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Supporting therapist engagement in evidence based practice:
Developing a continuing education programme through participatory
action research

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BA (Anthropology), Post-graduate diploma (Occupational Therapy),
MA (Occupational Therapy)

A thesis submitted to the School of Clinical Therapies
in partial fulfilment of the requirements for the degree of
Doctor of Occupational Therapy
at the
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DECLARATION

I hereby certify that the thesis I am presenting for examination for the degree of

Doctor of Occupational Therapy

in the School of Clinical Therapies,

National University of Ireland, Cork

is solely my own work

other than where I have clearly indicated that it is the work of others.

I also confirm that this work has not been submitted in part or whole for any other degree elsewhere.

I consider this work to be a complete thesis fit for examination.

Signed _____

Date _____

ABSTRACT

Therapists find it challenging to integrate research evidence into their clinical decision-making because it may involve modifying their existing practices. Although continuing education (CE) programmes for evidence-based practice (EBP) have employed various approaches to increase individual practitioner's knowledge and skills, these have been shown to have little impact in changing customary behaviours. To date, there has been little attempt to actively engage therapists as collaborators in developing educational processes concerning EBP. In this thesis a participatory action research (PAR) approach to educating practicing clinical therapists is presented.

This research involved two distinct time frames. First, a preliminary three phase EBP educational programme was developed, over two-years, in collaboration with an occupational therapy service in the Republic of Ireland. This preliminary work helped to inform the main study which consisted of three stages and was conducted over a subsequent two-year period.

The first stage of the main study involved developing the framework for a new post-qualification multi-disciplinary MSc module based on a scoping review of healthcare literature regarding: 1) educational approaches to EBP; 2) adult learning theory; and 3) the threshold concepts teaching and learning construct.

In the second stage, the researcher (who was module leader) collaborated with seven clinical therapists (one occupational therapist, four physiotherapists and two speech and language therapists) enrolled in the *Implementing Evidence in Therapy Practice (IETP)* MSc module to further monitor and adapt the learning programme over ten weeks. The participating therapists actively engaged in the PAR iterative cycles of reflecting→ planning→ acting→ observing→ reflecting with the researcher. Non-participant observer notes taken during each class and researcher field notes written after each class further informed this stage of the study. The nominal group technique (NGT) was used to gain consensus on adapting the content and learning approaches. Findings from stage two resulted in changes to the IETP module, as it unfolded, that were meaningful to the therapists.

The third stage of the main study included mixed methods to evaluate the IETP module and its influence on therapists' subsequent engagement in EBP activities. Data were gathered at two time points: 1) immediately on completion of the module; and 2) four to five months later. At the first time point, i.e. the final day of the module, the participants: a) completed an EBP knowledge, skills, attitudes and behaviours questionnaire that they had also filled out on the first day of class; b) completed a written module evaluation form for the study university; and c) engaged in a group

discussion to evaluate the module. The questionnaire data was analysed using SPSS computer software. Comments made on the module evaluation forms and during the group discussion were collated onto a master list and analysed. At the second time point, i.e. four to five months post module, each participant took part in one individual interview where they reflected on the module and the transfer of the learning into their professional practice. Qualitative data were analysed inductively using a strategy outlined by Creswell (2003).

Findings from the questionnaires revealed that post-module, and irrespective of the number of years since qualification, the therapists self-reported: a) increased EBP knowledge and skills; b) more positive attitudes towards EBP; and c) feeling more capable to overcome barriers to engagement in EBP activities in their workplaces. From the module evaluation forms and group discussion four categories of findings emerged as being important to the therapists: 1) characteristics of the learning environment; 2) acquisition of relevant EBP skills; 3) nature of the learning process; and 4) acquiring confidence.

In the findings from the interview data two themes and sub-themes emerged which expanded on the four categories already identified. Theme 1: Experiencing the learning (sub-themes: module organisation; learning is relational; improving the module); and theme 2: Enacting the learning through a new way of being (sub-themes: criticality and reflection; self agency; modelling EBP behaviours; positioning self in an EB work culture). The therapists' perspectives had by then shifted from that of a learner to that of a clinician constructing a new sense of self as an evidence-based practitioner.

Findings from this study underline the importance of the process of socially constructed knowledge and of empowering learners through collaboratively designed continuing education programmes. In the student-driven learning environment, therapists chose repetitive skill-building and authentic problem-solving activities which reflected the complexity of the environments to which they were expected to transfer their learning. These findings have implications for educators designing EBP continuing education programmes, during which students develop professional ways of being.

GLOSSARY OF ABBREVIATIONS

AHP	Allied Health Profession
AOTI	Association of Occupational Therapists of Ireland
AR	Action Research
ASHA	American Speech-Language-Hearing Association
BB	Blackboard
CAAB	Children Acts Advisory Board
CAP	Critically Appraised Paper
CAT	Critically Appraised Topic
CE	Continuing Education
CEHP	Continuing Education in the Health Professions
CME	Continuing Medical Education
COTEC	Council of Occupational Therapists for the European Countries
CPD	Continuing Professional Development
CTC	Commitment To Change (statements)
D.Occ.T	Doctorate in Occupational Therapy
DoHC	Department of Health and Children
EB	Evidence Based
EBM	Evidence Based Medicine
EBP	Evidence Based Practice
ETR	Education, Training and Research (HSE committee)
HSCP	Health and Social Care Professionals
HSE	Health Service Executive
IASLT	Irish Association of Speech and Language Therapists
IETP	Implementing Evidence in Therapy Practice (module)
ISCP	Irish Society of Chartered Physiotherapists
IT	Information Technology
KSAB	Knowledge, Skills, Attitudes and Behaviours
KT	Knowledge Translation
KTA	Knowledge Translation in Action
MOU	Memorandum Of Understanding
MSc	Master of Science

NAIRTL	National Association for the Integration of Research, Teaching & Learning
NGT	Nominal Group Technique
NPO	Non Participant Observer
OT	Occupational Therapist, Occupational Therapy
PAR	Participatory Action Research
PBR	Practice Based Research
PCCC	Primary Care / Community Care
ppt	powerpoint (slides)
PT	Physiotherapist
RCT	Randomised Control Trial
RD	Reflexive Diary
RFN	Researcher Field Note(s)
SLT	Speech and Language Therapist
SoP	Scholarship of Practice
SoTL	Scholarship of Teaching and Learning
WCPT	World Confederation for Physical Therapy
WFOT	World Federation of Occupational Therapists

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PAPERS, POSTERS, WORKSHOPS AND PUBLICATIONS

A number of conference papers, conference posters, workshops and one publication have resulted from work for this thesis.

Papers

Engaging with students through action research to develop learner-centred approaches to evidence-based practice, co-authors G. Chard and E. Savage, Council of Occupational Therapists for the European Countries (COTEC) 9th Congress, Stockholm, Sweden, 24th May 2012.

Occupational therapists as research consumers and research producers: The new clinical imperative. Association of Occupational Therapists of Ireland (AOTI) annual conference, Mullingar, 28th April 2012.

Collaboratively designing a module with students as co-researchers, co-authors G. Chard and E. Savage, National Association for the Integration of Research, Teaching and Learning (NAIRTL) annual conference, Galway, Ireland, 9th June, 2011.

Building an evidence-based practice culture in a primary care/ community care team, co-authors M. Kelly, C. Kearns, N. Kiernan, B. Roberts, Association of Occupational Therapists of Ireland (AOTI) annual conference, Dundalk, 8th April 2011.

Lost in knowledge translation? Finding learning strategies which support evidence-based practice, co-authors G. Chard and E. Savage, Association of Occupational Therapists of Ireland (AOTI) annual conference, Dublin, 28th May 2010.

Empowering therapists to be evidence-based practitioners, co-author N. Ruddigkeit, Association of Occupational Therapists of Ireland (AOTI) annual conference, Kilkenny, 1st May 2009.

Developing strategies for systematically embedding evidence-based practice in therapeutic decision-making. Council of Occupational Therapists for the European Countries (COTEC), 8th Congress, Hamburg, Germany, 24th May 2008.

Posters

Using action research to develop learner-centred approaches to evidence-based practice, co-authors G. Chard and E. Savage, British College of Occupational Therapists (COT) annual conference, 14th June 2012, Glasgow, Scotland.

Lost in translation? Finding educational strategies supporting research translation into therapy practice, co-authors G. Chard and E. Savage, World Federation of Occupational Therapists (WFOT) 15th Congress, Santiago, Chile, 4-7 May 2010.

Designing the plane while flying it: Using collaborative action research to develop teaching approaches supporting therapists' engagement in evidence-based practice, co-authors G. Chard and E. Savage, American Association of Occupational Therapists annual conference, Orlando, Florida, 29th April, 2010.

Supporting therapists engagement in evidence-based practice through an inter-professional post-qualification Masters' programme, co-authors G. Chard and C. O'Sullivan, National Association for the Integration of Research, Teaching and Learning (NAIRTL) annual conference, Dublin, Ireland, 11th November, 2009.

Workshops

Practice Based Research. Series of four all-day workshops delivered with H. Lynch to two different cohorts of practicing occupational therapists January – September 2012. Workshops were funded by an HSE grant awarded to the Association of Occupational Therapists of Ireland.

Evidence-based practice in occupational science & occupational therapy. Three day workshop presented to new heads of occupational therapy departments being trained by the European Network of Occupational Therapists in Higher Education (ENOTHE), Krakow, Poland, 12th-14th January 2012.

How can we best use evidence to inform our clinical decision-making? One day workshop given at the invitation of the Hellenic Occupational Therapy Association, Athens, Greece, 4th June 2011.

Publication

Crausaz, J., Kelly, M. and Lee, S. (2011). Three educational approaches to enhance the evidence-based practice behaviour of Irish occupational therapists. *WFOT Bulletin*, 64(2), 11-17.

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Encouragement from colleagues helped me to see new opportunities in every setback; and my family's patient understanding allowed me to stay focused and keep going.

Additional thanks to NAIRTL for the grant to fund expert panel costs and to the members of that panel.

DEDICATION

This thesis is dedicated to my grand-daughter, Zoé, who will one day soon begin to choose which road(s) of life-long learning and discovery she wishes to pursue.

CHAPTER ONE - INTRODUCTION

1.1 Forward

The idea for this study arose from a long-standing personal concern about why clinical therapists appeared to rarely embed current research findings into their clinical decision-making. As a clinician and therapy services supervisor in the 1980s through to the beginning of this century, I was sometimes disheartened by the seeming gap between best practice and actual practice. I saw intervention approaches, for which there was little or no credible research support, continuing to be used for decades. Many clinicians seemed reluctant to change practices to which they had become accustomed. Most of my colleagues relied on their clinical experience, based largely on their own and fellow therapists' anecdotal opinions, customs and values, as their principal source of evidence. Attempts on my part to introduce new, research-based interventions were met with much scepticism. In particular, therapists with more than 10 years experience felt that new research findings were not relevant to treatment planning for their specific clients. I came to realise that integrating current research into clinical practice was not a simple linear process. Making therapists aware of the research evidence supporting certain practices was not enough for those practices to be implemented, even if the necessary resources were made available. And yet at the same time, I intuitively felt that most therapists wanted to provide their clients with the best healthcare possible, hence my interest in identifying and overcoming impediments to evidence-based practice. Exploring how clinical therapists could best be supported in integrating research evidence into their clinical decision-making became the key focus of this study. As I am a university lecturer, I was particularly interested in the role that education, and specifically post-qualification continuing education, could play in facilitating the translation of research evidence into practice.

This thesis describes an unfolding research process that consisted of two distinct time periods as I trialled two different educational approaches with therapists, in my efforts to support them in transitioning from being primarily experience-based to being more

research evidence-based practitioners. I re-oriented my educational approach when I realised that I had under-estimated the complexity of the issues and processes involved. When challenges arose during succeeding steps of the research process, I explored different bodies of literature to inform my reflections and subsequent decision-making. Hence, in this thesis there is no one literature review chapter, rather the critical discussion of relevant research is integrated throughout the thesis. The scope of the reviewed literature is multi-disciplinary as the main study involved practising occupational, speech and language and physiotherapists.

Chapter 1 places my practice concern within the framework of a healthcare-wide debate about which evidence sources should be favoured in clinical decision-making. The definition of the evidence-based practice (EBP) healthcare paradigm documented in the literature, is first discussed from an historical perspective. The reasons for the promotion of EBP by governmental and professional bodies, both internationally and in Ireland, are explored next. The reactions of clinical therapists to the EBP imperative, and its endorsement of a specific triad of evidence sources to the possible detriment of therapists' preferred sources, are explained in detail. This is intended to help the reader contextualise some of the difficulties that arose during a preliminary phase, service development project; difficulties which impacted the decision-making process and ultimate direction of the main study.

Chapter 2 begins with an overview of an occupational therapy service, hereafter referred to as Sunnyview (a pseudonym), where I trialled an initial EBP educational programme. This two-year preliminary work with the five occupational therapists and manager at Sunnyview was conducted in adherence to university taught module requirements for a Doctor of Occupational Therapy (D.Occ.T). As a result, our academic-clinic collaboration was framed as a service development project, rather than formal research. Chapter 2 continues with a discussion of the literature I consulted regarding adult learning principles and constructivist learning approaches. This review focused on how adults integrate new learning and why it should ideally be experiential in nature. The review considered how to foster a learning environment which was conducive to EBP knowledge and skill acquisition. These adult learning principles, and the Sunnyview therapists' self-identified EBP knowledge and skill needs, informed the design of twelve EBP educational sessions, each of 1.5 hours duration. As the learning was meant

to be self-directed, therapists chose whether to attend sessions, whether to do suggested readings, and whether to participate in the session's learning activities. This experience helped me to appreciate the shortcomings of a loosely-structured educational approach that did not require the active involvement and commitment of the learners. Abstract discussions about different EBP skills, without concomitant demonstrations of actually using those skills, did not appear to lead to an integration of the new learning into practice. I also became aware of the importance of un-addressed issues, such as attitudes towards change and team dynamics, which affected whether therapists embraced the use of new research evidence. Chapter 2 concludes with my realisation that an educational approach that was not work-based might better support therapists' engagement in EBP activities. To this end, I decided to explore in the main study for this thesis how a university-based, inter-disciplinary post-qualification module might foster a more challenging learning environment that was also supportive and rewarding.

The education literature also underpins the rationale for the participatory action research (PAR) methodology detailed in Chapter 3. Doing PAR allowed for the systematic investigation and evaluation of the effectiveness of the chosen university-based educational approach. The unfolding nature of the PAR process gave the participating therapists a voice regarding decisions taken about the teaching and learning strategies and content of the module, within the constraints of university guidelines. Issues arising regarding data generation methods, analysis and trustworthiness are discussed in Chapter 4.

As the main study of this thesis involved the conceptualisation, delivery and assessment of a new university-based EBP module, *Implementing Evidence in Therapy Practice* (IETP), I further explored the literature specific to healthcare education and the acquisition of EBP knowledge and skills. This scoping review informed the preparatory development of the content and structure of the module. Chapters 5, 6 and 7 detail the three stages of the chosen action research process: designing the IETP module (Chapter 5), conducting the module (Chapter 6) and evaluating its influence on therapists' engagement in EBP (Chapter 7). Based on these findings, the final chapter raises questions about whether a therapist-focused educational approach is the optimal one or whether a more systems-focused approach might provide additional benefits. The EBP literature description of clinicians as research evidence consumers, but not also research

generators, is challenged and alternative continuing education models for EBP are considered.

1.2 Defining evidence-based practice

Although there is no universal definition of evidence-based practice (EBP), it is commonly understood to involve the integration of a triad of evidence sources in the clinical decision-making process: practitioner expertise, the best current external evidence and the patient's values and preferences all within the context of available resources (Dawes et al., 2005; Sackett, Rosenberg, Gray, Haynes & Richardson, 1996). EBP can be graphically represented as in Figure 1:

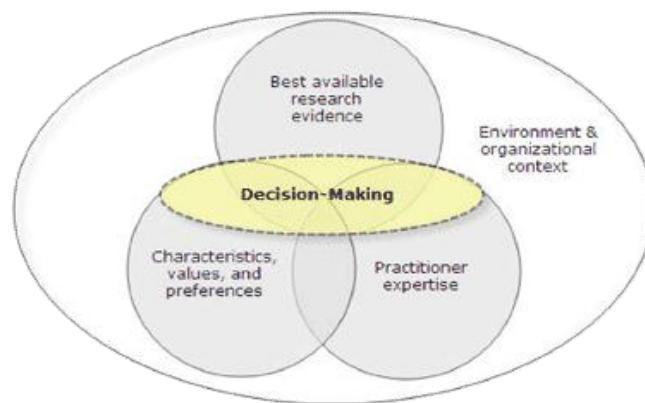


Figure 1 Evidence-based decision-making

Practitioner expertise is defined as the knowledge which individuals develop through clinical experience and seeing practice outcomes. Best external evidence is meant to encompass clinically relevant, patient-centred research. This external evidence is usually translated into practice by following a series of steps known as the EBP process or cycle (Dawes et al, 2005; Greenhalgh & Russell, 2006; Taylor, 2007):

1. Identify a knowledge gap and formulate a clinical question.
2. Efficiently locate the best, most current evidence to address the question.
3. Appraise the evidence in terms of validity, reliability and applicability to one's practice setting and available resources.
4. Integrate the appraisal with one's own clinical expertise and client preferences and apply evidence in practice.

5. Evaluate the impact of the evidence through reflection and/or practice outcomes.

Later a sixth step was added (Law, MacDermid & Telford, 2008):

6. Disseminate knowledge by advising others of the EBP cycle experience.

Through working with therapists, I have found that summarizing the EBP steps mnemonically with words beginning with A is helpful, as depicted in Figure 2.

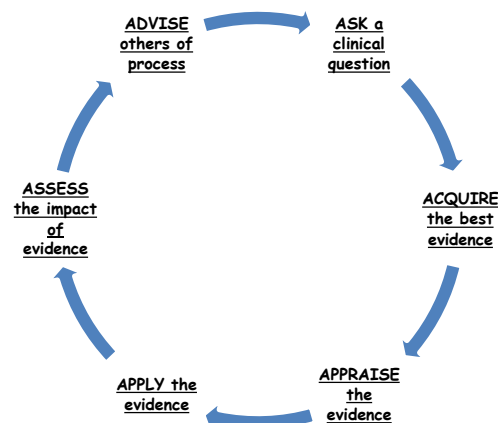


Figure 2 Concise steps of the EBP process

The relative merit of the different evidence sources in the triad has been much debated throughout the healthcare literature (Enderby, 2004; French, 2005a; Greenhalgh, 2002; Herbert, Sherrington, Maher & Moseley, 2001; Jones & Higgs, 2002; Kamhi, 2006; Lloyd, King Bassett, 2002; Ottenbacher & Tickle-Degnen, 2002; Ratner, 2006; Tonelli, 2010; Trinder & Reynolds, 2000; Wiles & Barnard, 2001). Writing from the perspective of nursing, French (2005c) maintains that there are four assumptions underlying research being deemed an important, if not the most important, evidence source for clinical practice:

1. That there are deficits in practice, composed of clearly identifiable problems, to which research will provide a single, best answer solution;
2. That research evidence is a neutral representation of reality whose use would not be influenced by the socio-cultural characteristics and contexts of its users;

3. That research is an inherent good and results in knowledge that is useful and beneficial to practising clinicians;
4. That the information from research can actually be applied to practice.

Similar concerns are addressed arise in the occupational therapy literature and are addressed through defining EBP as functioning within the larger framework of clinical reasoning and reflective practice. As described by Tickle-Degnen (2000a, p. 102):

Evidence-based practice [...] is like a toolbox of methods available to the occupational therapy practitioner to aid clinical reasoning. The toolbox consists primarily of methods designed to integrate current and best evidence from research studies into the clinical reasoning process.

The essence of EBP, according to Taylor (2007, p. 2), is:

that the decision process is explicit and therefore clearly articulated so that decisions can be explained to the patient/client and justified to colleagues and managers [...] Evidence-based practice should be viewed as a way of thinking critically about every intervention and action and, as such, is just one of the tools of clinical reasoning and reflective practice. However, because of the use of up-to-date evidence, evidence-based practice is a powerful tool.

EBP is a tool being promoted since the 1970s, according to an editorial in the *The Lancet* (1995), as foundational to a movement that has grown from “... a substantive whisper to a strident insistence that it is improper to practice medicine of any other kind” (p. 785). Not everyone has agreed with the last part of this statement. EBP, however, began first in medicine as a movement for more evidence-based medicine (EBM).

1.3 Brief history of EBP

While the testing of medical procedures for efficacy has existed for centuries; the findings from observation/ research were oftentimes met with indifference if not hostility. The existence of strong evidence does not ensure its uptake and subsequent changes in practice patterns (Clancy & Cronin, 2005; Graham et al., 2006). Just one example would be the promotion of hand washing for medical practitioners which began in the mid-19th century but which did not become established practice in all healthcare settings until well into the 20th century. Resistance to new ideas is

particularly strong if the research findings contradict customary beliefs, values and practices. Proponents of EBP seek to bridge the research – practice gap by advocating the “*conscientious, explicit, and judicious use of current best evidence*” (Sackett et al., 1996, p. 71) in everyday practice behaviours. A complex undertaking as demonstrated by the time lag between the publication of research findings and their use in actual practice, which is cited as being seven to ten years by Bannigan (2007) or even seventeen years by Clancy and Cronin (2005).

So why in the late 20th century did EBP emerge as a new practice paradigm impacting almost all fields of health care and health policy? It may well be due to the increasing accessibility of information, the development of the health consumer lobby and a concomitant health litigation culture. High profile cases of alleged medical malpractice have resulted in an emphasis on the need for health professionals to make the knowledge base supporting their clinical decisions explicit. R.B. Hayes at McMaster University in Ontario, Canada was an early promoter of EBM along with other physicians in Canada and the U.K. including Archie Cochrane known for the Cochrane Library of EBM databases. They sought to reframe what constituted best practice in the exercise of clinical judgement to assure quality healthcare (Haynes, Devereaux & Guyatt, 2002; Sackett, Rosenberg, Grey, Haynes & Richardson, 1996). Throughout the 1980s and 1990s and continuing into the first decades of this century, encouraging health professionals to maintain a critical attitude to their own practice and evidence was seen as a way to improve clinical services, reduce variation in service provision and make clinicians more accountable (Cusick & McCluskey, 2000; Unsworth, 2011; Reilly, 2004; Zipoli & Kennedy, 2005). Calls for practitioner accountability increased as changes were made in how health care was administered in response to increasing cost, managed care systems and shorter hospital stays. Clinical therapists also began to find themselves under pressure to justify the services they provided, by demonstrating the use of research evidence, without which their scope of practice might be reduced. This, in turn, could lead to a decrease in staffing levels and services provided (Holm, 2000; Lin, Murphy & Robinson, 2010).

Initially, proponents of EBP focused on encouraging individual practitioners to engage in the steps of the EBP cycle. An implicit assumption in this approach is that the individual therapist, in contrast to the group or organisation, is the most important factor

impacting the use of research findings in practice. However, a growing appreciation of the complexities involved in improving the uptake of research evidence by clinicians led to a broadening of the discussion at the beginning of this century (Chard, 2005; Clancy & Cronin, 2005; French, 2005a, 2005b; Ilott, 2003; Jones & Santaguida, 2005; Lencucha, Kothari, & Rouse, 2007; MacIntosh-Murray, Perrier, & Davis, 2006). The definition of EBP evolved from that originally proposed in 1996 by Sackett et al. with its mention of the research evidence and clinical expertise elements of the evidence triad to an expanded version in 2005 by Dawes et al. which acknowledges the role of economic factors: *“These [EBP] decisions should be made by those receiving care, informed by the tacit and explicit knowledge of those providing care, within the context of available resources”* (p. 4).

Nonetheless, even the expanded definition of Dawes et al. does not adequately account for all variables outside the control of the individual clinician. French (2005a) found from her study of clinical nurse specialists trying to construct EB guidelines for nursing practice, that the accomplishment of EBP requires diverse skills. These include:

- translating evidence into a meaningful format for practice;
- mediating the values, preferences and working practices of multiple stakeholders;
- negotiating organisational complexity and the management of professional boundaries;
- coordinating inter-organisational and inter-agency working.

As Ilott (2003) succinctly observes, *“even when the best available evidence is known, organizational and economic factors militate against professionals changing their established practice”* (p. 352). Consequently, the discussion of how to increase research utilisation, i.e. the use of research findings in practice, began to embrace a broader systems-level approach. The individual practitioner was positioned not only within the environmental dynamics of teams and organisations, but also within the inter-play between knowledge producers and knowledge users. This expanded construct is referred to as knowledge translation (KT)¹ (Law, Missiuna & Pollack, 2008; Pentland, Forsyth, Maciver, Walsh, Murray, Irvine & Sikora, 2011).

¹ Particularly in Canadian-based occupational therapy, the terms knowledge transfer, knowledge exchange and knowledge translation are in ascendancy (Law, 2010; Law, MacDermid, Vrkljan & Telford,

The importance of viewing EBP from both an individual practitioner and a systems-level² perspective will be returned to repeatedly in this thesis. A dual individual/systems focus is also apparent in the approach of governmental bodies and health care disciplines to EBP.

1.4 The professional imperative of EBP

Governmental bodies and health care disciplines strongly advocate the EBP healthcare paradigm. For example, within the Irish health care context, the Health Service Executive's (HSE) Transformation Programme 2007-2010 prioritises having evidence based prevention programmes and treatments on the premise that they provide better outcomes and survival rates for patients (HSE, 2006). The HSE maintains an updated EBP section on their website with links to EB methods and tools as well as sources of evidence. Additionally, in 2008 the HSE established a committee for education, training and research (ETR). Their 2009 report (HSE, 2009) laid out the ETR committee's terms

2008; Law, Missiuna & Pollack, 2008; Lencucha, Kothari & Rouse, 2007; MacDonald et al., 2008; Metzler & Metz, 2010a, 2010b). Estabrooks, Thompson, Lovely & Hoffmeyer (2006) define knowledge translation so broadly that it encompasses nearly every term used in the past 30 years when discussing evidence-based decision-making. These include: research utilisation, innovation diffusion, knowledge transfer, knowledge exchange, research dissemination, research implementation and research uptake. This does not mean, however, that there are no distinctions between terms such as knowledge transfer, knowledge exchange and knowledge translation. Knowledge transfer is probably the most commonly used term, especially in fields outside of health care. The knowledge transfer process, though, is usually described in uni-directional terms. Knowledge flows from knowledge producers to stakeholders. In addition, knowledge transfer may or may not include the actual use of the knowledge (Graham et al. 2006). In contrast, knowledge exchange is implicitly a multi-directional process between knowledge producers (the community of researchers) and one or more of three types of knowledge users: knowledge consumers (the community of practitioners), knowledge beneficiaries (the community of clients) and knowledge brokers (a community of health organisations or policy makers who facilitate knowledge transfer across boundaries) (Law, Missiuna & Pollack, 2008). The preferred term in the domain of health appears to be knowledge translation, particularly if the focus is on a systems level. However, if practitioners, rather than researchers or health educators, are the projected audience, the term EBP is still most commonly used. This is probably due to the term EBP already being familiar to clinicians; it takes time for new terms to gain acceptance. Nonetheless, discussions about EBP among clinicians often addresses issues such as research utilisation, innovation diffusion, knowledge transfer, research dissemination, research implementation and research uptake. As this thesis describes an educational approach developed collaboratively with practitioners, the term EBP and EB work culture will generally be employed.

² For the purposes of this thesis, a systems-level perspective will mean that the focus is on either a team, or a health delivery organisation. A systems-level perspective will imply that the emphasis is on promoting a research culture and the utilisation of research at all levels in an organisation. In the literature, however, the distinction between the individual and a system is not always clear. For example, Bannigan's (2007) research utilisation implementation model notes the importance of managerial support, resources and a vague readiness for change, but does not specifically state whether these apply to an individual practitioner, a team, an entire organisation or all of the above.

of reference and stressed that health services research and EBP are central to improving HSE services.

The Department of Health and Children (DoHC) Expert Group on Mental Health Policy (2006) and the Mental Health Commission (2007) have authored policy statements which endorse EBP. The DoHC (2008) has also published a document outlining the importance of developing research capacity and resources in the therapy professions in Ireland, so as to promote an evidence-based health care culture. The Children Acts Advisory Board (CAAB) published a report in 2009 making recommendations about how to increase EBP among practitioners in children's services (child health and welfare, education, justice and community and voluntary organisations). These latter two reports address EBP from an organisational perspective. In particular, the CAAB report stated that the barriers to organisational use of research included (p. 25):

- lack of a research culture
- failure to value research
- lack of resources to promote research use
- culture of blame and reaction rather than reflection
- reliance on oral exchange of information.

The reported facilitators of organisational research utilisation were (p. 26):

- promotion of a research culture that demonstrates the value placed in research and research based innovations
- provision of resources to support research dissemination and utilisation
- provision of research training
- basing policies and protocols on research evidence
- developing specific research roles
- providing incentives and developing performance indicators that value research use.

Professional organisations appear to have more of an individual practitioner, rather than organisational, focus. For example, the American Speech-Language-Hearing Association (ASHA) (2005) issued an official policy document which states that audiologists and speech-language pathologists (as speech and language therapists are

called in America) “*integrate the principles of EBP into their clinical decision-making process*” (p. 2). It is interesting that the wording is such that it gives the impression that they already routinely engage in EBP, rather than EBP being a goal still being strived towards. The Irish Association of Speech and Language Therapists (IASLT) has post-qualification continuing professional education (CPE) requirements, but does not yet specifically advocate EBP (2009). The World Confederation for Physical Therapy (WCPT) (2002) and the Irish Society of Chartered Physiotherapists (ISCP) (2006) advocate the incorporation of the principles and philosophy of EBP into pre and post qualifying education programmes. Similarly, the code of ethics and standards of practice of the World Federation of Occupational Therapy (2005) and Association of Occupational Therapists of Ireland (AOTI, 2008) state that occupational therapists should base their decision-making on knowledge, clinical reasoning and research evidence with particular stress placed on introducing new research advances into practice. AOTI has also put structures in place to support practising Irish occupational therapists in acquiring the knowledge and skills that are foundational for being EB therapists. In 2010, AOTI received a grant from the HSE to conduct free one-day workshops for occupational therapists on EBP in six different regions of Ireland (Crausaz, Kelly & Lee, 2011). In 2011 AOTI received a second grant for four-day workshops (sessions spaced over nine months) to be delivered to occupational therapists in four different regions of the country and designed to support therapists in doing practice-based research.

Despite strong endorsement of EBP by governmental and professional bodies, and hence its immediate relevance for practising clinicians, translation of the EBP paradigm into therapy settings has not been without controversy.

1.5 Therapists’ preferred sources of evidence

Debates in the literature on the reasons for therapists’ favouring one evidence source in the EBP triad over another have generally addressed four inter-related questions:

1. What are therapists’ attitudes towards EBP?
2. What are therapists’ actual evidence sources when engaging in clinical decision-making?

3. What are the EBP skill levels of individual therapists which might be impacting on their evidence choices?
4. What are the workplace-embedded barriers to engaging in EBP?

Answers to the first question have been reported from the perspectives of both academics and practising therapists. This more theoretical academic debate has revolved around issues regarding what constitutes best evidence. Though the original definition of EBP mentions a triad of evidence, some academics have highlighted concerns about the perceived emphasis on the research element of EBP leading to a possible de-valuing of clinical experience and the preferences and views of the clients (Blair & Robertson, 2005; Craik & Rappolt, 2003; Jones & Higgs, 2002; Kamhi, 2006; Lloyd, King, & Bassett, 2002; Ottenbacher & Tickle-Degnen, 2002; Ratner, 2006; Reagon, 2006; Trinder & Reynolds, 2000; Wiles & Barnard, 2001). This poses difficulties in the eyes of some who have argued that research cannot capture the complex nature of therapy interventions and what has been termed the art of clinical practice (Creek, Illott, Cook, & Munday, 2005; Duncan, Paley & Eva, 2007; Fish & Coles, 1998; Lambert, Harrison & Watson, 2007). For example, Christiansen and Lou (2001) complain that the positivistic tradition of studying objectified phenomena contains an inherent bias based on the assumption that the unobservable is unimportant. Beecham (2004) maintains that an overly research-focused EB approach risks being a reductionist process with a real potential for doing harm.

As possible indication of a weighting in favour of empirico-analytical research evidence, there is the often-cited traditional hierarchy of evidence graphically represented as a two-dimensional triangle. Systematic reviews of randomized control trials (RCTs) are at the apex of the hierarchy, observational studies & case studies are situated lower down, and personal (practice-experience based) opinion is placed at the bottom (Greenhalgh, 1997). Initially, qualitative research was oftentimes not included, though EBP authorities like Greenhalgh (2006) now state that qualitative studies are “*as valid and as necessary as the more conventional quantitative studies*” (p. 43). An alternative research model has recently been proposed by Tomlin and Borgetto (2011). Their multiple hierarchy three-dimensional pyramid integrates quantitative (experimental and outcome research) and qualitative methodologies. Their model is more aligned with an EBP paradigm valuing all three sources of evidence and therefore

better reflects the clinical therapy professions' epistemology. An epistemology exemplified by Beecham (2004) when she describes how these professions' belief systems endorse the importance of a client's subjectively experienced life-world being acknowledged and valued. Occupational therapy theorists have also been very vocal in their support of practice-based experience, oftentimes termed craft-based knowledge, as an esteemed form of evidence (Rappolt, 2003). Blair and Robertson (2005) suggest that one manner of maintaining a balance between research knowledge and craft knowledge is to use clinical reasoning skills based on reflexive practice. They define reflexive practice as necessarily incorporating client priorities. This idea, also espoused by Taylor (2007) and Tickle-Degnen (2000a), is developed further by Bannigan and Moores (2009) when they suggest integrating reflective practice and evidence-based practice in such a way that their complementary qualities form what they term a model of professional thinking.

Therapists themselves, however, do not speak in terms of theoretical models when describing their attitudes towards EBP; rather their attention is often focused on more prosaic issues. For example, while many clinicians' attitudes towards EBP seem to be evolving from viewing EBP as a threat to traditional practice to it being an opportunity for professional growth, they sometimes frame this opportunity in terms of protecting their profession's scope of practice. Wiles and Barnard's (2001) study of 56 physiotherapists in the U.K. highlighted that some therapists view embracing EBP as a sort of defensive manoeuvre in order to compete with other professions which might lay claim to similar areas of expertise and who, it was feared, might be gathering evidence quicker than were physiotherapists. Another perceived advantage cited by participants in this study was the belief that EBP would enable therapists to provide clients with the opportunity to make informed choices about the treatment options on offer and thereby reduce the risk of litigation. But then, these same issues have been discussed in forums of the American Occupational Therapy Association since the beginning of this century (Holm, 2000; Lin, Murphy & Robinson, 2010).

In other respects, clinicians' attitudinal comments reflect concerns similar to those expressed by academics. Reagon, Bellin and Boniface (2008) conducted a qualitative study investigating the meanings attributed to EBP by 21 occupational therapists in the U.K. Though the researchers referred to Taylor's (2007) framing of EBP within a

process of clinical reasoning which draws on multiple evidence sources, they found that practitioners associated EBP almost exclusively with the use of research findings in clinical decision-making. Even though these clinicians ranked research according to traditional evidence hierarchies, they described occupational therapy as a “*touchy, feely profession*” (p. 431) rarely amenable to proof by numbers. Participants in the study highlighted what they perceived as a ‘tension’ between client-centredness and EBP. Nonetheless, these same participants recognised the existence of an EBP imperative and anticipated that they would need to begin justifying their clinical decision-making through producing evidence. Although data for the above-cited doctoral study (Reagon, 2006) was gathered around 2004, academics (Tickle-Degnen, 2000a, 2000b, 2000c; Taylor, 2003) were much earlier discussing the role of reflection and clinical experience in the EBP process. This would appear to indicate that there is a theory-to-practice delay regarding newer definitions of EBP. In my experience with practitioners during both the preliminary service development project in 2006-08 and the main research study in 2009-10, I found that Irish clinicians still tend to equate EBP solely with research evidence. The most experienced therapists expressed ambivalent feelings about the applicability of the EBP paradigm to their own daily practice for the reasons cited above.

Many of the 21st century international and Irish studies researching therapists’ attitudes towards EBP have employed quantitative methodologies where data are collected through postal or internet questionnaires. In 2001, Curtin and Jaramazovic surveyed 500 occupational therapists working in England. They reported that these therapists a) were generally positive about EBP; b) felt that engaging in EBP was a professional duty; c) believed that it would raise the professions’ profile; and d) agreed that EBP would help justify and improve the quality of interventions. Echoing the later findings of Reagon, Bellin and Boniface (2008), 45% of the clinicians viewed EBP as conflicting with client-centred practice. And while 90% of the therapists did not believe that EBP would “*remove the creative aspect of the job or make practice too narrow*” (p. 218), an unspecified majority of the respondents still considered clinical experience to be more important than research as an evidence source for clinical decision-making. Dysart and Tomlin (2002), who surveyed 209 American occupational therapists, found that it was the therapists with more than fifteen years of clinical experience who most frequently believed that research conclusions could not be translated into treatment plans for

individual clients. A study of 131 members of the American Occupational Therapy Association (Cameron et al., 2005) also found that as the years of practice increased, the use of research evidence in making clinical decisions decreased. The Cameron et al. study additionally found that “*the more educationally advanced the practitioner becomes, the less likely he or she is to rely on a scientific basis for treatment*” (p. 131). This latter finding is not reported in any other studies, however.

Although the often-cited Curtin and Jaramazovic (2001) and Dysart and Tomlin (2002) studies of therapists’ attitudes towards EBP date from the beginning of this century, their findings appear quite consistent both over time and across different countries and clinical professions. An Australian study of 650 occupational therapists (Bennett, Tooth, McKenna, Rodger, Strong, Ziviani, Mickan & Gibson, 2003) found that 96% considered EBP important to the profession. A study of 1000 American physiotherapists conducted by Jette et al. (2003) reported clinicians having positive attitudes about EBP, particularly younger and more recently qualified physiotherapists compared to those who were older or had been licensed longer. While EBP was deemed important for clinical decision-making, 84% of the respondents recognised the need to increase the use of research evidence in their daily practice. Forty-two percent acknowledged that there was a lack of strong evidence to support aspects of what they were presently doing. Zipoli and Kennedy’s (2005) survey of 240 American speech and language therapists cited similar findings. A recent Dutch study of 200 occupational therapists reports very positive attitudes towards EBP, particularly by those therapists working in teaching hospitals (Dopp, Steultjens & Radcl, 2012). Two recent, though small, Irish studies (Murphy & Robinson, 2009; O’Shea, 2011) surveying occupational therapists, also reported comparable attitudes.

