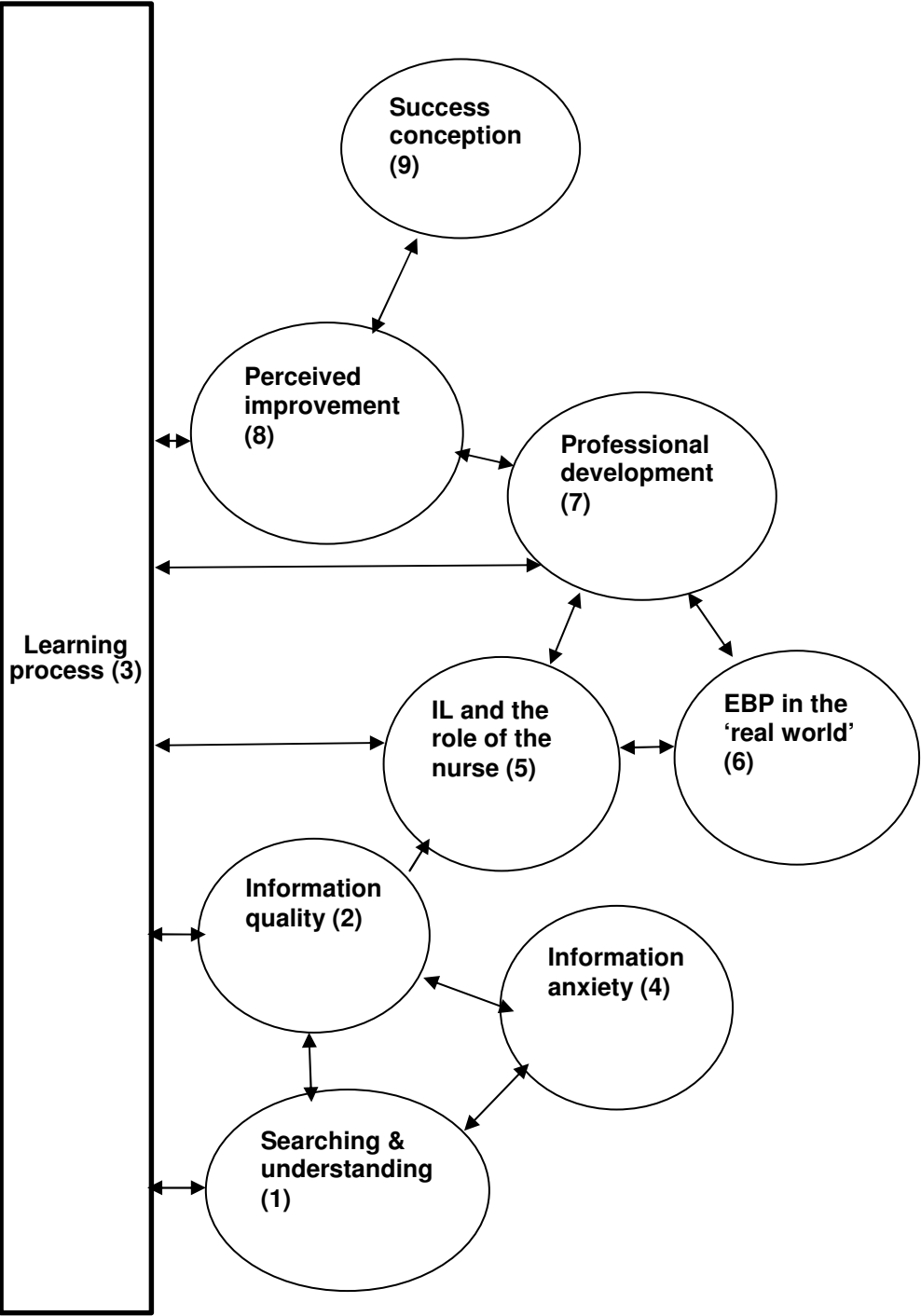
Category 9: Information skill sessions: Success conception

Information skills sessions are seen as an effective way of teaching information skills in both academic and professional educational terms

Explanation of the outcome space derived from the categories of description

So far the analysis chapters have concentrated on linguistic representations of the results. The representation of the outcome space as seen in Figure 6.3 shows a graphic representation of information literacy in its many facets as perceived by the participants. Each category of description represents ways that they interact with information and these conceptions collectively represent the phenomenon being studied. Furthermore, the varying ways that the students experience information have been interpreted by me as the researcher.

Figure 6.3: Inter-relationships between categories of description



The table is constructed using a metaphor of the student journey from an information literacy novice to a more experienced information literacy practitioner and should be read from the bottom of the page to the top. Category 1 (Information searching and understanding) represents the information deficit which may be either known or unknown to the students when they arrive at university.

Having recognised their information deficit, and having grasped the basics of how to search for information, students proceed further up the hierarchy to Category 2 (Information quality). This deals with students' concern to obtain reliable and valid information that will serve both their academic and clinical work. Information is viewed objectively as a commodity that can be accessed and used providing that appropriate skills and knowledge are in place.

Information skills are acquired and experience gathered via the learning process (Category 3) which is over-arching and pervades everything they do on the course. Where such skills are not acquired or the learning process/methods are not congruent with student expectations, some students may experience information anxiety (Category 4) extending to several aspects of library use. The concept of confidence or lack of confidence was identified as a recurring feature in Categories 1, 4 and 8. If this anxiety can be overcome, then students report increased confidence in their information skills and are generally of the opinion that the information skills sessions have been successful (Category 9). Additionally they report a perceived improvement in their own skills (Category 8).

As students progress through the learning process, the intersection of university learning and the 'real world' of the nurse combine with information literacy to form a bridge between the two. Significant aspects of the latter conception are depicted in Categories 5 (Information literacy and the role of the nurse), 6 (Evidence-based practice in the 'real world' of the nurse) and 7 (Information literacy: Professional development). These three categories form a closely interrelated triangle. Here, information is viewed both subjectively (Category 6) and objectively (Categories 5 and 7) as students draw their own conclusions about its importance to them and how it can be used in their clinical practice and professional development.

Conclusions about categories of description

The inter-related nature of the structure shows that students perceive two inter-related paths to success in becoming information literate. Firstly, they become aware of their information deficit and the need to acquire the skills and knowledge to be able to rectify this. At the start of the course, this is accomplished within the university learning process which concentrates on dealing with traditional textual information discourses predominantly through information technology.

The second path is the relevance of information to the professional values and roles of the nurse. As has been discussed, prior knowledge and experience may not necessarily match up with the actuality of how a nurse learns to be a nurse. This is particularly true in the case of information literacy, as in many cases, students are surprised at the emphasis on the need to be able to search for and use evidence to improve clinical practice. The concentration on research in the

first year sometimes leads to anxiety and a lack of confidence as well as frustration in not learning what they perceive as nursing skills.

In years two and three the relevance of what they have learned becomes clearer and they need to be able to put their information skills into practice, both in course work and on clinical placements. On each placement, some students felt part of that particular culture and occasionally found that this conflicted with their theoretical assumptions in relation to research and information literacy skills.

During the placements, students view information within a specific context or landscape and learn informally through both socio-cultural and physical practices.

This is not always an easy process as noted by Lloyd (2007) who asserted that:

The ability to become information literate within context is influenced by the social, historical and political interests which produce and shape context through its discourses and discursive practices. Therefore, coming to know the information environment may be fraught with tensions produced by the contestation of information as it is played out according to discourse and discursive practices. In this respect, some voices will be heard, while others will remain silent

(Lloyd, 2007:8)

From the results of this research, it would appear that students need to have reached a certain point in the university learning process (Category 3) where it aligns information literacy and the role of the nurse (Category 5) and with evidence-based practice in the real world (Category 6) to ensure that they will succeed in becoming information literate within their own context (Category 9). This contributes to their personal and professional development (Category 7).

Thus equipped with appropriate skills, they are able to use them to challenge current nursing practice where required in order to enhance patient care.

Chapter 7 will draw conclusions about the results of this research in ways that are intended to be useful to information literacy practitioners and nurse educators. The author will also explain how this specific research adds to the existing body of knowledge and suggest areas where further research would be beneficial.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

The final chapter of this dissertation discusses the conclusions that may be drawn from the research and how they throw new light onto the hitherto little-researched area of student nurses' conceptions of information literacy. The discussion brings together the lessons learned from each objective and is presented in objective order in order to structure the results more clearly for the reader. Additionally, as an aide-memoire, the meaning structures for each category are repeated. These summarise the discussion and content of each category. It should be borne in mind that the conclusions need to be viewed as part of an holistic and inter-related process rather than a series of disparate strands, given that inter-relatedness is a key factor throughout both the research itself and the phenomenon it investigates.

The author assesses whether the objectives have been met and the ways in which this specific piece of research contributes to new knowledge about conceptions of information literacy in student nurses. Also, it investigates their views on its relevance in the culture and workplace of qualified nurses. Consideration is given to the way the research was carried out and to some alternative methodologies that might have been used instead.

Lastly, the author makes recommendations for further research for both clinical educators and librarians that have been identified from the thesis and which he feels will contribute to the further development of the subject.

Objective 1(Categories 1, 2, 3, 4)

To explore BSc Nursing students' conceptions of information literacy as part of their overall learning experience during the three year period of their university course.

Category 1: Information searching and understanding conception

Students perceive information technology as the key to becoming information literate. The category splits into two main sub-categories with the first being the perception that students who can use information technology will be successful in becoming information literate. The second is that a lack of success with information technology leads to information anxiety and therefore failure to achieve information literacy. The findings in this category mirror those of Bruce (1997).

Conclusion

On a general level, this research seems to support the view espoused by Bruce et al (2006) that people view information literacy and learning and teaching differently. They contend that:

Information literacy (IL) is not a theory of learning, but rather that peoples' approaches to IL and IL education are informed by the views of teaching, learning and IL which they adopt either implicitly or explicitly in different contexts. IL educators, including discipline-based academics and librarians are challenged daily by an environment in which administrators, teaching colleagues, students and others bring very different perspectives to the processes of IL education.

(Bruce et al, 2006:1)

These authors propose a six frames model in order to view information literacy as well as teaching and learning through specific frames that influence the context.

These six frames are the Content Frame, the Competency Frame, the Learning to Learn Frame, the Personal Relevance Frame, the Social Impact Frame and the Relational Frame. The results from this research show similar variations in perceptions and approach and in the way that the participants relate to the phenomenon. In particular, as was seen in the discussion about Category 3 (Learning process), participants' views on the nature of teaching and learning are a key factor in determining their attitudes to information literacy.

In this category, an important aspect is the continuing tendency to conflate the concepts of information literacy and information technology. This conflation is not as pronounced as in the 1980s and 1990s and students now demonstrate a slightly modified view in that information technology is seen as a tool that can be harnessed to retrieve and use information effectively. It is possible to suppose that one reason for this change of view is the accelerated development of the Internet. With its development, health information has become accessible to everyone and in order to support patients, nurses have to have knowledge to do so. With this in mind, Gilmour et al (2008) assert that:

Competency in accessing, assessing, and using online resources is required before nurses can effectively support patients and families' use of the Internet health information.

(Gilmour et al, 2008:9)

The development of such Internet-based information coupled with the evidence-based agenda leads on to the requirement for nurses to be able to discern what is, and what is not, reliable information if it is to underpin any changes in practice of patient care.

Category 2: Information quality conception

The participants showed concerns about the quality of the information they retrieve. They learn about this in their lectures and gain insight into which information sources to use to locate the best quality information. The progressive nature of their course enables them to contrast the place of information quality as an abstract concept in their lectures with a way of evaluating information in the library sessions, and the way it can influence changes to practice.

Some of them discussed the need for an effective evidence- base to aid clinical decision making in the hospital wards. As part of this discussion they questioned the extent to which ward staff thought about the quality of the data they used to aid decision making.