Regarding attitudinal differences between therapists with varying amounts of professional experience, the two Irish studies taken together provide a comparison between the attitudes of long-qualified and recently-qualified therapists. In the Murphy and Robinson (2009) study, 42 of the 57 therapists were qualified for 5-40 years and held senior grade or manager level positions. Thirty per cent of the respondents initially qualified through a three year diploma programme (no longer offered in Ireland) which did not include a research component. By comparison, the O’Shea (2011) study focused only on 27 recently qualified therapists with less than 4 years experience. As part of a

four-year BSc or two-year MSc programme, these recent graduates all studied research methods and completed research papers. Interestingly, both the long-qualified and recently-graduated therapists reported nearly identical attitudes towards EBP. However, the two groups demonstrated a significant difference in their reliance on research evidence. This may be linked to the considerable differences in their self-perceived EBP skill levels, which draws attention to the second and third questions under consideration: What are therapists' actual evidence sources when engaging in clinical decision-making? And what are their EBP skills which may be impacting these evidence choices?

Studies have shown research, and internet databases, to be the form of evidence least used by health care practitioners, especially when compared to clinical experience (Bennett et al., 2003; Curtin & Jaramazovic, 2001; Humphris, Littlejohn, Victor, O'Halloran, & Peacock, 2000; McKenna et al., 2005; Pain, Magill-Evans, Darrah, Hagler, & Warren, 2004; Turner & Whitfield, 1997). When therapists do access research, Pringle (1999) found they tend to be selective in that they search for research that confirms what they already think, rather than that which might contradict current practice. Such an approach to practice validation would not conform to the EBP aim of challenging and changing outdated practice. International clinical therapy studies have demonstrated that most health professionals rely on their pre-qualification training, post-qualification practical courses, clinical experience and opinions of colleagues when engaging in clinical decision-making, oftentimes without additionally incorporating current research evidence (Bennett et al, 2003; Caldwell, Coleman, Copp, Bell & Ghazi, 2007; Gillam & Gillam, 2006; McCluskey & Cusick, 2002; Stevenson, Lewis, & Hay, 2004). Similar findings are reported in the two recent Irish studies as summarised in Table 1, which would confirm that globally therapists' preferred sources of evidence, like their attitudes towards EBP, have changed little in the past 10 years. One indicator of beginning change, however, is the shift in the utilisation of some evidence sources by recently qualified therapists. What is particularly noteworthy in Table 1 is the 20% greater use of current research evidence by recent Irish graduates, all of whom studied research methodologies and conducted research for their pre-qualification programmes.

Table 1 Evidence sources for decision-making used by Irish occupational therapists

Sources used very often/often/sometimes in past month	74% qualified 5-40 years (Murphy & Robinson, 2009)	Recently qualified (≤ 4 years) (O'Shea, 2011)
Entry-level OT education	60%	Not asked
Colleagues	91%	100%
Current research literature	56%	78%
Clinical experience	98%	100%
CPD courses	84%	81%
Textbooks	56%	19%

The significance of this difference is amplified when considered in conjunction with the Zipoli and Kennedy (2005) study. The latter researchers found that the first year of clinical practice was crucial in determining whether feelings of self-efficacy regarding EBP and consistent use of EB resources were sustained. They maintain that recent speech therapy graduates, who have post-graduate training in research methodologies, must actually witness the use of research evidence and have opportunities to access, appraise and apply best evidence during their first year of professional practice if EBP is to become embedded in their own customary way of working. A study of Irish occupational therapy students by Stronge and Cahill (2012) found that fieldwork educators not practising EBP was considered an important barrier to EBP by the students. At the same time, 80% of the students described themselves as EB practitioners and 87% reported being prepared with evidence when participating in fieldwork placements. This would appear to indicate that the difficulty lies not with current students/ recent graduates, but with longer qualified therapists. This is the third question under consideration: What are the self-designated EBP skill levels of individual therapists which might be impacting their evidence choices?

Surveys of therapists' EBP skills typically include questions about confidence levels regarding abilities to engage in the steps of the EBP cycle. The 'Acquire the best evidence' step requires database searching skills, which, in turn, assumes basic information technology (IT) abilities. Ratner (2006) underlines the importance of IT issues when she advocates what she terms greater information literacy. There is so much new evidence being generated that practitioners can quickly feel overwhelmed in trying

to keep current; over 20,000 health care journals are published each year (Grimshaw, Santesso, Cumpston, Mayhew, & McGowan, 2006). Such a volume can appear particularly daunting for those who possess inadequate database searching skills; a lack of basic IT skills is rarely reported nowadays. Upton (1999) maintains that a self-reported lack of IT skills frequently occurs with a concomitant self-perceived lack of competence in critically analysing research evidence. The Jette et al. (2003) study reported that 44% of the physiotherapists were not confident in their critical appraisal skills and 34% lacked confidence in their search skills. Another cited barrier was a self-described inability to transfer research findings to the respondents' specific client group. The Irish Murphy and Robinson (2010) study of mostly long-qualified occupational therapists had similar findings. Respondents reported "*limited critical appraisal skills*" and "*limited search skills*" following heavy workload and lack of time as personal impediments to engaging in EBP (p. 17). An additional barrier for international therapists is evidence written in a foreign language (Dopp, Steultjens & Radel, 2012; Ilott, Taylor & Bolanos, 2006).

American speech and language therapists (SLTs) do not cite insufficient EBP knowledge and skills as an impediment to engaging in EBP. This finding has been partially attributed to educational differences among the clinical therapies in the United States (Zipoli & Kennedy, 2005). The entry-level degree for speech and language therapists has been at Masters level for decades in the United States, compared with occupational and physiotherapists who moved much more recently towards graduate professional training programmes. Hence, for a long time SLTs have received graduate training in statistics and research methods probably resulting in strong skills in accessing, appraising and applying research evidence. The research of Jette et al. (2003) and Dysart and Tomlin (2002) also support this hypothesis.

In Ireland, it has only been since 2007 that all occupational, speech and language and physiotherapists have graduated from four-year Bachelor of Science or two-year Master of Science programmes, as opposed to the previous three-year diploma programmes. The impact of the lack of a research methods component in the diploma programmes is starkly demonstrated in the differing self-perceived EBP skill levels between long-qualified and recently qualified Irish occupational therapists as seen in Table 2. Clearly,

long-qualified Irish occupational therapists feel they have considerably fewer EBP skills than their younger, or less experienced, colleagues.

Table 2 Self-reported EBP knowledge and skills of Irish occupational therapists

Statement	Percent feel they possess skill (Murphy & Robinson, 2009) (74% qualified 5-40 years)	Percent feel they possess skill (O'Shea, 2011) (All qualified ≤ 4 years)
Able to generate a clinical question	47%	96%
Aware of and have used electronic databases	61%	96%
Able to undertake a computer search	60%	100%
Have general computer skills	91%	100%
Have critical appraisal skills	51%	96%
Able to review and evaluate practice	56%	93%

The discussion on which evidence sources are preferred for decision-making has until now focused on individual therapist factors. This is not meant to imply, however, that systems-level (workplace) factors are not equally important, or that one does not impact the other. As this thesis addresses the EBP educational needs of individual therapists, not how to lobby employers to support an EB work culture, many of the systems-level factors³ are outside the scope of this study. Hence only a few pertinent issues will be considered when answering the fourth question: What are the workplace-embedded barriers to engaging in EBP?

International researchers studying EBP behaviours consistently cite time as the greatest barrier for clinical therapists (Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Jette et al., 2003; Taylor, 2007; Zipoli & Kennedy, 2005). The Irish Murphy and Robinson (2010) study of occupational therapists cites large workload first and lack of time second. But then, a large workload leads to a greater lack of time for other things.

³ Commonly cited workplace-embedded barriers include: lack of protected time for reading research, lack of access to databases, large workloads and staff shortages and a workplace culture which places higher value on clinical experience than on research. Commonly cited enablers to EBP are support from management, support from OT colleagues, and support from colleagues from other disciplines (Dopp, Steultjens & Radel (2012).

As we have seen above, a large proportion of Irish experienced therapists don't feel they possess skills foundational to performing the steps of the EBP process and so when they are pressed for time they are probably even less likely to engage in EBP. This may partially account for therapists' preference for clinical expertise evidence, to the detriment of research evidence, in their decision-making.

Possible difficulties with the third evidence source, client values and preferences, are discussed in the literature, particularly from the viewpoint of doctors and nurses (Ford, Schofield & Hope, 2002; Sidani, Epstein & Miranda, 2006). In the clinical therapies literature, the ability of experienced practitioners (as opposed to students) to integrate both clinical expertise and client preferences into their clinical decision-making is assumed. Since it appears that it is the research component of the EBP triad that poses the most challenges for occupational therapists, I decided to concentrate my attention in this area. I surmised that as an educator, I might have a role to play in helping to improve the EBP knowledge and skills of clinical therapists interested in increasing their use of research evidence. It is also beyond the scope of one study to address all dimensions of EBP.

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1.6 Focusing on research utilisation

Research utilisation⁴ is the term most commonly found in the literature when referring

⁴ Most definitions of research utilisation are derived from the work of Estabrooks, such as the one proposed by Bannigan (2007): "*a process in which the valid products of research are applied directly, indirectly or persuasively to verify current practice or to change current practice*" (p. 196). Direct research utilisation is usually considered to mean that the research has been translated into an easily useable form such as a clinical protocol, algorithm or clinical practice guideline and applied fully, partially or in modified form in a clinical setting. With direct research utilisation, the research findings impact practice in a tangible and measurable way. Indirect research utilisation is where the research informs the practitioner in that it changes his/ her thinking but does not concretely translate into changed practices. Indirect research utilisation, therefore, has a less measurable impact on practice. Persuasive research utilisation is when the research is used to influence decision-makers on local, regional, national or international levels. Overall, research utilisation is primarily focused on results from specific research-based knowledge being used. However, there is another term, implementation research, employed by some health researchers in the study of psychological factors which may impact the healthcare professional's ability to use research findings effectively (Estabrooks, Thompson, Lovely & Hoffmeyer, 2006). Self-efficacy studies would fall into this category. Estabrooks et al. state that implementation research aims "*to uncover the influences on health care practitioners' beliefs, choices and decision-making, in order to identify what combination of methods would achieve the behavioural shifts required to improve practice*" (p. 28). The focus is more on what occurs in a practitioner's mind before or while research utilisation is taking place. Somewhat confusingly, others use the terms implementation, research implementation or implementation of research to describe the execution of the decision to put specific research knowledge into practice (Graham et al., 2006). There appears to be overlap in the use of all of these terms, however, as demonstrated by Bannigan's (2007) integration of several in her research utilisation implementation model. Over the years, many different research utilisation models have been

to the application of research findings to practice concerns. Focusing on this element of the EBP evidence triad, however, does not negate the importance of also acknowledging therapists' probable concerns about EBP and the rationale for their preferred evidence sources. As has been seen in the discussion above, many practitioners still hold the erroneous belief that EBP is only concerned with research evidence and is in contradiction with client-centred practice. Experienced therapists might welcome the opportunity to openly discuss the importance they attribute to all three elements of the EBP evidence triad. Having such a forum would allow them to first explore how they might integrate EBP into the larger framework of their reflexive practice or model of "*professional thinking*" (Bannigan & Moores, 2009, p. 342). Only then could therapists be expected to begin valuing research as much as clinical experience as an evidence source. This, in turn, might motivate especially long-qualified therapists to consider how research conclusions might be translated into treatment plans for their clients. There is little benefit in addressing clinicians' EBP knowledge and skill needs, without also recognising the impact of their attitudes, especially if the latter preclude them from valuing and utilising EBP.

A considerable amount of research has demonstrated that many therapists have substantial difficulties in locating, assessing and using research evidence (Bannigan & Birleson, 2007; Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Gillam & Gillam, 2006; Hammond & Klompenhouwer, 2005; Jette et al., 2003; Law & MacDermid, 2008; McCluskey, 2003; McQueen, Miller, Nivison & Husband, 2006; O'Connor & Pettigrew, 2009; Rappolt, 2002; Zipoli & Kennedy, 2005). Hence I decided to focus my educational efforts on improving therapists' foundational research utilisation skills so as to encourage positive attitudes about, and engagement in, EBP. I initially did this by collaboratively developing a pilot EBP educational programme with a team of occupational therapists within the framework of a service development project. I discuss this in the next chapter.

proposed (Brown & Rodger, 1999; Colquhoun, Letts, Law, MacDermid & Missiuna, 2010; Craik & Rappolt, 2003; Kitson, Rycroft-Malone, Harvey, McCormack, Seers & Titchen, 2008).

CHAPTER TWO - PRELIMINARY SERVICE DEVELOPMENT PROJECT

2.1 Introduction

In this chapter I will describe and analyse the strengths and weaknesses of a preliminary EBP educational programme collaboratively developed, over a two-year period, with an Irish occupational therapy service, hereafter referred to as Sunnyview (pseudonym). This exploratory work was done prior to developing the main study of this thesis and provided valuable insights into the framing of the main study.

The aim of this initial programme was to improve therapists' research utilisation skills in response to a service manager's request to establish an academic – clinical collaboration exploring EBP. This service development project was not conducted as formal research, but rather was the foundation for the content of three of the four taught university modules which form part of the D.Occ.T programme of study (Appendix 1). The EBP sessions at Sunnyview began after I had first consulted the literature regarding adult learning theories and the epistemological underpinnings of constructivist learning approaches, literature which I critically review in this chapter. I then describe the development of the collaboration which evolved over three different phases: 1) framing the project including assessing service EBP learning needs; 2) EBP skill development sessions; and 3) learning about how individuals respond to the need to change their customary work practices (Figure 3).

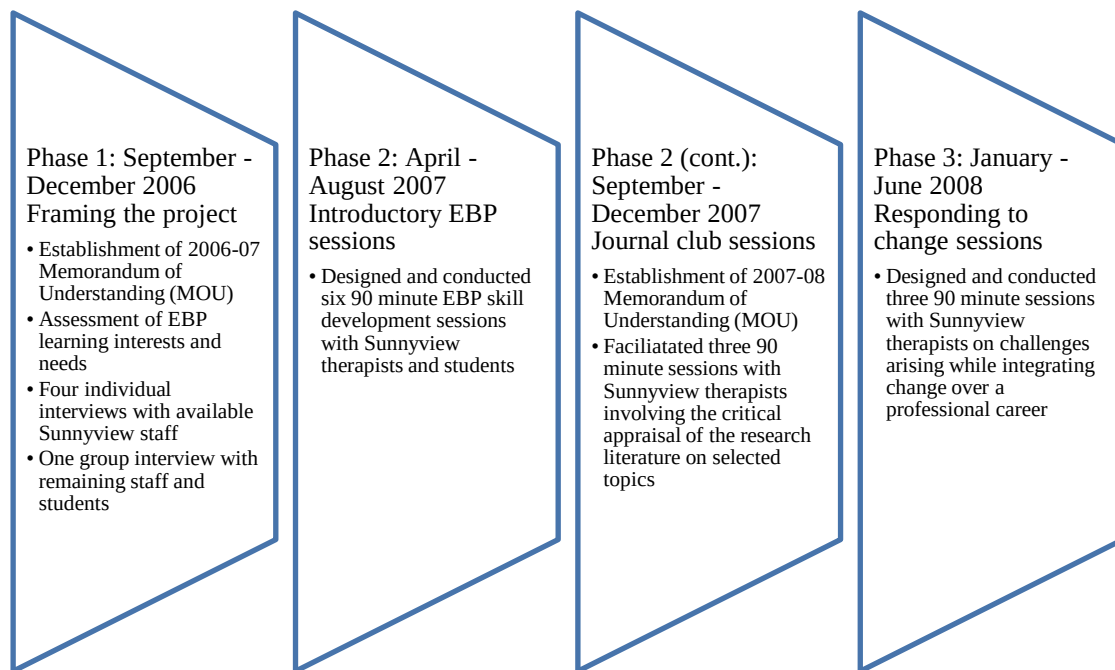


Figure 3 Timeline of Sunnyview collaboration.

Throughout this collaboration I submitted four written papers fulfilling the requirements for three different doctoral modules. In this chapter, summaries of this work form the basis of the discussion of the learning which I drew from each phase of the project and how it resulted in my decision to alter my educational approach for the main study. The chapter concludes with the research aims of my main study.

2.2 Adult learning principles and constructivist educational approaches

Adult learning theorists such as Malcolm Knowles (Knowles, Holton & Swanson, 2005) and Stephen Brookfield (1986) emphasise that adults learn differently than children. They maintain that any educational programme aimed at adults should be focused first on the learner, rather than on instructional design. Knowles defines the teaching approach of andragogy (andros being Greek for man) as being separate from that of pedagogy (pedo, Greek root word for child). Knowles introduced his andragogy model in the early 1970s, building on the work of Dewey (1933) and Lewin (1951) among others. In it he describes a number of core adult learning principles which he argues

must be addressed in all adult learning situations. They include (Knowles, Holton & Swanson, 2005, p. 3):

1. Learner's need to know (why, what and how)
2. Self-concept of the learner (autonomous, self-directing)
3. Prior experience of the learner
4. Readiness to learn (life related)
5. Orientation to learning (problem centred, contextual)
6. Motivation to learn (intrinsic value, personal/ professional payoff)

Knowles et al. underline the need of learners to 'own' the learning process in order to feel empowered. By owning they mean that the adult learners should be given opportunities to share control over the learning strategies. When adults are treated as collaborative partners in the learning, not only is the 'need to know' addressed, but the process appeals to a self-concept based on being independent learners. As much of the literature emphasises, EBP involves a commitment to lifelong, self-directed learning. Knowles et al. (2005) note the importance of integrating the learner's prior experiences, a founding principle that has long been espoused by many educational theorists (Argyris, 1982; Boud & Griffin, 1987; Dewey, 1933; Kolb, 1984; Schön, 1987). Savery and Duffy (1996) also argue the need of learners to own the learning process by providing learning opportunities that are experiential and problem-solving in nature.

Schön (1987), a learning theorist frequently cited in the health education literature, analysed the experiential basis of professional problem-solving. He theorizes about how professionals, through reflecting on past experiences, seek to interpret professional questions or conundrums (reflection-on-action). Schön maintains that professionals subsequently seek additional information (research, opinions of colleagues) which they integrate into their thinking. When professionals later find themselves in a similar situation they re-consider the applicability of the new knowledge (reflection-in-action). Schön's theory is commonly cited in the clinical therapy literature over the past 15 years as an explanatory framework for clinical reasoning (Brown, Esdaile & Ryan, 2003; Higgs, 1995; Schell & Schell, 2008).

Like Schön, Kolb (1984) encourages reflective learning. His theory of experiential learning describes a cycle comprised of four stages which are followed in sequence if successful learning is to take place. These stages are:

- Concrete experience (doing/ having an experience)
- Reflective observation (reviewing/ reflecting on the experience)
- Abstract conceptualisation (concluding/ learning from the experience)
- Active experimentation (planning/ trying out what one has learned)

I find both the Schön and Kolb models very relevant to EBP teaching and learning. Both emphasise the role of reflection in learning. As noted previously in the discussion of definitions of EBP in the occupational therapy literature, EBP is seen as “*just one of the tools of reflective practice*” (Taylor, 2007, p.2). Additionally, the experimentation stage of Kolb’s model requires that the learner apply what has been learned. EBP learning, following his model, would involve implementing problem-solving strategies that educate for capability (Fraser & Greenhalgh, 2001).

On examining the adult learning theory literature in greater depth, I became aware that most of the above-cited theorists were anchoring their ideas in a constructivist epistemology. Epistemology is concerned with how we know what we know. The American educator John Dewey (1933) was a constructivist, as were educational psychologists Vygotsky and Piaget. Piaget’s theories of child development are commonly taught in occupational therapy curricula. Both Vygotsky and Piaget maintain that children learn to know as they engage with the world around them and seek to make sense of it by creating meaning (Tryphon & Vone, 1996). Constructivism, then, focuses on the meaning-making of the human mind (Crotty, 1998). When this meaning-making takes into consideration the larger social context it is referred to as social constructivism, or, more commonly, simply constructionism⁵. Intuitively, the logic of

⁵ Constructionism is an epistemological stance oftentimes invoked by qualitative researchers. It has its roots in the philosophical writing of Heidegger and Husserl among others. Constructionism is embodied in many theoretical perspectives such as phenomenology and critical inquiry. Positivists maintain that by using appropriate methods of inquiry we can arrive at an accurate and certain knowledge of an objective truth. Constructionists, however, believe that “*all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context*” (Crotty, 2009, p. 47). Therefore, in the constructionist view, meaning is not discovered, but is rather constructed. In contrast to a positivist, a constructionist maintains that our world, including its objects, is indeterminate. Our world contains potential meanings, but the actual meanings are constructed by us humans. We do this during the process of engaging with the world in our attempt to interpret and make

anchoring the therapists' learning (i.e. constructed meanings about EBP) in their understandings about their [clinical] experiences appealed to me as one well familiar with the writing of Schön and Kolb. Much has been written in the adult learning literature which supports such a premise (Argyris, 1982; Boud & Griffin, 1987; Fish & Coles, 1998; Knowles, Holton & Swanson, 2005; Savery & Duffy, 1996). All of these theorists emphasise that learning is ideally grounded in life experiences which themselves take place within social contexts.

Savery and Duffy (1996) propose eight constructivist instructional principles that enable individuals to elicit meaning from their learning experiences (pp. 17-25):

1. Learning activities should be tied to a larger task or problem.
2. The learner should be facilitated in feeling ownership of the overall problem or task.
3. The task should be authentic in the sense that it has real world relevance for the learner.
4. The task and the learning environment should be such so as to reflect the complexity of the environment in which the learners will be expected to function at the end of the learning.
5. The learner should also have ownership of the process used in tackling the task or problem.
6. The learning environment should challenge the learner's thinking.
7. The learner should be encouraged to test existing knowledge / experiences against alternative views/ experiences.
8. Reflection should form an important part of the learning process.

sense of it. At the same time, we are born into a time and space-framed world of meaning that is bestowed upon us by our culture. And it is not just our thoughts that are constructed, our emotions are also. Consequently, from the constructionist viewpoint, meaning (or truth) is neither objective nor subjective. Rather, all human knowledge is merely a plausible way of viewing our world; there is no one 'true' way of seeing things. Even scientific knowledge is just one particular form of constructed knowledge designed to serve specific purposes. On an ontological level, constructionism does not deny that the world can exist without a human mind (e.g. dinosaurs probably existed millions of years ago), but maintains that meanings without a mind do not exist (it was humans who gave dinosaurs a name, attributed to them the associations we make about them).

Constructivism is somewhat different from constructionism, though the constructivist epistemology is grounded in that of constructionism. The proponents of constructivism are to be found particularly in social psychology and education. Constructivism focuses on "the mean-making activity of the individual mind [whereas] constructionism focuses on the collective generation and transmission of meaning" (Crotty, 2009, p. 58) such as an entire culture.

These instructional principles guided me in developing learning strategies for the Sunnyview EBP sessions detailed in the programme handbook (Crausaz, 2007a). The learning activities were linked to EBP skill development. The proposed tasks, such as engaging in journal club discussions, were authentic as described by Savary and Duffy (1996). As the learning took place within the actual service where the therapists worked as a team, everyday enablers and constraints to engaging in EBP were frequently discussed.

The education literature in the health professions, in congruence with the constructivist educational literature cited above, also underlines the importance of contextual learning. In the health professions, the criteria for an effective learning environment highlight the importance of facilitating the transfer of what is learned to what is practised. For example, in occupational therapy pre-qualification education there is a long tradition of what is termed work-integrated learning (clinical placements). In post qualification education, the emphasis is on fostering what Brown, Esdaile and Ryan (2003, p. 220) term a “*learning workplace culture*”. Dillenbourg (1999) stresses the role of the group in fostering such a learning workplace culture. He envisions colleagues learning from each other by working together on the same objective; each group member is a potential source of information. Dillenbourg credits group process with creating both a sense of ownership and empowerment. Hammel, Finlayson, Kielhofner, Helfrich and Peterson (2001) emphasise the importance of situated learning where: 1) knowledge is acquired in context; 2) learning involves social interactions with collaborative problem solving of specific issues. Welch and Dawson (2006) maintain that practice-based collaborative learning of EBP skill acquisition, involving an entire team, serves as a catalyst to increasing therapists’ confidence in consuming research and in exploring the transition towards being an evidence-based practitioner. It was this literature that inspired me to initially orient my efforts to encourage research utilisation by therapists through a service-based educational approach.

Hence, the adult learning literature re-enforced my conviction, grounded in my past experiences as a facilitator of short continuing education courses between 1990 and 2005, that the learning of practising clinicians should incorporate their prior experience and include experiential learning tasks focused on problem-solving. I was also aware that in working with the entire Sunnyview occupational therapy team I would need to

address the differing EBP skill needs and attitudes of novice to expert therapists. Dysart and Tomlin's (2002) research demonstrates that it is the most experienced therapists who regard research evidence to be the least relevant to their clinical practice. Hence, I felt the grounding of new EBP knowledge and skills in the therapists' clinical experiences would be the shortest route to bridging the much criticised theory-practice divide; a bridging to be primarily accomplished through reflective practice as advocated by many scholars (Argyris, 1982; Boud & Walker, 1990; Fish & Coles, 1998; Higgs & Jones, 2000; Kolb, 1984; Schon, 1987). The learning strategies employed during the six 1 ½ hour EBP skill development sessions with the Sunnyview therapists in April to August 2007 were designed with the intention of doing just that (Appendix 2).

Additionally, the literature impressed upon me the importance of learners owning the learning process by having their say in the learning strategies being employed. This was accomplished through the Sunnyview therapists and myself collaboratively deciding the content and learning activities of each session. In this way, their need to know a specific body of knowledge was addressed in a manner meant to enable self-directed learning. However, the literature also highlights challenges to encouraging self-directed learning. In the paper *Putting evidence-based occupational therapy into practice: A programme of collaborative task-based learning* (Crausaz, 2007b) I debate at length whether a constructivist learning environment is, in fact, something of a chimera. If it is assumed that teachers are the knowers who craft content and learning processes, are they really supporting a collaborative search for meanings? In the role of the expert I still had the strongest voice in what the learners should be learning and how. Tennant (1986), in his criticism of Knowles' work, maintains that there are only emasculated self-directed learners as any strategies to aid the transition of learners from being dependent to being more self-directed are necessarily paternalistic and manipulative. Tennant develops his position even further by arguing that Knowles (and by extension many constructivist learning theorists) gives too much guidance for structuring the processes to be adhered to in any educational setting by stating "*why should self-directed learners follow the processes advocated by Knowles? Surely the imposition of a process can be just as restrictive and alienating as the imposition of content?*" (p. 115). Tennant laments the use of learning contracts as they "*commence with a diagnosis of personal deficits [...] there is the prescription to define 'deficits' in relation to the needs of social institutions*" (p. 120).

In my collaboration with Sunnyview, the therapists self-identified their EBP knowledge and skill deficits and they decided on the learning activities in which they wished to engage to address those deficits. However, through my work with them, as I discuss below, I came to appreciate the limitations of *not* insisting that learners demonstrate more self-direction and *not* imposing minimal engagement in the learning processes, even if it meant my assuming what Tennant would consider a manipulative role. Hence I feel that Tennant's criticisms are over-stated. As Savery and Duffy (1996) emphasise, a learning environment is one where learners reflect on their existing knowledge and challenge their own and each other's thinking. If the learners do not set the bar this high, perhaps it is the role of the teacher to actively support them in doing so, even if Tennant would consider such an approach paternalistic. This encouragement should probably be done from the outset, when learning aims and objectives are first being articulated. As I was only beginning to construct my understanding of how best to frame EBP educational opportunities, the Sunnyview collaboration gave me an opportunity to learn from my mistakes, before undertaking the main study.

2.3 Phase one: Framing the Sunnyview project

In June 2006, four Irish occupational therapy managers expressed a willingness to collaborate in studies conducted by students enrolled in the Doctor of Occupational Therapy (D.Occ.T) programme. After telephone discussions with the four managers, I chose to conclude a Memorandum of Understanding (MOU) with the manager of the Sunnyview occupational therapy service as she appeared to share my interest in EBP (Appendix 3). We agreed to explore together how best to develop strategies which they might find useful for integrating EBP into their daily practice, keeping in mind the context of their personal preferences and also existing environmental supports and barriers. The Sunnyview occupational therapists were advised in the MOU that the outcomes of our collaborative undertaking would form the basis of papers submitted in partial fulfilment for the D.Occ.T programme. Following discussion with staff, the MOU, and accompanying consent form, were signed by the manager and each staff member both in 2006 and 2007. As this was a preliminary service development project, and not yet formal research, ethical approval was not deemed necessary.

Sunnyview is a mental health service situated in the premises of a large hospital. The staff group was composed of two senior therapists (including the manager) both with more than 10 years experience, four junior therapists with < 1 to 2 years experience and two third-year students (in 2006 – 2007 only). The senior therapists each had a bachelor degree in occupational therapy; two of the junior therapists each had a bachelor degree, one had a diploma and one had a master's degree. The therapists had been educated in Ireland, the U.K., Australia and New Zealand.

From the outset, the Sunnyview service development project was conceived as a collaborative undertaking where how best to proceed would be discussed and decided upon by the entire occupational therapy team, as advocated in the adult learning literature. The project began with one group and four individual interviews to explore team members' reasoning behind relying on different aspects of the EBP evidence triad (clinical expertise, client values and preferences, research evidence) and to ascertain their self-identified EBP skill needs. The reflective thinking demonstrated by therapists, particularly during the group interview discussion format, highlighted the close inter-relationship between clinical reasoning and EBP as often argued in the occupational therapy literature (Taylor, 2007; Tickle-Degnen, 2000a). The individual and group interviews also highlighted these mental health professionals' preferred reliance on clinical expertise and client preferences to the possible detriment of research evidence (Crausaz, 2007c). Such preferences are described as a common occurrence in the international EBP research literature cited earlier. Particularly the senior therapists emphasised their preference for drawing on their extensive clinical expertise for their clinical decision-making; they expressed scepticism about the applicability of research evidence to their specific practice. The junior therapists appeared less categorical; each maintained that research findings could be a valid source of evidence, if only they had time to consult it. The students on placement described how they used research evidence to support their intervention planning while at Sunnyview. All of the qualified therapists mentioned that the voices of their clients and their families were always respected and valued in this mental health setting where interventions were based on the recovery model.

Subsequent to these interviews, the team decided that they would like me to design and conduct six 1 ½ hour educational sessions, spread over 5 months, where I would

address their EBP skill deficits. The content of these sessions (Appendix 2) was based on needs the therapists identified during the individual and group interviews; while the adopted teaching strategies were based on the adult learning literature discussed earlier. Hence, I was particularly concerned that the learning would:

- reflect what the therapists' felt they wanted/ needed to know
- enable the therapists to co-construct an understanding of what constituted EBP
- acknowledge and value the therapists' prior experience
- motivate the therapists to engage in challenging, self-directed learning
- be grounded in the therapists' specific work context
- involve problem-solving and the actual 'doing' of EBP
- support therapists in reflecting on, and learning from, their EBP experiences.

For reasons of convenience, but also to emphasise the work-based nature of our collaboration, the Sunnyview therapists and I decided to conduct the learning sessions in the occupational therapy service (one exception was a hands-on database searching session in the study university library).

2.4 Phase two: Designing and conducting EBP skill development sessions

It was clear to me from the interviews that all of the therapists valued the forum our collaboration provided for them to explore their own and each other's ideas and opinions about what constituted EBP. During subsequent team discussions the senior therapists emphasised their strong reliance on clinical expertise and invited the others to adhere to their view. The junior therapists, on the other hand, seemed more intent on co-constructing a group understanding of prioritising evidence sources that encompassed everyone's viewpoints and learning needs. The senior therapists admitted lower confidence in their information technology (IT) skills than the junior therapists, particularly in reference to database searching skills. I had the impression that these senior therapists were probably not used to being in a position where they were less skilled than their juniors, and that it was quite possibly a situation that they did not like.

Thus, as a consequence of the senior therapists' views, I decided to proceed slowly in my EBP educational efforts for the six initial EBP sessions conducted from April to August 2007 (Appendix 2). At the end of each session everyone present decided by consensus on the content of the subsequent session. All of the sessions were audio-taped and I wrote field note summaries of what transpired. Rather than beginning by introducing database searching, an area where the senior therapists had indicated that they felt relatively unskilled, I suggested that we start by hand searching hard copies of two years of both practice-oriented and research-focused journals. Everyone supported this idea. From this we moved on to formulating possible clinical questions based upon the articles they had chosen as interesting and possibly relevant to their practice. As everyone had experience of hand searches of journals, this two-session activity appeared to put everyone at ease. However, one senior therapist did not attend the third session on database searching. Not until the fourth session did we focus on the more challenging content area of qualitative and quantitative research methodologies, necessary for them to be able to critically assess the chosen research literature. Here the junior therapists and students were clearly more at ease than the two senior therapists with the vocabulary and concepts. With one exception, however, the junior therapists appeared almost reticent to highlight their pre-existing skills.

All those who attended the sessions expressed an appreciation for the EBP sessions as they afforded them an occasion to meet as a whole team. Such meetings were apparently a relatively rare occurrence as several team members were based in outreach settings. In fact, during the evaluation discussion of the last session, this occasion for face-to-face contact was mentioned as being the most positive aspect of our entire collaboration. The social component seemed to motivate attendance, possibly more than the opportunity to acquire EBP skills. Although most of the therapists attended for most of the time, many did not appear to engage in any of the reflective exercises or readings outside of the meetings or in preparation for the subsequent session. This disengagement was manifest even though the group had decided which EBP experiential activities they would find most useful and why. For example, during the 5th session journal club the only people who had actually read the two research papers being critically appraised were the two who had agreed to present (one junior therapist and one student). As the others had not done the reading they were not in a position to reflectively challenge each other's thinking; a necessary component of the learning

environment advocated by Savery and Duffy (1996). Nonetheless, the two senior therapists were dismissive of the articles' findings and their relevance to Sunnyview clients even though their understanding of the findings was only based on the presenter's quick verbal summary. Self-directed learning implies a commitment to actively seeking, doing, and reflecting, but adult educational theories also emphasise empowerment and ownership. Therefore, I understood my role as guiding, mentoring and helping to actualise the learners, not to chastise them.

Additionally, it was clear that both the students and the junior therapists were understandably impressed by the wealth of clinical expertise that the senior therapists could bring to any discussion on specific therapeutic approaches. Research has demonstrated that pre-qualification students and novice practitioners rely principally on explicit theoretical knowledge for their decision-making (Benner, 1984; Schön, 1987). In contrast, experienced therapists draw on a wealth of clinical expertise developed from intuitively reflecting-in-action in oftentimes complex clinical situations. However, many expert therapists are unable to explain the theoretical rationale for their decisions by making explicit their intuitive/ implicit reasoning. This tacit knowledge is, according to Greenhalgh and Russell (2006, p. 100):

inextricably woven with the experiences and situational contexts within which it was generated and is often attached to the practical wisdom of a particular individual[...] a phenomenon known as embodied knowledge or 'stickiness'.

Therefore, it can be challenging for experienced therapists to critically examine their knowledge base and consider changing how they practice.

At the end of our first year of collaboration, the entire Sunnyview team were keen to continue the educational sessions in the service. I was not sure if this was because they enjoyed the social contact and/or valued practicing EBP skills.⁶ Not wanting to judge, I agreed to facilitate three more journal clubs sessions from September to December 2007. I introduced the idea of increasing the level of critical analysis during these discussions by everyone committing to reading the selected research articles ahead of time. Everyone agreed, though in retrospect I think it would have been a good idea to include such specifics in the form of learning outcomes in the second Memorandum of

⁶ I decided not to directly ask them the question as I am not sure they would have answered me honestly. We ostensibly met to enhance their research utilisation skills. If they had admitted that it was the social interaction they primarily appreciated, the manager may have discontinued our sessions.

Understanding and consent forms which everyone signed a second time (Appendix 3). As a group of six (the students were no longer present) they decided to work in pairs to formulate clinical questions, search the databases for relevant research and circulate two articles per session at least two weeks ahead of time. Once the journal club sessions began again in September 2007 only the presenting junior therapists had prepared by reading the articles chosen for discussion. The two senior therapists either did not attend or only engaged minimally in the discussions. Neither of them ever presented. I was reminded of research (Pringle, 1999; Stevenson, Lewis & Hay, 2004; Taylor, 2007) noting that many therapists are reluctant to change practices to which they have become accustomed to using and I wondered if this included the Sunnyview senior occupational therapists.

In my field notes written after these journal club discussions and a paper I wrote analysing the experience (Crausaz, 2007b) I reflected on the possible impact on recent graduates of working in a service where research evidence did not appear to be much valued by senior therapists. Similar to the findings discussed in Chapter one (Jette et al., 2003; Murphy & Robinson, 2009; O'Shea, 2011; Zipoli & Kennedy, 2005) these more experienced therapists were observed to verbally share sceptical attitudes with the team regarding the importance of research findings relative to clinical experience in their decision-making. I wondered what might be the potential impact of senior therapists modelling behaviour on junior therapists and students. Wiles and Barnard (2001) suggest that supervisors' expressed support for an EB work culture may, in part, be due to EBP being central to many managerial agendas. Hence, while supervisors are perhaps unwilling to communicate public disapproval of EBP in general, they may report conflicts between EBP and their established and preferred ways of working. If reluctance towards changing customary practice was being openly expressed by senior therapists, this would hardly foster the 'learning workplace culture' open to new ideas as advocated by Brown, Esdaile, and Ryan (2003). McCluskey and Cusick (2002) underline the importance of managers driving the change process by acting as opinion leaders.

I was specifically concerned with the possible impact on what health psychology theorists term an individual's beliefs about self-efficacy (Michie et al., 2005; Salbach & Jaglal, 2010). These beliefs are defined as judgements about one's ability to do

something and are considered to have a primary influence on a person's decision to engage, or not, in particular activities. A component of self-efficacy beliefs are feelings about having the freedom and/ or authority to engage in a specific professional behaviour. Chard (2003, p. 278) contends that:

The self-efficacious attitudes of potential adopters [i.e. clinicians] and open and informal attitudes of teams are the most influential determinants in the adoption of innovations.