Conclusion

The key factor underpinning the use of evidence-based material is that it must be reliable in order to effect change in clinical practice. Nurses are expected to have appropriate skills in order to be able to use evidence to do this. Participants expressed their concern that once they had learned how to retrieve information, they then had to learn how to assess and critique it. While the first year students struggled with this somewhat, those in the second and third years recognised that their critical skills had developed due to the work they had done on their course. Additionally, some of them had seen first-hand that the clinical areas used quality assured materials (for example, documents issued by the National Institute for Clinical Excellence) which highlighted its importance in a work setting and in their role as nurses. To this extent, information literacy education, coupled with practical work on the course, expanded their thinking to include skills, knowledge and

attitude. In turn, this led to an understanding of the nature of making inferences and being able to consider both the logic and accuracy of evidence presented to them (Watson and Glaser, 1980).

What has been described so far relates to some of the constituent parts of the learning process that students needed to engage with in order to pass their course and in a wider sense to begin the transformation from novice to expert.

Participants exhibited varying levels of engagement and varying degrees of frustration with the whole process. This is defined and discussed in Category 3.

Category 3: Learning process conception

Students questioned what they needed to know to fulfil their role and how they should acquire this knowledge. Also, they were unsure about where information literacy sessions fitted as part of the educational continuum. While they demonstrated some awareness of the overarching educational process, the discussion suggested that many saw the individual parts of the course simply as discrete components rather than aspects of a wider cohesive whole. This was most prevalent in the first year students who, at the start of the course, did not yet have the benefit of the ensuing two years study against which to judge what they were learning.

Conclusion

The difficulties experienced in terms of the cohesiveness of the whole learning process would seem to confirm the work of Tolhurst (2007) who explored the nature of acquiring knowledge. Tolhurst concluded that:

Students with simple beliefs are likely to engage in study habits in which they rely on authority (perhaps the lecturer) to provide clear answers. When researching, such students are likely to be satisfied with the first information they find that they believe provides a suitable answer, and not persist if they do not locate information quickly and easily. Students with more sophisticated epistemological beliefs are more likely to consult multiple sources, integrate ideas, value different opinions and persist in the event of not being successful at first

(Tolhurst, 2007:220)

It is possible that the prior experience and knowledge of the majority of the first year students pre-determined the nature of their epistemological beliefs to be simple rather than complex and led to the frustration they expressed in the data. Conversely, the fact that the second and third year students expressed less dissatisfaction and more understanding suggested that they had developed more sophisticated epistemological beliefs. This supports the work of Brownlee et al (2001) whose research indicated that the epistemological beliefs of students who participated in reflective practice were more likely to move from simple to complex. As part of this nursing course, the students are asked to use reflective practice as a self-development tool and it seems that its use does help in transforming their epistemological beliefs and critical/analytical skills.

Category 4: Information anxiety conception

The meaning of this category relates to the lack of confidence felt by a number of participants in their information searching and library skills as identified by Mellon (1986). Coupled with this is the perceived pressure of expectation from peers, library staff, and academic staff. First year students specifically were trying to adjust to a new environment and found that the library seemed to be especially forbidding. Those who exhibited lower self-confidence experienced higher levels of library anxiety while those who were able to deal with the new skills and environment experienced an increase in confidence. On first examination, the lack of confidence expressed by the participants would seem to indicate that the findings of this research may partially contradict Appleton's research with student midwives in that for them:

Information skills training had a very positive impact on the students' teaching and learning experiences. They gained confidence and achieved greater understanding of their studies

(Appleton, 2005:170)

In interpreting the data, however, it must be remembered that the research is looking at variations in experience and while the lack of confidence is a valuable finding, it was by no means common to all the participants.

Conclusion

The variations in experience in the discussion show a balance between confident students and those lacking in confidence. When asked to rate whether they felt that their information skills had improved, the majority felt that they had. It is important therefore to remember that phenomenographic method does not

represent each individual perception, but rather a collective view across a group. Deeper probing into the results revealed some of the reasons behind the lack of confidence that were predominantly related to the size of the group and a fear of losing face in front of their peers. Once again, this was expressed strongly by the first year students as they learned how to deal with their new educational environment.

Objective 2 (Categories 5, 6, 7)

To examine the value and relevance of information literacy in searching for evidence-based materials within their placements as an indicator of its place in the 'real world' of the nurse.

Perhaps more than any of the others, Categories 5, 6 and 7 are closely inter-related. They deconstruct participant observations of the nursing role in relation to information literacy and the varying realities of the role as evidenced in placement areas. Additionally, they examine the role of information literacy as an aspect of professional development and the transition from novice to expert.

Category 5: Information literacy and the role of the nurse conception

The meaning emanating from Category 5 suggests that prior knowledge and experience of nursing do influence role perceptions. Where role perceptions and reality do not match, students can feel dissatisfaction with what they are taught on their course. Information literacy is not necessarily perceived as being part of the nurse's role so therefore students question its usefulness. This is particularly prevalent in those first year students who have worked as nursing assistants and therefore have a task-based approach to the nurse's role.

Conclusion

Category 5 takes as its theme the perceived mismatch between student expectations about the role of the nurse and what they are taught in the university. While prior knowledge and/or experience of nursing should be helpful to those about to enter the profession, there is a viewpoint which suggests that they set up unrealistic expectations as shown in the quotation in Chapter 5 (p159) from the nurse who had already been working in an health care assistant role. Nursing as practised day-to-day is entirely context-dependent and often far removed from the stereotype. Cheek and Jones (2003) considered the fluid nature of contemporary nursing and the subsequent implications for nurse education. The conclusion they reached was that:

Any educational preparation for nurses must be cognizant of the diversity of settings that nurses both practice today, and will practice in the future. Educational programs should not be shaped by somewhat limited understandings of what contemporary nursing is about.

(Cheek and Jones, 2003:47)

The nature and structure of this BSc Nursing course suggests that it does attempt to follow this premise, although the narrow role perceptions that some students bring with them to the university contribute in part to the difficulty they exhibit in deciding where the reality of being a nurse lies. The academic arena and the clinical areas both represent nursing, but students can seem confused about how they intersect. Objectively, both are two sides of the same coin, but this does not seem to be apparent to the students as they study. It seems as though some of what they observe out on placement does create a conflict in their mind with what they have learned in the university as is seen in Category 6.