Consequently, I began to ask myself to what extent the Sunnyview junior therapists felt they could introduce innovative practices reported in the research literature. McCluskey and Cusick (2002) maintain that individuals only engage in EBP when they demonstrate a willingness to change their attitudes and values. In their opinion, this is because EBP implies a major change in work behaviours and a commitment to lifelong, self-directed learning.

As a consequence, early in the autumn of 2007 I decided to do a scoping review of change theory literature so as to better understand the dynamics of what I was observing at Sunnyview. I proposed to the Sunnyview therapists that from January 2008 the focus of our sessions should shift from running journal clubs to discussing the role of change inherent in being a self-directed, life-long learner and evidence-based practitioner. They agreed that how people manage change would be a stimulating and useful topic of discussion.

2.5 Phase three: Responding to change

I became interested in the impact that attitudes about change might have in EBP upon hearing a statement made by the Sunnyview manager during an early discussion about preferred evidence sources for clinical decision-making. She felt that changing intervention practices was of minor importance over a long professional career. She partly attributed her general aversion to change to the Irish Health Service Executive's proclivity, in her opinion, to establish new policy guidelines every few decades. She stated that these new policies would be announced with great fanfare, incurring considerable financial cost, and then would rarely be implemented. The 2006 *Vision for Change* mental health policy document (DoHC, 2006) had recently been rolled out, replacing the earlier *Planning for the Future* (1984) policy initiative which, in her

opinion, was never fully funded. This gave me much food for thought about how employees in large organisations respond to what they appear to view as the imposition of top-down change and whether this may also impact how they view change on a clinical level.

As a consequence, I decided to explore how guidelines in two recent policy documents, intended to change the delivery of health and social care services, were perceived by others who were being asked to implement them. Again, this exploration represented work undertaken for a D.Occ.T module (Appendix 1), and was not structured as a formal research study needing ethical approval.

Vision for Change (Department of Health and Children, DoHC, 2006) and *Primary Care: A new direction* (DoHC, 2001) shaped the re-configuration of HSE occupational therapy services in Ireland. I decided that the best way to proceed would be to seek the views of two senior HSE employees whom I knew through professional contact. One employee, John (pseudonym), is responsible, on a national level, for the implementation of the *Vision for Change* guidelines; Mary (pseudonym) is an occupational therapy manager supervising the transition of a service from a community to a primary care orientation following guidelines laid out in *Primary Care: A new direction*.

John and Mary both agreed to be interviewed individually; John's interview lasted 2 hours, Mary's 1 ½ hours. Both interviews were audio-taped and transcribed verbatim. I complied with John's request that I send the interview schedule of semi-structured questions ahead of time. In fact, John guided the interview in other directions through the expressing of his views. I commenced both interviews with a broad question about how the changes they were being asked to implement were perceived by them. I analysed both interviews for indicators of the sort of change management techniques reported in the literature. This exercise was intended to prepare me for facilitating discussions, requested by the Sunnyview manager and occupational therapists, on how practitioners could best introduce and/or adapt to changes in their practice on an organisational and clinical level.

In a paper titled *The challenge of implementing organisational change within the Irish healthcare context* (Crausaz, 2008a) I compared the change implementation experiences of John and Mary with the theoretical change models developed by Bridges (2003),

Gardner (2006), Kotter (1996), Lewin (1951), Prochaska, DiClemente and Norcross (1992) and Rogers (2003). I concluded that the many simultaneous changes being under-taken in the HSE were more complex than the stages detailed in the cited theoretical models. The challenges faced by both John and Mary appeared to lie outside the domain of change management theory and more in the domain of a political willingness to make hard budgetary choices. I was nonetheless impressed by the genuine commitment of these two employees to change, and their willingness to act as innovators in implementing the new policy guidelines. I became convinced that sustaining the commitment of such people is key to realising the stated HSE goal of transforming itself into a more client-centred system with integrated quality services in order to enable Ireland's population to live healthier and more fulfilled lives.

I used the models of the change theorists and insights gleaned from the interviewees as a springboard for discussing the process of professional change with the Sunnyview therapists during three 1 ½ hour sessions in January to June 2008. My field notes include verbatim transcripts of these sessions and formed the basis of a paper analysing challenges arising while attempting to integrate changes in customary practice (Crausaz, 2008b). The manager expressed a personal dislike of feelings of uncertainty which she felt change engendered. She admitted that faced with an innovation in either a private or professional context, she was rarely an early adopter, or even early majority, categories described by Rogers (2003). Several of the other therapists appeared uninterested, and even dismissive of, conceptual change models. They much preferred talking broadly about change, drawing again on their individual experiences. Most frequently they described how their clients perceived change and the difficulties they experienced in getting their clients to change their mal-adaptive behaviours. These narrative discussions remained on a descriptive level; the therapists appeared unable to critically appraise the underlying meanings of what they were saying. However, during one session when neither senior therapist was present, the junior therapists shared personal experiences of engaging in a change process. Some reflected on change engendering feelings of discomfort and the subsequent need for a sense of control and power over a situation in flux. The pitfalls inherent in leading change were briefly addressed in a more honest and open manner.

After the three sessions on change I began to question (Crausaz, 2008b) whether theoretical knowledge about the change process really facilitates initiating a change in work behaviours as suggested by Plastow (2006) and Taylor (2007). Both of these authors consider the change process as implicit in the implementation of EBP, in terms of the change agents (i.e. therapists) needing to understand and explicitly plan the stages involved in change. I was unsure as to whether the apparent difficulty in getting the Sunnyview therapists to more actively engage in self-directed EBP as demonstrated by a willingness to consider possible changes in their customary practices lay with me as a teacher, the level of “*readiness for change*” (Bannigan, 2007, p. 200) on the part of the individual Sunnyview therapists, or the dynamics of the team as a whole. In any case, our two year collaboration had come to an end and, from my perspective; there was not enough of a sense of forward momentum for me to want to continue. I felt they were not as invested in the process of transitioning from being primarily experience-based to being more research evidence-based practitioners as was I, for whatever the reason. I decided I would do better to re-orient my educational approach to a different learning environment.

2.6 Transition from a service-based to a university-based learning environment

The service development project from 2006 to 2008 impressed upon me the limitations inherent in such a loosely structured, open-ended educational approach. I had begun the collaboration with no clear endpoint; rather I sought only to vaguely explore strategies which they might find useful for integrating EBP into their daily practice. I now appreciated the importance of clearly stated learning outcomes which implied the active involvement of the learners. The Sunnyview experience also confirmed what I had read in the literature about therapists’ attitudes towards EBP, their actual evidence sources when engaging in clinical decision-making, their EBP skills levels which might be impacting the evidence choices and the workplace-embedded barriers to engaging in EBP.

There was a clear demarcation between the two senior Sunnyview therapists and the very junior therapists regarding several issues surrounding EBP. Both the senior and junior therapists initially erroneously considered EBP as concerning almost exclusively

research evidence. Even when EBP was defined as including a triad of evidence sources, the senior therapists still valued only their clinical expertise and client preferences to underpin their clinical decision-making. The junior therapists viewed the utilisation of research findings in a more positive light. When the senior therapists were not present, they willingly engaged in discussions about how specific research findings might be transferred into their practice. These same junior therapists, unlike their senior colleagues, already possessed basic skills in the domains of formulating clinical questions, doing database searches and critically assessing the relevant literature. However, the junior therapists did not appear to be actively using these skills due to workplace-embedded barriers. One explicitly acknowledged barrier was lack of time to consult the research literature. But I believe there was a more subtle implicit barrier which explains, at least in part, why protected time was not being given for such consultation. Knowles, Holton and Swanson (2005) emphasise the importance of the learner's readiness to learn (e.g. demonstrated by active engagement in EBP learning activities) and motivation to learn (intrinsic personal value and extrinsic professional payoff). I am of the opinion that the Sunnyview senior therapists modelled behaviour that implicitly communicated a non-readiness to engage in EBP knowledge and skill acquisition. This, in turn, impacted the junior therapists' motivation to learn as any demonstrations of research utilisation through self-directed learning were not valued by the senior therapists. The resulting learning environment did not encourage the learners to challenge their own and each other's customary way of working.

Hence I decided that I should consider a different learning environment to pursue my interest in the role that post-qualification education could play in facilitating the translation of research evidence into practice. I felt that a university-based learning environment would allow me to establish clear learning outcomes and to require explicit demonstrations of learning on the part of the enrolled students/ therapists; however manipulative Tennant (1986) might consider such an approach to be. I had come to believe that these demonstrations of learning were necessary to ensure that the learners actually engaged in the self-directed and reflective learning foundational to EBP.

In 2008, the School of Clinical Therapies at the study university was required to modify the structure of its MSc programme. This included the MSc for practising occupational therapists, speech and language therapists and physiotherapists in order for it to fit the

new post graduate modular framework. Formerly called the MSc in Advanced Healthcare Practice, the structure and focus was changed and it became the MSc in Evidence Based Therapy Practice. I was part of these discussions and requested to teach on the programme. The MSc was framed in such a way that *Implementing evidence in therapy practice* (IETP) became a core and compulsory module that would be offered for the first time in the autumn of 2009. This module became the foundation of my main study.

2.7 Main study research aims

The course of my investigations thus far had led me to appreciate how complex and even opaque the motivations and behaviour of individual therapists could be, particularly within the context of their professional practice setting. Despite this complexity, I still felt it was important to develop an educational approach which would support Irish occupational therapists' engagement in EBP activities. Rather than continuing in the work-based learning environment of the preliminary service-development project, however, I decided that the main study of this thesis would more productively be situated in a university-based learning environment.

The research aims were:

- To develop, in collaboration with clinical therapists, learning opportunities for acquiring the skills necessary for locating, critiquing and translating research findings into practice within the framework of a multi-disciplinary post-qualification MSc module on EBP.
- To develop reflexive narrative accounts of the learning process from the clinical therapists' perspective in order to evaluate the learning programme's influence⁷ on therapists' engagement in EBP.

2.8 Conclusion

The preliminary service development project, where I trialled an initial EBP educational approach in a southern Ireland occupational therapy service, proved to be a most

⁷ In the context of this study, *influence* is understood to mean the capacity of the module to shape or give direction to the thinking and/or behaviour of the clinical therapists who were enrolled as students.

valuable learning experience. Whereas I remained convinced that post-qualification continuing education could play a role in facilitating the translation of research evidence into practice, I was forced to re-evaluate the choice of learning environment. Practice settings are messy and unpredictable places where power relationships, inherent in their hierarchical structure, can play a complex role. Therefore, I decided to change to a university-based learning environment while retaining the same educational focus of supporting therapists in transitioning from being primarily experience-based to being more research evidence-based practitioners. This main study would seek to examine clinical therapists' experiences as they became active participants in an action research process of conducting and evaluating the *Implementing evidence in therapy practice* (IETP) module. The clinical therapists' contributions would help me to better understand which learning strategies best supported their engagement in EBP activities and to adapt the educational approach accordingly. As the module was a core and compulsory component of the new MSc in Evidence Based Therapy practice, it was important that its support of clinical therapists' engagement in EBP activities be demonstrated. This is the focus of the next chapter.

CHAPTER THREE - FRAMEWORK OF MAIN STUDY DESIGN

3.1 Overview of the chapter

This chapter examines two of the three framework elements of my main study: 1) the philosophical assumptions about what constitutes knowledge, and 2) the general strategy of inquiry or methodology of my research. The third element is the data generation methods, described in Chapter four.

Philosophical assumptions regarding what is knowledge (ontology), how we know what we know (epistemology) and what are the values (axiology) underpinning this study are presented. As will be discussed, the axiology of this study originates in late 19th century critical theory/ inquiry which, in the 20th century, led to the emergence of the participatory action research (PAR) strategy of inquiry. The PAR methodology determined my choice of methods for gathering data related to my research aims (Figure 4).



Figure 4 Framework elements of main study design

While Crotty (2009) describes a four-step decisional process where the choice of the first elements logically lead to the designation of subsequent ones, my trajectory was less linear. The Sunnyview service development project influenced my decision to adopt a constructivist epistemology grounded in a realist ontology. The constructivist approach in education, which values empowering learners, stimulated my interest in

PAR. This interest was further increased following a review of the historical use of PAR in educational and occupational therapy research. I came to appreciate how much PAR had been influenced by assumptions implicit in a critical inquiry theoretical perspective. As I explain in this chapter, by deepening my knowledge of critical inquiry I came to understand how it had shaped the development of PAR as a methodology in the 1970s and gave a context for its plan of action.

Next, I summarise the key features of PAR methodology and the three-stage plan of action in my study. Broad aspects of methodological validity are addressed. Based on a recommendation identified in the literature (McNiff & Whitehead, 2006), I decided to convene an expert panel to review my adherence to PAR methodology and data generation methods. The importance of transparency in PAR, and its impact on ethical and power balance issues, is then explored. This chapter closes with a summary of my methodology, describing its congruence with a realist ontology, constructivist epistemology and critical inquiry axiology.

3.2 Philosophical assumptions of main study design

As discussed in Chapter two, from the beginning of the Sunnyview service development project I adopted a constructivist epistemology to underpin my teaching approach. According to this epistemology, individuals are perceived as creating knowledge by integrating new information with past experiences thereby creating a personal process for meaning-making (Crotty, 2009). As defined by Vygotsky and Piaget, all meanings emerge through the interaction between an individual's mind and the world which surrounds him/ her (Tryphon & Vone, 1996). As humans live in the company of other humans, this constructed knowledge about the world is developed and transmitted within a social context. The meanings are varied and multiple and are oftentimes further elaborated through discussions or interactions with other people. Additionally, these existing-in-the-mind meanings about the world are understood to be in response to a *real* world (i.e. one that exists outside of human brains). Consequently, a realist ontology and a constructivist epistemology are considered compatible (Crotty, 2009).

A constructivist epistemology in education means, among other things, using teaching approaches which encourage learning through reflection grounded in life experiences.

Such approaches are believed to empower adult learners to be self-directing through experiential problem-solving (Argyris, 1982; Boud & Griffin, 1987; Kolb, 1984). For example, during reflection-in-action and reflection-on-action (Schön, 1987) the learner constructs knowledge by integrating new information with past and present experiences. This constructivist mean-making process can be done by an individual or a group.

Since I had adopted a constructivist epistemology in my teaching, I felt that the methodology of my main study should reflect a similar learner-empowering philosophy. I was therefore interested in a research methodology which would explicitly include the learners as equal and full participants in the inquiry process. In so doing, I hoped to avoid some of the difficulties I had experienced with the Sunnyview project, particularly the therapists' passive style of engagement. To my dissatisfaction, I felt that during the latter I had ended up doing an inquiry *on* the learners rather than *with* the learners. During the main study, I wanted the mean-making to involve myself and the learners actively developing a common understanding of how to design learning opportunities which would support their engagement in EBP activities. This thinking led me to select an action research (AR) methodology, specifically participatory action research (PAR).

AR is predicated on the belief that research should be focused on solving practical problems by involving stakeholders in the research process. Its primary purpose is to engage people in a systematic inquiry so as to design a means of accomplishing a specific goal and to evaluate its effectiveness (Stringer, 2007). Such a strategy of inquiry would permit me to address my research aims of: 1) collaborating with therapists in developing a university-based EBP module designed to support them in acquiring the knowledge and skills foundational to utilising research evidence in practice and 2) evaluating the influence of the learning programme on their engagement in EBP.

On reading the education-based literature on action research (Herr & Anderson, 2005; McNiff & Whitehead, 2006, 2009; Stringer, 2007), I realised that action research implies certain assumptions about the research task; assumptions which have their basis in the critical inquiry theoretical perspective. Critical inquiry began as a search for knowledge within the context of actively seeking more freedom and power in the late nineteenth and early twentieth century. This led to the birth of PAR from the work of

Freire in the 1970s. Even though my reflections had evolved from assuming a constructivist epistemology to choosing a PAR methodology, before proceeding further I wanted to first understand the theoretical roots of PAR so as to better examine its underlying assumptions.

I learned that critical inquiry had its origins in critical theory and philosophical debates beginning with Marx, Nietzsche and Horkheimer and extending through the post-modern writings of Habermas and Foucault. Research which is “*done in the vein of critical theory*” is currently referred to as critical inquiry (Crotty, 2009, p. 147) Critical theory draws on different intellectual traditions in the social sciences and humanities and is defined differently depending on whether it is being espoused by sociologists or literary critics. Regarding the former, in the late 1930s Horkheimer, of the Frankfurt School, defined critical theory as a social theory focused on critiquing and changing society as a whole.

Starting in the 1960s, critical theorists such as Habermas became particularly concerned with different manifestations of authority and injustice which, in their view, accompanied the evolution of a political and economic system based on industrial and corporate capitalism. Habermas had a large influence on the later development of action research as a strategy of inquiry for he detailed how societal changes might be chronicled. Habermas described three *interests* of the researcher in the pursuit of knowledge generation: technical, emancipatory and practical (Herr & Anderson, 2005). By technical, he is referring to the human desire to take control over the natural and social reality. In this case, knowledge is generated through causal explanations, frequently by using quantitative methods. An emancipatory interest means the researcher is concerned with releasing human potential and investigating the role of ideology and power within organisations and society. The emancipatory interest reflects the critiquing of society espoused by Horkheimer above and the later work of Freire discussed below. The emancipatory interest had a large impact on the development of action research done by feminist researchers, among others. However, it is Habermas’ practical interest which is of greatest relevance to this study’s purpose of exploring how therapists appreciate different teaching and learning approaches aimed at supporting their engagement in EBP. By practical interest, Habermas meant that a researcher gains

understanding through interpretative methodologies – primarily hermeneutic⁸ interpretation – in order to gain an understanding of a given situation. The generated knowledge is then used to inform and guide practical judgements.

In the 1970s, critical inquiry was greatly influenced by Freire, a Marxist, and his best known work *Pedagogy of the Oppressed* (Crotty, 2009; Herr & Anderson, 2005). Freire was a Brazilian educator who established phenomenally successful literacy programmes for peasant farmers in the early 1960s. When the Brazilian government was toppled in a military coup in 1964 Freire was jailed and then forced into exile. His literacy campaigns were considered subversive by the military because he did not begin with teaching the alphabet. Instead he would spend time in the farmers' communities so as to first ascertain which words were most meaningful to them. These generative words would then form the basis of learner discussions, the intention being that the learners would feel a sense of power over the words they used. In this respect, Freire was clearly influenced by earlier critical theorists.

Most importantly, Freire viewed humans as being born with a creative imagination which could be used to look critically at their situation, reflect upon it, and then to intervene so as to create something better. Framed by Freire as an ongoing, forward-moving project, critical inquiry was defined as involving a spiralling process of reflection and, as we shall see, *action*. For Freire, action and reflection had to occur together, not in sequence, in order to be creative and liberating (Crotty, 2009). Though later educational constructivists such as Argyris (1982), Boud & Griffin (1987), Schön, (1987) and Knowles et al. (2005) do not use the common Marxist term of liberation, clear similarities between their thinking and that of Freire can be seen.

Freire goes a step further, however, because in an educational context he did not see a separation between teachers and students. Rather, he felt that in being taught, the students would also teach. This dialogue between students and teachers, he felt, would

⁸ Hermeneutics refers to shared understanding between people, a sharing that occurs through language. Different interpretations of a phenomenon under investigation are brought together through a dialogue between the text (traditionally a biblical text) and the inquirer to produce a shared understanding (Paterson, Higgs & Wilcox, 2005). The hermeneutic interpretive cycle is where the inquirer understands a part (specific sentence, utterances) of the text in order to grasp the whole (the complexity of intentions, beliefs) and vice versa. The circular nature of this form of interpretive analysis emphasises the importance of the cultural, historical and social context in identifying meaning (Carpenter & Suto, 2008). Currently, social researchers that employ observation and interviewing and then analyse data by allowing major themes to emerge in quite straightforward ways maintain that they are engaging in a form of hermeneutics (Crotty, 2009).

result in both being jointly responsible for a learning process during which everyone would grow. Hierarchies would disappear. In order to facilitate this level of participation on the part of the learners, Freire stated that the teacher must truly trust students and their ability to reason (Crotty, 2009).

Inspired by the writing of Freire, critical inquiry in education, and many other domains, came to focus on power relationships within society with the intent of exposing injustice, as had Habermas decades earlier. The underlying value assumption of critical theory (Crotty, 2009) was that all thought is impacted by power relations which are social in nature and historically based. Specifically, certain groups in society are perceived as being more privileged than others. Reflecting its initial links to Marxist thought, critical inquiry assumes that social relations are governed by privileged groups oppressing the less privileged within a capitalist production and consumption environment. According to the critical inquiry perspective, there is always the danger that research practices will reproduce these same hierarchical systems of class, race and gender oppression. Indicative of the dual roots of critical theory as espoused by sociologists and literary critics, critical inquiry also assumes that language plays a preponderant role in conscious and unconscious awareness. As we shall see, all of these assumptions and the emphasis on *action* shaped the development of PAR as a methodology, especially in terms of its values (axiology).

3.3 Historical development of action and participatory action research

Participatory action research (PAR) has been widely adopted in education, particularly as a methodology for exploring teaching and learning practices (McNiff & Whitehead, 2006, 2009; Werder & Otis, 2010). This is due to teacher researchers wanting to study their professional practices in order to make a difference in their own setting.

Participatory action research is also becoming the most practised *action* approach in health care (Carpenter & Suto, 2008; Kielhofner et al. 2006; Taylor, Suarez-Balcazar, Forsyth & Kielhofner, 2006). As participatory action research is done *by* or *with* insiders to an organisation or community, but never *to* or *on* them, it is clearly in line with the current health care concepts of client-centred practice and advocacy.

As a sub-set of the broader action research (AR) form of inquiry, PAR has many of the general characteristics of AR. Both involve a deliberate and systematic reflective process. Both involve some action or cycle of actions undertaken to address a particular problem or situation. Both require that some form of evidence be presented to support that changes have, or have not, occurred within the research setting and/ or within the researchers themselves. Historically, action research has oftentimes used quantitative data collection methods; in more recent times the focus has become more qualitative. Stringer (2007) maintains that in some respects action research is: phenomenological (focusing on people's actual lived experience/reality), interpretive (focusing on their interpretation of acts and activities), and hermeneutic (incorporating the meaning people make of events in their lives). It provides the means by which stakeholders – those centrally affected by the issue being investigated – explore their experience, gain greater clarity and understanding of events and activities, and *use* those extended understandings to construct effective solutions to the problem(s) on which the study is focused.

The primary difference between the broader AR term and the more specific PAR term is one of positionality. AR encompasses a range of different options regarding the researcher's positionality, i.e. insider (emic) or outsider (etic) to the situation under study. PAR implies that the researcher is an insider collaborating with other stakeholder insiders such as clients, community members or students (as in this study). The researcher is a participant, not just an observer, in the evolving action process. In this manner, PAR challenges conventional ideas about change and change agency where outside experts are brought in to solve local problems. PAR integrates the knowledge of the emic researcher with the expertise of stakeholders about their own problems and possible solutions. And while PAR has some similarities with other qualitative, and even quantitative, approaches to research, it is in a category of its own. The action researcher does not seek to prove or disprove a hypothesis or answer a research question. Rather, the aim is for PAR participants to collaborate with the researcher in designing a solution to a problem, as is discussed in more detail in section 3.4 below.

The broader action research strategy of inquiry developed before Freire began writing on education in the 1970s. Action research originated in the mid twentieth century work of Lewin (1951) and his theories of organizational and social change (Herr & Anderson,

2005). Lewin believed that knowledge should be created from problem-solving in real-life situations such as optimizing production in factories using worker-centred, collaborative techniques where the researcher was an outsider. In the U.S., Lewin's research was taken up by business consultants who applied the action research methodology using purely quantitative methods of manipulating isolated variables in an effort to improve worker efficiency. In Europe, however, action research was more inspired by the critical inquiry theoretical perspective as it was also focused on issues of equity, self-reliance and oppression. For example, in Spain in the early 1990s, an action research project in workplace democracy furthered the development of the now famous worker-managed Mondragon⁹ cooperative businesses (Herr & Anderson, 2005). The latter would be an example of Habermas' emancipatory form of research.

Argyris (1982) advocated moving action research away from what he judged to be too strong an adherence to positivist notions and quantitative research methods. Concerned about the ability of organisations to learn, he felt that action research methodology had become too disconnected from the reality it was designed to understand. Argyris maintained that action research should generate knowledge that was useful, valid, and descriptive of the world while at the same time informative about how things might be changed. Argyris' promotion of the reflective practitioner came to underpin the principles of constructivist-based teaching and learning approaches.

Argyris' ideas regarding action research also reflected the thinking of Freire; the latter's work leading directly in the 1970s to the emergence of a new form of action research: participatory action research (PAR). Freire promoted research as a highly inductive process (Herr & Anderson, 2005). He felt that issues of vital importance to community members should be identified and studied in a collaborative fashion. Using a PAR methodology, community co-researchers would be initiated into the inquiry process by a facilitator/ researcher. Through active engagement in the process, they would all learn together, producing practical knowledge aimed at social transformation.

⁹ The cooperative's business philosophy promotes four corporate values: 1) co-operation; 2) participation; 3) social responsibility and; 4) innovation. Many have praised the Mondragon enterprises for their inclusion of ordinary workers in decision-making and even see the business model as a viable alternative to the capitalist mode of production.

In recent years in the third-level educational environment, a PAR approach has sometimes been employed within the context of Scholarship of Teaching and Learning (SoTL) studies. PAR is favoured by some SoTL researchers for being able to connect theory and practice in a manner that ensures all voices are heard and valued by drawing on students' insider knowledge of their expertise as learners (Werder & Otis, 2010). Such SoTL studies demonstrate a PAR axiology by valuing a commitment to a shared responsibility for learning between students and teachers, by supporting a more democratic intellectual community and by engaging in authentic co-inquiry.

In conclusion, in PAR knowledge is created transactionally through the interactions between the researcher and the research co-participants. This process is clearly congruent with a constructivist epistemology. The underlying tenets of PAR – democratic action, participation, empowerment and mutual regard (Herr & Anderson, 2005) – have their origins in the critical inquiry axiology. I will now discuss the key features of participatory action research methodology in more detail. In Chapter four I describe how these features informed my choice of methods and led to decisions regarding data generation.

3.4 Key features of PAR methodology

The key features of PAR reflect its constructivist epistemology and critical inquiry axiology. These features are (Herr & Anderson, 2005; Stringer, 2007):

1. PAR is an unfolding social process of co-operative inquiry. It is based on an ongoing, democratic and respectful dialogue, where the participants are considered co-researchers.
2. PAR is participatory and therefore involves a collaborative, reflective decision-making process.
3. PAR is transformative as the researcher and participants engage in an action process to produce a practical knowledge outcome which they then evaluate.

The unfolding process of PAR underpins its generative and transformational nature; the end of one thing becomes the beginning of another (McNiff & Whitehead, 2006). This process is usually described as a spiral of iterative reflective cycles consisting of several steps (depicted in Figure 5):

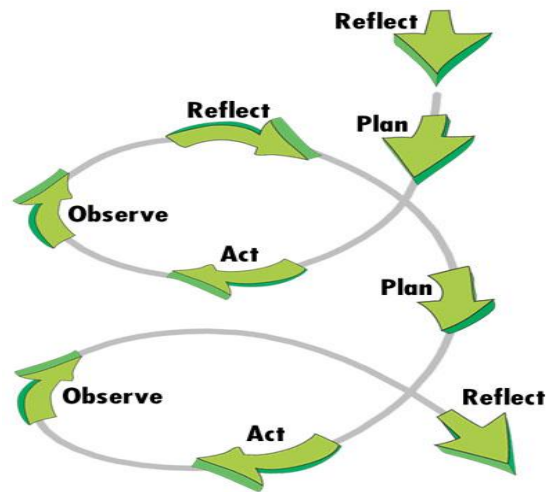


Figure 5 Iterative cycles of participatory action research

- *Planning* a course of action through group discussion
- *Acting* by implementing the decided upon action
- *Observing* the ongoing process and practical outcomes decisions
- *Reflecting* through evaluating the outcomes
- *Planning & Acting* again, followed by
- *Observing & Reflecting* again

The PAR process is meant to be as fluid, open and as responsive as possible. Steps may overlap or plans may become obsolete in the light of emerging understanding and learning from experience. One of the major strengths of PAR is that its unfolding nature allows the tentative framing of approaches to address the problem under study and then a refinement and/ or re-framing through continuing iterations of the PAR cycle (Herr & Anderson, 2005; Stringer, 2007). Emphasis is placed on the evolving, collaborative *process*.

As described in section 2.7, the first aim of this main study was to develop, in collaboration with students who were clinical therapists, learning opportunities for acquiring the skills necessary for engaging in EBP activities. Consequently, I planned that the students and I would engage in the PAR iterative cycles through discussions at the end of each class. During these discussions, the students would evaluate the content and learning approaches of each class and decide which they wished to see integrated

into the subsequent class. Hence, students that enrolled in the *Implementing evidence in therapy practice* module would assume the role of co-researchers by constructing an evolving group understanding of the learning opportunities which best met their needs.

The second aim of the main study was to develop narrative accounts of the co-constructed learning process from the students' perspective in order to evaluate the influence of the learning programme on the students' engagement in EBP. While reflection and evaluation of outcomes were also involved in each cycle of the iterative PAR process as discussed above, the students' thinking was taken to a more reflexive¹⁰ level in the final stage of the main study as described in the next section.

3.5 Three stages of main study design

The main study was composed of three stages, reflecting its PAR methodology, as depicted below (Figure 6).

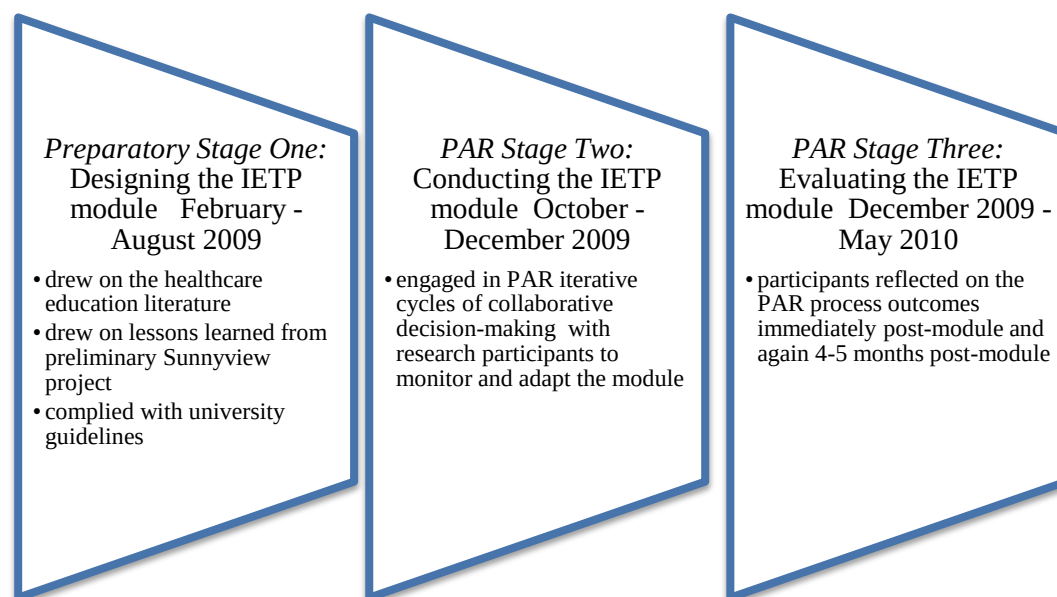


Figure 6 Three stages of main study design

¹⁰ Reflexivity is usually defined as a form of meta-cognition which incorporates reflective self-awareness (Paterson and Higgs, 2008). Through being reflexive, the thinker takes into account the possible impact of implicit societal and cultural beliefs and values on their judgements and actions. This deeper level of understanding is oftentimes part of a process of self-critique and self-development.

I began stage one of the main study after receiving ethical approval in February 2009 from the appropriate clinical research ethics committee (Appendix 4). During the preparatory stage I complied with two university requirements: a) the submission of a module descriptor (Appendix 5) in the winter of 2008/09 for curriculum committee approval and b) the production of the module handbook (Appendix 6) before classes began in October 2009. In my role as university staff and module leader, I was the principal decision-maker at this point; the students had not yet become involved. Hence, stage one was not part of the collaborative or data gathering PAR process. In Chapter five I discuss how the healthcare education literature and the Sunnyview project impacted on the choices I made during stage one regarding learning outcomes, learning content, learning activities and assessments detailed in the module descriptor and handbook.

The stage two PAR process commenced on the first of the five all-day classes held between October and December 2009, and concluded on the last day of class. During this stage, only the general learning outcomes and assessment requirements developed during stage one were not open to modification by the students due to university regulations.¹¹ The stage two PAR process addressed the first of my two research aims through focusing on monitoring and adapting the specific content and learning activities of the module using data generation methods detailed in Chapter four. My task as an action researcher was to foster a context in which students with divergent perceptions and interpretations could construct an understanding of their situation which made sense to them all; a group endeavour which reflected the constructivist epistemology of my study. Guba and Lincoln (1989) describe this as a hermeneutic dialectic process where new meanings emerge through the comparing and contrasting of divergent views. In action research, the aim is to reach a consensus so as to develop an action agenda. In my study, this meant that at the end of each class the students decided what learning content and activities they wished to see integrated into the following class. The iterative cycles of this PAR process are described in Chapter six.

Stage three concerned the evaluative component of the PAR process and addressed my second research aim. It saw the generation of four data sources: 1) interviews; 2)

¹¹ Modifications to both learning outcomes and assessments are, of course, encouraged by the study university. However, they must be done for the teaching of the module in the following academic year and not while the module is in progress.

module evaluation forms; 3) a group discussion about the module on the last day of class and; 4) a questionnaire. According to Stringer (2007), in PAR the evaluation should provide an “*indication of the extent to which the process has made an impact on the lives of the people for whom the project was formulated*” (p. 161). In order to respect the principles of PAR, the evaluation process is not carried out by an outsider, but rather engages those who have been directly involved in the research to make judgments through the sharing of their own experiences. Historically, programme evaluation in educational settings was usually framed as an ‘effectiveness’ study (summative evaluation) employing primarily quantitative methods for measuring outcomes. In recent years, programme evaluations have been focused more on improvement (formative evaluation) and utilised diverse methods of data generation (Patton, 2002). Whereas quantitative information may still be included in the evaluation, numbers by themselves are often felt to oversimplify the dynamic nature of PAR and to risk focusing on tables that easily quantify relatively trivial features while disregarding more significant, but less numerically measurable, aspects (Stringer, 2007).

Hence, programme evaluation interviews have become a more common data source for capturing not only programme outcomes but also programme processes (Patton, 2002). Consequently, I chose to conduct individual interviews with the students four to five months after the module was completed. I felt that qualitative interviews could best capture not only what the module ‘looked and felt like’ for the students, but also what changes they perceived in themselves as a result of their enrolment. Providing a guided reflection record of the students’ views underscored my study’s constructivist epistemology. Equally important, by being afforded the opportunity to respond in their own words and to express their own personal perspectives, these interviews emphasised the students’ role as co-researchers.

The students were required, as part of university policy, to individually complete a written evaluation of the module; these forms were a second evaluation stage data source. Immediately after they finished filling out the evaluation forms, the students expressed a desire to engage in a group discussion about the module which, with their permission, I audio-taped. This became a third evaluation stage data source. I also had each student complete an EBP knowledge, skills, attitudes and behaviours (KSAB) questionnaire before and after the module. Rather than being another module evaluation

instrument, the questionnaire was conceived primarily as a learning needs and learning validation self-assessment tool for the students, as recommended in the continuing education literature (see section 4.7). The composite findings from the evaluation stage of my study are discussed in Chapter seven.

3.6 Methodological validity

I have already described action research (AR) as a process where a problem of common concern is addressed through democratic inquiry in order to enact solutions. In my study, the students collaborated with me in developing the *Implementing evidence in therapy practice* (IETP) module to address the problem of designing a university MSc module which supported their subsequent engagement in EBP activities. From the beginning, due to our close partnership, I was concerned with assuring that the PAR process was both systematic and rigorous.

Within the action research context, Denzin and Lincoln (2005) refer to the validity, credibility and reliability of a study rather than trustworthiness. Herr and Anderson (2005) maintain that trustworthiness is a term more appropriate for naturalistic or qualitative inquiry. While Herr and Anderson acknowledge that validity is a word most often employed by positivists, they prefer the term validity as they feel it better encompasses the outcome(s) focus of action research. Denzin and Lincoln (2005) stress that any action research is judged by the willingness of the stakeholders to act on the decisions made by consensus during the research process. For them, as for Herr and Anderson, the core validity claim centres on the change activity actually engaged in and whether or not the consensually-proposed solution helps solve the problem. For all of these authors, my study's validity claims would centre on: 1) demonstrating that the students' decisions about learning content and activities were actually integrated into subsequent classes as part of the PAR iterative cycles and 2) reporting the students' evaluation of how the consensually-constructed module influenced their subsequent engagement in EBP activities.

As with any quantitative or qualitative research, internal validity is generally defined as the correctness or trustworthiness of inferences drawn from data. External validity refers to how well these inferences can be generalised to other persons, other settings, or past/

future situations. In other words, are the findings transferable to other contexts (Creswell, 2003). Stringer (2007) links validity criteria to what he states are the goals of AR: a) the education of both the researcher and the participants; b) addressing and solving a problem through a series of reflective cycles; c) engaging in a change process relevant to a local setting while generating sufficiently rich descriptions so that others might make judgements about whether or not the situation is sufficiently similar to their own for the outcomes to be applied elsewhere. Good AR, he maintains, is a systematic process incorporating clearly defined and open-to-scrutiny procedures which allow an independent judgment as to whether the reported evidence supports the researcher's assertions.

Before the module began, I sought confirmation that stages two and three of my main study conformed to best practices for action research. I did this by twice convening an expert panel to review my methodology and methods: once before the module started, and a second time nearly at mid-point during the module. I was particularly concerned with adequately addressing the AR validity criteria described above and with defining my role as a researcher. I questioned whether my dual role as a teacher and researcher might pose ethical and power balance difficulties for the student participants.