Category 6: Conception of evidence-based practice in the “real world” of the nurse

The university environment stresses the importance of information literacy in order to support clinical decision making. Participant observation on clinical placements, however, reported little evidence of this in actuality. Searching for, and use of information is very much context-dependent. Some reasons cited for its non-use were a lack of time and a lack of computer access. A more covert reason discovered in this research was the ambivalent attitude towards information literacy shown by qualified nursing staff. The category demonstrated the conflicts the participants felt in working and studying across two different cultures and environments.

Conclusion

The results of this research appears to confirm the work of Tannery et al (2007) who suggested that while nurses on the wards and other clinical areas do have information needs, there are common barriers to overcome which mean that these needs are not always fulfilled. Such barriers include information anxiety, lack of time, lack of Internet facilities, information skills deficit, and lack of organizational support as well as apathy amongst some qualified staff (Tannery, 2007; Majid et al, 2011). The barriers reported are the same as those noted in the examples by the students in this study while on their placements. The little-discussed yet important barrier in the literature is the attitudinal barrier presented by qualified staff who decide that they do not want or need to search for information or that they are frightened of computers. Qualified staff attitudes are explored more fully in Category 7.

Category 7: Information literacy: Professional development conception

Participants showed recognition that information literacy is part of professional development although the data revealed evidence of an alternative perception that it was simply another skill that had to be acquired in order to pass the course. On placements, the negative views of some qualified staff towards those students prepared to challenge the status quo caused conflict in participants' minds between the clinical and educational ethos. Students felt that they had to decide whether to follow the prevailing ethos of their area or to ask questions about the way procedures were carried out and risk being seen as a 'troublemaker'

Conclusion

This current research appears to show little evidence of nurses using their information literacy skills fully in clinical settings. Usage appears to be context-dependent, with community-based staff generally having more wide-ranging skills in locating and using information. There is a strong contrast with those working on wards where evidence based practice appears to be disseminated via guidelines and protocols, or practice updates provided by more senior staff. A third year student explains her experience of information literacy on a ward:

They do with certain things like medications and I've only ever had one mentor who was really into it. I mean really into it. Some of them subscribe to journals and tell you things. Sometimes they have journals in the staff room that you can read if you want to. As qualified nurses, I don't know how they use information because I don't know what's enough and what isn't enough. It's not a big thing like it is here

(female, year 3)

In this quotation, the student makes reference to information not being 'a big thing' like it is in the university and also the way that qualified nurses do talk to the

students about various professional issues while they are on placements. In this sense, it partially reflects the findings of Lloyd and Williamson (2008) relating to the difference between information literacy in an educational setting and that of the workplace. In discussing the transfer of skills from one arena to the other, they suggest that:

It has become evident that generalizations from research in the educational sector to workplace situations do not necessarily reflect the realities of experience and use of information in those contexts. Nor do they provide a clear understanding of the outcomes of IL practice in at least some workplaces.

(Lloyd and Williamson, 2008:5)

There is no doubt that students learn much from experienced colleagues and become part of the nursing community via social information and experiential knowledge pathways. Once again the differences in the nature of knowledge as portrayed in the educational and workplace settings are brought into sharp focus. The attitude of qualified staff towards the evidence base and the way they influence students is a key factor in work-based learning. Where staff exhibit a reluctance to use the evidence-base, its importance is lessened in the eyes of the students. This is identified by one of the second year participants in talking about staff who eschew the evidence-base in favour of experience:

And if you get two together on a shift then you'll find that they think that experience overrules the evidence base

(female, year 2)

In this case, the student feels unable to challenge this viewpoint for fear of ridicule and being ostracised by other staff upon whom they may depend in order to pass their placement.

While it is apparent from the data that the majority of students in this study did see the acquisition of information literacy skills in order to search for evidence-based materials as an essential factor in becoming a nurse, their experience on placements caused them to question it. This highlights the two very different, and seemingly opposing viewpoints taken within the educational and workplace settings.

Objective 3 (Categories 8, 9)

To evaluate the usefulness of information literacy currently taught on this course in the light of the results of the research and make recommendations as to how it should be taught in the future.

Category 8: Information skills: Perceived improvement conception

Participants agreed that the pivotal point came between the end of the first and the beginning of the second year. The nature of the course meant that, while they were taught information skills in year one, they did not feel that it integrated closely enough with their course work. Several admitted that they could manage to pass the course in year one with little use of journal and other evidence-based information. Hence, the information skills they had been taught were not used until the second and third years and did not always seem wholly relevant. As they progressed, factors influencing their perceived improvement included a better understanding of university systems, recognition of the need to use information skills, and increased confidence in their skills. Additionally, their practical experience helped to align their skills with the nurse's role.

Conclusion

The notion of perceived improvement was based entirely on the viewpoints expressed by the participants. Throughout the interviews they talked about the areas in which they felt their skills had improved and were asked to rate their information skills. As discussed in Chapter 6, the majority of students seemed to be of the opinion that their skills had improved as they progressed through their course. This had been particularly noticeable in years 2 and 3. The author contends that possible reasons behind this were firstly, feeling more comfortable with the dual educational environments (university and clinical placements), and secondly, greater demonstrable relevance of information skills to the real world. Lastly, many students exhibited increased confidence in their skills and abilities. The self-perceived improvement recognised by the majority of participants would suggest that for this course, the methodology had fulfilled the premise expressed by Bruce (2004) in talking about the significance of information literacy education as stated below:

The significance of information literacy education lies in its potential to encourage deep, rather than surface learning, and in its potential to transform dependent learners into independent, self-directed, lifelong learners. Without information literacy people are condemned to lack of information, dependence upon others for access to knowledge and information, and even to acute levels of information anxiety.

(Bruce, 2004:6)

Category 9: Information skill sessions: Success conception

There were three significant factors that contributed to the success or failure of the information literacy sessions. These were group size, content of the session, and the timing/relevance in relation to other aspects of their course. Information skills sessions were generally seen as beneficial and making a considerable contribution to improving student information skills as part of the overall education process. Essentially, students divided into two sub-categories, those who felt that the sessions had been beneficial and those who did not.