3.7 Expert panel consultation

McNiff & Whitehead (2006) strongly endorse the convening of an expert panel, or validation group, during action research. Its role, as they define it, is to meet at crucial stages during the research process to listen to the researcher's claims to knowledge (ontology, epistemology and theoretical perspective). Additionally, the panel ascertains whether or not those knowledge claims and their evidence base (research methodology and data generation methods) are congruent, coherent and believable. In particular, the panel members are meant to: 1) raise questions about taken-for-granted aspects, 2) critique the rigour of the methodology, 3) determine whether the evidence gathering methods would achieve the outcomes wanted for the study and 4) discuss whether the researcher had addressed all pertinent ethical issues. The recommendations of this expert panel are discussed here in full as they shaped both the methodology and the methods of my PAR study.

My expert panel consisted of five members with diverse backgrounds (Appendix 7) who agreed to meet twice to consider the issues raised above by McNiff & Whitehead (2006). Members were recruited so as to reflect expertise in the domains I considered most pertinent to my study. These were: action research, the scholarship of teaching and learning, evidence-based practice and current occupational therapy practice in Ireland. Two members are co-directors of the teaching and learning centre at the study university, one has published a book on continuing professional development and evidence-based practice and one is an occupational therapy manager. The fifth person, and panel chair, was recommended to me as being a leader in action research in Ireland.¹²

I took specific steps in order to support the expert panel members in being reviewers of my methodology and methods, as only the chair had already performed such a role in a PAR context. These included emailing informational materials prior to the first meeting: 1) an explanation of the role of an expert panel in PAR; 2) a description of the primary data generation method during stage two of the research (the nominal group technique, Appendix 8); and 3) a brief summary of my study and a list of possible questions for discussion.

The initial two-hour discussion was guided by the questions I had composed (Appendix 9) to address the validity criteria deemed important in the action research literature as discussed in section 3.6 above. At the end of the first meeting the panel recommended:

1. That I clarify my use of the terms *capacity*, *improvement* and *influence*. They felt that it was unclear whether the study's unit of analysis was me as the teacher, or the module. However, through our discussion they realised that I intended it to be the module.
2. That I use additional data generation methods for capturing student responses during the class, particularly the group interactions. They suggested that the classes be videotaped.
3. That people other than me mark all module assessments. Though one panel member felt that this separation between my teacher and researcher roles was

¹² I received a grant from NAIRTL (National Academy for the Integration of Research Teaching and Learning) to fund the travel and accommodation costs of panel members.

unnecessary, the majority maintained that this was important in order to minimize power imbalances between a teacher and the students.

By the conclusion of the discussion, other than the points mentioned above, the panel had endorsed my PAR methodology and my proposed data generation methods.

As a result of the panel's recommendations I did the following prior to our second meeting:

1. Reformulated my research aims and my definition of the word *influence* (as stated in section 2.7) so as to make clear that the study's unit of analysis was the module.
2. Requested that a departmental colleague (X), on the first day of class, discuss with the students their possible participation in the research. X mentioned to the students the possibility that the class sessions might be video-taped.¹³
3. Arranged for five colleagues to mark the different module assignments, depending on their areas of expertise.

Prior to the second expert panel meeting three months later, the members were emailed anonymously-rendered data to review and a second set of questions to consider (Appendix 9). The chair again led the two hour discussion, guided by the questions I had composed to address issues raised in the action research literature (Herr & Anderson, 2005; McNiff & Whitehead, 2006, 2009; Stringer, 2007). These questions were formulated so as to clearly reflect the study's unit of analysis being the module, as recommended by the panel during its first meeting. At the end of the second meeting, the judgement of the panel regarding my PAR methods was that:

1. The dynamics of the group interactions were very well captured by the different data sources.
2. The triangulation afforded by the different evidence sources greatly strengthened the study.

¹³ The students refused, stating that they felt it would interfere with their learning. They did, however, accept X's alternative proposal of a non participant observe (NPO) taking written notes. The role of the NPO is discussed in more detail in section 4.3.2.

3. My researcher field notes (RFN) and reflexive diary (RD) entries exhibited a good level of critical subjectivity¹⁴ which the panel chair, in particular, considered foundational to action research.
4. The non-participant observer (NPO) notes¹⁵, a data source which arose out of the students not wanting to be video-taped, gave evidence of the students having the confidence and skills to participate fully as co-researchers.
5. The nominal group technique (NGT) discussions, reported in the NPO notes, demonstrated the students' abilities to negotiate a common understanding of how they wished to modify the subsequent session's content and learning approaches. For example, the data generated from the second class (NPO notes and researcher field notes [RFN]) provided evidence of the students' decisions from the first class being implemented during the second class.

In summary, the panel members agreed that my data: a) were careful and honest, b) accurately reflected the dynamics of what was occurring, and c) captured the unfolding PAR process. They felt that my methodology had an appropriate action-oriented focus on the *problem* of how to support clinical therapists' engagement in EBP activities and that the chosen data collection methods would generate data on students co-constructing and evaluating an educational *solution*. Additionally, the panel members judged that I was practising in an ethical manner. These overarching ethical concerns are reviewed below, while more specific ethical issues which arose during data generation are discussed in Chapter four.

¹⁴ According to Herr and Anderson (2005), critical subjectivity is a process whereby the action researcher acknowledges his/her personal perspectives and biases so as to build a critical reflexivity into the research process. These perspectives are meant to be articulated in diaries, field notes and, to some, extent, in the thesis. Developing the skills and habits of self-reflexivity is considered to be of primary importance for any action researcher. The expert panel's role, according to Herr and Anderson (2005), includes examining the researcher's critical subjectivity. Mason (2002) defines critical subjectivity as involving "*thinking critically about what you are doing and why and recognizing the extent to which your thoughts, actions and decisions shape how you research and what you see*" (p. 5).

¹⁵ The expert panel felt that the substitution of a non participant observer for videotaping, while regrettable, was acceptable.

3.8 PAR transparency considerations

In PAR there is a strong imperative for transparency as participants are meant to exercise more control over the research process than participants are generally accorded in other research approaches (Stringer, 2007). The ability of PAR participants to engage in collaborative decision-making with the researcher, as the research process unfolds, is founded upon this transparency. Such transparency is ensured through openly addressing ethical and power balance issues, which are sometimes inter-twined, and possible researcher bias.

Ethical considerations are an important part of any research study and include the responsibility to guarantee that participants experience no harm as a result of their involvement in the research. This is done through informing the participants as to the purpose, aims and processes of the study and how the results will be used. In addition, when considering PAR data collection in classrooms, one must consider the power hierarchy which generally exists in such environments. For example, students may feel coerced to consent because of the power differential between themselves and the module leader. This problem can be circumvented by having a disinterested third party obtain consent. Hence, I put clear protocols in place for obtaining informed and freely-given consent. These are detailed in Chapter four and included assurances of confidentiality and the security of research information.

Concepts of power and responsibility are oftentimes inter-linked. As discussed in section 3.3, PAR, as originally conceived by Freire, was intended to challenge traditional power relationships within society (Crotty, 2009). Through participating in AR, newly-empowered stakeholders are encouraged to take responsibility for local-level planning and decision-making. In an educational context, this means that teachers, who are usually viewed by students as holding the power in the classroom, would create a collaborative learning environment. Students would become more responsible for determining educational content and learning approaches. Methods employed to support this process would need to demonstrate democratic procedures which were clear and open to scrutiny; these methods are discussed in detail in Chapter four.

Procedures guaranteeing transparency, however, cannot completely eliminate power issues inherent in academic student – teacher relationships. Nonetheless, the PAR approach, which mitigates the classroom power disparity, changes the nature of these

power relations. I had more expertise than the students in the domain of EBP and through my experience in teaching had acquired an understanding of what challenges students and what were the expectations for quality work. As PAR co-researchers, however, the students took greater responsibility for their own education than students are normally accorded. At the same time, care was taken that control during the PAR iterative cycles did not reside too much with one participant so as to not undermine the collaborative and democratic nature of the process. While I could not relinquish totally the responsibility of facilitating the students' learning, I still gave the students significant decision-making opportunities. My role was that of a catalyst who empowered the students to examine several courses of action and assisted in the implementation of their decisions. All of the students had their voices heard and were actively engaged in the transactional knowledge construction process. My voice was also part of this process.

Even though action research is a tradition of inquiry different from both quantitative and qualitative research, action researchers still need to systematically reflect on who they are in the inquiry process. Like a qualitative researcher, they must be mindful of their own personal biography and how it might shape the study. The process of introspection, or reflexivity, aids researchers in acknowledging their possible biases, values and interests. This is important as the personal-self is seen as inseparable from the researcher-self (Mason, 2002). Whereas the education and qualitative research literature is replete with references to researcher reflexivity and bias, two of the action research texts which I consulted (McNiff & Whitehead, 2006; Stringer, 2007) made no explicit reference to either term. McNiff and Whitehead (2006) mention that an action researcher engages in reflection-in-action as defined by Schön (1983) without going into more specific detail. Stringer (2007) emphasises the researcher's role as a neutral catalyst who '*brackets*' his/ her own knowledge, so as to enable the client/ student group to explore issues in their own terms while arriving at a practical solution (pp. 98-99). It is as if Stringer perceives the researcher as a humanoid devoid of emotions and a life history that might impact the role of facilitator. Herr and Anderson (2005), on the other hand, emphasise that action researchers must acknowledge that their research engagement will necessarily reflect perspectives drawn from their own personal experiences. These authors maintain that while bias and subjectivity are natural and acceptable in AR, they must be articulated and examined through various forms of

journaling, as described in Chapter four. By building critical subjectivity into the research process, action researchers can ensure that they do not have a distorting effect on research outcomes.

3.9 Chapter summary

In this chapter I have laid out the rationale for the framework of the main study and the decision-making processes I went through to arrive at my choices. I have described how a constructivist epistemology for the study, and a realist ontology, had their origins in the Sunnyview service development project which, in turn, led to my selecting a PAR strategy of inquiry. The PAR methodology, due to its origins in a critical inquiry axiology, reflects the all-important constructivist emphasis on empowering learners.

The three stages of the main study were briefly outlined including the forms of data generated during each. Stage one, designing the IETP module, is described at greater length in Chapter five. Chapter six concerns stage two, conducting the IETP module. The topic of Chapter seven is stage three, evaluating the IETP module.

This chapter also discussed the expert panel which was convened to review my PAR methodology and data generation methods and to judge how the study addressed AR validity criteria. The panel determined that, with minor revisions, my study was adhering to best practices in action research. Broad ethical, power balance and researcher bias considerations, which underpin what needs to be a transparent PAR process, were described. Specific procedures employed for addressing these issues are integrated into a discussion of data generation and data handling methods in the next chapter.

CHAPTER FOUR - METHODS OF DATA GENERATION AND DATA HANDLING

4.1 Overview of the chapter

This chapter describes the different methods employed for data generation and data handling during stages two and three of the main study; stage one being the preparatory designing of the module *Implementing evidence in therapy practice* (IETP) which was not part of the PAR process. My choice of the term data handling, rather than data analysis, is deliberate. The former term incorporates the understanding element of analysis, while also communicating the dimension of needing to manage an evolving situation so as to “*produce adequate and useful outcomes*” (Richards, 2009, p. 4). Processing data in a manner which respected the dynamically unfolding PAR context, through repeatedly integrating the voices of the student co-researchers, was central to how I gained and used knowledge from my study.

Participatory action researchers are primarily interested in the unfolding dynamics and outcomes of the problem → solution process. In the case of my study, supporting therapists’ engagement in EBP activities (*problem*) was addressed through developing a multidisciplinary post-qualification MSc module on EBP (*solution*). As the students were my co-researchers, this chapter begins with an account of their recruitment. A brief discussion of how PAR dynamics were integrated within the module provides the rationale for the types of data generated during stage two (Figure 7 below). Stage three data generation focused on evaluating the PAR outcome, i.e. the collaboratively-developed IETP module. The issue of triangulation is addressed once the reader is familiar with the multiple data generation sources of the study.

The distinct data handling procedures for stages two and three are discussed independently. This is followed by a discussion on the ethical issues that arose from recruiting students as co-researchers within the context of a module that I taught. Finally, I examine my role as researcher in the research process (reflexivity) and the issue of bias and its possible impact on data handling. This chapter concludes with a

review of the study procedures for ensuring PAR rigour in the light of the described data generation and data handling methods.

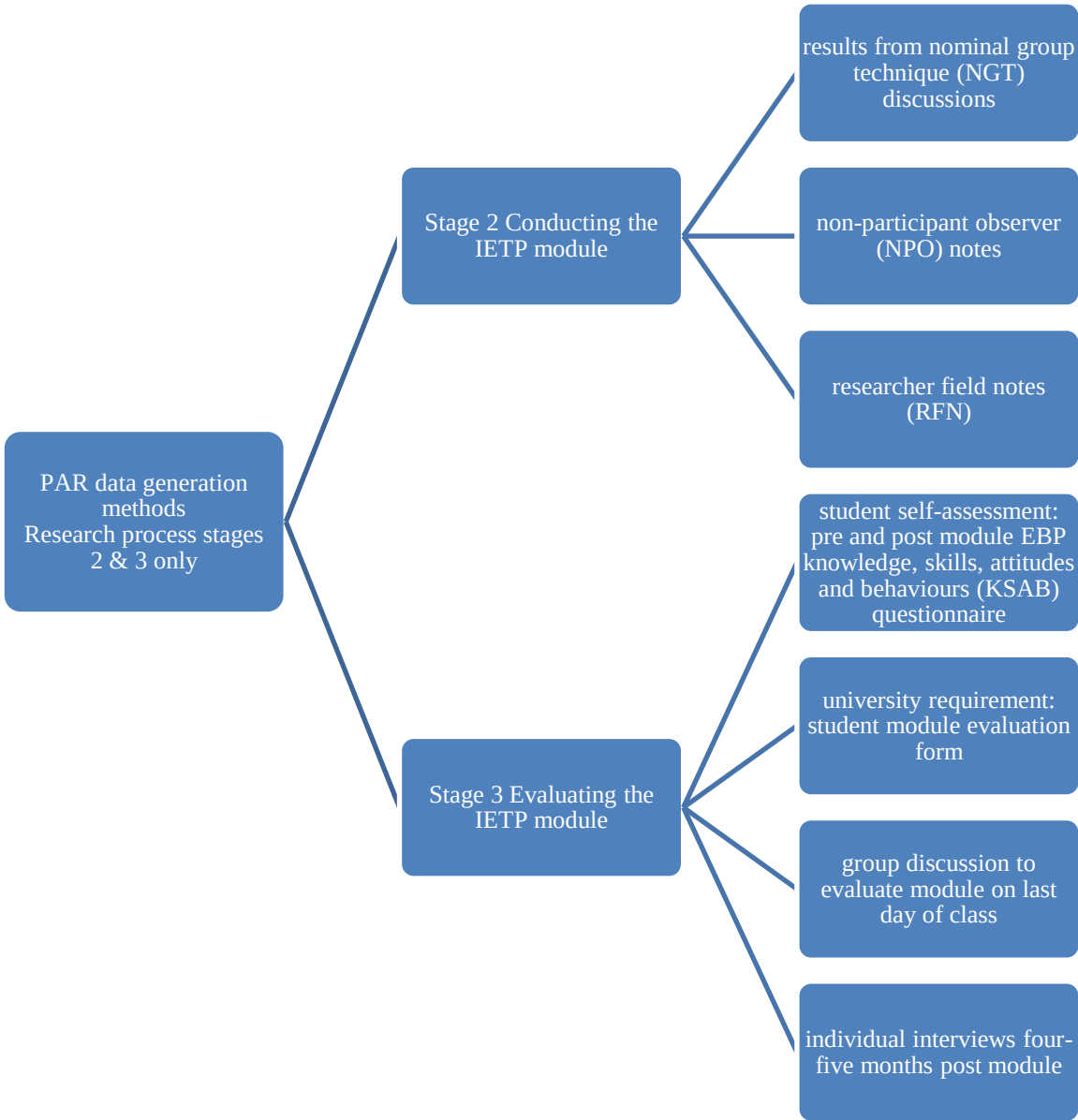


Figure 7 Stage 2 and Stage 3 PAR data generation methods

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4.2 Recruiting study participants

My PAR sampling strategy was guided by a desire to recruit participants who would be in a position to contribute their professional expertise to an exploration of how different learning approaches for EBP skills and knowledge acquisition supported therapists' engagement in EBP activities. Therefore, an inclusion criterion was that all participants had to have at least two years of clinical experience. The clinical therapists who registered at the study university for the post-qualification MSc *Implementing Evidence in Therapy Practice* (IETP) module in the autumn of 2009 had 5 to 27 years of clinical experience. The two men and five women who registered included one occupational therapist, four physiotherapists, and two speech and language therapists. My recruitment strategy can be termed a captive convenience sample (Carpenter & Suto, 2008) because all the students who enrolled in the module were approached about participating in the research as all met the inclusion criteria.

I made every effort to ensure that the recruiting process was ethical. All of the students were given the opportunity to join the research. The option of completing the module, but declining to participate in the research, was also offered. It was made clear that students who joined the research could withdraw at any time without prejudice. Before the module began, each of the enrolled students was sent an email by the departmental Executive Assistant. This included a three-page document giving information about the research (Appendix 10) including assurances about confidentiality and the security of research data. A separate consent agreement form (Appendix 11) was also attached.

At the beginning of the first all-day class another member of staff, X, spoke to the students about the research without me being present. She explained the background, purpose and design of the study, re-iterating what was in the information document. She also answered all questions raised by the students. It was during this discussion that the students stated that they would decline to take part in the study if it meant that the class sessions were to be videotaped as the expert panel had recommended. While the students were interested in being involved in the research, they felt that being videoed would make them feel self-conscious, inhibit what was said in discussions and therefore hinder their learning. They were of the opinion that while it would be easy to anonymise written data, the same could not be guaranteed for video data. After discussion, several students told X that they were happy to take part in the research as long as video was

not used. The students agreed, however, to the presence of a non-participant observer (NPO) taking notes; a role that X assumed beginning that day. It was also explained to the students, as recommended by the expert panel, that staff other than me (the module leader) would be marking all of their assignments.

At the end of the introductory discussion about the research, X asked the students to consider whether they wished to participate in the research. If they felt comfortable and wished to do so, the students were advised that they could complete consent forms at any time during this first day and ask for more information at any time. I then entered the classroom after this discussion and commenced the first class. At the end of the first class, six of the seven students returned signed consent forms to me, noting their chosen pseudonym. Only these six students remained after class the first day for the nominal group technique (NGT) discussion. The seventh student wanted more time to reflect on whether or not to participate in the research. She returned the consent form to me at the beginning of the third class and participated in all of the participatory action research-related activities starting on the second day of class. In summary, the seven enrolled students, all of whom met the inclusion criteria, signed consent forms and were recruited to the study. Their details can be found in Chapter six (section 6.2).

4.3 Data generation sources while conducting the IETP module

The IETP module consisted of 35 contact hours of teaching delivered during five classes, each class being of seven hours duration. Classes were held every two or three weeks over a 10 week period. Approximately 150 hours of self-directed study was also expected of students. The PAR process integral to stage two commenced during the first class in early October 2009 and concluded on the last day of class in December 2009. Figure 8 below (extracted from Figure 7) indicates the data sources informing this PAR process.

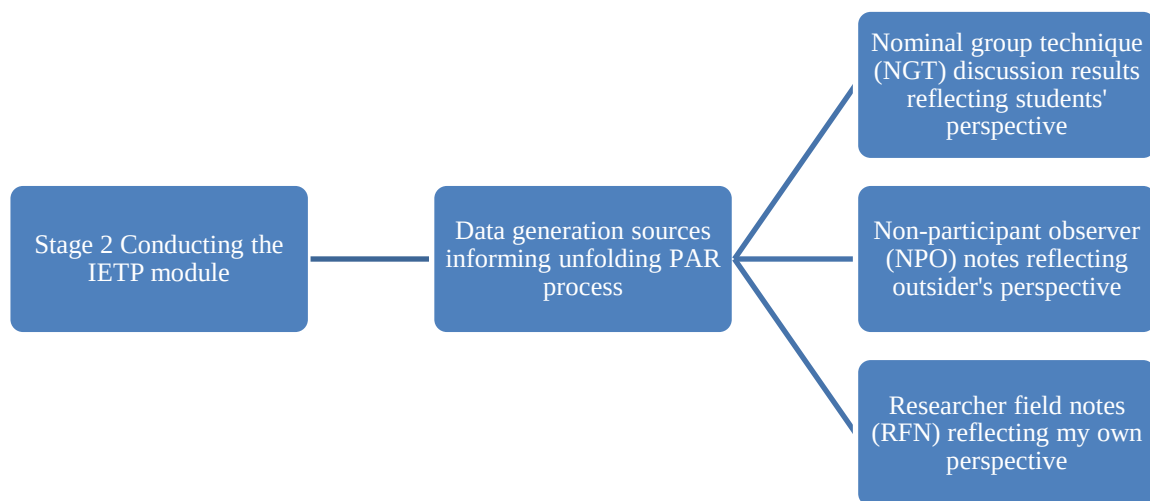


Figure 8 Data generation sources informing the PAR process

During each class the students, as co-researchers, were responsible for: a) observing their own learning which was taking place; b) reflecting on that learning; and c) based on that learning, proposing a plan of action for the next class. In this manner, they addressed the first aim of the study; that is, collaboratively developing learning opportunities for acquiring the skills necessary for locating, critiquing and translating research findings into practice within the framework of a multi-disciplinary post-qualification MSc module on EBP. The students fulfilled their co-researcher role through end-of-class NGT discussions as described below.

4.3.1 Nominal Group Technique (NGT) discussions

The NGT is considered a useful consensus method in healthcare research (Potter, Gordon & Hamer, 2004) as it provides a rapid, structured approach for collecting and organizing the thoughts of a group with the intention of arriving at a democratic decision on an issue. The iterative PAR cycles of co-constructed understandings are reflected in the four steps of the NGT which are: 1) generating ideas, 2) recording ideas, 3) clarifying ideas and 4) voting on ideas as seen in Figure 9 below.

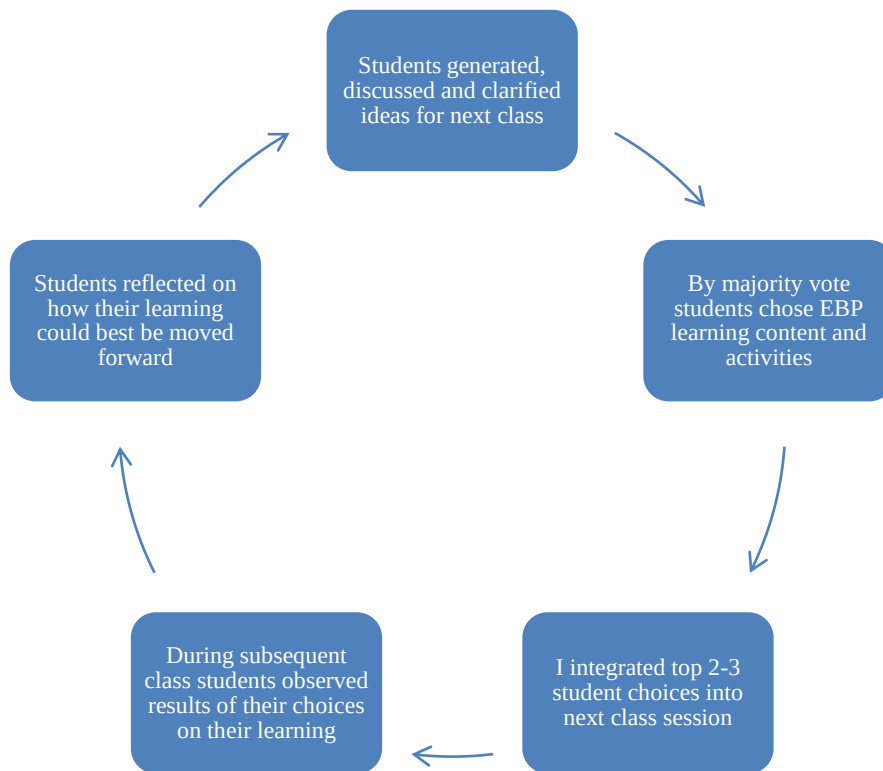


Figure 9 Students co-construct understanding through NGT discussions

I acted upon the students' NGT-generated decisions by integrating their top two or three learning approach choices (decided by majority vote) into the subsequent class. During each class, as the students engaged in class discussions and other learning activities, they were able to observe the impact of their choices on their learning. They reflected on their current learning and which EBP skills they wanted to develop still further. They then once again made choices during that day's NGT discussion for the next class. In this manner, the PAR iterative cycles continued to unfold over the 10 weeks of the IETP module. The specific results of these NGT discussions, which reflected the students' perspective on their learning, are detailed in Chapter six. Because I facilitated the NGT discussions, the non-participant observer recorded the students' NGT decisions in her written notes.

4.3.2 Non-participant observer (NPO) notes

A second source of data was the non-participant observer (NPO) notes written during each seven hour class, as agreed by the expert panel. These notes provided an outsider's perspective on student class behaviours. The notes included detailed descriptions of students' body posture, facial expressions, levels of engagement, and brief summaries of who spoke when and to whom. The focus of the note-taking was the group dynamics during the learning and not what was said per se. Students could request to have access to these notes at any point during or after the classes, though none ever asked to do so.

A university colleague, X (who is also one of my research supervisors) acted as the NPO during the first, second, fourth and fifth classes. As she had to be absent during the third class, a second colleague, Y, assumed the role of NPO. Colleague X was chosen because she and I agreed that it needed to be a person who deeply understood the aims of the research and PAR methodology. As the NPO would see and hear intimate discussions of the group (though she did not record these), we agreed that the NPO should be a person very knowledgeable about the development of the study. I briefed colleague Y on PAR methodology and she also reviewed the NPO notes of the first two classes before sitting in on the third class.

The arrangement of the classroom environment illustrates the etic (outsider) position of the NPO. The seven students were seated in a contiguous semi-circle of desks facing the front of the classroom and the whiteboard/ powerpoint screen. I sat at the left end of the semi-circle, in line with the students, so that I never had my back to any student and they all could see me clearly. The NPO was not part of the semi-circle as she sat approximately two meters from the closest student. Her desk, with a laptop computer, was placed near an electrical socket in the front of the room, to the far right of the powerpoint screen and next to the windows. Though her desk faced the students, so that all of them were within her field of vision (and she in theirs), her physically distant location and her total silence communicated that she was not a member of the group. As the NPO herself mentioned in the notes, after the first hour of the first day, the students' gazes were almost always directed at each other, at me or at the powerpoint screen on display; rarely at her.

4.3.3 Researcher field notes (RFN)

A third source of data during the conduction of the IETP module was my researcher field notes (RFN), following a format suggested by Miles and Huberman (1994). In the evening after each class, I completed a summary about the day (Appendix 12) giving my perspective. As discussed in the 4.6 stage two data handling section below, these field notes, along with the nominal group technique results and the non-participant observer notes, informed the unfolding PAR process and provided evidence of the developing partnership between myself and the student co-researchers as the partnership evolved during the IETP module.

4.4 Data generation sources for evaluating the IETP module

Stage three concerned the evaluative component of the PAR process, which addressed the second aim of my study. The purpose of the evaluation was to assess the outcome of the PAR process; that is, the module's influence on the students' acquisition of knowledge and skills about EBP and their subsequent engagement in EBP activities. This stage had four data generation sources as illustrated in Figure 10 below (extracted from Figure 7).

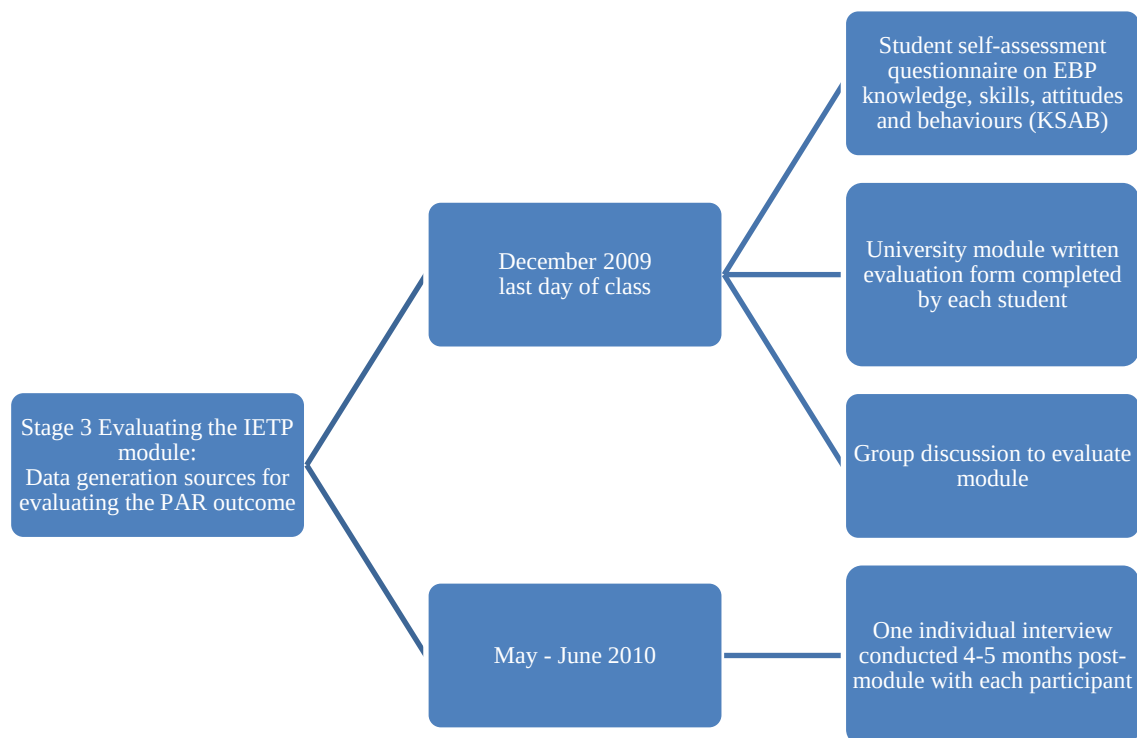


Figure 10 Data generation sources for evaluating the PAR outcome

4.4.1 EBP Knowledge, Skills, Attitudes and Behaviours questionnaire

The purpose of the EBP Knowledge, Skills, Attitudes and Behaviours (KSAB) questionnaire was to provide students with a tool: a) for assessing their learning needs at the beginning of the module; and b) for determining, on the last day of class, whether or not the module had, in fact, addressed those needs. In 2006, Khan and Coomarasamy completed a systematic review of eight studies (seven RCTs and one non-randomised study) reporting on efficacious teaching and learning methods for acquiring EBP knowledge and skills. They concluded that any programme should, among other points discussed in more detail in Chapter five, include methods for: 1) identifying individual learner needs; and 2) giving learners an opportunity for self-assessment. These findings reflect two of the adult learning principles of Knowles et al. (2005) and elements of EBP course structure promoted by Stern (2005). As a consequence, I decided that the IETP module should include some version of an EBP KSAB questionnaire. During my

collaboration with Sunnyview, I had solicited the therapists' opinions regarding two self-report questionnaires on EBP; one constructed by Alsop and a second by Taylor. I had previously personally met both of these U.K.-based researchers and I had very briefly discussed with them their work in the area of EBP (Alsop, 1997; Taylor, 2003). I subsequently made contact with each of them and they emailed me copies of unpublished EBP questionnaires they had developed. The Sunnyview therapists found the meaning of a number of the questions on the Alsop questionnaire unclear; hence sometimes they were not sure how to respond. However, they were of the opinion that the Taylor questionnaire would be a useful tool for assessing their EBP knowledge and skills needs. I therefore chose it for the IETP module students and obtained permission from Taylor in 2008 to use it in my study.

The Taylor EBP KSAB questionnaire is comprised of 86 self-assessment items divided into six sections. A copy of the questionnaire and a description of its psychometric properties are in Appendix 13. All of the sections, with the exception of the first, require a Likert scale response. The sections solicit data about:

1. Demographic information about the respondent (6 questions)
2. Perceptions of, and attitudes towards, EBP (23 statements)
3. Present knowledge and skills regarding EBP (10 statements)
4. Perceived barriers to EBP (34 statements)
5. EB activities engaged in during a typical month (3 statements)
6. Information sources used in clinical decision-making in the past 6 months (10 statements)

On the first day of class I asked the students to fill out the questionnaire individually using a blue ink pen. On the last day of class, the students again completed the same copy of the questionnaire using a red ink pen. In this manner, the students were easily able to see how their responses had evolved over the 10 weeks. As this questionnaire was primarily an assessment tool for the students, and not for any outside observer, I decided they should be able to see their initial responses while filling out the questionnaire for a second time at the end of the module. Their responses gave some indication as to whether or not the module had possibly influenced changes in their attitudes towards EBP and their self-assessed level of EBP knowledge and skills. How

the data from these questionnaires were processed during the module evaluation stage is discussed in section 4.7.1 below.

4.4.2 Student module evaluation forms

The second data source for evaluating the IETP module was the university student module evaluation forms. Having students complete such forms is strongly encouraged by the study university and these forms are reviewed by the department and the external examiner. In order to construct this form (Appendix 14) I reviewed other departmental and university evaluation forms for other modules. The students were asked to complete this form at the end of the last class.

4.4.3 Group discussion to evaluate module

Immediately after completing the module evaluation forms, the students expressed a desire to verbally share with each other their views about the module. Hence they engaged in a 30 minute unstructured group discussion; providing a third data source for evaluating the IETP module. With the students' permission, the discussion was audio-taped, transcribed and their comments were collated with those made on the written evaluation forms.

4.4.4 Post-module individual interviews

The fourth data source for evaluating the IETP module was interviews. Approximately four - five months after submission of their final assignment, each of the students took part in one individual semi-structured interview. I considered this time delay to be minimally necessary in order to allow each student time to integrate, or not, their learning from the module into their professional practice.

The purpose of an interview guide is to ensure that the interviewer has carefully considered how to best use the limited time available by employing a systematic and comprehensive approach to the topic under study. The guide guarantees that the same broad subjects are broached with each interviewee, while at the same time allowing the interviewer the freedom to explore and probe through follow up questions in order to further elucidate particular lines of inquiry (Patton, 2002). There are specific techniques involved in interviewing and these can be varied to meet particular situations. As emphasised by Denzin and Lincoln (2005), the use of language is important as specific words can be employed to create a "*sharedness of meanings*" so that both the

interviewer and the interviewee understand “*the contextual nature of specific referents*” (p. 713). As suggested by Stringer (2007), I attempted to formulate questions which encouraged the students to discuss events and phenomena in their own manner, while also asking about specific issues regarding the IETP module. Through integrating all of these concerns, the interview guide reflected my study’s constructivist epistemology.

The content of the interview guide was compiled from issues identified as potentially relevant in the action research and qualitative evaluation methods literature. The same literature informed the strategies and tactics employed to engage the students during the interviews. Patton (2002), in discussing interviews designed to evaluate an educational programme, recommends that the following areas be addressed (p. 345):

- a) What has the student done in the programme?
- b) What knowledge, skills and activities have been achieved?
- c) How has the student been affected in their feelings about self, attitudes towards work, aspirations and interpersonal skills?
- d) What aspects of the programme have had the greatest impact?
- e) What problems has the student experienced?
- f) What are the student’s plans for the future?
- g) What does the student think of the programme (strengths, weaknesses, things liked, disliked, things that should be changed)?

While I agreed in general with Patton’s suggestions I felt that some of his questions might be interpreted as too focused, not broad enough to allow open-ended comments. At the same time, I knew I needed to be mindful of my own knowledge and expectations and to find a way of encouraging the students to explore the different issues without my own implied judgments being embedded in the questions. For example, from reading the EBP literature I had concluded that it was important that both change and leadership theories be integrated into the module. The students might not be of the same opinion, so I did not want any question to convey my bias. Rather, I tried to construct questions which were neutral, which dealt with one issue at a time and which supported the establishment of a positive and open rapport.

As suggested in the literature (Denzin & Lincoln, 2005; Hinojosa, Kramer & Crist, 2010; Patton, 2002; Stringer, 2007), I decided that the interview should commence with

general information about what I was aiming for and why that information was important. The interview guide then addressed the broad areas suggested by Patton (2002) above, regarding the general impact of the module and its strengths and weaknesses. The guide also included specific questions about the learning activities, group interactions, assessments and the collaborative action research process. Students were asked how their general professional behaviour might have changed since the module. One suggestion of Patton (2002) was the idea of having a ‘role play’ question where the interviewee is asked to simulate some aspect of an experience. I used this strategy to encourage the interviewee to describe the enablers and barriers to their workplace EBP culture. This indirect approach allowed the interviewee to disassociate her/himself somewhat from the question so that it would appear less judgemental. The interviewee was not being directly asked to report on his/ her engagement, or not, in EBP activities in the workplace; rather they were asked what ‘advice’ they would give to a (fictitious) newly-hired colleague.

During the interview I was mindful of how the interviewee was responding to questions and I occasionally provided process feedback on how the interview was progressing which I felt would be helpful for maintaining the flow of our interactions.¹⁶ Prompts were used to facilitate the interviewee in revealing more details of the phenomena and/ or feeling they were describing. If the interviewee digressed into what appeared to be longwinded tangential remarks, due to time constraints I would listen attentively to assess the relevance and quality of the responses. If necessary I would re-phrase a question so as to encourage a more focused answer. I ended the interview by giving the interviewee an opportunity to have the final say. A copy of the interview guide can be found in Appendix 15.

The seven individual interviews took place between May and June 2010. Each interview lasted 60 to 90 minutes and they were audio-taped. The participants were able to select the time and place for the interviews; everyone chose their own work setting. Verbatim written transcripts were made from the audio-tapes by an Irish professional transcriber as I sometimes have difficulty understanding Irish accents. Each transcript was sent to

¹⁶ Patton (2002) refers to such feedback as “*support and recognition responses*” (p. 375) which is intended to let the interviewee know that the purpose of the interview is being fulfilled. It may include statements like: “*It’s really helpful to get such a clear statement of what X was like, that’s just the kind of thing we’re trying to get at*”; or, “*We’re halfway through the interview now and from my point of view, it’s going very well. You’ve been telling me some really important things. How’s it going for you?*”

the interviewee for member-checking to assure accuracy (omissions and errors). Finally, I re-formatted each transcript to anonymise the data by substituting the pseudonyms chosen by participants when they signed the research consent form.