Conclusion

As discussed in Chapter 6, the information literacy sessions provided were generally perceived as beneficial by the participants. It appeared that the embedded nature of the information literacy teaching worked well in so much as information literacy was perceived as being integral to the rest of the educative process. This would appear to contradict Johnston and Webber's assertion that an embedded course encouraged surface rather than deep learning (2003) and that stand-alone information literacy modules were preferable.

Areas where students were critical included the size of the group being taught, the timing in relation to the rest of the course, and the relevance of materials. In two of these aspects this reflects similar findings in a study carried out with student midwives by Appleton (2005)

Information skills training is very much desired and required within health studies curricula, and is fundamental to evidence-based practice and higher level academic study. Such training should be developed, delivered and assessed collaboratively between academic and library support staff. The

training needs to be embedded into the particular health studies curriculum and relevant to student work and assignments. It is very important that the timing of such a training programme is right, and should be planned accordingly around the whole course.

(Appleton, 2005:8)

Both the interview data discussion and the self-assessment of skills indicated a perceived self-improvement in the participants' information skills as they progressed through the course. Such results are subjective due to the small scale nature of the study. The key factor in looking at perceived improvement more objectively would be to carry out a more quantitative type of assessment with a longitudinal approach.

Have the objectives been met?

In Objective 1 the study succeeded in exploring student perceptions of information literacy and its value as part of their overall learning experience. Students were able to express their perceptions of the phenomena and the data revealed a good understanding of the subject, particularly regarding searching for information and the notion of information quality. Also, it emerged that they had difficulties in adjusting to the teaching and learning style in the university in the early part of their course. Difficulties in understanding university systems coupled with a perceived lack of skills appeared to lead to low levels of confidence. This led to information anxiety that extended to almost all aspects of library use. This conclusion is based on anecdotal evidence however, and any causal link between the two was not fully established given that it was outside the remit of the work.

Objective 2 involved examining the perceived value and relevance of information literacy as observed by participants on their placements. This enabled the researcher to investigate student perceptions of the relationship between what they had learned in the university and how information literacy was perceived and used on the placements. While this varied depending on context, students reported little use of information skills in clinical areas and somewhat hostile attitudes from some of the qualified staff. The importance of information literacy as part of the nurse's role appeared to be significantly diminished in the 'real world' of the nurse in contrast to the importance afforded it within the artificial construct of the university.

Lastly, in Objective 3 the study set out to evaluate the usefulness of the information literacy sessions taught on the course. It was seen that as a result of these sessions participants perceived an improvement in their information literacy skills. While the sessions were seen as successful, ideas for further improvements emerged. These included smaller teaching groups, adjustments of timing of sessions, provision of materials to suit a variety of learning styles, and a reminder that library staff should not make assumptions about student skills levels.

Limitations of the study

The reliability and validity of phenomenography as an approach have been discussed in Chapter 3. The author did consider other approaches including grounded theory, phenomenology and a case-study approach. Phenomenography was chosen as it had been used successfully in similar studies (Webber and Johnston, 2005; Andretta, 2007b), and because the investigation was dealing with

perceptions of information literacy and not information literacy per se. The sample size and structure followed advice from the professional literature. The results, however, only give a snapshot of different groups across the three years of the course. It may perhaps have been more appropriate to have conducted a longitudinal study with the same group through the course. Unfortunately, time and resources did not allow for this possibility.

A major concern throughout was the power relationship between the researcher and the participants. This could potentially have influenced the results up to the point where participants gave the answers that they felt that I, as researcher wanted to hear. Also, in asking questions and probing for information, I had to be careful not to project my expectations onto them nor express any emotions at the responses received. Ultimately, however, in using the phenomenographic approach, the researcher forms part of the whole process in analysing the data and interpreting them to create categories of description. Throughout the whole process I did seek to remain open to the implications of the data through 'bracketing' my own thoughts and assumptions. I believe that I did accomplish this successfully, but if conducting similar research in the future, a more collaborative approach in categorizing the emerging data might add to the validity of the work.

Contribution to research in information literacy

This thesis makes a contribution to new knowledge in four main areas. Firstly, it explores the dual and sometimes conflicting nature of the educational process in teaching student nurses within both the artificial environment of the university and the 'real world' as perceived by the students on clinical placements. This

exploration highlights the differences between the two and the conflict that can arise when expectations stemming from one educational arena (university) are not realised by the actuality of the other (clinical placements). This intersection represents the meeting of traditional educational discourse within the university and the more pragmatic information landscape and culture found within specific clinical settings. It also represents the clash between the apprenticeship model of nursing as outlined in the introduction and that of the supernumerary student nurse who inhabits the two different arenas of academia and practice.

Secondly, the thesis considers the seemingly clear differentiation that the students make between the 'hands on' aspects of nursing versus the 'academic' aspects. This brings into focus the apparent imbalance between the academic aspects of nursing which appear to overwhelm its 'hands on' practical and compassionate side. One possible inference here is that the emphasis on the nurse's perceived need for evidence has gone too far. Within this lies the question of the nurse's need for such high levels of information literacy and the subsequent emphasis placed in its teaching. These concerns are important in the light of the recent Health Ombudsman's report into the treatment of older people in hospital (Abraham, 2011) that talks of:

NHS provision that is failing to respond to the needs of older people with care and compassion and to provide even the most basic standards of care.

(Abraham, 2011:5)

In the same report one complainant reported that:

Her mother was not helped to eat, even though she was unable to do it herself. She said this had once happened when several nurses were 'chatting' at the nurses' station. Nurses left food trays and hot drinks out of reach of patients and Mrs R's family felt she would not receive food or drink unless they gave it to her.

(Abraham, 2011:17)

In April 2011, the columnist Christina Patterson spoke of her own experiences of poor nursing in a radio broadcast stating that 'when it came to washing patients, some nurses felt that it was beneath their dignity'. (Patterson, 2011)

One possible interpretation of such experiences could be that nursing has lost its caring element and is no longer a vocation but an academic course that happens to include looking after patients. This is not the first time such criticism has been levelled at university educated nurses who were described as 'too posh to wash' by Beverly Malone, the then General Secretary of the Royal College of Nursing (Reuters News agency, 2004).