In summary, each of the three stages of my study employed different and multiple data generation methods. Stage one, the preparatory designing of the *Implementing Evidence in Therapy Practice* (IETP) module which was not part of the PAR process, involved reviewing the literature and what I had learned from the preliminary collaboration with Sunnyview. During the IETP module, stage two, non-participant observer (NPO) notes including results from the nominal group technique (NGT) discussions and researcher field notes (RFN) were generated. Stage three, evaluating the IETP module, included: 1) student self-assessment EBP KSAB questionnaires; 2) university module evaluation forms; 3) group discussion about module and; 4) individual interviews. Seven participants were recruited to the study. Each completed the pre- and post- KSAB questionnaire. All seven participants completed the IETP module and all its requirements (attendance, assessments and module evaluation) by January 2010. One student, however, twice failed the final assessment, and hence failed the module in August 2010. Nonetheless, this student participated in all of the PAR activities. Seven individual interviews took place between May and June 2010.

Now that the reader is familiar with the multiple data generation sources of the study, I will discuss how I ensured rigour through triangulation and the process of data handling.

4.5 Triangulation

Denzin and Lincoln (2005), in their seminal text on qualitative research, describe triangulation as the use of multiple data sources “*in an attempt to secure an in-depth understanding of the phenomenon in question*” (p. 5). In their opinion, the gathering of multiple perspectives can add rigour, breadth, complexity and richness to a study by embracing the ambiguity inherent in diverse perceptions. Stringer (2007) believes that credibility in action research is enhanced when a study incorporates multiple sources of information as they enable the researcher to clarify meanings by comparing and contrasting the different sources. In the same vein, Patton (2002) notes that studies

using only one method are more vulnerable to the weaknesses inherent in that particular method, whereas different data sources are more likely to have non-overlapping weaknesses and complementary strengths. Triangulation should not be employed, however, in order to mask flaws in the research design or to compensate for one incorrectly applied method by simply adding a second (Razum & Gerhardus, 1999). Patton (2002) maintains that correctly applied multiple methods will most likely yield somewhat dissimilar results as different types of inquiry are sensitive to different real-world nuances. Rather than weakening the credibility of the study, in agreement with Stringer (2007) and Denzin and Lincoln (2005), Patton states that these inconsistencies provide an opportunity for deepening insight into the phenomenon being studied.

Therefore, triangulation of methods is complex and its purpose is not always readily understood or articulated by researchers. It is imperative that the researcher states clearly the details of and rationale for using triangulation (Casey & Murphy, 2009; Zauszniewski, 2012). There are two distinct purposes for triangulation presented in the literature: 1) confirmation of data and; 2) completeness of data (Casey & Murphy, 2009). When the researcher examines data gathered from multiple sources by exploring the extent to which the findings agree or converge, it is termed a process of confirmation. In this case, consistency in the data provides the researcher increased confidence in the credibility of the findings (Denzin, 1978; Razum & Gerhardus, 1999). Completeness of data is concerned with obtaining a more holistic and contextual representation of the phenomena through gathering multiple perspectives (Casey & Murphy, 2009; Denzin & Lincoln, 2005). The emphasis on completeness of data as a purpose of triangulation differs from a purpose of confirmation since, with the former, the use of multiple methods is expected to yield different results. As suggested by Patton (2002), different sources of data are sensitive to different real-world nuances.

Denzin (1978) has identified four types of triangulation: 1) data triangulation through the use of a variety of data sources; 2) investigator triangulation with the presence of several researchers or evaluators; 3) theory triangulation which uses multiple theoretical perspectives to interpret the same set of data; and 4) methodological triangulation where multiple methods are employed to study one problem or programme. While this study exhibits all of these types of triangulation, there is some overlap between the different types.

Data triangulation in this study is demonstrated through the use of different data sources during the conduction of the IETP module: a) the nominal group technique (NGT) discussions; b) the non-participant observer (NPO) notes; c) the researcher field notes (RFN). This data triangulation was designed to highlight how the iterative cycles of the PAR process were experienced similarly and differently by the students and the researcher. These multiple perspectives were examined by the researcher so as to provide as complete picture as possible of the unfolding PAR process. Casey and Murphy (2009) maintain that when the aim is completeness of data, triangulation can contribute to the comprehensiveness of a study. Therefore, the rationale for data triangulation in this study was to provide a holistic and deeper description of PAR decision-making during the ITP module.

Investigator/ evaluator triangulation in this study is demonstrated through distinct investigators/ evaluators voices being heard: that of the students and my own as researcher. The rationale for the investigator triangulation was to reduce the potential bias which might be present should there be only one investigator, thereby improving the reliability of the study (Dootson, 1995). However, as the investigators/ evaluators in this study represent two of the same sources noted under data triangulation, the investigator/ evaluator triangulation does not provide additional rigour to the study than that afforded by the use of data triangulation.

Regarding theory triangulation, a realist ontology and constructivist epistemology informed the critical inquiry axiology of this study (see Chapter 3). Whereas these represented multiple theoretical perspectives, all three had congruent philosophical assumptions: a) that multiple realities exist as individuals have varying perceptions of a given situation and; b) that individuals interact with each other and the environment as they interpret their experiences and make choices. As stressed by Dootson (1995), the chosen PAR methodology and methods were guided by this broad theoretical stance. PAR is a process of co-operative inquiry which respects the socially-constructed multiple realities of the participants as they engage in collaborative decision-making and evaluation. Both the qualitative and quantitative methods employed in this study reflected the philosophical paradigm under which they were generated.

With methodological triangulation, the fourth type identified by Denzin (1978), the researcher uses two or more methods to decrease the weaknesses of any one method and

thereby strengthen the outcomes of the study through completeness of data.

Methodological triangulation is described as having two designs: a) within method; or b) across method (Casey & Murphy, 2009; Zauszniewski, 2012). Within method triangulation is defined as using more than one method of data collection from the same research tradition (such as qualitative observations and interviews) to measure the same variables or phenomena. Across method triangulation involves both quantitative and qualitative data collection, as in this study. If qualitative and quantitative methods are used simultaneously, and the findings are complementary, this is termed simultaneous triangulation. If one method is used before the other, this is termed sequential triangulation.

The three stages of this study demonstrated across method, sequential triangulation while exploring the development of an MSc module supporting the students' subsequent engagement in EBP activities. Stage one, designing the IETP module, relied on an in-depth review of the healthcare literature, and as such was not part of the PAR process. Stage two, conducting the IETP module, utilised methods common to action research: a) an approach for consensual decision-making such as the NGT (Potter, Gordon & Hamer, 2004); and b) an educational-context approach (McNiff & Whitehead, 2006) for capturing the students' learning (NPO notes in substitution for videoing). Stage three, evaluating the IETP module, employed methods found in research concerned with reviewing programme quality (Patton, 2002): questionnaires, evaluation forms, group and individual interviews. The rationale for methodological triangulation in this study was to provide comprehensiveness and validity to the findings.

In summary, when the purpose of triangulation is completeness of data (be it within or across method and simultaneous or sequential) contradictory findings are embraced as enriching the study rather than being perceived as methodologically flawed because of assumptions that consistency of findings across data sources is required (Casey & Murphy, 2009). While findings from one method can presumably validate those from another method, the primary aim is deeper insight and comprehensiveness.

Triangulation, however, cannot in itself assure the rigour of a study. Creswell (2003) and Mason (2002) caution that having several methods for gathering data does not guarantee that the researcher will have a better grasp of what is being studied. They argue that the researcher's approach to data analysis/ handling is even more important

than multiple data generation sources. Concerns about rigour arise particularly in qualitative analysis for it depends upon pattern recognition in the data. Consequently, there is the possibility that the findings might be shaped by the researcher's predispositions and biases, be it unconsciously, inadvertently or intentionally (Patton, 2002). To counteract this possibility, and thereby increase the credibility of this study, other than triangulation I used two additional rigour-enhancing strategies: 1) a reflexive diary (section 4.9) and; 2) clear procedures for data handling (section 4.7). In particular, how I engaged in the pattern recognition process is discussed in section 4.7.4.

Giving evidence during the data handling process of systematic analysis of the data, with a particular focus on demonstrating the credibility of the researcher and the findings, is essential. This process is termed operationalising/ implementing triangulation and involves two sequential stages: 1) preparing/ sorting the data through assigning codes of meaning and; 2) generating completeness by comparing and combining the perspectives generated from each data set in order to yield a broad understanding of the phenomena under study (Casey & Murphy, 2009).

4.6 Data handling process while conducting the IETP module

The primary focus during stage two was the collaborative decision-making that I engaged in with participants as co-researchers through which we developed, modified and reviewed the IETP module. The participants made decisions during the nominal group technique (NGT) discussions at the end of classes 1 to 4 (there was no NGT discussion at the end of the 5th, or last, all-day class) and then I acted upon those decisions as illustrated below in Figure 11.

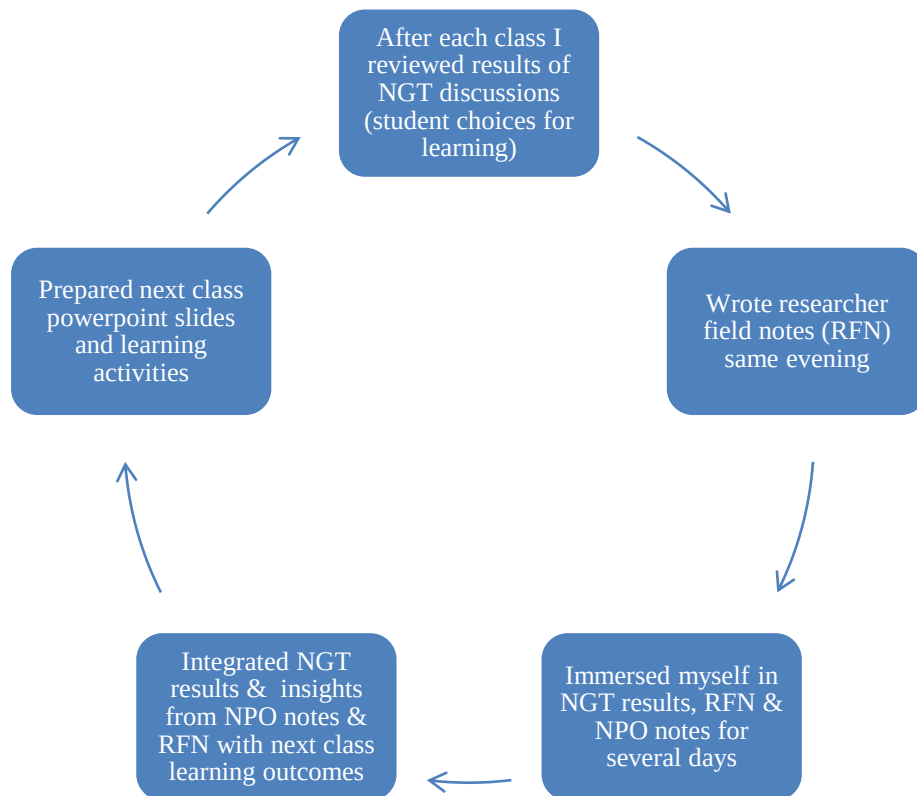


Figure 11 Iterative PAR data handling process

While conducting the IETP module, I was iteratively collecting and analysing data within an evolving context, hence my choice of the term data handling (Richards, 2009) to describe the process. After each class, using the students' pseudonyms, I wrote my researcher field notes (RFN), reflecting on the session. The NPO emailed me her notes on that day or shortly afterwards and I re-formatted these, inserting student pseudonyms. Over the next week (except in the case of class five) I read the NPO notes several times in tandem with my RFN to get a sense of the dynamics of the student learning taking place. At the same time, I reviewed the learning outcomes for the next session, as described in the module handbook, and the specific learning approach choices which received the highest number of votes during the NGT discussion (reported at the end of the NPO notes). Immersing myself in these different data sources allowed me to appreciate the students' learning from three different perspectives: my own (RFN), that of an outside observer (NPO notes) and that of the students (NGT discussion results). Once I felt that I had as holistic an understanding as possible within the time available, I prepared the teaching materials and designed the learning activities for the following session. This class preparation work generally had to be completed within five days so as to be ready for the next 7 hour class. Working within such tight

time constraints was demanding but also intellectually stimulating. I definitely had the impression that I was “*designing the plane while flying it*,” as noted in Herr and Anderson’s (2005, p. 69) description of action research.

I engaged in this data handling process four different times. After the fifth class there were RFN and NPO notes but no NGT discussion results and no future teaching materials and activities to prepare. The generative and transformational nature of the PAR process during the IETP module is described in Chapter six. The insights I gained during stage two data handling informed the construction of the interview guide for the stage three: evaluation of the module.

4.7 Data handling procedures for evaluating the IETP module

Stage three data included: 1) individual student responses to a pre and post module questionnaire about EBP knowledge, skills, attitudes and behaviours (KSAB); 2) student module evaluation forms; and 3) group discussion to evaluate module; and 4) individual interviews. Different data handling procedures were employed for each data source as illustrated below in Figure 12 (extracted from Figure 7).

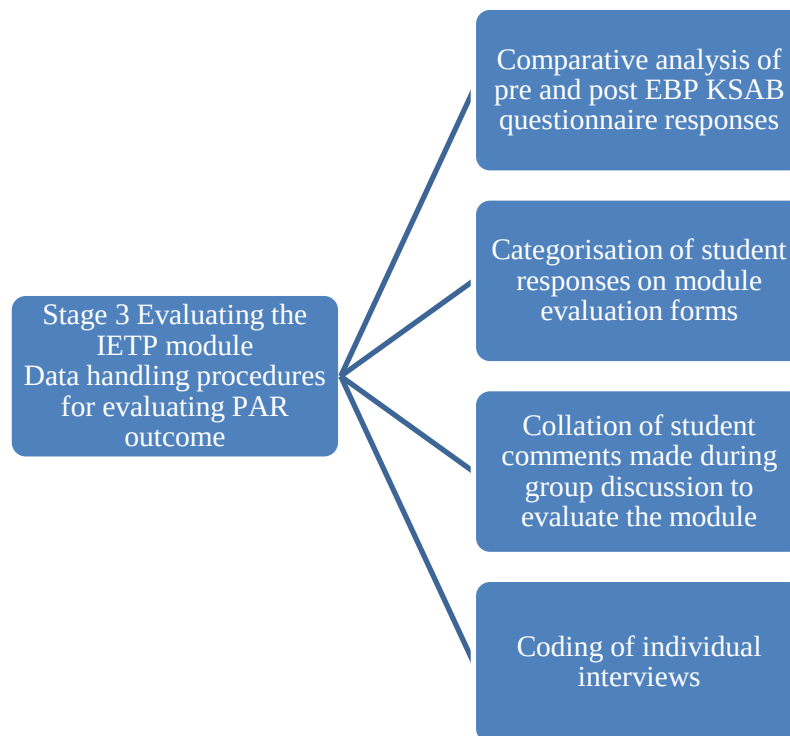


Figure 12 Data handling procedures for evaluating the PAR outcome

4.7.1 EBP KSAB questionnaires

The Taylor EBP KSAB questionnaire (Appendix 13) was primarily conceived as a learning self-assessment tool for each student. Employment of such a tool is recommended in the continuing education literature (Khan & Commarasamy, 2006; Knowles et al, 2005; Stern, 2005). By using a blue coloured pen for the questionnaire completed at the beginning of the module, and a red pen for the same questionnaire completed during the last class, the participants were immediately aware of changes in their responses. In addition, I decided to use the IBM SPSS (Statistical Package for the Social Sciences) computer software to compare pre and post- module response differences across the total group of students.

Before I analysed the data, however, I first determined the internal consistency of the questions as Taylor had not reported this criterion in the psychometric assessment of the

questionnaire. Some of the 86 items in two of the six sections (one on attitudes towards EBP; a second on perceived barriers to EBP) had been worded by the author to reflect alternating perspectives. During questionnaire construction, this is generally done to prevent a response bias (Polit & Beck, 2004). For example, in the first section item 9 asked respondents if they strongly agreed, agreed, disagreed or strongly disagreed with the statement “*keeping up to date with literature/ research is important to me in my job*”. Item 8 was framed from an opposing perspective: “*finding and reading research is not a high priority*”. In the section on perceived barriers to EBP, successive statements regarding possible barriers to EBP also presented contrasting perspectives: “*I feel confident in my ability to read and understand research literature*” (item 40) or “*I do not feel capable of evaluating the quality of the research*” (item 58). As a consequence, I reverse scored some items so that all the responses in these two sections moved in the same direction (Pallant, 2010). In order to assure that the re-configured items exhibited internal consistency, using IBM SPSS computer software I calculated a Cronbach alpha coefficient for the items in these two sections after I had entered each participant’s data. Values above 0.7 are considered acceptable; above 0.8 are preferable (Pallant, 2010). The Cronbach alpha coefficient for the re-configured section on perceptions of or attitudes towards EBP was 0.86; for the section on perceived barriers to EBP it was 0.84.

I then calculated a total score for each of the six sections for every student. The sample size ($n=7$) was too small to draw any statistically significant conclusions about the participants’ learning based solely on this questionnaire. However, descriptive statistics boxplot graphs comparing total group changes in EBP knowledge, skills, attitudes and behaviours pre and post module were generated as were comparative pre and post module individual bar graphs on each questionnaire section. The ordinal scale nature of the data was not appropriate for inferential statistical tests. Results from these questionnaires are discussed in Chapter seven in conjunction with the other three evaluation stage data instruments.

4.7.2 Module evaluation forms

A module evaluation form (Appendix 14) was completed by each participant on the last day of class. The evaluation form questions were focused on the specific content and learning approaches of the IETP module rather than the acquisition of general EBP

knowledge, skills and behaviours as ascertained through the Taylor EBP KSAB questionnaire. Each response from each evaluation was entered into a master listing of comments. This provided a summative overview of student opinions regarding whether and how the module had met the learning objectives as stated in the module handbook. The student comments were then categorised under three broad headings. These were set aside while the group discussion transcript was reviewed.

4.7.3 Group discussion to evaluate the module

On the last day of class, immediately after completing their written module evaluation forms, the participants engaged in a 30 minute group discussion to evaluate the module. The verbatim transcript was read several times and the most salient comments were collated. These comments were then triangulated with those from the student evaluation forms. In the process, the original three categories from the student evaluation forms were amended and refined. Lastly, these categories were compared with the evaluation form master comment list to confirm that the categories were an accurate reflection of the two data sources.

4.7.4 Post-module individual interviews

Because I was concerned about using an interpretative approach to analysing the interview data, I sought to construct a version of the data which reflected the participants' interpretations or understandings of how they experienced the module and what influence they felt it had on their subsequent EBP behaviour. The constructivist epistemology of my study led me to focus on how people create and re-create their realities according to the meanings they find in their differing situations as described by Guba and Lincoln (2005).

I began my analysis of the individual interviews by engaging in what Creswell (2003) calls the generic steps to data analysis (pp. 191-195):

1. Organise and prepare the data
2. Read through data to get a general sense of the information and reflect on its overall meaning
3. Begin detailed analysis with a coding process which organises material into 'chunks'
4. Use the coding to generate a small number of themes or categories

5. Develop a narrative 'passage' to represent or convey the themes
6. Make an interpretation or meaning of the data and discuss lessons learned.

During step one I organised and prepared the data by having a professional transcriber type out verbatim transcripts of each interview which were emailed to the seven respective participants for member checking and corrections. Following corrections, transcripts were re-formatted using pseudonyms.

For step two, I read through all of the transcripts several times to gain a holistic appreciation of the data. I made notes, in what became my coding diary, regarding my thoughts about the data. Having a written record of my evolving thinking helped me to clarify my ideas. For example, the literature reports (Denzin & Lincoln, 2005; Guba and Lincoln, 2005; Mason, 2002) that interviewees have a tendency to give accounts of events that accentuate consistency and suppress contradiction; hence I noted this concern in my coding diary at this 'whole data' reading stage. In addition, I drew up thumbnail sketches of each participant based upon impressions they made upon me in reading the interviews and also aspects of their personalities that I had come to appreciate since the beginning of the module. For example, among other comments, I noted that Tara was a lone therapist working with professionals from other disciplines. In class and during the interview, she talked at length about waging professional boundary battles; oftentimes using a combative-sounding language. On the other hand, she was also very interested in learning strategies for introducing change in the workplace in a subtle way so as to bring other stakeholders on board. I continually added to these sketches in my coding diary as they enabled me to keep a vivid image of each participant in the forefront of my mind as I made coding decisions. I used these sketches to help ensure that any coding decisions I made would capture these salient aspects of their personalities.

I also used the diary to summarise and reflect upon different possible coding strategies reported in the literature; particularly those of Patton (2002), Mason (2002), Miles & Huberman (1994), and Saldana (2009). I recorded my arguments and counter-arguments about which one might best capture the data. For example, Miles and Huberman (1994) recommend creating a general accounting scheme for codes which is not content specific but rather indicates general domains or areas in which codes can be developed. They suggest: acts, actions, meanings, participation, relationships and setting. Mason

(2002) proposes: actions, attitudes, understandings and practices. Saldana (2009) advises: activities, characteristics, and outcomes. I blended their suggestions with Knowles et al.'s (2005) adult learning theoretical model as I felt those of Mason and Saldana, in particular, were too broad and didn't discriminate enough about the learning process. I listed domains¹⁷ under which I thought I would most probably develop codes. This list had little impact on the themes which emerged during step four as the domains were only intended to help me mentally organise an ever-expanding code list for easy consultation and data handling (management).

Step three involved a more detailed data analysis through coding. I decided to do a combination of two forms of affective first cycle coding described by Saldana (2009): values coding and evaluation coding. I felt they would best capture the broad meaning-making regarding unfolding EBP learning and the more specific programme evaluation aspects; both being important components of PAR. I found these two coding forms to be in harmony with my study's theoretical framework while addressing my second research aim of analysing the learning process from the clinical therapists' perspective in order to evaluate the IETP module's influence on therapists' engagement in EBP.

Values coding, as the label implies, is the application of codes that reflect an interviewee's values, attitudes and beliefs regarding him/ her, another person, a thing or idea. Values codes are perceived as reflecting the interviewee's concepts or beliefs which emanate from his/her personal knowledge, experiences, opinions, prejudices, morals and other interpretive perceptions of the social world (Saldana, 2009).

Evaluation coding is the application of non-quantitative terms or codes to qualitative data with the aim of making judgments about the merit and worth of a programme. The usually descriptive terms reflect participant observations or responses to attributes and details that assess quality. The coded section of text might explore how the program measures up to a standard or ideal. Or it may provide recommendations for change, if needed, and how such changes might be implemented (Saldana, 2009).

I began the first cycle coding process by listing the domains under which I thought I would most probably develop codes. As I carefully re-read each interview, I highlighted

¹⁷ These were: 1) personal attitudes; 2) prior experience of learner; 3) readiness to learn; 4) orientation to learning; 5) motivation to learn; 6) need to know; 7) self concept; 8) understandings; 9) actions/ activities; 10) work setting; 11) characteristics of module; 12) assessment of module; 13) outcomes; 14) action research process.

short chunks or slices of text. Each slice had discrete meaning when isolated from information which came before or after it. Each slice was labelled with an indexing category referred to as a term or code. During this initial coding process all text was coded, except for short social exchanges. The multiple-word code assigned to any one slice came from values or evaluation-focused thoughts which the participants' words evoked in my mind.¹⁸

To facilitate consistently applying my set of codes to the data, and easy retrieval of specific text slices, I decided to use Computer Aided Qualitative Data Analysis (CADAS) software. After researching several, I chose *Ethnograph* as it appeared easy to use and was inexpensive to purchase. Besides rendering the highlighting of text very easy, *Ethnograph* allows constant monitoring of what codes already exist as one engages in the coding process. *Ethnograph* permitted me to quickly locate any code within its domain list; and each code had an easy-to-consult definition. Hence I could rapidly decide if this or that pre-existing code captured this or that slice of text, or if the text needed a new code. This helped me to avoid redundant coding. The list of domains, initial codes (including definitions) and one individual coded transcript were emailed to each of the seven students for member checking in July 2011. If they had not agreed with any of the coding (whether they agreed with the domains was irrelevant as they existed only for code retrieval purposes) I would have re-consulted the text and re-considered the assigned code. This situation did not arise, however.

Creswell's (2003) fourth step of data analysis involves more focused, second cycle coding. By now my coding diary had expanded to include reflexive and analytical (methods) memos to myself, which I wrote throughout the coding process. During this step I repeatedly reviewed and reflected upon the first cycle's codes and adjunctive slices of text or quotes. I made different versions of concept-mapping diagrams through inductive reasoning. As described by Mason (2002, p. 180), inductive reasoning is where:

the researcher will develop theoretical propositions or explanations out of the data in a process which is commonly seen as moving from the particular to the general.

¹⁸ Examples of generated values codes would be: *feel more in synch with new grads, being respected, re-affirming who I am*. Generated evaluation codes included: *clarifying messy points, communicating knowledge, using EBP steps, multi-disciplinary learning*.

While moving between the particular and the general (and back again) my thinking was within a ‘hermeneutic circle’ (see section 3.2) where I was attempting to comprehend a slice of text (the part) by understanding the contexts (the whole) within which it was produced, while at the same time appreciating the contexts by understanding the text. My diagrams graphically represented a matrix of relationships between different groupings of codes; groupings which were not impacted by my domain boundaries. Eventually over-arching themes, or families as they are called in *Ethnograph*, emerged. The themes served to build additional layers of more complex analysis. They allowed me to make an interpretation as to the *meaning* of the data (Creswell’s step five). These themes were then examined for their applicability to each student case and across different cases. If a theme did not ‘ring true’ with every participant I explored the contradictions using personal reflexivity (see section 4.9 below) as documented in my coding diary. The process of checking themes against the transcripts and modifying them when necessary continued until I found I was no longer making changes. Each theme was then illustrated by diverse quotations to display multiple perspectives in the construction of a ‘lessons learned’ narrative (Creswell’s step six) about how the module influenced therapists’ subsequent engagement in EBP activities, as described in Chapter seven.

4.8 Ethical practice procedures

As the methods of data generation were going to entail direct and prolonged interactions between myself and the research participants, careful thought was given to defining my dual role as a researcher and the module leader. Even though I had reviewed this issue with the expert panel (see section 3.7) and they had estimated that I was proceeding in an ethical manner, I was nonetheless cognizant of a power imbalance between myself and the participants due to my role as module leader. However, since the participants were participatory action *co-researchers*, the unfolding research process always needed to demonstrate that it was based on an ongoing, democratic and respectful dialogue that acknowledged issues important to the participants. For example, the participants asked how my research agenda might impact their learning; specifically whether or not participating in the research might entail additional ‘work’ and time commitments from them. Once they had experienced an end-of-class 30 minute NGT discussion this latter

question was no longer an issue. They expressed some concern, though, about whether or not a person other than me was marking their assessments.

The participants stated that the study data protection measures met their standards. However, they were emphatic about also having a confidential forum during the classes, their assessed work and any interviewing process that followed. A guarantee of confidentiality was critical to them feeling comfortable when sharing information about their day-to-day work with clients and the challenges they faced in being EB practitioners with their colleagues within their work settings. These practitioners were rightly concerned that class discussions and assignments would inevitably involve sharing sometimes detailed and personal information about colleagues and therapy practice. While they clearly respected their colleagues, Ireland and (city) is a small therapy community. Anything that might breach their confidentiality presented a major ethical hurdle for the participants. In the first hour of the first class the participants agreed among themselves that anything heard in the classroom would stay in the classroom. Their reflections on their experience of being co-researchers, communicated on the last day of class, are explored in Chapter six.

4.9 Personal reflexivity

In action research, the researcher is the instrument. Hence the credibility of the study depends a great deal on the skill and rigour of the person doing the study. Guba and Lincoln (1989) maintain that the transparency and insight exhibited by the researcher can greatly enhance this human instrument. A researcher reflexive diary was maintained during the entire data generation/ collection and data handling/ analysis period. During stage one of my research (designing the IETP module) I was able to document my increasing understandings and these continued during stage two while conducting the module. Oftentimes, though, there was an overlap between diary entries on myself as a researcher and field note reflections on myself in dual roles as an educator and a participant in the unfolding PAR process. In stage three, evaluating the IETP module, I continued the researcher diary for entries immediately after each individual interview. Once I began data analysis, however, reflections were integrated into my coding diary. These coding diary entries were of a personal (researcher reflexivity) nature but were also about the methods I was employing (methodological reflexivity).

By constantly reflecting on, questioning and evaluating the unfolding research process I sought to critically examine how subjective elements, such as my own assumptions and biases about EBP and teaching and learning approaches, might influence what data was being collected and what interpretations I was making during data analysis. In chapters five through seven I reflect on my own emotional responses during the three research stages; especially those experienced when my expectations were not met or were exceeded, when I found myself feeling frustrated or elated. Critically examining these instances became a personal journey of learning about my own heretofore unquestioned assumptions and biases. I tried to use these revelations as a resource for more intense insights during the analysis process. By inserting my examined self into all three stages of the research context I felt I could better explain why I decided on the themes that I did for analysing the interviews. By making my biases and personal subjectivity explicit, they helped to illuminate, deepen and validate my research claims.

4.10 Review of procedures ensuring rigour

The issues most critical to the integrity of any research study are: 1) the extent to which the methods selected have the potential to address the research question(s); 2) whether an explicit rationale for multiple methods is provided and the manner in which this triangulation is described; and 3) the rigour with which the research is conducted (Casey & Murphy, 2009; Dootson, 1995; Zauszniewski, 2012). To this end, it is important to begin with research questions/ aims that are concise and relevant.

The first aim of this study was to develop, in collaboration with the students, the IETP module using a PAR methodology and the multiple data generation methods of NGT discussions, NPO notes and RFN. These methods were selected according to the type of data that were required in order to represent the multiple perspectives integral to the unfolding PAR process. The second aim of this study concerned the evaluative component of the PAR process where the students reflected upon the influence of the module on their acquisition of EBP knowledge and skills and their subsequent engagement in EBP activities. The multiple methods employed included questionnaires, evaluation forms, group and individual interviews. The rationale for the across method sequential triangulation of this study was to provide completeness of data and thereby comprehensiveness and validity to the findings.

In AR, the term rigour is generally synonymous with validity and encompasses the integrity of the entire research process through addressing: a) construct validity or whether the method(s) of gathering data are appropriate for the methodology and underlying philosophical paradigm of the study, which has already been discussed; b) internal validity or whether the claimed change/improvement is the result of reflection and action; and c) external validity or whether the findings can be transferred into another setting (Herr & Anderson, 2005; Melrose, 2001).

The most powerful action research (AR) studies are considered to be those where the researcher gives rigorous proof of a spiralling change in her own and the participants' understandings (Stringer, 2007). This internal validity criterion encompasses concerns about trustworthiness and credibility (Herr & Anderson, 2005). AR explores a problem of interest to a specific group of people in order for them to enact solutions. As a consequence, transferability (external validity) of the findings is of less importance than in other forms of research. Nonetheless, it could be useful to see if understandings arrived at by one group of people might be helpful in other similar contexts. This comparison can be facilitated when the researcher provides enough information on rich data for others to make their own judgements regarding transferability.

In AR, however, it is internal validity criteria that provide a detailed measure against which the integrity and quality of a study can be judged. Accordingly, AR internal validity criteria are considered as being met when the research process (Herr & Anderson, 2005; Melrose 2001):

- generates new knowledge relevant to the local setting (*catalytic validity*)
- demonstrates a democratic and unfolding change process (*democratic validity*)
- achieves action-orientated outcomes (*outcome validity*)
- exhibits systematic inquiry about new learning that is open to scrutiny (*process validity*)
- is monitored through collaborative, expert or peer review (*dialogic validity*).

When applied against specific research procedures, these five internal validity criteria oftentimes overlap as they all underpin the transformative nature of action research.

Data generation and data handling procedures during stage two (conducting the IETP module) demonstrated catalytic validity by producing knowledge about what learning content and activities were judged useful by the students in their specific learning context. The multitude of data sources (triangulation) reflected new understandings from the perspectives of the participants (nominal group technique [NGT] results) and the researcher (researcher field notes [RFN] and reflexive diary). A third person perspective (non-participant observer [NPO] notes) documented the democratic nature of the unfolding PAR iterative cycles (democratic validity). Two of these data sources, the NGT results and the NPO notes, provided an auditable trail (process validity) of the collaborative decision-making process (dialogic validity) and the resulting actions (outcome validity) that the students and I took to implement those decisions. Two other data sources, my RFN and reflexive diary, were a reflection upon that change process (democratic validity). Upon review of a sampling of NPO notes, RFN and reflexive diary entries from two classes, the expert panel judged that my data exhibited catalytic, democratic, outcome and process validity. The expert panel's deliberations conferred dialogic validity.

Stage three (evaluating the IETP module) data generation and data handling procedures addressed all of the above-cited criteria. The multiple methods of this stage included: 1) EBP self-assessment knowledge, skills, attitudes and behaviours (KSAB) questionnaires; 2) student module evaluation forms; 3) group discussion to evaluate the module; 4) individual interviews; and 5) my researcher and coding diaries. The first two data sources attested to catalytic validity (new EBP knowledge and skills that the students felt they had acquired during the module). The analysis of the learning which they reported is open to scrutiny (process validity). Member checking of the individual interview transcripts and their coding by the participants conferred dialogic validity. All students were consulted for member checking, though not all chose to be involved. The critical subjectivity of my diaries demonstrated democratic validity as I sought to examine my evolving assumptions about EBP teaching and learning as compared to what the students described during the individual interviews. This process led to a co-constructed understanding of how participation in the IETP module supported therapists' subsequent engagement in EBP activities (outcome validity).

Hence, this study met all of the AR internal validity criteria foundational to demonstrating integrity and quality as described by Herr & Anderson (2005) and Melrose (2001). In addition, Melrose (2001) states that if the action researcher is ethical and responsive to his/her collaborators in the AR study, it may not be necessary, or even desirable, to demonstrate scientific rigour through adhering to external validity criteria. She emphasises that the predominant AR focus is being transformative for the participants in the sense of leading to improvement in a situation. According to Melrose, rigour is demonstrated through iterative cycles where the early cycles are clearly used to decide how to conduct the later cycles. Data triangulation increases rigour as it facilitates checking data for themes or patterns. Concomitantly, searching for reasons for anomalous data from different sources can lead to further illumination or completeness of data. Melrose maintains that an AR study may not lead to generalisable or transferrable conclusions at all as the AR context is special to the participants and their particular environment.

In summary, if the rigour of a study is judged by the defensibility of its knowledge claims (Creswell, 2003); the knowledge generation claims of AR are confirmed through clear and detailed AR validity criteria. Rigour in AR research is focused on interactions within the group leading to greater understanding of a particular local context in order to improve a situation (problem→ solution) (Stringer, 2007). Hence, rigour is mostly concerned with demonstrating the empowering of the participants and the resulting change process. As a consequence, the preeminent outcome of theory generation seen in most research is rejected when an AR methodology is used. Pragmatic outcomes are deemed the preeminent criteria for rigorous AR (Melrose, 2001). In this study, the primary outcome was the development and evaluation of a multi-disciplinary post-qualification module that would support therapist engagement in EBP.

4.11 Summary of data methods

In Chapter four I have critically reviewed the distinct data generation and data handling methods employed during the three stages of the main study. Seven students were recruited to the study in October 2009 and each completed the pre- and post- KSAB questionnaire, the module evaluation form and engaged in a group discussion to evaluate the module on the last day of class. All participated in the NGT discussions

and decision-making. Seven individual interviews took place between May and June 2010. The rationale for across method sequential triangulation was described in relation to the nature of the PAR process and the stated purpose of achieving completeness of data. I then assessed my ethical practice procedures and how I addressed concerns about researcher bias and the credibility of the findings of the study through personal reflexivity. Finally, I applied AR validity criteria to the generation and handling of the multiple data sources giving evidence of rigour throughout the research process, thereby demonstrating the integrity and quality of the study and the defensibility of its knowledge claims.

So far we have explored methodological considerations (Chapter three) and methods for data generation and handling (Chapter four). In the next three chapters the findings from the three study stages are presented.

CHAPTER FIVE - THE RESEARCH PROCESS STAGE ONE: METHODS EMPLOYED FOR DESIGNING THE IETP MODULE

5.1 Overview of the chapter

This chapter begins with the rationale for the *Implementing Evidence in Therapy Practice* (IETP) module, one based on studies reported in the EBP literature and my pilot work with Sunnyview. I then discuss two theoretical concepts which I explored in greater detail in the literature subsequent to my educational experience at Sunnyview: knowledge translation (KT) and commitment to change (CTC). The six-month process of designing the module began with a scoping review of the healthcare literature regarding existing educational approaches to EBP. This literature describes education aimed at two different groups of learners: 1) pre-qualification students registered for credit-rated university-based modules¹⁹ on EBP; and 2) post-qualification practicing therapists enrolled in non-credit-rated continuing education²⁰ (CE) workshops on EBP. The IETP module is unique in Ireland, as this continuing education on EBP is credit-

¹⁹ In Ireland, a prescribed number of contact (face-to-face) hours with an associated number of credits, usually delivered over one semester, is referred to as a module; as in a neuroanatomy or child psychology module. In the United States the same unit of study is called a course, e.g. a neuroanatomy or child psychology course. In Ireland, a course can refer to an entire programme of study leading to a degree, such as a BSc in occupational therapy. In this thesis, when discussing credit-rated education on either the pre-qualification (BSc) or post-qualification (MSc) level, the word module will be used. Non-credit-rated post-qualification education delivered outside of a formal university setting will be referred to as a workshop.

²⁰ Research in this domain has generally been carried out by academics interested in the areas of continuing education (CE), continuing medical education (CME), continuing education in the health professions (CEHP) or continuing professional development (CPD). Though there appears to be quite a bit of overlap between all of these terms, CPD seems to be in more common use across healthcare disciplines. CPD, however, is oftentimes defined more broadly as encompassing not only CE workshops/modules, but also a wide range of practice context activities which researchers in the field (Craik & Rappolt, 2006; Lockyer, Gondocz & Thivierge, 2004; Moon, 2004; Price & Felix, 2008) maintain also have the potential to lead to EBP activities. These include: journal clubs, case conferences, reflective practice, and participating in communities of practice (such as the Irish paediatric section of the Southern Regional Group of Occupational Therapists). For the purposes of this thesis, the focus is on CE, which is defined as being concerned with enhancing a qualified practitioner's clinical competence; be it in the form of non-credit-rated workshops or credit-rated university modules.

rated, post-qualification (MSc-level) and multi-disciplinary. The target groups for enrolment are practicing occupational therapists, speech and language therapists and physiotherapists. Hence, the literature describing both credit and non-credit rated educational offerings was a valuable resource while designing the IETP module. Finally, my thinking during the module design process was also informed by the work of Meyer and Land (2005, 2006) and Land, Meyer and Smith (2008) and their construct of threshold concepts. This chapter closes with an overview of the IETP module content and learning activities which, in accordance with university guidelines, had to be defined before the module was approved by the study university curriculum committee.

5.2 Rationale for the module

Prior to the 1980s, clinical reasoning tended to be opinion-based as experience, local customs and values were considered adequate ‘evidence’ (Alsop, 1997). Such anecdotal-based knowledge can be slow to change, however, because it is not as open to rational debate and examination as research-based knowledge. Over time, a consensual definition of EBP developed and came to include the integration of a triad of evidence sources for clinical decision-making. These sources include: 1) the practitioner’s expertise; 2) the best current external (research) evidence; and 3) the client’s values and preferences (Dawes et al, 2005; Sackett et al., 1996). By the beginning of this century, occupational therapy educators/ researchers defined EBP as being embedded within a process of clinical reasoning drawing on this multiplicity of evidence sources (Bannigan & Moores, 2009; Taylor, 2007; Tickle-Degnen, 2000a). Nonetheless, many occupational therapists still rely primarily on their undergraduate training, practical workshops²¹, personal clinical experience and opinions of colleagues when making decisions with/ for their clients; as demonstrated by research internationally (McCluskey & Cusick, 2002; Salls, Dolhi, Silverman & Hansen, 2009) and in Ireland (Murphy & Robinson, 2010; O’Shea, 2011). A large proportion of Irish therapists, particularly those who graduated before the introduction of two new BSc entry-level

²¹ These usually provide information about specific assessment tools or intervention approaches with a particular client population.

educational programmes in 2003²², report that they lack competency in EBP skills. These skills include accessing, appraising and applying research evidence (Murphy & Robinson, 2010; O'Shea, 2011). It appears that the longer it has been since pre-qualification training, the greater the possibility that a therapist is no longer following best practice guidelines of integrating recent research evidence into clinical decision-making (Dysart & Tomlin, 2002). As McCluskey (2004, p. 4) states:

the aim of EBP is to help practitioners identify and then cease using ineffective treatments in preference for proven effective ones.

Facilitating therapists in doing just that was the main motivation for my study.

In Chapter two, I described how I had explored with Irish clinicians their self-identified EBP skill deficits during a two-year preliminary service development project with an occupational therapy team at Sunnyview. Using adult learning principles and constructivist instructional approaches (Argyris, 1982; Boud & Griffin, 1987; Dewey, 1933; Knowles et al., 2005; Kolb, 1984; Savery & Duffy, 1996; Schon, 1987) I designed, in collaboration with the Sunnyview therapists, a total of twelve EBP sessions delivered over a fourteen month period in 2007 to 2008 (see Figure 3, section 2.1). These sessions were predicated on the assumption, supported by the literature, that any EBP educational undertaking should: 1) acknowledge and value therapists' prior professional experience; 2) reflect what the therapists' felt they wanted/ needed to know; and 3) involve problem-solving and the actual 'doing' of EBP. However, the Sunnyview project impressed upon me the drawbacks of an informal practice-based learning environment in which:

- the open-ended, fluid structure had no defined endpoint and no clear learning outcomes agreed upon at the beginning of the educational process
- all the participants were not selected based on their motivation to develop their EBP skills and willingness to be self-directed in their learning
- the participants could be passive as they were not required to actively engage in the EBP activities or to give oral and/or written demonstrations of their learning

²² Trinity College Dublin converted their 3 year diploma programme in Occupational Therapy to a 4 year BSc Honours programme in 1986 with a first cohort graduating in 1990. When the University College Cork and National University of Ireland Galway BSc Honours programmes began in 2003 the number of graduates in Ireland having benefited from studying research methods increased considerably.

- the learning process could be inhibited by work-based team dynamics and an tacit work culture which did not encourage the questioning of customary practices.

As a consequence of my experience at Sunnyview, and the realisation that learning must be structured and outcomes-focused, I decided to shift my educational efforts to a university-based learning environment. This allowed me to explore the role that post-qualification, credit-rated continuing education could play in supporting primarily experienced-based therapists in also becoming research-evidence-based practitioners. A university learning context is structured around explicit learning outcomes and an assessment process requiring students to demonstrate what they have learned in order to achieve credits. As students in Ireland generally self-fund their post-graduate education, registering for a module might suggest motivation to actively engage in learning in order to increase knowledge and skills.

In 2008, the existing MSc programme at the study university was reviewed and re-configured to become the MSc in Evidence Based Therapy Practice. *Implementing evidence in therapy practice* (IETP) was designated as a core and compulsory module of the programme. The module was intended to support therapists' in acquiring not only the skills for locating and critiquing research findings, but also for translating those findings into practice. From 2008 to 2009 I again reviewed the EBP literature in order to deepen my knowledge in two inter-related areas where I felt my educational efforts at Sunnyview had fallen short: 1) how to support knowledge translation at individual, team and organisational levels; 2) how to facilitate changes in behaviour following learning. I also conducted a scoping review of the healthcare literature on pre- and post-qualification educational approaches to EBP to inform my thinking while developing the content and structure of the module. At the same time, I attended teaching and learning seminars offered by the study university on undergraduate teaching, postgraduate training and professional development in preparation for designing this new module.

5.3 Knowledge Translation on micro, meso and macro²³ levels

In clinical practice, the utilisation of EBP knowledge and skills has been the subject of study and debate (Chard, 2005; Clancy & Cronin, 2005; Cusick & McCluskey, 2000; French, 2005a, 2005b; Ilott, 2003; R. Jones & Santaguida, 2005; Lencucha, Kothari, & Rouse, 2007; MacIntosh-Murray, Perrier, & Davis, 2006; Salls, Dolhi, Silverman & Hansen, 2009). This debate in the literature appeared early in the 21st century and the process being discussed is now referred to as Knowledge Translation (KT)²⁴. KT was first promulgated at McMaster University in Canada, where the term evidence-based medicine (EBM) also originated (Law, Missiuna & Pollack, 2008). While the systems-level KT process is complimentary to the steps of the EBP cycle, the latter (like research utilisation²⁵) is primarily focused on the clinical decision-making of the individual practitioner. In comparison to the EBP cycle, the more over-arching KT model stresses four particular points:

1. In KT it is recognized that new knowledge does not on its own lead to widespread implementation -- there must be a 'dynamic and iterative process' involving dissemination (process of knowledge transfer), exchange and application.
2. KT highlights the importance of two-way exchanges which take place between key groups within the healthcare system who possess different types of information (process of knowledge exchange)
3. Practitioners are not only knowledge consumers, they may also be knowledge communicators (disseminators) and, in collaboration with researchers, knowledge generators²⁶ (process of knowledge generation).

²³ Micro level is defined as referring to that of the individual therapist; meso is on the level of the team; macro is the healthcare organisation, or healthcare service on a national or international level.

²⁴ See discussion of Knowledge Translation (KT), knowledge transfer and knowledge exchange in section 1.3.

²⁵ For the purposes of this thesis, the definitions of research utilisation and research implementation will adhere to those most commonly found in the international literature. When the perspective is that of the individual practitioner facing workplace challenges while engaging in EBP, the term research utilisation will be used. When the perspective is that of a range of stakeholders, hence more on a systems-level, the term research implementation, implementation research or knowledge translation research will be employed. With the latter three, the emphasis is on promoting a research culture and the uptake of research at all levels in an organisation.

²⁶ The scholarship of practice (SoP) model was originally developed by Kielhofner (2005a, 2005b), an occupational therapy educator, researcher and scholar, and addresses many of these same points. The focus of SoP is to apply theoretical and empirical knowledge to practical clinical conundrums through scholarship. The key aims of SoP are to: 1) conduct research that is designed to contribute directly to practice; 2) establish partnerships with individuals and/ or organisations that are not part of academia in

4. Many stakeholders are implicated in KT as research needs to be integrated not only into practice, but also into health policy (process of knowledge application).

KT research is the study of methods used to promote the uptake of research findings by clients/ patients, clinicians, managers, health care providers and policy makers. KT research has found that the time gap between dissemination of original research findings and their integration into health policy and routine practice is one to two decades (Curran, Grimshaw, Hayden & Campbell, 2011). Pentland et al. (2011) conducted an integrative literature review by searching six computerised databases for literature describing or discussing knowledge transfer or exchange²⁷ activities in healthcare published between January 1990 and September 2009. Thirty-three papers (four systematic reviews, nine literature reviews, one environmental scan, nine empirical studies and ten case studies) were selected, according to set inclusion and exclusion criteria, for review.

The key characteristics of successful knowledge transfer (sharing knowledge) were found to be:

- ensuring the relevance of research information or findings when sharing them with knowledge users
- making research evidence accessible to potential users
- presenting the knowledge in a clear format as this has an impact on the perceived value of the knowledge and the likelihood of it being used in practice.

The key characteristics of successful knowledge exchange (including generating knowledge) were found to be:

- collaboration between researchers and health professionals during the design of research studies so as to produce relevant new knowledge
- collaboration between those producing and using research evidence so as to influence clinical and policy decision-making.

order to create new educational, practice and research scholarship opportunities; and 3) create synergies to simultaneously advance scholarship and practice (Forsyth, Summerfield-Mann & Kielhofner, 2005, p. 262). Hence, the SoP model is generally implemented within clinical services. This model also acknowledges the important role played by organisational and health policy stakeholders as evidenced by a partnership between the United Kingdom Centre for Outcomes Research and Education (UKCORE) and the Gloucestershire Partnership NHS Trust (GPT) which is founded upon the SoP model (Forsyth, Melton & Summerfield-Mann, 2005). The KT model, however, is more commonly employed by all healthcare professions in a wide range of healthcare delivery and education contexts. I therefore chose to integrate the KT model into the IETP module.

²⁷ See footnote 1, section 1.3 for definitions

The key characteristics of successful knowledge application were found to involve minimising barriers and maximising enablers through strategies such as:

- engaging local opinion leaders in guiding the changes necessary to apply knowledge in practice
- engaging managerial and organisational stakeholders in order to create conditions which are most amenable to the use of knowledge
- being sure to provide pre-requisite organisational capacities such as adequate time and also sufficient financial, technological and human resources
- being cognizant of the organisation's unique culture including its: a) dynamics and processes; b) world view; c) priorities and expectations; d) language and forms of communication; e) rhythms and time scales.

Clearly, assessing barriers to the application of knowledge features prominently in the KT model. In addition, this model advocates a very broad dissemination of knowledge by emphasising that knowledge is of interest to a whole range of users; such as practitioners, policymakers, patients and the public. The Canadian Institutes of Health Research developed the Knowledge-to-Action (KTA) process model (Figure 13).

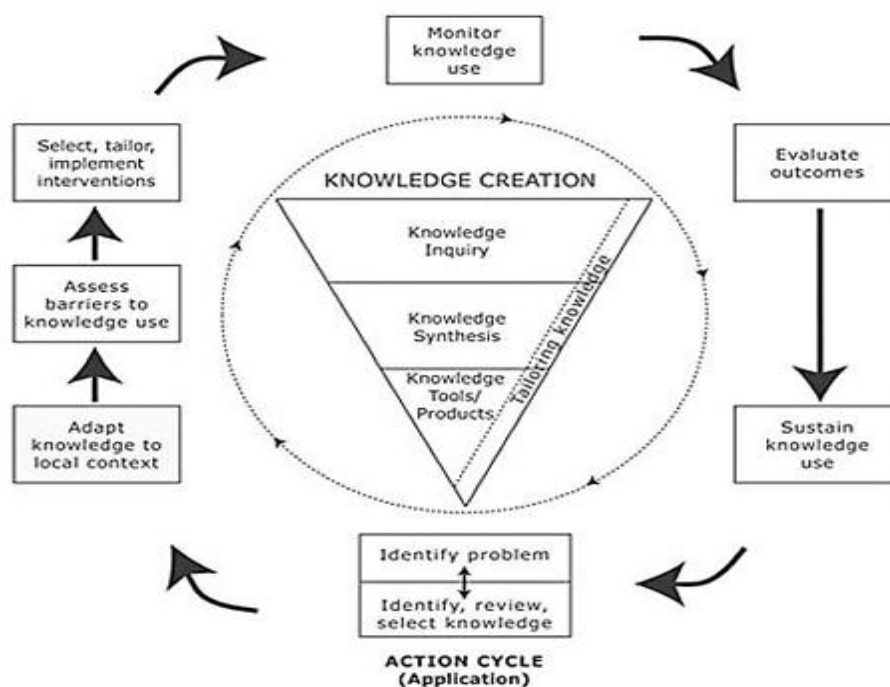


Figure 13 Graham et al. (2006) Knowledge to Action (KTA) process model

This process model incorporates the steps of the EBP cycle while also emphasising that knowledge needs to be adapted to the local context (Graham et al., 2006). The KTA process model is being used as a conceptual framework for continuing education in healthcare (Campbell, 2010; Petzold, Korner-Bitensky & Menon, 2010).

Dawes et al. (2003) maintain that the KT model:

both subsumes and broadens the concepts for CME and CPD [as it] has the potential to improve understanding of, and overcomes the barriers to, implementing evidence based practice (p. 33).

Promoters of KT (Law et al., 2008; McWilliam, 2007; Metzler & Metz, 2010a) imply that individual clinicians no longer have the sole responsibility and accountability for achieving EBP, the utilisation of knowledge must be shared and promoted at all levels of an organisation by a wide range of stakeholders. There is, therefore, a strong sense of collective responsibility. The policy and managerial implications of a systemic approach to EBP are increasingly being recognised (Dopson, FitzGerald, Ferlie, Gabby & Locock, 2002; Iltott, 2003).

The Knowledge Translation (KT) model, however, does not address one critical issue: what happens to prior knowledge when new knowledge is introduced via the knowledge creation funnel? For the persistent use of old knowledge is oftentimes at the crux of research non-utilisation. McCluskey has analysed both personal and organisational factors (Cook, McCluskey & Bowman, 2007; McCluskey, 2004; McCluskey & Cusick, 2002; McCluskey et al., 2008). While she underlines that managers need to drive the change process by acting as opinion leaders (meso level), on a personal level she maintains that individuals will engage in EBP when they are ready to change their attitudes and values. In her opinion, this is because EBP implies a major change in work behaviours and a commitment to lifelong, self-directed learning (McCluskey & Cusick, 2002). The difficulty, as I discussed in Chapter two within the context of the Sunnyview pilot project, is that some therapists, especially those longest qualified, appear reticent to question and change their customary practice. This is particularly true when there is no encouragement or motivation at meso or macro levels.

5.4 Commitment to change (CTC)

An understanding of: 1) how individuals react to change; 2) the processes involved in introducing change; and 3) the impact of change agents is considered essential to the successful implementation of EBP and the development of an EB work culture (Chard, 2003; Cutcliffe & Bassett, 1997; Eccles, Grimshaw, Walker, Johnson & Pitts, 2005; Grol & Grimshaw, 2003; Hammond & Klompenhouwer, 2005; Leeman, Baernholdt & Sandelowski, 2007; McCluskey & Cusick, 2002; McCluskey, Home, & Thompson, 2008; Menon et al., 2010; Plastow, 2006; Taylor, 2007). The discussion about change and EBP began more than a decade ago when academics realised that the difficulty in transitioning from predominately experienced-based clinical decision-making to research evidence-based decision-making does not lie with a lack of research information being available. Researchers (French, 2005c; Greenhalgh, 2006; Trinder & Reynolds, 2000) highlight a fundamental point: the EBP cycle is not a simple construct, rather it is a complex process encompassing many steps and as such, it risks being thwarted along the way. McCluskey, Home and Thompson (2008) describe the increasing levels of difficulty, with formulating a clinical question and searching for evidence being easier than appraising the evidence. They estimate *changing practice* so as to apply new evidence to be the most challenging.

Bannigan (2007) acknowledges the importance of openness to change in any discussion about EBP, as demonstrated by her own model. Supports needed for research findings to be taken up by therapists and then translated into changes in practice are depicted in Figure 14. It is not clear in her model, however, which factors are primarily individual (micro) and which are meso or macro. For example, *readiness for change* might be an assessment about a practitioner, about a team, or about an entire organisation.



Figure 14 Bannigan's research utilisation implementation model

A number of authors such as Hammond and Klompenhouwer (2005), Plastow (2006) and Taylor (2007) maintain that understanding both the stages involved in change and the different responses clinicians have to making changes is essential. These authors support the deliberate planning of the process of change, an opinion endorsed by others (Appleby & Tempest, 2006; Grol & Grimshaw, 2003; Ketelaar & Gorter, 2008; MacGuire, 1990; McPhail, 1997; Overton & MacVicar, 2008; Wakefield, et al., 2005). For example, Plastow (2006) describes in detail how new evidence-based interventions can be introduced into a practice setting through deliberately following the steps of an implementation strategy based on the work of change management theorists.

While the term EBP is still used, Greenhalgh (2006), Ryan, McNamara and Deasy (2006), Taylor (2007) and Trinder and Reynolds (2000) adopt the systems-level perspective of KT by devoting many pages or entire chapters of their textbooks to the

challenges of getting evidence into practice. For example, Trinder and Reynolds (2000, pp 222-223) maintain that there is a strong tendency to:

underestimate the complexity and extent of the task of introducing change [necessitated by EBP] (...) Successful and sustained change must involve the active input of managers, policy-makers, patients and clinicians, as well as effective working relationships between them (...) implementing change therefore requires consideration of organisational, economic and community environments as well as the knowledge, attitudes and beliefs of individuals.

Ryan et al.'s work (2006) is of particular importance because of its Irish health care context. They state that whether the change is large or small, managing the change process is critical to its success. They are of the opinion that a lack of effective consultation with all interested parties combined with a lack of coherent planning has resulted in the failure of many change-implementation processes.

Greenhalgh (2006), Trinder and Reynolds (2000) and Ryan et al. (2006) have similar opinions. They all contend that potential change agents within an organisation, such as managers and senior clinicians, are central to creating an evidence-based culture where decision-making is expected to be based on the best available evidence. Conversely, in the event of senior clinical personnel within the workplace or the profession at large being opposed to new practices such as EBP, change may not be realised since such personnel can have a tremendously negative influence (Greenhalgh, 2006).

McCluskey, Home and Thompson (2008) note that the process of change is slow, and that gains can generally be measured in years, not weeks or months. This view is supported by Estabrooks et al. (2006, p. 31) who write from the systems-level perspective of KT that:

change occurs slowly over time (no big jolts) as people develop new (and to them better) ways of doing things. [...] the old way of doing things [is] de-institutionalized, new ideas arise, undergo testing, catch on, diffuse, and become institutionalized into a new taken-for-granted way of doing something.

The importance of a commitment to change (CTC) has been widely discussed in EBP continuing medical education (CME) literature since the 1990s, concurrently with the emergence of EBM and EBP. The conceptual development of CTC came from the fields of social psychology and organizational studies. A CTC procedure has been developed

where workshop participants are asked to write down two or three specific things that they commit to changing as a result of what they have learned during a workshop. An implied assumption of the statement is that the changes will be behavioural in nature.

While change theory and change models are discussed in clinical therapies EBP literature, actual use of CTC statements during CE workshops has not been reported, with the exception of general EBP individual action plans described by Crausaz, Kelly and Lee (2011). However, the use of CTC statements is reported in studies of continuing medical education courses with physicians (Lowe, Rappolt, Jaglal & MacDonald 2007; Overton & MacVicar, 2008; Wakefield et al., 2005). This may be partly due to the fact that physicians can make short, discrete changes with wide implications for patient outcomes. For example, the Wakefield et al. (2005) study reported that 71% of the CTC statements were related to physicians changing their prescribing after attending a workshop on targeted medications.

The issue of CTC statements, or any discussion of changing behaviour, is seemingly not addressed by pre-qualification educators. This may be due to their students still learning initial professional behaviours and not having yet developed behaviours that might need to be changed. The theoretical foundations for CTC statements, however, could be of interest to those designing post-qualification, continuing education in EBP, be it non-credit-rated workshops or credit-rated modules. The use of CTC statements addresses issues raised by constructivist educational theorists such as Kolb (1984) and Knowles et al. (2005) (see section 2.2) as they underline the importance of representing new learning through actions thereby empowering the learner to own the learning process. If CE takes place over several sessions, as Khan and Coomarasamy (2006) suggest is optimal, ties develop between the learners. The individual learner may become concerned about the views of colleagues in the workshop/ module, particularly if they are from the same local area. Declaring an intention to change to peers exposes the participants to future questions about whether they carried through with implementation. According to Overton and MacVicar (2008), if learners in small long-term group situations make overt statements to their peers about their intention to change their behaviour, they are likely to do so. Wakefield et al. (2005), basing their work on Lewin (1951), comment that if learners feel that there might be a follow-up process this, in itself, can create a drive to follow through with the CTC statement.

Greenhalgh and Russell (2006) consider post-qualification continuing education as the vehicle for creative change in complex environments. They see organisational learning (meso/ macro level) as dependent on individuals (micro level) making links outside the organisation so as to feed a knowledge creation cycle, facilitating behavioural change within the organisation. They maintain that:

Individuals who consume research, have contacts with knowledge producers or who engage in continuing education become conduits for new knowledge. These individuals are known as boundary spanners [and] are the human capital on which organizational innovation depends (p. 103).

Hence, the aim of post-qualification EBP education should be the fostering of *boundary spanners* who will drive the establishment of an EB work culture throughout the Irish healthcare system.

Next, the methods for teaching, learning and assessment that are reported in the literature on pre-qualification, credit-rated university-based EBP modules and post-qualification non-credit-rated continuing education EBP workshops will be explored.

5.5 Methods for EBP teaching, learning and assessment

There are both similarities and differences between the teaching, learning and assessment methods of credit-rated and non-credit-rated EBP education (Table 3). The literature on credit-rated EBP education generally concerns entry-level education and is largely focused on giving students strategies for transferring classroom-acquired EBP skills to the fieldwork setting (Crabtree, Justiss & Swinehart, 2012; Stern, 2005).

Table 3 Methods for EBP teaching, learning and assessment

	Pre-qualification credit-rated modules	Post-qualification non-credit-rated workshops
Educational framework	Module on EBP delivered over one semester¹ EBP module run concurrently with practice education module² EBP principles incorporated in all modules across curriculum³	One-day workshop on EBP sponsored by Irish OT association⁴ ½ day, 2 day and 4 day workshops on EBP⁵ McMaster model 2 day EBP workshops⁷
Teaching methods	Didactic lectures^{1 & 2} Class discussions^{1 & 2} Small group tasks^{1 & 2}	Didactic lectures⁴⁻⁶ Group discussions⁴⁻⁶ Small group tasks⁴⁻⁶ Clinically-integrated with ward rounds⁶ Post-workshop emails to answer questions⁵
Learning methods	Homework assignments^{1 & 2} Assigned readings¹⁻³ Evidence-based projects^{2 & 3}	Assigned readings⁴ Simulated clinical encounters⁷ Reflective exercises⁸ Small-group self-directed tutorials⁷ Participants encouraged to write CAT <i>after</i> workshop⁵
Assessment of learning methods	*Exams¹ *Papers on Critically Appraised Topics (CATs)^{1 & 2} *Oral presentations to peers and practice educators³	Learning self-assessment questionnaire⁴ Participants gave responses to simulated clinical encounter⁷ **Adapted Fresno Test (AFT)⁹

*Passing mark required for credit

¹Tickle-Degnen (2000c)

²Stern (2005)

³Lin et al. (2010)

⁴Crausaz, Kelly and Lee (2011)

⁵McCluskey and Lovarini (2005)

**Tool for managers to assess staff learning

⁶Khan and Coomarasamy (2006)

⁷Wyer et al. (2009)

⁸Moon (2004)

⁹McCluskey and Bishop (2009)

While designing the new module, however, I was particularly interested in the literature regarding post-qualification learners as the IETP students were to be practicing occupational therapists, speech and language therapists and physiotherapists. With one exception (Reynolds, 2010), this literature describes EBP education only within the framework of non-credit-rated workshops. Reynolds describes teaching EBP as part of a post-professional occupational therapy clinical doctorate programme using a distance education format, neither of which currently applies in the Irish context.

McCluskey and Lovarini (2005) claim that the manner in which EBP education is delivered and whether there is follow up has an impact on whether or not the workshop promotes behaviour change.²⁸ They describe sending emails to participants post-workshop to answer questions and to encourage behaviour change. Khan and Coomarasamy (2006) reviewed eight studies (seven RCTs and one non-randomised study) to evaluate the change in practitioner behaviour and patient outcomes subsequent to workshops designed to improve clinical competency in a specific area of practice. They found that the interactive workshop format is the most effective in improving patient outcomes, compared to didactic teaching alone.

Khan and Coomarasamy (2006) also reviewed 23 RCTs, non randomised studies and before-and-after comparison studies comparing classroom teaching methods (didactic, interactive or a mix of the two) with clinically-integrated teaching methods (not specified other than those involving ward rounds). While all of these studies looked at teaching methods targeting clinical competency in a specific area of practice, general lessons about the learning of generic EBP knowledge and skills can be inferred. Khan and Coomarasamy found that classroom-style teaching improves knowledge, but not skills, attitudes or behaviour; whereas clinically-integrated teaching improves

²⁸ The scholarship of practice (SoP) model of providing CE in EBP through practitioner – academic partnerships is also very focused on supporting changes in behaviour. As SoP is integrated into a service-based context, however, it is not applicable to CE in academic-based settings. In the GPT/UKCORE partnership, for example, there was a two-tiered education delivery system (Forsyth, Melton & Summerfield-Mann, 2005). Firstly, the UKCORE (academic) educators led two sessions (not stated how many hours for each). The first session integrated lectures, interactive discussion, small group work, viewing of video cases, problem solving, role play and case studies to convey new EBP knowledge (particularly about EB assessments) to the participants. This first session also included reflections on practical implications of service changes and how to reconstruct routines to support EB changes. The second session, held 3 months later, allowed participants to share their experiences of using EBP knowledge in practice through peer case studies, interactive discussions and problem solving. Secondly, in addition to these UKCORE-led sessions, the partnership included GPT (service-based) trainers whose role it was to guide and support other therapists in making “*their own appropriate evidence-based decisions*” (Forsyth, Melton & Summerfield-Mann, 2005, p. 221).

knowledge, skills, attitudes *and behaviour*. None of these 23 studies, however, evaluated patient outcomes.

Based on their systematic review and ideas drawn from educational theory²⁹, Khan and Coomarasamy (2005) conclude that continuing education aimed at increasing competence in EBM would have enhanced value for the learner if:

1. the learning uses an interactive approach
2. the learning is incorporated into clinical practice
3. the programme involves sequenced events as these aid reinforcement compared to single events
4. the workshop identifies and takes into account individual learner needs
5. the teaching and learning strategies are multi-faceted
6. the workshop educator gives individual feedback and the opportunity for student self-assessment. (para. 16)

Moon (2004) also discusses CE workshops aimed at increasing clinical competency in a specific area of practice. Basing her work on the Kolb (1984) learning cycle (see section 2.2), Moon maintains that deep learning only occurs when the learner engages in reflective activity. She defines deep learning as that which is represented in action and therefore is the most likely to have an impact on practice. According to Moon, good teachers need to facilitate the adoption of a deep learning approach by the learners. This can be done by having participants engage in reflection which leads them to:

- develop an awareness of the nature of their current practice
- clarify the new learning from the CE workshop and how it relates to their current understanding
- integrate the new learning with their current practice
- anticipate or imagine the nature of improved practice (p. 8)

Like Khan and Coomarasamy (2006), Moon (2004) also advocates spreading a workshop over several sessions. For her, this is important as it allows participants to keep a reflective journal over time and to engage in reflective activities between sessions. She also advocates paying attention to the learning environment through building up a set of ground rules and games or exercises that can improve

²⁹ Khan and Coomarasamy (2006) were drawing on sources similar to, but not as detailed as, the sources cited in section 2.2, pp. 21-26.

communication. She feels that these facilitate group functioning and thereby improve the learning resource of the group and the learning environment generally.

Regarding assessments of learning, Crausaz, Kelly and Lee (2011) describe one-day workshops on EBP funded by the Irish Health Service Executive (HSE) through the Association of Occupational Therapists of Ireland (AOTI) which employed a self-assessment questionnaire to determine whether or not attendance at the workshop had an impact on the therapists' EBP knowledge and attitudes.³⁰ Wyer et al. (2009) and McCluskey and Bishop (2009) advocate an assessment process, integrated into their EBP workshops, that is more than a self-assessment of general knowledge. Wyler et al. describe a process (though they do not state if this was oral or written) where participants were required to formulate a relevant question in response to a simulated clinical scenario. The participants followed specific steps in order to attempt to answer the question. Next, the participants replied to increasingly more explicit follow-up prompts relevant to their initial question. Wyler et al. maintain that this process supports the development of the problem-solving skills foundational to EBP.

McCluskey and Bishop (2009) use an instrument that they devised, based on the Fresno Test³¹ of competence in evidence-based medicine. Their Adapted Fresno Test (AFT)³² was developed for use with clinical therapy practitioners, by changing the scenarios in the original Fresno Test. McCluskey and Bishop maintain that the AFT evaluates knowledge in the following areas:

- an understanding of the hierarchy of evidence and potential methodological biases in study designs

³⁰ The Salbach and Jaglal (2010) EPIC (evidence-based practice confidence) scale was administered pre and post workshop and contains eleven items questioning the respondent confidence in his/ her ability to engage in activities reflecting all steps of the EBP cycle (see Figure 2, section 1.2) excluding advising others of the knowledge translation (KT) process.

³¹ The Fresno Test (FT) was designed to measure the effect of university EBM curricula on the knowledge and skills of pre-qualification medical students. Several systematic reviews have appraised different instruments for evaluating education in EBP, but these have reviewed the literature aimed at CME for physicians (Flores-Mateo & Argimon, 2007; Shanneyfelt et al., 2006).

³² McCluskey and Bishop (2009) claim that the AFT is responsive to measuring EBP knowledge acquisition, especially among novice learners who scored lower on the AFT pre-workshop than post-workshop. They report that the AFT has acceptable inter-rater reliability and internal consistency and is suitable for use by therapy professionals and health educators. In fact, according to them, the AFT is being used by educators in occupational therapy, physiotherapy, nursing, public health and dentistry.

- the ability to interpret and critically appraise a published study including the study's interpretation of reported statistical analyses
- the ability to write a focused clinical question with the PICO³³ format
- the use of databases and other sources of information including use of keywords while searching. (p. 120)

Glegg and Holsti (2010) maintain that the McCluskey and Bishop (2009) and McCluskey and Lovarini (2005) measures of EBP knowledge and skills are two of only three tools with adequate reliability and validity. A serious weakness of the AFT, however, is that it does not include questions that evaluate respondents' skills in appraising qualitative research, although the authors acknowledge that it should. Additionally, McCluskey and Bishop (2009) admit that the AFT does not measure changes in practice, patient care or patient outcomes³⁴; an area that they do not explicitly discuss during their workshops. Hence, the AFT tests material oftentimes covered in quantitative research methods modules including statistics and database searching, with additional information about formulating clinical questions. McCluskey and Bishop (2009) promote the AFT as a tool for managers to use with their staff as an outcome measure for staff workshop learning.

The pre-qualification and post-qualification EBP education literature informed my decision-making in the design of the IETP module (Crausaz et al. 2011; Khan & Coomarasamy, 2006; Lin et al. 2010; McCluskey & Bishop, 2009; McCluskey & Lovarini, 2005; Moon, 2004; Stern, 2005; Tickle-Degnen, 2000c; Wyler et al., 2009). I decided not to include an exam-style assessment of learning such as the AFT due to its focus on material usually covered in research methods; the study university's MSc Evidence Based Therapy Practice programme has a separate research methods module. I also rejected the idea of a module taught over five consecutive days. Rather, I opted for classes spread over 10 weeks, allowing two or three weeks between each all-day class. This framework permitted the IETP module students to:

³³ PICO is one of the most common formats for formulating a clinical question. P is for problem or population; I is for intervention; C is for comparison (with a group not receiving the intervention); O is for outcome. The clinical question does not have to include C, however. An example of a PICO format question would be: Do children with hemiplegic cerebral palsy who receive constraint-induced movement therapy (CIMT) casting on their hemiplegic upper extremity perform better on the Assisted Hand Assessment (AHA) measure than comparable children who do not receive CIMT casting?

³⁴ Step five of the EBP cycle: Assessing the impact of applying new evidence.

1. keep a reflective journal and a log of their EBP activities over many weeks
2. engage in small group tasks such as preparing and participating in a formal debate
3. do several assigned readings between classes to inform group discussions
4. integrate the new learning with their current practice through doing an analysis of the enablers and barriers to EBP in their workplace
5. complete homework assignments such as a critically appraised topic (CAT)
6. do a self-assessment of whether their EBP knowledge, skills, attitudes and behaviours (KSAB) had evolved over a 10 week period
7. complete three assignments for credit including:
 - a. a paper where the student reflected on the evidence sources for their current practice
 - b. an oral presentation to the class where the student made a public statement as to how they intended to change their practice based on research evidence addressing a specific area of their work
 - c. a final paper incorporating the critical appraisal of a wide body of EBP literature.

The next consideration was the content and focus of the didactic lectures, class discussions, small group tasks, and assigned readings in the module. Again, I drew upon the pre-qualification and post-qualification EBP education literature to design this aspect of the IETP module.

5.6 Module content

The module content had to provide the learner with the knowledge and skills which the EBP literature has defined as necessary for translating research evidence into practice; namely the ability to engage in the steps of the EBP cycle (Dawes et al, 2005; Law et al. 2007; Taylor, 2007). These steps involve competency areas where Irish therapists report that they lack skills (Murphy & Robinson, 2010, O'Shea, 2011). As described in the literature, credit-rated pre-qualification modules appear more systematic in addressing most, if not all, six steps (Table 4).

Table 4 Educational content integrating steps of EBP cycle

<i>Developing knowledge and skills regarding EBP cycle steps of :</i>	Content examples for pre-qualification credit-rated modules	Content examples for post-qualification non-credit-rated workshops
1. <i>Asking a clinical question</i>	Related to concerns that generally arise in clinical practice according to module leader ¹ Generated under guidance of practice educators ²	Not clear if based on workshop-provided scenarios or clinician's own practice ³⁻⁵
2. <i>Acquiring the best evidence</i>	Learn database searching skills while having access to university library facilities; required to utilise these skills for much academic work ^{1&2}	Learn database searching skills in the abstract as during workshop generally no library access; may not have library access from workplace ⁵
3. <i>Appraising the evidence</i>	Frequent critical appraisal of research studies for academic work ^{1&2}	Appraise a few provided (number not stated) qualitative and quantitative research articles, possibly unrelated to clinician's own practice ^{3&5*}
4. <i>Applying the evidence</i>	Hypothetically evaluate research for clinical utility ² Learn leadership skills in order to respond to possible practice-based barriers to applying evidence ²	Demonstrate ability to apply evidence during simulated clinical encounters ⁴
5. <i>Assessing the impact of the evidence</i>	Hypothetical consideration of implications on intervention planning ¹	Possibly not addressed
6. <i>Advising others of the knowledge translation (KT) process</i>	Design in-service for clinicians on specific EBP example ²	Possibly not addressed

¹Tickle-Degnen (2000c)

²Stern (2005)

³Crausaz et al. (2011)

⁴Wyer et al. (2009)

⁵McCluskey & Bishop (2009)

^{5*}Participants receive basic instruction in statistics so they can appraise quantitative research

However, much of the learning appears to be based on hypothetical case studies/ situations as the learners are students, not clinicians. Furthermore, the post-qualification workshops do not seem to capitalise on participants being therapists by anchoring their learning in their daily practice. In addition, neither the pre nor post-qualification education appear to address the issues of knowledge transfer on micro, meso and macro levels and the importance of a commitment to changing practice, despite both being highlighted as central concerns in the EBP literature.³⁵

As noted earlier regarding the importance of micro to macro perspectives, a commitment to change needs to exist at individual and organisational levels. McCluskey (2004) studied the overall process of implementing EBP within a service. After following therapists subsequent to a 2-day workshop on EBP in Australia, she concludes that individual and organisational factors, and an openness to change on both levels, impact research utilisation. Moon (2004) maintains that participants are oftentimes not asked about, much less supported in transferring their new learning into practice. She advocates contacting the managers of participants prior to workshops in order to garner a commitment that the participant would be well supported in subsequently implementing changes in practice. Moon also stresses that workshops need to be structured in such a way that their impact goes beyond merely the acquisition of knowledge and skills, to actively focusing on changing practice. The process of integrating EBP learning into practice, then, encompasses the need to change customary practice which, in turn, implies viewing the process from micro, meso and macro perspectives. A number of researchers (Caldwell, Whitehead, Fleming & Moes, 2008; Pipe, Cisar, Caruso & Welik, 2008; Turkel, Reidinger, Ferket & Reno, 2005) maintain that successful EBP requires enacting leadership strategies. Pipe et al. (2007) advocate integrating a discussion of the leadership skills necessary for implementing change into educational approaches to EBP.

Jack, Roberts and Wilson (2003) report on an initiative that did appear to build in managerial support before a post-qualification credit-rated educational unit on EBP. A module was developed jointly by a College of Nursing and an acute hospital trust in the U.K. From the beginning, the objective was to achieve a clear and identifiable outcome resulting in enhanced patient care. The nurses who enrolled as students in the course

³⁵ The UKCORE/ GPT scholarship of practice partnership did address all of these issues. However, here I am citing learning content and approaches which are transferrable to an academic setting.

were asked to formulate their own clinical question beforehand; during the module they carried it through using the steps of the EBP cycle. Most importantly, the module culminated in a formal oral presentation by the students, attended by clinical and education staff and management up to non-executive directors. All participants then debated how the changes suggested by the students could be implemented, including what resources might be needed. Such a close partnership between the educational provider and the clinical setting would appear to be ideal and appears to have much in common with the scholarship of practice clinician – academic partnership model (Forsyth, Duncan & Summerfield-Mann, 2005; Forsyth, Melton & Summerfield-Mann, 2005).