Such reports bring the reader back to the question of whether nursing is a profession or not and, if it is, then should nurses be 'trained' or 'educated'. In a wider context, Watson (2006) questions whether the purpose of a university is to 'train' student nurses or to help form their characters in such a way as to enable them to become the accountable practitioners of the future. Anecdotal evidence suggests that some nursing practitioners believe that attempts to professionalise nursing by equating it with academic and technological prowess instead of nursing care have done it a disservice (Patterson, 2011).

Thirdly, it gauges the effectiveness of the information literacy sessions from a student point of view. In this way it seeks to take a user-centric rather than a library-practitioner approach. This is done as a way of addressing a criticism that is commonly levelled at information literacy research. Such an approach enables the author to make recommendations about how the sessions may be improved for future cohorts by using feedback from their predecessors on the same course.

Lastly, the thesis brings to light the importance of peers, both in terms of peer pressure to conform to a common educational standard and in peer support and help in the information literacy sessions and beyond. The research revealed that outside the formal sessions there appeared to be a considerable amount of mutual support taking place whereby peers were the preferred means of assistance as opposed to either library or academic staff.

Recommendations for further research

The nature and approach of this study mean that the findings cannot be generalised across other areas in information literacy research but may be applicable to participants in similar target groups. That notwithstanding, the results are certainly of interest in terms of developing the teaching within the course in question. Additionally, other researchers may wish to consider the recommendations to decide whether they are applicable in their own areas. The author provides below a set of recommendations aimed at those practitioners dealing with various educational areas.

For nurse educators and research nurses

On the assumption that nurse education remains within the auspices of Higher Education, further work needs to be done in securing partnerships between health care providers and Higher Education in procuring and carrying out research. This point was noted by Closs (2000) who commented that:

Research is not an elitist activity, and if we are to advance the practice of nursing, midwifery and health visiting, we have to develop our research base. Research, education and practice must be inextricably linked, so that research evidence really can provide a basis for clinical practice.

(Closs, 2000:424)

It is only by including more nurses in the research process that it will become a part of the nurse's role rather than being seen as something related but separate from 'hands-on' nursing as was seemingly the case with some of the participants in this study. Following on from the seminal work of Lloyd (2005; 2006; 2007; 2008; 2010) in recasting information literacy as a socio-cultural practice, more research needs to be done using similar methodologies in the field of nursing.

Lloyd used fire-fighters in her studies to show how information literacy is expressed in a variety of different ways outside the traditional textual discourse. This is also related to earlier recommendations hinging around the nature of what it is to be a professional nurse given that the data from this study revealed that participants struggled to reconcile their position in the different landscapes of the university and clinical settings. By investigating the importance of informal and non-formal learning we can help to address the criticism that current practice in information literacy does not:

Take into account the importance of informal learning or other sources of information which are accessed through communication or action. This reduces the power of information literacy and the way in which information literacy education is undertaken by students and undergraduates. It also reduces the ability to transfer skills and practices between contexts.

(Lloyd, 2005:87)

The results from this thesis suggest that while in many cases evidence-based materials are used in clinical settings, the attitudes reported by some of the students show that some qualified staff feel that evidence-based information is not an important part of their work and that it is not within their role to acquire the skills to search for and use it. Some areas have research nurses and senior staff whose role does include the dissemination of such materials. The dissemination model is seemingly a commonly used approach to ensure that nurses have appropriate and up-to-date information when needed without having to search for it individually. The skills to do so however, need to be seen as part of wider professional development and this can only happen with support from individual organisations who are aware of their strategic importance. If it is the case as Watson (2006) suggests, that nursing is indeed a profession with the accountability and need to act beyond mere competency in unfamiliar circumstances and contexts, then the role of information skills warrants further investigation.

For librarians and information skills teachers

One of the key findings of this research is the mismatch between the perceptions of learning to be a nurse and the actuality of doing so, particularly with regard to the teaching and learning process in the university as juxtaposed against students' prior learning experience. Add to this the very different nature of learning on

placements and the result may lead to conflict in students' minds which presents as general dissatisfaction with the learning process and lack of confidence in their skills.

One possible answer may be to try and link education in Higher Education with feeder institutions such as colleges and schools. The participants were clear in their assertion that the very different learning process was a huge shock to them once they entered the university. This had already been noted by Wallace (2007) in the United States who organised a summit involving a variety of California's educational institutions in order to:

Examine the state of information literacy, identify information literacy gaps within and across educational institutions, identify potential information literacy collaborations within and across educational institutions, and identify needed educational opportunities in the area of information literacy for educational institutions.

(Wallace, 2007:47)

Those attending included university staff, staff from high schools and colleges, and other community education providers. The summit allowed those present to explore different expectations and assumptions about information literacy. Some of the main discoveries were the gaps and misconceptions at the transition point from high school to university. This equates to the differences between school/sixth form and university as identified in this study. Some of these gaps were:

A lack of common standards and no discussion of assumptions and expectations between educational institutions.

A real gap in the tools and resources available to teach information literacy concepts and to engage in information literate practices between the educational institutions.

Each level saw a dramatic difference between the computer and information skills that students thought they possessed those that they actually possessed.

Each level expected students to be able to articulate an information need and at least know how to start looking for quality information.

Each level expected incoming students to understand how the Internet worked, was searched, and the need to evaluate all information found. Each level expected incoming students to know how to integrate information found and understand the concept of plagiarism.

(Wallace, 2007:5)

Using studies like that carried out by Wallace, those responsible for teaching information literacy may wish to consider these issues, perhaps through a series of workshops. This is important where library staff were criticised for their unrealistic expectations and assumptions about what the students already knew or should know.