All of the above-cited healthcare education and adult learning theory literature and my experiences with the Sunnyview therapists informed the design and plan of the new module. I decided that the IETP module content would include students:

- Examining their preferred evidence sources and how different clinical therapies' core beliefs and philosophies impact viewpoints about EBP
- Identifying the enablers and barriers to integrating new knowledge in their workplace on micro, meso and macro levels
- Applying change and leadership theories to the establishment of an evidence-based work culture
- Articulating a clinical question based on a clinical conundrum (step 1 EBP cycle)
- Exploring different databases and applying search strategies to practice-based clinical questions (step 2 EBP cycle)
- Practicing skills for critically appraising qualitative and quantitative research (step 3 EBP cycle)
- Applying located research evidence to their practice context through implementing a change strategy (step 4 EBP cycle)
- Assessing the probable impact of that knowledge translation (step 5 EBP cycle)
- Assessing the applicability of different KT communication strategies (step 6 EBP cycle)

Next, I designed specific module content, learning activities and assignments which would be formally assessed. My thinking and rationales during this time was informed by teaching and learning seminars offered by the study university on undergraduate teaching, postgraduate training and professional development. Through these seminars I was introduced to the work of both Meyer and Land (2005, 2006) and Land et al. (2008) and their construct of threshold concepts.

5.7 Designing the module

The construct of threshold concepts was developed within the context of a U.K. national research project on the characteristics of strong teaching and learning environments at the beginning of the 21st century. Meyer and Land (2005) first proposed that certain concepts in economics were foundational to the mastery of that discipline. They argued that threshold concepts exist in every discipline, concern knowledge that learners oftentimes find ‘troublesome’ and hence:

- involve a conceptual shift on the part of learners
- are discursive as the shift in perspective is accompanied by an extension of language as new ideas are articulated in new ways
- are integrative as they allow learners to make connections that were heretofore hidden from their view
- are irreversible as they are unlikely to be forgotten once understood (though the learner can later revise or even reject them)
- are reconstitutive as they involve a *repositioning of the self* (p. 374) as learners redefine their sense of self and beliefs.

Meyer and Land’s construct was used as a guide for designating what I felt were threshold concepts for a module on implementing evidence in therapy practice.

Threshold concepts usually have a very cursory formulation such as ‘electromagnetism’ or ‘Darwin’s theory of evolution’.³⁶ Originally, threshold concepts were formulated for

³⁶ In 2012 I located two papers, written by occupational therapy educators, discussing the threshold concepts framework. The first was presented by Rodger and Turpin (2011) at an international conference on threshold concepts in Sydney, Australia in 2010. They used Meyer and Land’s framework to examine and reform the occupational therapy curriculum at the University of Queensland. In so doing, they compiled a list of 20 pieces of what they and their colleagues considered to be *troublesome knowledge*. They then reduced the list to five entries which they felt met Meyer and Land’s criteria of being threshold concepts. According to Rodger and Turpin, the five threshold concepts for an occupational therapy

entire disciplines; more recently they have also been used for sub-disciplines (Tanner, 2011). Hence, at first I defined the threshold concepts for EBP as being:

- 1) Triad of evidence sources
- 2) Commitment to change
- 3) Consuming, generating and communicating new knowledge
- 4) Leadership and the EB work culture

I generated these concepts myself, based on my immersion in the EBP and healthcare education literature over the previous three years. I later re-formulated these concepts as attitudinal statements for I felt this formulation better reflected Meyer and Land's (2005) description of the acquisition of threshold concepts as being a transformative process where learners redefine their sense of self and beliefs. These re-formulated threshold concepts are presented in Table 5 together with how I planned to address them through class discussions, learning activities and students' continuous assessments. Whereas I had no objective proof that framing the IETP module around attitudinal statements about EBP would result in implementation of that learning, I felt that the literature implied that it might.

As described in Chapter one (section 1.5), the attitudes of therapists (and educators) towards EBP is a subject that has been much reported in the clinical therapy literature and has been foundational to how EBP as a construct has evolved over the years within the discipline of occupational therapy. Therapists' attitudes towards EBP impacts on what evidence sources they use, their confidence in their EBP skill levels and also their perceived level of ability to confront workplace-embedded barriers to engaging in EBP. McCluskey and Cusick (2002) maintain that individuals engage in EBP when they demonstrate a willingness to change their attitudes and values. Holm (2001) states that attitudinal barriers can be a greater hindrance to the practice of evidence-based occupational therapy than are workplace barriers. O'Sullivan (2004) credits continuing education with leading to a change in a professional's attitudes resulting in changes in

curriculum are: 1) *purposeful and meaningful occupation*; 2) *client centred practice*; 3) *the integral nature of occupational therapy theory and practice*; 4) *identity as an occupational therapist*; and 5) *thinking critically, reasoning and reflecting* (p. 263). Whereas I would agree that these are entry-level threshold concepts for the profession of occupational therapy, the IETP module had to address the learning needs of occupational, speech and language and physiotherapists. The second paper by Tanner (2011) applies the Meyer and Land framework just to practice education, delineating three threshold concepts: 1) *client-centred practice and the use of self*; 2) *developing a professional identity*; and 3) *practising in the real world* (p. 429).

Table 5 EBP threshold concepts

Threshold concept	Class discussions	Learning activities	Related assignments
<i>How I, my profession and my clients value different types of evidence underpins my professional decision-making</i>	Class 1: What it means to be an EB practitioner; ontology and epistemology of OT, SLT & PT professions	Formal two team debate on what constitutes ‘best’ evidence class 2	
<i>Being a professional implies engaging in a life-long, self-directed journey of learning and a commitment to changing practice</i>	Class 3: Change management theory	SWOT ¹ analyses of own workplace regarding attitudes, facilitators, barriers and mediators to EBP and challenging customary practice classes 2 & 3	First assignment due class 4: Reflective paper on being an EB practitioner from micro (individual) perspective
<i>I am a consumer, generator and communicator of new knowledge</i>	<u>knowledge consumer</u> Class 2: How to do a database search Classes 2 & 3: How to critically assess qualitative and quantitative research articles <u>knowledge generator & communicator</u> Class 4: Generating evidence in practice through assessing application of new research and then communicating about experience to others	Classes 1- 4 actively engage in each step of EBP cycle from formulating relevant clinical question→ database searching in library lab→ critically appraising research article to peer → hypothetically describing applying and assessing impact of evidence→ how would disseminate new knowledge	Second assignment due class 5: Oral presentation demonstrating engagement in all steps of EBP cycle and a commitment to changing practice on both micro and meso (team) levels
<i>I can lead the establishment of an EB culture in my workplace irrespective of my work role</i>	Class 4: Leadership characteristics/ theories Class 5: Existing and needed supports for facilitating an Irish EB workplace and healthcare culture		Third assignment due mid January: Final paper reviewing EBP literature, debating how to sustain EBP work culture from meso and macro (organisational) perspectives

¹Strengths, weaknesses, opportunities and threats

behaviour. Hence, I believed that it was the students' *attitudes* towards EBP which would probably drive the process of their eliciting meaning from their IETP learning experiences. I felt that the threshold concepts for the IETP module, and the learning that they engendered, would encourage students to critically examine their attitudes/ beliefs towards EBP. For this reason I chose to state the threshold concepts in the first person, as if they were being articulated by the students themselves. Such a formulation communicates that the students would construct their own individual identity as an EB practitioner, through accepting or rejecting these attitudes/ beliefs, while acquiring EBP knowledge and skills. As described by Wenger (1998):

Learning transforms who we are and what we can do; it is an experience of identity. It is not an accumulation of skills and information, but a process of becoming – to become a certain person, or conversely to avoid becoming a certain person (p. 215).

Meyer and Land (2005, 2006) imply as much when they describe a transitional or *liminal space*; a time and dimension where all learning occurs. Grappling with threshold concepts is depicted as involving a messy back and forth journey as students flounder between old and emergent understandings within this liminal space. As formulated in Table 5, the EBP threshold concepts are consistent with criteria developed by Land et al. (2008). The adoption (or conscious rejection) of these concepts by the students would most probably: 1) require a conceptual shift on their part; 2) would involve them learning a new EBP language (be discursive); 3) would allow them to make new connections between EBP theory and practice (be integrative); and 4) would be irreversible (as the term is defined by Meyer and Land). What I did not know in advance was whether mastering the threshold concepts would also be reconstitutive; i.e. would they result in the “*repositioning of the self*” described by Meyer and Land (2005, p. 374).

As formulated, these attitudinal threshold concepts served as generative topics supporting the EBP knowledge and skill content highlighted in the EBP and healthcare education literature. At no time, however, did I specifically articulate these threshold concepts to the students. My objective was not to tell them what the literature advocated regarding their attitudes towards EBP; rather that they construct their own new understandings and beliefs through participation in the module. The module provided the ‘liminal space’ for that journey of discovery.

Guided by the threshold concepts, I then decided on: 1) topics for class discussions; 2) learning activities related to those topics; and 3) assignments that would serve as demonstrations of the students' critically reflecting on these concepts as their new understandings emerged. These choices were based on knowledge and experience accumulated over years as a lecturer and as a clinician, as well as my review of the healthcare education literature discussed above. I had no prior objective evidence that the chosen discussion topics, learning activities and assignments were those that would best support therapists in acquiring the skills necessary for locating, critiquing and translating research findings into practice. The first aim of my PAR study, however, was to suggest certain content using proposed teaching approaches and to then allow the students to modify the module as it was being conducted. This process is discussed in Chapter six. The second aim of my study was to evaluate the module's influence on therapists' engagement in EBP. This is discussed in Chapter seven.

5.8 Procedures for IETP module design

In compliance with the study university guidelines, a module descriptor (Appendix 5) was submitted in the winter of 2008/09 to the curriculum review committee for approval. In the spring and summer of 2009 I wrote the module handbook (Appendix 6). At the study university, the content of any module handbook is completely at the discretion of the module leader. However, in May 2010 the external examiner for MSc programme wrote in her report that she judged the IETP module handbook to be "*the best that she had ever seen*".

In preparing the handbook, I reviewed the EBP literature relevant to occupational therapy, speech and language therapy and physiotherapy. This allowed me to integrate readings from all three therapies, thereby providing focused support for the content, learning activities and assignments. Although I was well acquainted with the EBP literature in occupational therapy, I did not have the same level of familiarity regarding physiotherapy (PT) and speech and language therapy (SLT) literature. Hence I consulted with SLT colleagues at the study university regarding what they considered the most eminent journals in their discipline. I contacted PT lecturers at another Irish university for the same information. Next, I completed a comprehensive review of these publications regarding discussions and debates of EBP issues dated from the year 2000

using the CINAHL database. I also did a MEDLINE search around specific EBP keywords to include the perspectives of other disciplines, particularly regarding KT, change management and leadership theories. These scoping reviews permitted me to incorporate a wide body of literature in the seventy-four recommended readings for the module which were posted on BlackBoard. I deliberately tried to include discussions of controversial issues as they were debated in the literature. Based on authors I saw frequently cited in the EBP research literature, I selected a recommended textbook from each of the disciplines (Haynes & Johnson, 2009; Law and MacDermid, 2008; Taylor, 2007).

5.9 Chapter summary

In this chapter I have described the rationale for the IETP module. This is followed by a review of the healthcare education and EBP literature, and a discussion of the Meyer and Land (2005) framework of threshold concepts. These sources guided the development of the IETP module content and learning activities. In Chapter six I will describe how my student co-researchers, through engaging in the iterative cycles of PAR, then modified that content and those learning activities.

CHAPTER SIX - THE RESEARCH PROCESS STAGE TWO: FINDINGS FROM CONDUCTING THE IETP MODULE

6.1 Overview of the chapter

This chapter describes the Participatory Action Research (PAR) process that unfolded as the students and I engaged in collaborative decision-making during the *Implementing Evidence in Therapy Practice* (IETP) module. Together we developed, modified and reviewed the module content and learning activities for each of the five classes which took place every two to three weeks over a 10 week period. The teaching approaches and content for each class are summarised in Appendix 16. The chapter begins with a short profile of each student participant in the study. Next, each of the full-day classes is reviewed chronologically in order to demonstrate the unfolding nature of the PAR decision-making process. The perspectives of the students, an outside observer and myself as researcher (Figure 15) are integrated as the iterative PAR steps of observing → reflecting → planning → acting unfolded week by week. The critical examination of each class includes: 1) a descriptive summary of class teaching approaches and content; 2) the theoretical rationale for the learning processes and content of each class; 3) a discussion of how the students responded during class; 4) a report on the students' engagement in the PAR process through the Nominal Group Technique NGT consensual decision-making; and 5) my reflections on the students as learners and as co-researchers. The chapter closes with a summary of the PAR decision-making process.

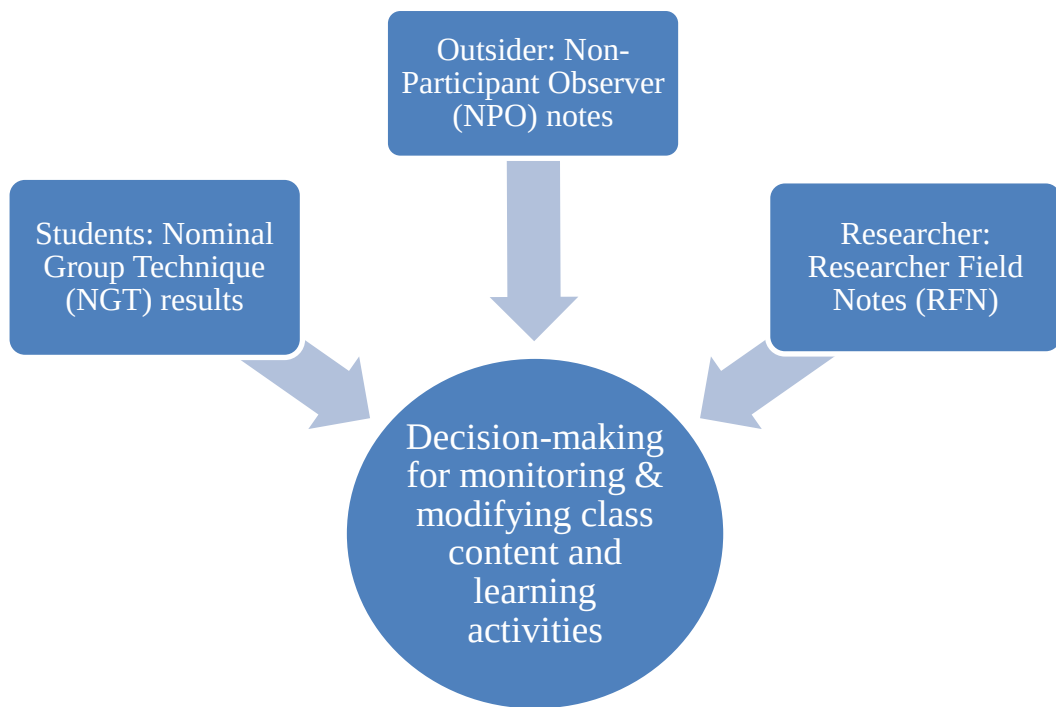


Figure 15 Three perspectives informing the iterative PAR decision-making process

6.2 Profile of participants

Seven practicing clinical therapists enrolled in the IETP module at the study university (Table 6). To protect their anonymity, each chose a pseudonym when they signed a form consenting to participate in the study as student co-researchers. These pseudonyms clearly denote the person's sex, but other details noted below are intentionally general so as not to identify the participants more than necessary.

Table 6 Details about student participants

Chosen pseudo-nym	Profession	Years qualified	Work setting	Work role	Work contract	Already completed other MSc modules
<u>Mary</u>	physio-therapist	5	hospital	clinical	full time	no
<u>Tara</u>	physio-therapist	7	hospital	clinical	full time	yes
<u>Ted</u>	physio-therapist	8	community	clinical	full time	yes
<u>Tamara</u>	physio-therapist	26	community	clinical* & managerial	part time	yes
<u>Tom</u>	occupational therapist	6	hospital* & community	clinical	full time	yes
<u>Dottie</u>	speech & language therapist	15	community	clinical	full time	yes
<u>Siobhan</u>	speech & language therapist	27	school	clinical	full time	no

* Majority of the time

6.3 Findings from Class One

6.3.1 Rationale for learning processes and content³⁷

The constructivist epistemology of this study implied that students themselves would engage in creating meaning³⁸ by constructing a sense of the EBP paradigm. This learning would occur in both individual and social (group) contexts (Crotty, 2009). To facilitate the constructivist group process, I actively supported creating a climate of belonging to a group. In congruence with Knowles et al.'s (2005) theories for engaging and empowering adult learners, I had the students begin the first class by describing their prior experiences with or attitudes towards EBP before we began to discuss any viewpoints expressed in the literature.

In this manner, students were encouraged to examine and contrast their existing knowledge and experiences against alternative views by explicitly stating their own opinions. Reflection therefore became an implicit and important part of the learning process right from the start as advocated in the adult education literature (Argyris, 1982; Boud & Walker, 1990; Higgs & Jones, 2000; Kolb, 1984; Moon, 2004; Schön, 1987). In addition, the chosen learning activities were designed to mirror the complexity of the students' workplaces (Savery & Duffy, 1996). I endeavoured to create a learning environment where students' thinking and attitudes were continually challenged in the same way that they might be challenged in the workplace during their efforts to implement EBP.

The primary focus of the day was on the first threshold concept (*How I, my profession and my clients value different types of evidence underpins my professional decision-making*). I never explicitly articulated this attitude however, because I did not want the students to examine ideas only from the perspective of what I or other educators considered an optimal attitudinal stance for an EB practitioner. Rather, I wanted the students to explore and construct their own meanings and understandings about the

³⁷ For each of the five classes, these commentaries are based on researcher notes I made while I was designing the IETP module from the winter of 2008 to the summer of 2009 and on my researcher field notes (RFN) during the module in the autumn of 2009. References are made to literature cited in earlier chapters so as to make my line of thought clearer to the reader. By the autumn of 2009, however, this literature had become so integrated into my thinking that I no longer always explicitly cited it in my RFN.

³⁸ For a definition of constructivism see section 2.2.

effect that oftentimes implicit attitudes regarding different evidence sources might have on their practice. This was done by having the students:

1. Examine their preferred evidence sources for clinical decision-making
2. Familiarise themselves with evolving definitions of EBM and EBP
3. Explore and discuss different clinical therapies' core beliefs and philosophies and how these beliefs impact viewpoints about EBP
4. Develop their skills regarding the first and second steps of the EBP cycle (ask a clinical question; acquire the best evidence).

The teaching methods alternated between brief periods of didactic lecturing, short reflective exercises, pair and whole class discussions (Appendix 16³⁹). All knowledge and skill areas were re-visited in subsequent classes so as to encourage greater reflection and deep learning (Moon, 2004).

Class One began with the students completing a self-assessment questionnaire (see section 4.4.1) about their current EBP knowledge, skills, attitudes and behaviours (KSAB) as advocated by Khan and Coomarasamy (2006); the students completed the same questionnaire on the last day of class. Class One included only a brief introduction to the steps of the EBP cycle. Each step was later developed in more detail through the process of 'doing' each step, thereby anchoring the learning in the student's daily practice (Kolb, 1984; Savery & Duffy, 1996). The preparatory tasks for Class Two (keeping a reflective journal and finding evidence to support their team's position in the debate) were intended to develop in the students a greater awareness of the nature of their current practice. As McCluskey and Cusick point out (2002), this is the first step in considering changing how one practises.

6.3.2 Student responses to learning⁴⁰

It took the students a few hours to feel comfortable being in the group with me and with each other. The discussion began with them setting the ground rules including: *what's discussed here [in class] stays here, everyone's opinion is to be respected, everyone should be given a chance to speak, not everyone has to speak*. This first exercise

³⁹ Classes are referred to as Day One, Day Two etc. as they are also in the module handbook.

⁴⁰ These findings are based on the non-participant observer (NPO) notes and my researcher field notes (RFN) for each of the five classes.

appeared to build confidence in the classroom being a 'safe' place. These ground rules were posted on Blackboard to further validate their importance and to remind everyone of what had been agreed.

Some of the students in the class knew others, some did not. Initial 'icebreaker' discussions greatly relaxed the atmosphere. By the time the students were describing their typical working day there was much laughter and they began sharing more detailed personal commentaries. I did not accompany the students on the mid-morning break as I wanted to give them social time alone to coalesce as a group without feeling they still had to 'perform'.

Mary was the quietest (and youngest) and had the least clinical experience. As she sat directly next to me, she was outside of my field of vision unless I shifted in my seat. I positioned myself differently vis-a-vis her on subsequent days to facilitate drawing her into group discussions. Tom was relatively reserved in expressing his opinions (English was not his first language) but, as the only occupational therapist, he appeared to enjoy representing his profession and articulating its strong endorsement of qualitative research. Tamara often expressed views in an outspoken way, though she frequently sought confirmation of her opinions from the group and from me. At the beginning of the first day Tamara was not sure that she wanted to enrol, but by the end of the day she was very enthusiastic. Dottie remained somewhat disengaged from everyone; she left early saying she already knew the basics of database searching and had not yet decided whether or not she would consent to participate in the research. Siobhan expressed particularly critical views of what she termed too much 'jargon' in the published literature and what she felt was a wide gulf between research and the realities of everyday practice. Tara articulated her opinions forcefully, appearing confident in her knowledge base. She and Ted were previously acquainted and clearly respected and liked each other. Ted appeared to enjoy challenging the others' thinking, especially as his opinions were often at odds with his fellow physiotherapists.

The students most often looked at me when they talked, despite me sometimes averting my gaze to encourage them to address each other during class discussions. During pair exercises, however, they engaged more fully with each other and I generally ceased to exist until the whole group came back together for a shared discussion. They so enjoyed this pair sharing of personal experiences and/or reflections that I had to set time limits

so that we could move on to the next topic. They were more reticent about communicating specific workplace concerns with the whole class than they were in pairs. In general, when the students were able to link theoretical points back to their personal experiences and opinions they were more enthusiastically engaged in the discussions. If I validated a student's contribution by writing it up on a flip chart or on the whiteboard the student oftentimes appeared to sit up straighter and lean more into the group. They would have a similar response if, while discussing a new topic, I referred back, by student name, to an idea or opinion which had been expressed earlier.

The students' views were seen to develop as the day progressed. Tara and Tamara (Mary initially voiced no opinion) at first agreed completely with the physiotherapist (PT) author's positivist stance in one of the assigned readings. Ted agreed with Tom in supporting the occupational therapist (OT) author's stance on naturalistic research. Dottie and Siobhan endorsed the middle ground position of the speech and language therapist (SLT) author. By the end of the day all of the students had assumed a more middling stance, though Dottie and Siobhan (both SLTs) also acknowledged that the OT author made some valid points. It would appear that as the students became more comfortable with what initially might have been 'troublesome knowledge' (Meyer & Land, 2006), a gradual shift was observed in their understanding of what it meant to be an evidenced-based practitioner.

6.3.3 Students' engagement in the PAR process⁴¹

All of the six students who participated (Dottie had not yet consented to be part of the research process) stated that they liked the idea that the NGT responses were anonymous. They watched me keenly as I shuffled their individual response papers before I noted their suggestions on the flip chart for voting (which was also anonymous).

⁴¹ Findings from RFN and NPO notes for each of the five classes.

NGT decisions⁴²

Discussion point(s) to be re-visited during next class:

- content of a reflective journal (26 points)
- how to ask a clinical question (22 points)

Activities which particularly supported their learning:

- class discussions (18 points)
- reflective exercises (16 points)

Learning activities to be integrated into the next class:

- critically appraised papers (24 points)
- group brainstorming (18 points)
- small group exercises presenting back to entire class (18 points).

6.3.4 Researcher reflections on learning environment⁴³

Herr and Anderson (2005) maintain that the success of any PAR entry process depends upon careful relationship building. Hence, negotiating the learning environment with the students was foundational to demonstrating respect of them as co-collaborators in the research. When the students declined to be videoed, the camera was removed. A second important PAR element is clearly defining the participatory structures to the participants. When I first entered the classroom, X had already explained the research project. The students had expressed the desire not to be videoed, but had accepted the presence of a non-participant observer [NPO] (a role X assumed). There was a palpable tension in the air. The students appeared relieved, however, when I confirmed that the

⁴² For each class, these decisions were reported in the NPO notes. At the beginning of the first NGT discussion I explained to the students that they were being asked to reflect together on how the day had gone for them, what worked well and what they felt needed to be included in the following class. During each NGT discussion, the students individually answered the same three questions: 1) what was the 'muddiest point' discussed during the day that they would like re-visited during the next class; 2) which activities particularly supported their learning; and 3) what types of learning activities would they like to see integrated into the next class. The number of answers to each question generally ranged from 5-10. The top 2-3 responses (in terms of votes received) to each question were then integrated into the subsequent class (see also Appendix 8 for general description of NGT). Though I had to set out learning outcomes and assigned readings for each class in the module handbook prior to the beginning of the module, I had not yet prepared a time-framed outline of content and learning activities for each class, nor any powerpoint (ppt) slides. Hence, during the two or three weeks between classes I first analysed my RFN, the NPO notes and the results of the NGT discussions before doing this class preparation.

⁴³ All findings are based on RFN for each of the five classes.

PAR process primarily entailed them partaking in a 30 minute end-of-class nominal group technique (NGT) discussion and being interviewed four - five months after the module ended. This illustrates another important aspect of PAR: that the process should not be considered too onerous by the participants (Herr & Anderson, 2005). After answering any additional questions related to the study, I formally began the class.

The ‘getting to know each other’ activities took time, but were essential to building a sense of group identity and an environment in which the students would feel safe in making personal disclosures. I had designed the session to have a maximum amount of class discussion drawing on examples from their professional opinions and experiences. These were linked to the readings; powerpoint (ppt) slides served only as discussion prompts. As the students did not yet know each other well, I instigated mostly paired (more private) discussions, rather than whole group discussions, and then gave each pair a choice about whether they would share pertinent points with the entire class. I concluded from the students’ responses to the day’s learning that I needed to increase to a maximum the amount of time that students spent on task-based activities which allowed them to ‘experience’ the day’s theoretical concepts. The more abstract or unfamiliar the concepts required more task-based time being allotted to support their learning through pair and small group activities.

6.4 Findings from Class Two

6.4.1 Rationale for learning processes and content

The focus remained on the first threshold concept (*How I, my profession and my clients value different types of evidence underpins my professional decision-making*) while also introducing issues which underpin the second concept (*Being a professional implies engaging in a life-long, self-directed journey of learning and a commitment to changing practice*). The first part of the third threshold concept (*I am a consumer⁴⁴, generator and communicator of new knowledge*) was addressed through EBP skill development. Once again, I did not explicitly articulate any of these concepts; rather I guided the

⁴⁴ Knowledge consumers, generators, communicators are terms used in the Knowledge Translation model (see section 5.3). Knowledge consumers are knowledge users who belong to the community of practitioners.

students in constructing their own meanings and opinions as we discussed issues which might inform such attitudinal statements. This was done by having the students:⁴⁵

1. Formally debate the value of different types of evidence so as to better understand which they valued, and why, to underpin their professional decision-making
2. Engage in reflective journaling to become more aware of the nature of their current practice and the impact of critical incidents which may have provoked changes in their customary thinking and behaviour
3. Perform a computer search of library databases for specific evidence regarding their individual clinical question
4. Consume research by critically appraising papers
5. Examine enablers and impediments to consuming new research knowledge in their workplace.

The formal debate, and the open discussion which followed, was intended to allow the students to verbally share and then critically examine sceptical attitudes regarding the importance of research findings relative to clinical experience in their decision-making; attitudes which have been widely reported in the literature (Jette et al, 2003; Murphy & Robinson, 2009; O'Shea, 2011; Zipoli & Kennedy, 2005). Work-based challenges to engaging in EBP were addressed from micro, meso and macro perspectives in accordance with the Knowledge Translation paradigm (Law et al., 2008). Such a multi-level approach to EBP allowed the students to make connections that they probably had not made before (Meyer & Land, 2006). Barriers to consuming research (workplace access to databases, time to read and critically assess articles) have been widely documented in the international and Irish literature (Dysart & Tomlin, 2002; Taylor, 2007; Zipoli & Kennedy, 2005; Murphy & Robinson, 2010). Having the students begin to problem-solve how they might overcome impediments to being research consumers in their specific workplace was intended to support student beliefs about self-efficacy

⁴⁵ Some of these content areas were integrated subsequent to decisions taken by the students during the Class One NGT discussion (for details see Appendix 16, Class Two teaching approaches and content). Others had already been cited in the IETP module handbook as they addressed learning outcomes listed in the module descriptor approved by the study university curriculum committee in the winter of 2008/09. These learning outcomes were based on my scoping review of the healthcare education and EBP literature discussed in earlier chapters. However, the teaching and learning methods chosen to convey these content areas were, whenever possible, those voted by the students during the NGT discussion of the previous class.

and implicitly underline the importance of self-directed learning. Beliefs about self-efficacy are considered to have a large influence on a person's decision to partake, or not, in particular activities (Michie et al. 2005). As during Class One, the students engaged in reflective tasks and actively experimented with the concepts they were learning (e.g. how to search a database through key words). Both reflective thinking and hands-on doing are felt to underpin successful learning (Kolb, 1984).

6.4.2 Student responses to learning

It was clear that members of the two debate teams had researched the literature extensively in order to support their pro or con views regarding the question. Hence the debate was well informed, lively and stimulating. A few commented that they regretted that it had not been tape recorded. Both teams appeared to assume a sincerely felt 'us versus them' identity.

They laughed afterwards about whether they would *consort with the enemy*⁴⁶ during break time. Dottie appeared to be a team-appointed lead speaker of the pro group (Dottie, Ted and Tamara); whereas the con team (Tom, Tara and Mary) divided the roles more equally. All, however, participated in devising rebuttal arguments for their team between speaking times. Tamara commented that having to defend a point of view was a very good way to learn about the implications of being a proponent of different levels of evidence.

Dottie and Tara led the discussion on the emergence of research in the different disciplines; though on this day all of the students appeared more comfortable with abstract concepts such as ontology and epistemology which had been introduced during Class One. The more occasions the students had to verbalise ideas, the more they seemed to internalise them. This same comfort level, however, did not yet appear to exist with regard to reflective journaling, formulating clinical questions, and critically analysing a research article (newly introduced this class).

During the first exercise on reflective journaling (see Appendix 16) the students worked in pairs and were completely focused on discussing with each other, even when I circulated around the room. When the class came back together as a whole, there was

⁴⁶ In the NPO notes exact quotes are very occasionally transcribed, more often the students' words are only paraphrased (as in the RFN, which were generally written 2-3 hours after the class had ended). At the students' request, the classes were neither audio nor video-taped.

initially some hesitation on the part of some to speak in the larger group context (Tom: *I feel nervous about presenting*), but gradually students called out comments for me to note on the whiteboard. At the end of this activity, Ted commented that he found it helpful to first try formulating journal entries himself, before reading entries I had written.

I noted that I was less frequently a point of reference for the students' learning compared to Class One; the students exhibited more confidence in their ability to assist each other. For example, during the pair then whole group brainstorming on (re)formulating clinical questions, the problem-solving was done almost entirely among the students. Tara's clinical question proved particularly challenging for the class due to everyone's unfamiliarity with her domain of practice. Each student, however, tried to assist her in narrowing down the scope of her question. One student, though, declined to share a question with the class, stating later to me that this was because they did not want to put forth a question too similar to that of others. This student required 40 minutes of my individual attention during the lunch break in order to begin conceptualising another question.

During the critical appraisal of a paper (CAP) activity, the descriptive CAP questions were relatively easy for pairs of students to identify (e.g. aim/ objective of the study); the critical assessment of the research methodology/ methods was considerably more difficult. Mary and Tamara (both physiotherapists) appeared to share and discuss more fluently than the multi-disciplinary pairs (Ted & Dottie; Tom & Tara). During the whole class discussion Ted and Tom took the lead as I had them consider the strengths and weaknesses of multi-professional discussions in terms of the importance of a common vocabulary and domains of practice. The atmosphere was comfortable, collegial and not confrontational, even when Tamara or Dottie challenged some points. The students began to complete each other's sentences. At the close of this activity, the students stated that they found critically appraising a paper (CAP) difficult and that they still needed more practice.

Siobhan was not present in the class as she was presenting a paper at a conference; she requested a tutorial as a replacement. During those two hours, she sought as much specific detail about the debate and class discussions as I could furnish. She stated then, and again during Class Three, that she was very sorry to have missed class as she felt

the group experience was integral to her comprehending what she found to be new and sometimes difficult concepts. She came to the following class very well prepared. Tara requested permission to be absent from the third class to attend a conference very important to her work, though she stated that she would loathe missing an entire day. She also requested a tutorial and came to it prepared to do a mock journal club, asking me to give her formative feedback on her performance.

6.4.3 Students' engagement in PAR process

By the end of Class Two, most of the group appeared to be more comfortable with their role as co-researchers. One student, however, seemed to find engaging in the NGT process somewhat challenging. This student did not write suggestions on slips of paper at the same time as everyone else; rather the student was oftentimes distracted doing something else such as flipping through a book or trying to engage a neighbour in a side conversation. The group had to wait for this student to add contributions to the pile before the voting could begin, causing some tension among group members.

Dottie (who left early the first day), having experienced how the results of Class One's NGT discussion were integrated into Class Two, decided to participate in the Class Two NGT discussion. She returned a signed research participation consent form at the beginning of Class Three.

NGT decisions

Discussion point(s) to be re-visited during next class:

- conceptualisation in critical analysis⁴⁷ (24 points)
- critical appraisal of a paper (19 points)
- qualitative research analysis/ design (17 points)

Activities which particularly supported their learning:

- critically appraising a paper (CAP) (22 points)
- library database searching session (17 points)

⁴⁷ During the reflective journaling activity I showed Kolb's (1984) learning cycle as a theoretical support for the process. The students had little difficulty describing experiences. However, they found reflecting (asking why?) more challenging and they really struggled with the step of conceptualising (looking for meaning in the experience which could be generalised to other contexts).

- debate (16 points)

Learning activities to be integrated into the next class⁴⁸:

- guidance on reflective paper assignment
- more CAPs
- steps in EBP process
- practice database searching skills

6.3.4 Researcher reflections on learning environment

While Class Two discussions were very rich, I found through asking questions that their depth and criticality depended on the students having adequately ‘primed their minds’ through reading the assigned articles and/or book chapters before class. The students appreciated having the benefit of a great deal of experiential practice, though this took a lot of class time. Nonetheless, it was this learning approach which was clearly most meaningful to the students and which facilitated their taking ownership of the issues discussed, as advocated by Knowles et al. (2005). In most cases, I needed only to guide them through a quick theoretical synthesis of the topics under consideration, using one or two powerpoint slides, before focusing on experiential activities. I was still concerned, however, that a five or ten minute synopsis on a subject such as qualitative/quantitative research methods would never be a substitute for students reading at least a book chapter or two. This had been the difficulty with the Sunnyview therapists; they had been happy to attend sessions, but were not committed to doing any outside reading to deepen their knowledge. Without such a self-directed learning investment by the students, I questioned whether they would develop enough basic EBP skills to have the tools for implementing evidence-based behaviours in practice.

I did not find it difficult to integrate the student decisions regarding the desired content and learning activities for the next class. I found, however, that having some content and/or learning processes detailed in the module handbook was important for moving the students’ learning forward. The student NGT choices were focused on previous learning; whereas each class session detailed in module handbook re-visited former topics (on a deeper level) and introduced new ones.

⁴⁸ No points were reported in the NPO notes. I noted in my RFN, however, that the hour was running late and I told the students that as there were only four suggestions, all could easily be incorporated in the next class.

I found that I did not always correctly anticipate which concepts the students would find easy and which they would experience as being more challenging. For example, I had thought that once clinical questions were formulated, designating key words for database searching would be self-evident. Such was not the case; the students needed considerable guidance from the reference librarian as they had little appreciation of how overly vague key words could result in tens of thousands of 'hits'. I anticipated that critically appraising papers (CAP) would be challenging, but their class comments (and NGT decisions) underlined how truly daunting they felt them to be. As this skill underpins the entire EBP cycle, I was happy to comply with the student decision that we do some form of CAP during every class. This highlighted how important it was that I remained open about class content and sensitive to their needs and desires; a process greatly facilitated by the NGT feedback and the entire PAR structure of the students monitoring and modifying the module as it unfolded. I also concluded that it was imperative that I continually monitor how comfortable students felt with the new learning (one student being of particular concern). The issues of comfort and competency would probably impact their later research knowledge utilisation in the workplace.

6.5 Findings from Class Three

6.5.1 Rationale for learning processes and content

The primary focus of Class Three was the second threshold concept (*Being a professional implies engaging in a life-long self-directed journey of learning and a commitment to changing practice*); the importance of openness to change is an issue frequently emphasised in the occupational therapy literature (McCluskey, Home & Thompson, 2008; Plastow, 2006; Taylor, 2007). The first threshold concept (*How I, my profession and my clients value different types of evidence underpins my professional decision-making*) remained a secondary focus. Students were also given another opportunity to practice the first aspect of the third concept (*I am a consumer, generator and communicator of new knowledge*). The first written assignment aimed to establish whether students were able to articulate their stance regarding attitudes implicit in these threshold concepts (see Appendix 6, reflective paper guidelines), due by Class Four.

The issues underpinning these attitudinal statements were addressed during Class Three by having the students:

1. Discuss how behavioural changes occur in everyday life
2. Examine how changes to customary professional practices might be monitored and evaluated
3. Explore processes involved in establishing best evidence and implementing best practice
4. Practice their skills of critically appraising a paper (CAP)
5. Assess best procedures for conducting a journal club.

In preparing this third class (Appendix 16), I was particularly cognizant of what Argyris (1982) describes as learning being either single loop or double loop in nature. Single loop learning is that which fits prior experiences and existing values and therefore allows the learner to absorb knowledge in a relatively automatic way. Double loop learning is that which does not fit the learner's prior knowledge and experiences and therefore requires that learners construct new mental schemas. This is the 'troublesome knowledge' described by Meyer and Land (2006), the acquisition of which results in a conceptual shift. I felt the students had by now acquired enough basic EBP knowledge and skills, through performing the first three steps of the EBP cycle, to be challenged to articulate their own understandings of what it meant to be an EB practitioner in their reflective paper assignment. During Class Three, students were to reflect on their prior experiences with or attitudes towards personal change and organisational change management before discussing the theoretical models reported in the literature. This step-wise approach was to assure that adequate consideration was given to their pre-existing beliefs as the students constructed new mental schemas. For as Greenhalgh and Russell (2006, p. 103) describe

each new piece of learning slots into the totality of a person's existing knowledge in a way that subtly changes that existing knowledge.