With regard to the content of the information literacy sessions, students were generally happy with the content providing that it used nursing examples and was felt to be relevant to their course. Areas of concern for them were the size of the groups and the timing of the sessions in relation to the rest of their course. The majority of comments were reserved for the group size. This mirrors the results found by Craig and Corral (2007) in their study to measure the impact of a pre-registration information literacy programme. Their findings showed that students perceived real benefits in using small group sessions as a major factor in

improving confidence as described below:

Key influences on confidence levels thus included: previous and current experiences of using IT, the Internet and (to a lesser extent) libraries; and the programme itself, including the skills learned, feedback from small-group sessions, handouts and availability of help.

(Craig and Corrall, 2007:123)

The groups in this study were of necessity large and even when divided up into smaller groups were still perceived as too large for effective learning. While time, staff and resource availability factors often militate against small groups, the author would urge those providing the sessions to consider whether an alternative strategy could be used. This could be utilisation of more online materials or in provision of extra training to the more capable students so they can act as helpers to the others. The data indicate that there is already a good deal of interaction between the students and that the more capable of them already help some of the others. Consequently, it would be worthwhile exploring the possibility of peer assistance as a way of harnessing this natural interaction between students for the benefit of all.

The timing of the sessions were very much dictated by the structure of the rest of the curriculum. Some participants complained of information overload at an early stage while the academic staff and some students felt that they needed to have this information during the opening few weeks of the course. The author would recommend that the library and academic staff involved in designing the course consider aligning the timing of the information skills session even more closely with the rest of the course. This is of particular importance in the first

year, where students complained of not being able to see the relevance of what they were learning. Also, course designers should ascertain whether it is possible to reduce the length of the sessions, but to have a greater number of them. In this way, the students are constantly reminded of the importance of information skills. The shorter periods between sessions means that they are less likely to forget what they have learned.

Discussion brought forward comments about the different ways in which students learn. It behoves library staff to cater for a variety of learning styles, although this must be achieved within time and resource constraints. The current course is integrated into the curriculum and in this sense it overcomes one of the main weaknesses of teaching information literacy as a stand-alone module (Bruce, 1997). This point is also noted by Barnard et al (2005) who state that:

One-off demonstration-style information skills classes (e.g. how to use a specific database) delivered out of curriculum context do not necessarily coincide with the student's need for information and are sometimes not valued by students.

(Barnard et al, 2005:6)

Despite the integrated nature of the course, some students were critical of the demonstrations of databases with some preferring workbooks or actually talking through their searches with a member of staff. It is clear that there is no universal answer to the plethora of preferred learning styles evident within one particular group of students. The dilemma is how to cater for them given the severe restraints on staffing and resources and yet ensure that they experience an effective learning experience. Such restraints are likely to become even more pronounced in the future. The author would suggest further work based on

research carried out by Godwin (2006) who exhorts library staff to use new technology to gain the interest of students and teach them about using keywords, as well as the ethical use and evaluation of materials. In his paper, he puts forward the opinion that:

We should use this technology if we are to appear relevant to the Internet generation. We can then encourage them to use tools such as blogs and wikis but to be critical about the content. In the information age of the amateur, the provenance and validity of content becomes blurred; IL becomes even more critical, and librarians and academic staff have new teaching tools which attract rather than patronise or bore our students.

(Godwin, 2006:282)

The author would recommend more work at this institution using a mixed methods approach to assess students' acquisition of skills in relation to their confidence levels. Throughout the data analysis, confidence and lack of it were mentioned by a large number of participants. It would be helpful to know how skills and confidence are linked and what actions can be taken to increase student confidence in their ability to search, evaluate, and use information. While the current study concerns itself primarily with student perceptions of information literacy and its value, confidence is a topic that does warrant further research.

The approach taken in this thesis is by its nature subjective and explores the relationship between the student and the phenomenon (information literacy). It is noted in the literature, however, that self-reporting of skills (Craig and Corral, 2007) does not necessarily provide an accurate reflection of actuality. Hence, it may be useful to carry out further work using alternative methodologies.

Concluding remarks

This research highlights the issue of potential conflict between university and clinical learning as well as differing perceptions of the nurse's role by those entering the profession. Given that current and future financial constraints affect all aspects of training and education, consideration should be given to evaluating the way that evidence-based nursing is viewed and used by practitioners and its role in improving patient care. Those involved need further insight into the role of information literacy and whether it is something that all nurses need, or whether it is something that can be carried out by research nurses and disseminated appropriately. Also, this thesis has made reference to the influence of qualified ward staff upon the attitudes and perceptions of student nurses. It would appear that continued effort in trying to change their attitudes towards information literacy within the clinical area is of considerable importance as it may then be possible to demonstrate more clearly to students how academic learning within the university and clinical learning on the wards are not separate, but mutually inclusive. In doing this, it can be demonstrated that both have their part to play in providing the best care possible for the patient.

Finally, in relation to this particular nursing course, the data suggest that the information skills sessions run by the library staff were generally perceived to be beneficial. Some areas for improvement included reduced group size and ensuring congruency with, and relevance to, coursework. As a result of this research, aspects for future development may include peer-to-peer teaching and the use of web technologies in enhancing information literacy teaching.

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Appendix 1: Explanatory letter and focus group questions

Who I am and what is the research about?

My name is Antony Osborne and I am the Academic Librarian for Human & Health Sciences at the University of Brownfield. I am doing some doctoral research into the ways in which student nurses experience or conceive of information literacy. This will help me to see if your perceptions change throughout the duration of the course as a result of the information literacy we teach in the University, but also in relation to your other educational experiences, for example your clinical placements.

As I work in the library here, I should mention that it's ok to criticize the way we do things in our library; In fact, one of the reasons for carrying out this study here is to see if we need to change the way we teach information literacy to improve your educational experience and its relevance to your future careers.

The research involves focus groups with first, second and third year students and follow-up interviews with some of you

I would like to thank everyone for volunteering to participate in this focus group study, and also to remind you that you have a right to withdraw from the session at anytime. I would also say that your comments here are confidential and I would appreciate it if each of you would also consider each other's comments to be confidential as well. If you have any questions about the research project please do ask me about it.

I will need to do some follow- up interviews (about 20-30 minutes) on an individual basis which will help to clarify the research. If you are willing to take part in these, please indicate this below.

The data collected over the next few months will form the basis of my thesis and I will be happy to share the results with any interested parties. If you would like to receive some information about the findings then please leave your university email address with me.

Are you willing to participate in a follow-up interview? **YES/NO**

Name

Email address@.....

Telephone number

Thank you for your help

Antony Osborne

Introduction to the topic

Before we get into the actual discussion, I should explain that the purpose of this study is to find out about your conceptions of information literacy, which means that there are no right or wrong answers! so please feel free to say whatever you feel.

What I'd like to do now is to just briefly introduce the topic and explain how the focus group discussion works. There is a concept in education called information literacy. And its basic premise is that with the information explosion and the advent of the Internet, there is a need for people to be able to find information, rather than just learn "the facts," about a topic because there are too many facts to learn and because "the facts" changes so quickly.

In health care there has been a move over the past 10 years towards evidence-based practice which means finding appropriate research to assist health professionals in their clinical decision-making.

What questions to ask?

Year 1

1. What do you understand by information literacy?
2. How do you use information outside of your coursework? (Maybe)
3. Describe your picture of an effective information user (or information literate person) (Bruce)
4. Tell the story of a time when you used information effectively? (Bruce)
5. Describe your experience of being (or trying to be) an information literate person (Bruce)
6. Have you any ideas about how you would use information in nursing (AO)

Year 2 & 3

1. How do you use information to complete module assignments?
2. How do you use information outside your coursework? (Maybe)
3. Describe your picture of an effective information user (or information literate person) (Bruce)
4. Can you give any examples of how skills you have learned at library sessions have helped you either in your academic or clinical work (AO)
5. In what ways have you seen information used differently in your clinical areas to when you use it in the University (AO).
6. How do the nurses in your clinical/community areas perceive or use information in their work? (AO). Can you think of any ways in which information is valued differently?

Appendix 2: Interview Schedule for 1st Years.

1. How would you rate yourself at searching and using information
Poor/average/good/very good/excellent
2. How did you arrive at this conclusion?
3. How do you decide what is good and bad information?
4. In what ways do you think that the ability to search and use information in your studies will have an effect on your future role as a nurse?
5. Thinking back to the literature searching sessions – Can you outline any benefits of what you learned?
6. Would you run the sessions differently? If so how?
7. How does what was taught at the University differ from your past experience of learning how to search for and use information
8. In our session we used nursing examples in teaching you how to search. Some people teach these skills separately from the subject. Have you any views on how this might work?
9. We often use computers to search for information. Would you say that the ability to use computers and the ability to search and use information are the same, or different. If different, how are they different?
10. Since you started your course, how have you felt about the ways you have been asked to search for and use information? How does this fit in with your perception of what it is to become a nurse?
11. What age range are you (please circle as appropriate)

Under 25
26-35
46-55
Over 55

Appendix 3: Interview Schedule for 2nd/3rd Years.

1. How would you rate yourself at searching and using for information

Poor/average/good/very good/excellent

2. How did you arrive at this conclusion?
3. How do you decide what is good and bad information?
4. In what ways do you think that the ability to search and use information in your studies will have an effect on your future role as a nurse?
5. Thinking back to the literature searching sessions – Can you outline any benefits of what you learned?
6. Would you run the sessions differently?- If so how?
7. How does what was taught at the University differ from your past experience of learning how to search for and use information
8. We often use computers to search for information. Would you say that the ability to use computers and the ability to search and use information are the same, or different. If different- how are they different?
9. Since you started your course, how have your perceptions of information literacy changed? How does this fit in with your perception of what it is to become a nurse?
10. What age range are you (please circle as appropriate)

Under 25

26-35

46-55

Over 55

Appendix 4: Coded interview transcript

AO-How do people on the wards value information- do they think of it differently from us?)

I don't think they always have the time, because when it comes to searching one of the biggest things is **time**. I know that it's quicker with the Internet and computers, but that leads to the problem of there being massively more information. I think if people have a specialist role within the ward then they will probably use it a bit more but then it will be being done outside the ward. **On one ward my mentor, because she knew what my previous skills were gave me a task to design a leaflet. I adapted it for the ward and was able to know it up in half a night shift and she said it would have taken her weeks to do.** I don't know whether being on a ward utilises other skills as much as they could do and that could include IL as well if people have skills that lie in that area. It comes down to **time, staffing and letting people have the time to do it.** On my last ward one of my mentors was actually doing her nurse practitioner. I'd seen her using the computer for searches and I had to help her. Yes- she was younger than me but I was more familiar with searching. That isn't because I'm currently studying, but because of my general experience.

With mentors knowing that you have to use research to pass your degree they tend to help you with it. Recently I was working in a high dependency ward and my mentor referred to Critical Care journal quite a lot to back up what he was teaching me with evidence. There are lots of information leaflets on the ward, but they don't give you the evidence base. Most of the information on the wards is very patient-focused. There aren't a lot of teaching materials for students

AO (How do they expect their nurses to look for research then?)

When you get a job, you have access to the Internet- so I assume nurses will use the Internet to look for information. **I wouldn't say that it's widely advertised on the ward as to where to look for the evidence base.** They do have training sessions where you get new information. You tend to find that these are run by ward sisters, or a specific link member who will have been to a training day. Their role is to disseminate the information to the other ward staff with focus groups etc.

You do tend to get a link role for certain areas on the wards when you get a job. It's good for **your career development and a good way of learning and of course you have teaching skills.**

AO(How much time do you have on the ward to look things up)

No there isn't really time on the wards. I think it tends to be in your own time. If I were interested in something then I would look it up. It depends what area you are working in. In the surgical areas you don't have time to stop, but then when I worked on a cardiology work then you did have time to stop and look things up if you wanted to. I've used BNF- and some other materials in the ward, but I can't say I've ever looked at the evidence base

AO where do you look?

I do use Google often as an initial starting point, but of course the **quality of information** is the issue here. By using the searching tools in the University you can **assess the quality more easily.** When you're on the wards there might be the evidence base that everyone is taught, but then there might be a few people who look at **new data and its quality**

Codes

Purple = Related to information literacy on the wards

Yellow = Barriers to IL

Green = Quality of information

Red = Professional development