I thought that this 'slotting in' process would work best: 1) if ideas were briefly introduced in one class and then re-examined on a deeper, and more reflective, level during a subsequent class as advocated by Khan and Coomarasamy (2006) and Moon (2004); and 2) if the students engaged in EBP skills easily applicable to their work

setting (such as a journal club) and which acknowledged the complexities of workplace realities (Savery & Duffy, 1996).

6.5.2 Student responses to learning

Most of the students had experienced journal clubs in their workplace and had found them to be loosely-focused ‘talking shops’ (which had also been my frustration while working with the Sunnyview therapists). After role-playing a journal club (Appendix 16), the students discussed why it was best to first formulate a specific clinical question before doing a targeted database search around that question. They contrasted this approach with their heretofore customary practice of randomly choosing an article that appeared vaguely interesting when they had been designated to present at a journal club in their workplace. Through this discussion the students constructed their own understanding of how this newer format for a journal club might lead to a more fruitful critical analysis of the literature and a greater likelihood of their work colleagues considering changes in current practice.

The students appeared to feel more competent in articulating their reflective-level thinking than during Class Two. They were now able to go beyond the descriptive particulars of a situation (concrete experience phase of Kolb learning cycle⁴⁹), through critical reflection, to demonstrating and/or verbalising how they might generalise the learning from the situation (conceptualisation phase of Kolb cycle) by applying this new learning to their own practice (experimentation phase of Kolb cycle).

In general, the students engaged most enthusiastically with topics that had been briefly introduced during a prior class but which were now integrated into experiential task(s). For example, during Class One we discussed how to critically appraise a paper. During the Class Two they experienced critically appraising a paper as a class. For Class Three they prepared a CAP individually which was peer critiqued in a pair activity. The students further consolidated their skills through repeating the CAP activity as a group during two more classes. The students engaged in the same process when learning how to do a SWOT⁵⁰ analysis of a workplace. They examined which enablers and impediments to EBP were present, how to maximise the former and minimise the later,

⁴⁹ See Chapter 2, section 2.2 for explanation of Kolb learning cycle.

⁵⁰ Strengths, Weaknesses, Opportunities and Threats

and how to implement strategies for introducing evidenced-based changes to customary practice on several occasions.

6.5.3 Students' engagement in the PAR process

The students expressed no objections to having two new faces in the class: 1) a colleague, Y, who acted as NPO and took notes as X was not able to attend; and 2) a physiotherapy educator, Z, who asked to join us in the afternoon to familiarise herself with the module as she was going to be co-marking their oral presentations.⁵¹ On one occasion Siobhan did ask Y what she was *writing about*, to which Y replied *notes about class content and Janice's teaching methods*. The students had never asked X.

Dottie returned her signed consent form and laughed when a fellow student welcomed her as an official research collaborator. Tara was absent at a conference and Ted had to leave at mid-day due to personal reasons, so five students engaged in the 40 minute NGT discussion. The students decided to also vote on the relevance to their practice of nine assigned readings.⁵² They choose two articles to critique (through a group critically appraised topic [CAT] activity) for the next class.

NGT decisions

Discussion point(s) to be re-visited during next class:

- None stated as students felt there were no outstanding 'muddy points'

Activities which particularly supported their learning:

- Guidelines on reflective paper assignment (19 points)
- Role play of journal club (17 points)
- Library session (14 points)

⁵¹ As requested by the expert panel, it was decided (and the students had been informed at recruitment) that I would not be involved in marking any of the students' assignments so as not to complicate our relationship as co-researchers. The first written assignment (a reflective paper) was marked by a colleague who taught a module on reflective practice. The final paper was marked by X (also the NPO during four of the five classes). The oral presentations were co-marked by an occupational therapy academic at the study university, a speech and language therapy academic at the study university, and Z, a physiotherapist from a different university. Hence, all three clinical therapy professions were represented.

⁵² The highest vote getters were an article by Plastow (2006) and the Taylor (2007) book chapter on *Making evidence-based practice work*.

- SWOT analysis of enablers and barriers to EBP in the workplace (13 points)
- Discussion of Knowledge Translation (KT) paradigm (13 points)

Learning activities to be integrated into the next class:

- Guidelines for oral presentation [second assignment, due last day of class] (6 points)
- Group CAT (4 points)
- ‘Think tank’ on strategies for introducing workplace change (3 points)

6.5.4 Researcher reflections on learning environment

I felt a sense of accomplishment when the students stated that there were no ‘muddy points’ during the NGT discussion. I believe that the reason why ‘guidelines on reflective paper assignment’ received so many supported-their-learning votes was not due to the ten minutes we spent on discussing the assignment, but because the students were now much more comfortable with what it meant to be a reflective practitioner. I was pleasantly surprised that the students quickly understood the language of the newer Knowledge Translation (KT) paradigm⁵³, a re-formulation of the older EBP model, even though the former was heretofore unfamiliar to all of them. I had anticipated greater resistance to the new terminology and macro, rather than primarily micro, perspective. After three sessions with the study university reference librarian, they appeared confident in their database searching skills (step 2 EBP cycle), but they still felt they needed opportunities to practice their critical appraisal skills (step 3 EBP cycle).

Personally, I was not satisfied with the SWOT analysis task as I felt that I had rushed the students through the activity due to time constraints. My belief is supported by the fact that the students requested a ‘think tank on strategies for introducing change’ for Class Four; an activity which implies repeating some sort of workplace SWOT analysis. Once more, I think this is an example of students needing to re-visit concepts (and their related experiential activities) several times before they become truly integrated into their knowledge base.

⁵³ See Chapter 1, section 1.3.

I am surprised in reading the NPO notes at how many instances there are of myself and/or students laughing and smiling. Another indicator, I think, of the degree to which the students were feeling at ease in the group was their greater willingness to disclose specific information about challenges they experience in their workplace; and this during whole class (and not just pair) discussions. I found that when there were pauses in the class discussion, if I also shared professional experiences, contributions from the students would follow. For example, I described an instance when I had reacted negatively to new technologies, communicating that anyone can initially be resistant to change, depending on the context. During break the students insisted that I join them in the cafeteria; the social conversation flowed easily and the ambiance was very convivial.

6.6 Findings from Class Four

6.6.1 Rationale for learning processes and content

The foci of the day were: a) continuing to explore the second threshold concept (*Being a professional implies engaging in the life-long self-directed journey of learning and a commitment to changing practice*); b) addressing all aspects of the third concept (*I am a consumer, generator and communicator of new knowledge*); and 3) introducing the fourth, and last, threshold concept (*I can lead the establishment of an EB culture in my workplace irrespective of my work role*). Pipe et al. (2007) and Stern (2005) maintain that leadership is an important component of the EBP skill set. A point of view I had come to embrace during my work with Sunnyview when I saw how the therapists deferred to their manager's point of view regarding EBP; they did not appear to perceive a role for themselves in leading the development of an EB work culture, or perhaps were not encouraged to do so.

Students examined the conceptual issues underpinning the above threshold concepts by:

1. Contrasting different knowledge translation (KT) strategies when providing evidence-informed interventions
2. Investigating knowledge communication channels to clients, managers and funders

3. Considering reasons and means for researching their own practice through the use of assessment measures
4. Discussing the importance of leadership in establishing an EB work culture
5. Identifying different leadership styles and how these might apply to themselves.

Of particular relevance to Class Four was my theoretical rationale behind two of the module assessments: the reflective paper (due Class Four) and the oral presentation (due Class Five). My thinking was informed by the work of Wiske (1998) in the domain of the scholarship of teaching and learning (SoTL). She emphasises the importance of having performances of understanding (assessments) which mirror what she calls the method, purpose and form used by experts in a field; in this case EBP. By *method* she means how experts in EBP go about finding things out; by *purpose*, how experts generally use EBP knowledge; by *form*, how experts usually communicate their knowledge and understandings of EBP. As discussed in Chapter one, in occupational therapy EBP is viewed by experts in the field as one of the tools underpinning reflective practice and professional reasoning (Taylor, 2007). Therefore, a primary *purpose* of EBP is reflective practice. Hence, I considered it important that one of the assessments require the students to demonstrate their reflective practice abilities. As discussed in Chapter five, the structure of the entire IETP module was predicated on the students acquiring the necessary knowledge and skills for actively engaging in the six steps of the EBP cycle (the EBP *method* using Wiske's SoTL terminology). When I considered how experts usually exchange new knowledge I immediately thought of papers presented at conferences and articles published in professional journals. The former became an argument for having the students mirror this behaviour through presenting an oral paper to the class. My rationale was that an oral assignment would be good training for them and might encourage them to do such a presentation in the future, perhaps on new EB practices they would have introduced into their clinical setting subsequent to the module.

6.6.2 Student responses to learning

All of the students participated actively in the group critically appraised topic (CAT) on articles describing strategies for introducing change into the workplace (Appendix 16). At first, individual students were tentative in their comments. Then they began working

as a group, prompting each other, asking questions of each other. Ted, Tara and Siobhan did most of the talking; Dottie and Tom less. Mary spoke when spoken to; Tamara was not present during half of the class. More than during previous classes, the discussions were largely student directed. For example, they chose to first focus on the challenges posed by reading a what they considered a difficult article, then they spontaneously moved on to linking change theory to their own work issues and why people do and do not change their behaviour to implement evidence or skills. These discussions were rich and demonstrated the students' increased willingness to share specific details about challenges they encountered in their work settings, an openness which greatly supported their learning. I had become mostly a bystander to their co-constructing knowledge and attitudes about EBP. Another example was Tara and Siobhan (particularly the latter) moderating discussions about how they could introduce changes in the way journal clubs were conducted in their respective workplaces.

For the first time, one of their requested learning activities to be integrated in the next class (see below) was an example of them looking forward to new learning, rather than looking back towards an issue to be re-visited. Macro level EBP was a topic they were to address in their final paper due in January 2010, after completion of the module classes. The fact that they wanted to explore the subject through group discussion (rather than just readings) appeared to be an indication of the importance of the process of co-constructing their understandings with their peers.

6.6.3 Students' engagement in the PAR process

The students raised the question as to whether or not classes in future years would always end with a half-hour NGT discussion. I replied in the negative (apart from brief discussions about possible 'muddy points') as the procedure is quite time consuming. I assured them that they were helping to design the learning content and teaching structure for several years to come. They appeared pleased with a confirmation of the importance of their contribution to such an outcome. They stated that as there would be no NGT discussion at the end of Class Five that they would like to engage in a group discussion assessing the entire module.

NGT decisions

Discussion point(s) to be re-visited during next class:

- None stated as students again felt there were no outstanding ‘muddy points’

Activities which particularly supported their learning:

- CAT of 2 articles (31 points)
- SWOT of journal club (22 points)
- discussion of levels of evidence (e.g. evidence pyramid, PEDro system of scoring) (22 points)

Learning activities to be integrated into the next class;

- another CAT (19 points)
- group brainstorming of micro/ meso/ macro challenges to EBP (14 points)
- discussion of how to build an EB work culture (12 points)

An additional discussion focused on the relative weighting that the students wanted to have allocated to the peer and external assessor marking of their oral presentation (Appendix 16); they opted for a 50/50 formula.

6.6.4 Researcher reflections on learning environment

I was struck by how determined the students were to make it to class despite the logistical challenges posed by extensive flooding in the city and county.⁵⁴ I noted that they were rather pleased with themselves too, when they saw that they were the only students in the building. The shortened day, however, made it necessary to abbreviate some of the learning activities. Most regrettably, there was no time to explore, in interdisciplinary pairs, how one might research one’s own practice through outcome measures; only a general class discussion was possible.

I began several of the discussions using more powerpoint slides than usual as the topics were drawn from recommended book readings rather than required journal article readings (Appendix 16). In the past, the students had generally limited themselves to doing the required reading (except when they were preparing the debate) so I anticipated that this introductory scaffolding was probably necessary. I found, however,

⁵⁴ This flooding had a devastating impact on countless families. Some parts of the study university, the city and the county were under several feet of water for many hours, if not days. The study university was officially closed for a week and all exams were postponed.

that I was better this time at facilitating a free flowing class discussion of the issues at hand; that I did not *insert myself too much or too often*.⁵⁵ As a consequence, I noted more interplay (co-construction of knowledge) between the class members. I felt there was an excellent ambiance in the class, with much laughter and teasing comments between the students; a confirmation of how at ease, supportive and respectful they were with each other during class learning.

I was pleased with the positive comments students made on submitting their reflective paper assignment regarding their increased feelings of competency as reflective practitioners. I had had some doubts about the appropriateness of such an assignment because one member of the expert panel had queried whether I was requiring it only as data for my research, rather than as an assessment which would support student learning.⁵⁶

I was dissatisfied though, with the class discussion on leadership as I felt that the students had not fully engaged with the topic. Even though the discussion was immediately before lunch, I felt the fault lay more with the overly theoretical manner in which I introduced the subject. I had the impression that I had not found the right *entry point* (Wiske, 1998), in this case narrative stories, that might have a better chance of holding the students' attention. In May 2010, however, the external examiner's report endorsed, as fundamentally important, the integration of some form of leadership theory in the module, an opinion also supported in the literature (Pipe et al., 2007; Stern, 2005).

6.7 Findings from Class Five

6.7.1 Rationale for learning processes and content

This class remained focused on the fourth threshold concept (*I can lead the establishment of an EB culture in my workplace irrespective of my work role*). As discussed in Chapter 5 (section 5.3), the need for leadership is implicit in the KT model

⁵⁵ Reflection I made in my RFN.

⁵⁶ I had chosen not to utilise any of the students' work as data sources as my research focus was on whether or not the students felt an assessment had supported their learning (something they either told me in class or during their individual interview four – five months after the module ended); not whether the person marking their assignments (who was not, in any case, me) thought it had.

as EBP is viewed from multiple perspectives: micro (individual), meso (team) and macro (local, national and international health delivery systems). A systems-level approach incorporates a role for change agents (i.e. leaders) within the organisational context (Greenhalgh, 2006). Through discussion of the KT model, the students revisited all of the major topics of the module as they co-constructed a broad understanding of EBP. During the day's oral presentations, the students were tacitly demonstrating their agreement with all of the threshold concepts, mostly explicitly the third (*I am a consumer, generator and communicator of new knowledge*). One could argue that in order to conform to the assignment guidelines, the students had no choice but to at least give the appearance of agreeing with the threshold concepts. During their individual interviews four months later, however, when the element of being marked was no longer an issue, the students were able to voice their opinions freely.

Another rationale for choosing the oral presentation as an assessment method was that it involved the students arguing the case for a specific change that they wished to introduce into their practices supported by research evidence (Appendix 6). Healthcare education researchers (Lowe et al., 2007; Overton & MacVicar, 2008; Wakefield et al., 2005) argue that making a commitment to change (CTC) statement to professional peers in public helps lead to behaviour changes. In addition, Moon (2004) maintains that there is a pedagogical benefit to imagining the nature of improved practice as this state of imagining is a forerunner to actual change. Overall, the intent was that this interactive, public and clinically-grounded learning, as recommended by Khan and Coomarasamy (2006), would later result in greater integration and implementation of the steps of the EBP cycle into their daily practice.

The final assignment, a paper due in January 2010 (Appendix 6), was conceived as an exit point performance of understanding (Wiske, 1998) where students would examine how EBP theories and concepts had transformed, or not, their intuitive beliefs: Meyer and Land's (2005) conceptual shift. The students were meant to demonstrate whether they could move flexibly between practice-based examples and theoretical generalisations as they conceptualised the promulgation of an EB culture in their workplace, profession and healthcare organisation; while articulating their pro-active role in the process. In so doing, they would give evidence of their ability: 1) to articulate

the essential questions, purposes, and methods (Wiske, 1998) of EBP; and based on these 2) to conceptualise future scenarios for acting upon their learning and experiences.

Students examined the conceptual issues underpinning the final assignment, all four of the threshold concepts and EBP (or KT) from micro, meso and macro perspectives by:

1. Demonstrating their capacity to engage in all six steps of the EBP cycle as if they were making an argument to their work colleagues as to why and how some aspect of the team's customary practice should, based on research evidence, be changed
2. Discussing and debating how they could lead the building of an EB work culture in their team, their organisation, and their profession (meso and macro levels)
3. Examining the bi-directionality of knowledge translation through knowledge exchanges between knowledge producers (researchers and practitioners), consumers (practitioners) and beneficiaries (clients) on meso and macro levels
4. Evaluating how their EBP knowledge, skills, attitudes and behaviours (KSAB) had evolved since the beginning of the module (micro level)

6.7.2 Student responses to learning

The students seemed very engaged in their roles as presenters and as peer assessors during the oral presentations. After each presentation, both the students and the external assessors asked questions. In the session following the oral presentations, the students discussed how difficult they found it to discriminate between the standards of what merited low and high marks at Masters' level.

Even though they appeared somewhat tired in the afternoon, the students were relaxed and fully engaged with the topics under consideration, perhaps because the discussion would help inform their thinking for the final assignment. All of the students were very absorbed as they completed the EBP KSAB questionnaire for a second time⁵⁷ and the module evaluation form (Appendix 14). The class ended with a 30 minute group

⁵⁷ They had completed the same questionnaire, with a different coloured pen, at the beginning of Class One.

discussion during which the students reflected on the module.⁵⁸ Afterwards, the students were reminded that during an individual interview in 4 to 5 months time (May/ June 2010) they would be asked to reflect on the influence they believed the module had on their engagement in EBP.

6.7.3 Students' engagement in the PAR process

As it was the last day of class there was no formal NGT discussion. However, the students opted to use this time to reflect on their engagement in the PAR process generally and how they felt having the NGT decisions integrated into the module deepened their learning.⁵⁹ Ted summarised many of the group feelings when he commented:

*I keep using the word richness, but going back and doing analysis on every day really just solidified things and it was thickening up the pot all the way through the course, it was really good.*⁶⁰

Both Siobhan and Ted also commented that it must have been a lot of work for me to have implemented their decisions by preparing for the next class in the short interval between classes. Tara commented on how time consuming she found the NGT discussions.

For all of the students, being part of a research project elicited both positive and negative feelings. As Ted stated:

I was very excited by it when it [information sheet about the research] was sent out in the post because I remember reading the Fleming study in clinical reasoning and it was a collaborative action research study and it was just a

⁵⁸ These comments are reported in Chapter 7 in conjunction with the findings from the student module evaluation forms.

⁵⁹ Observations made by five of the students (Siobhan, Ted, Tom and Tamara), whose group discussion occurred on one day, are combined with comments made by Mary and Tara, who talked one week later as these two students were not present at the end of Class Five. With the students' permission, these comments were audio-taped and therefore can be reported verbatim.

⁶⁰ During member checking of the transcripts, participants commented on how embarrassed they were by the ungrammatical nature of many of their comments. Five of the participants requested that they be allowed to *correct* their grammar. I said no for fear that they might also change the meaning of some of their statements. However, as this thesis is a public document (and participants would recognise their chosen pseudonyms) I have omitted repetitive word sequences which communicate no additional meaning. For greater clarity, speaker-implied words are in brackets [*in italics*] and there are bracketed explanatory words for the reader [in normal type] for undefined words such as 'it'.

beautiful piece of work and I thought, yes, I definitely want to be part of [something like] that.”

In contrast, Dottie spoke at length about initially questioning whether or not being recruited as a research collaborator was fair. She elaborated by saying:

when you pay a lot of money for a course and [have] the expectation that you are going to get an expert [but then realise] ok I am getting a student in training.⁶¹ [...] but I think it has been the opposite, I think as a teacher Janice you are exceptional and I think in terms of getting concepts across, and they are hard concepts to get your mind around, I think you have done an exceptional job [so] my perception of how it [the research project] was going to be [I]changed my mind... I think maybe in hindsight it is even better because of the volume of work that has gone in to it on your part I think has been phenomenal and I think it has been a very worthy module. So my feelings have changed.

Mary agreed:

when I first heard about it [through emailed research information sheet] it sounded like something you were doing separately and we would have a small impact on it [module] and we were just the guinea pigs. Whereas it was more collaborative work. [...] It gave us more of an insight into the whole module.

Siobhan had feared that

it was going to be much more intrusive, I was thinking what is it going to be like with somebody there writing notes on everything [the NPO], that is going to be very intimidating. But in fact you just didn't really notice. [Name of NPO] was very discreet.

Tara, though, was not in agreement with the research-driven decision that I did not assess their work:

I think you would have a better feeling almost on how we progressed as practitioners over the course of the module. And the fact that you are not adding or contributing to our final mark might, I won't say mark us down, but I just think it is something that we are missing out on which I think is a bit of a negative thing.

6.7.4 Researcher reflections on learning environment

I was impressed with the quality of the student oral presentations, especially the degree to which nearly all engaged in the every step of the EBP cycle. It confirmed to me the strong self-teaching and learning potential of this assignment.

⁶¹ Dottie was referring to the fact that I was a lecturer and a doctoral student.

The students appeared to be owning the EBP process and they stated their ideas with confidence. During the peer feedback and the afternoon discussions the exchanges were mostly between the students. The group had obviously coalesced and they drew real support from each other.

One problem area did arise, however. The student peer marks for the oral presentations had only a 10 point spread (all were in the 60s); thereby most exhibited a large discrepancy with the external assessors, whose marks spread from the low 50s to the high 70s. Following normal guidelines, this would mean that most of the student marks would be excluded from the moderation process. I informed the students of this situation with the probable consequence being that they would have no input into the marks. I stated that I would have to seek external guidance as to how to proceed. I was left feeling most uncomfortable because I thought that the university procedures were in contradiction with the democratic nature of PAR decision-making with a consequence of disempowering the students. Here, there were conflicting tensions between my lecturer and researcher roles. As a consequence, I contacted the expert panel chair by email and telephone. Subsequent to our discussions, it was decided to compute the peer marks into the final marks submitted to the external examiner for this assignment. She reviewed videos of the oral presentations and reviewed both student and faculty colleague marking sheets as part of her assessment.

6.8 Summary of the PAR process

The decision-making process which unfolded while the IETP module was being delivered clearly adhered to the PAR validity criteria discussed in Chapter four (section 4.10):

- the students generated new knowledge about which teaching/ learning approaches supported them in the specific context of the IETP module (catalytic validity)
- the NGT decisions were made by consensus (democratic validity)
- there were action-oriented outcomes as at the end of each class the students modified subsequent module content and teaching/ learning approaches (outcome validity)

- the inquiry process was systematic and open to scrutiny through detailed RFN and NPO notes (process validity)
- the expert panel, when it monitored the RFN and my reflexive diary entries from the first two classes, deemed that they exhibited a good level of critical subjectivity (dialogic validity).

6.9 Chapter summary

In this chapter I have described the findings from the second stage of the research; namely the iterative PAR reflective cycles in which the students engaged as the IETP module was being conducted. The pre-determined learning processes and content (detailed in the module descriptor and IETP module handbook) were reviewed and modified by the students, thereby validating their role as co-researchers. This second stage fulfilled the first research aim: to develop, in collaboration with clinical therapists, learning opportunities for acquiring the skills necessary for locating, critiquing and translating research findings into practice within the framework of a multi-disciplinary post-qualification MSc module on EBP.

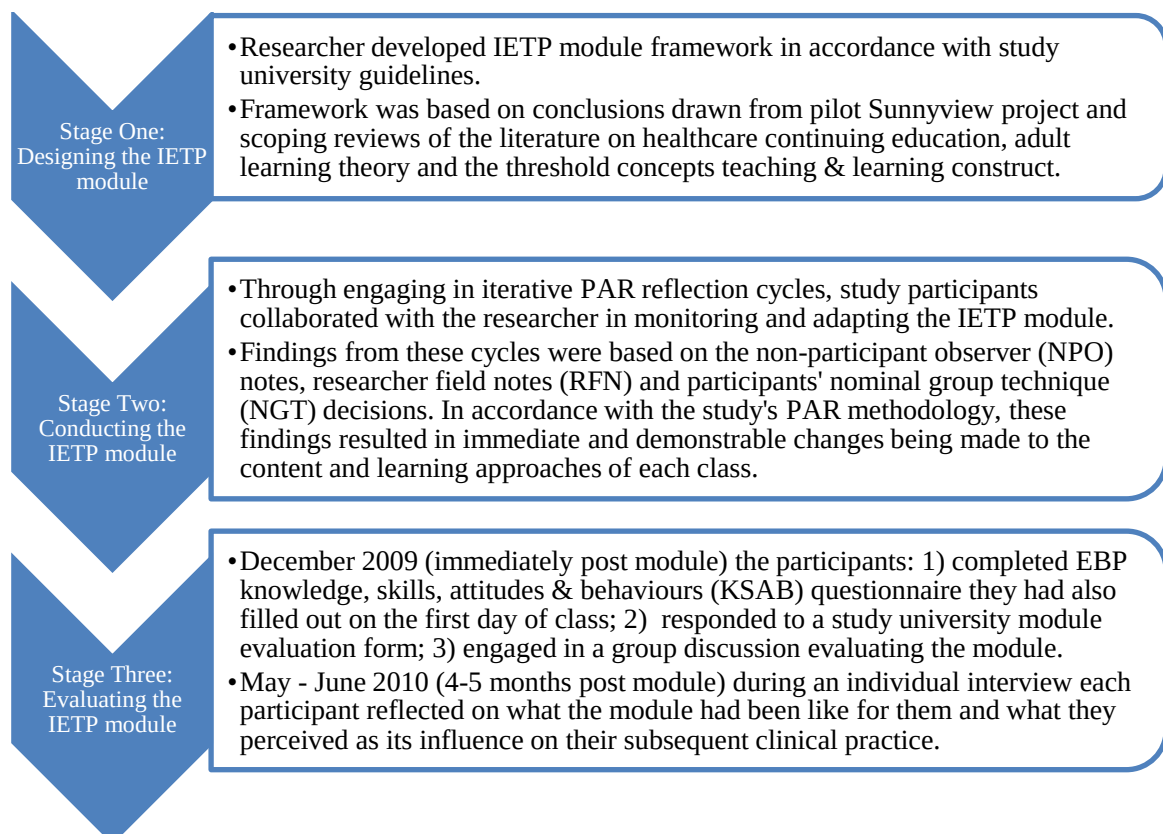
Chapter seven addresses the second research aim: evaluating the module's influence on the students' subsequent engagement in EBP.

CHAPTER SEVEN - THE RESEARCH PROCESS STAGE THREE: FINDINGS FROM EVALUATING THE IETP MODULE

7.1 Overview of the chapter

This chapter presents findings from the final stage of the main study (Figure 16). During stage three the participants evaluated the IETP module which they had monitored and adapted throughout stage two through iterative PAR reflective cycles. The purpose of the evaluation process was to explore the influence of the module on the participants' acquisition of EBP knowledge and skills and subsequent engagement in EBP activities. The participants' reflections on the module were gathered at two points in time: immediately following completion of the classes in December 2009; and 4 to 5 months later in May - June 2010.

Figure 16 Recapitulation of the three stages of main study



Continuing education outcomes are frequently evaluated using Kirkpatrick's (2007) four-level framework (Figure 17): reaction, learning, behaviour and results. The scope of this study incorporates the lower three levels only.

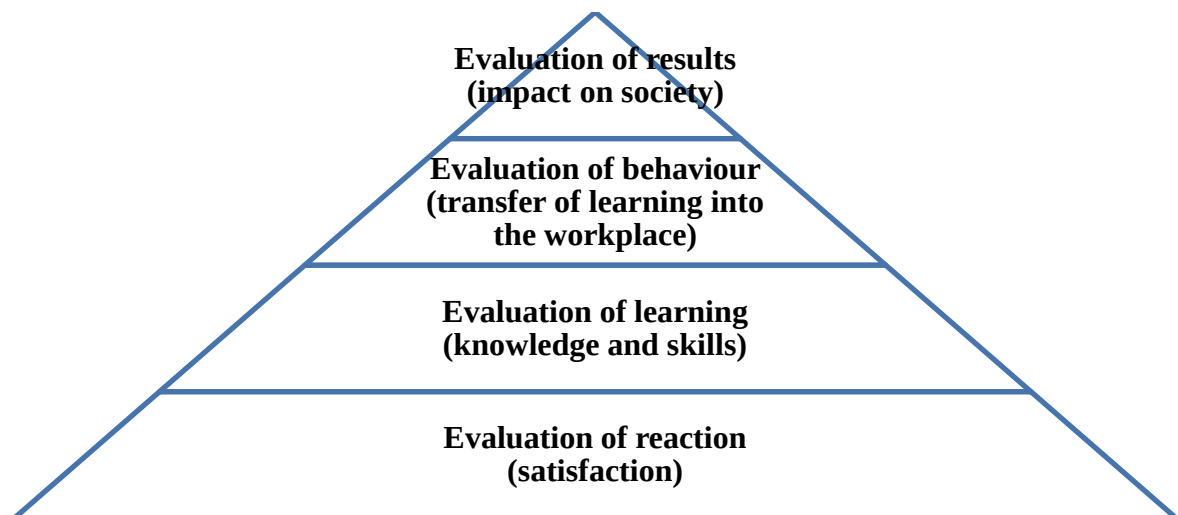


Figure 17 Four levels of educational outcomes

This chapter first focuses on findings from data collected in December 2009 from three sources: 1) EBP knowledge, skills, attitudes and behaviours (KSAB) questionnaires which participants completed individually pre and post module; 2) individual written responses to the study university module evaluation form; and 3) a group discussion evaluating the module. The main objective of these three data sources was to ascertain whether, by the last day of class, the participants felt that their participation in the module had permitted them to acquire the EBP knowledge and skills stated in the learning objectives of the IETP module descriptor (Appendix 5). Differences in pre and post module responses on the EBP KSAB questionnaires are described. Participant comments about what they felt had impacted on their learning, drawn from the module evaluation forms and group discussion, are reviewed. Finally, this chapter presents findings from one individual semi-structured interview in which each participant took part in either May or June 2010. The themes that emerged are defined and compared with reflections that the participants made in December 2009. The rationale for these multiple data sources was to achieve completeness of data in order to provide a holistic and contextual representation of how the IETP module influenced the participants EBP

learning and their subsequent engagement in EBP activities. While the purpose was not to attain convergence in the findings, there are broad linkages between the different data sources (Appendix 17).

7.2 EBP Knowledge, Skills, Attitudes and Behaviours (KSAB) questionnaire

As recommended in the literature (Khan & Coomarasamy, 2006; Knowles et al., 2005; Stern, 2005), the primary purpose of the EBP KSAB questionnaire (Appendix 13) was to provide each participant with a tool for identifying their individual learner needs in October 2009; and an opportunity for self-assessment in December 2009. When the participants filled out the questionnaire for a second time on the last day of class they could see their responses from the first day of class; hence they were able to appreciate whether and how their EBP knowledge, skills, attitudes and behaviours had changed.

Descriptive bar and boxplot graphs of findings were generated for each of the five sections of the questionnaire:

- 1) Perceptions of and attitudes towards EBP (23 questions); a high score⁶² indicates respondent views EBP positively.
- 2) EBP knowledge and skills (10 questions); a high score indicates respondent rates his/ her knowledge and skills highly.
- 3) Perceived barriers to EBP (34 questions); a high score indicates respondent is expressing confidence in his/ her ability to overcome barriers to EBP.
- 4) Number of EB activities engaged in during a typical month including searching, reading and implementing research literature (3 questions); a high score indicates respondent reports oftentimes engaging in these EB activities.
- 5) Frequency of different information sources being used for clinical decision-making in the last 6 months (10 questions); a high score indicates respondent has frequently availed him/ herself of these evidence sources.

⁶² As discussed in Chapter four, some items in sections one and three were re-configured so that responses always went in the same direction (high scores for positive attitudes about EBP and for great confidence in one's ability to overcome barriers to EBP). The Cronbach alpha coefficient for these two re-configured sections demonstrated high internal consistency and therefore supports the reverse scoring done for some items.

Irish studies by O'Shea (2011) and Murphy and Robinson (2009) state that recently-qualified and long-qualified therapists have similar attitudes towards EBP. However, the more recently qualified therapists reported higher levels of EBP knowledge and skills. In this study, between five and twenty-seven years had elapsed since the participants' entry-level education (Table 6, section 6.2). In order to compare the findings from this study with those of O'Shea (2011) and Murphy and Robinson (2009), bar graphs showing individual participants' pre and post module questionnaire scores relative to the number of years since they had qualified were generated. In addition, stem and leaf boxplot graphs were generated to indicate the degree to which the EBP knowledge, skills, attitudes and behaviour of the total group had changed over the course of the module. A summary of the findings for each participant and for each section of the questionnaire is presented in Table 7.

Table 7 Comparison between pre and post module EBP KSAB questionnaire scores

Years qualified	Mary 5	Tara 26	Ted 8	Tamara 26	Tom 6	Dottie 15	Siobhan 27
Positive attitudes towards EBP	↑	↑	↑	↑	↑	↑	↑
EBP knowledge & skills	↑	↑	↑	↑	↑	↑	↑
Confidence in ability to overcome barriers to EBP	↑	↑	↑	↑	↑	↑	↑
Number of EB activities in typical month	↑	↑	↔	↑	↔	↑	↑
Frequency of different evidence sources being used	↓	↔	↑	↓	↑	↑	↑

Questionnaire scores: ↔ unchanged ↑ increased post module ↓ decreased post module

7.2.1 Perceptions of and attitudes towards EBP

As a group (Graph 1, Appendix 18) the participants enrolled in the IETP module expressed more positive attitudes about EBP on the last day of class (scores range from 72 to 85; median of 80) compared to the first day of class (scores range from 66 to 74; median of 68). There is some overlap in the pre and post module scores as Ted (qualified 8 years) and Tamara (qualified 26 years) indicated more positive attitudes on the first day of class than Tara (qualified 7 years) did on the last day of class (Graph 2, Appendix 18). As discussed in Chapter one, two large American studies (Dysart & Tomlin, 2002; Jette et al., 2003) found that longer qualified clinical therapists tend to have less positive attitudes about EBP. In contrast, two small Irish occupational therapy studies (Murphy & Robinson, 2009; O'Shea, 2011), describe therapists as having equally positive attitudes towards EBP, irrespective of the number of years since qualification. The findings of this study are in agreement with the Irish studies. Among the seven participants, there is no apparent link between the number of years since qualification and the degree of positivity about EBP either pre or post module. Differences in attitudes towards EBP expressed by individual participants must, therefore, be attributed to other factors.

For example, during class discussions participants expressed a variety of opinions, some of which appeared related to their respective profession's ontology and epistemology (Appendix 16). The greatest increases in positive attitudes about EBP over the duration of the IETP module were demonstrated by Tom (qualified 6 years) and Siobhan (qualified 27 years). During early class discussions Siobhan expressed critical views about what she regarded as a wide gulf between research and the realities of everyday practice (section 6.3.2); an attitude which apparently changed over the course of the module as Siobhan gained confidence in her EBP abilities (section 7.4.4)

7.2.2 EBP knowledge and skills

As a group (Graph 3, Appendix 18) the participants reported increased EBP knowledge and skills on the last day of class (scores range from 21 to 29; median of 27) compared to the first day of class (scores range from 15 to 22; median of 17). Tom (qualified 6 years) reported greater EBP knowledge and skills on the first day of class than Siobhan (qualified 27 years) reported on the last day of class (Graph 4, Appendix 18). One explanation for this may be that Tom had previously completed other MSc modules,

Siobhan had not. For these earlier modules Tom would have been expected to locate literature through electronic database searches in order to write academic papers. During a tutorial session Siobhan commented on how challenging she had found it on many levels to return to the university environment after a very long absence.

In contrast to what is reported in the Irish and the international EBP literature (Dysart & Tomlin, 2002; Jette et al., 2003; Murphy & Robinson, 2009; O'Shea, 2011), this small sample exhibits no consistent link between the number of years since qualification and the self ascribed level of EBP knowledge and skills, pre or post module. The lowest pre module score was reported by Mary (qualified 5 years); the highest by both Dottie (qualified 15 years) and Tom (qualified 6 years). Once again, both Dottie and Tom had previously completed other MSc modules, Mary had not. The lowest post module scores, however, were reported by participants qualified 15 (Dottie) and 27 years (Siobhan); the highest by participants qualified 5 (Mary) and 6 years (Tom). The highest increases in EBP knowledge and skills over the duration of the module, though, were reported by Mary (qualified 5 years) and Tamara (qualified 26 years).

The sample is too small to draw any generalisations from these data. As we have seen, these results might be due to other factors such as how many other MSc modules the participant had already completed. Personality and workplace factors might also have had an impact. For example, Mary, the youngest and most recently qualified participant in the class, tended to be quiet and deferential during class discussions. She had a junior staff position in a large physiotherapy department in a university teaching hospital where research competency skills were highly valued. This may have led her to under-rate her pre module EBP knowledge and skills compared to other participants who worked in school and community settings where research might be of lower priority. Post module, Mary rated her EBP knowledge and skills very highly. She had undoubtedly acquired new skills; but she may also have acquired more confidence in her EBP abilities as she compared herself to classmates who worked in different settings.

7.2.3 Perceived barriers to EBP

As a group (Graph 5, Appendix 18) the participants expressed greater confidence in their ability to overcome barriers to EBP on the last day of class (scores range from 97 to 113; median of 105) than on the first day of class (scores range from 82 to 97;

median of 91). In this section of the questionnaire, the highest pre module score is equal to the lowest post module score, e.g. there is no pre and post module score overlap. There is no link between the number of years since qualification and the degree of confidence in overcoming barriers to EBP (Graph 6, Appendix 18). The highest level of post module confidence in overcoming barriers to EBP is expressed by therapists qualified 5 (Mary), 6 (Tom) and 15 years (Dottie). The least confidence about confronting impediments to EBP is communicated by those qualified 7 (Tara), 8 (Ted) and 26 years (Tamara). The greatest increases in confidence levels over the duration of the module were reported by a therapist qualified 27 years (Siobhan) and a therapist qualified 5 years (Mary); the two therapists who had not previously done an MSc module.

One explanation for the overcoming barriers to EBP scores may be that the participants were employed in very different work settings (section 6.2). As discussed in Chapter five, a commitment to changing practice, which is implicit in EBP, needs to exist at individual and organisational levels (Bannigan, 2007; French, 2005a; Illot, 2003; McCluskey, 2004; Ryan et al. 2006). Mary worked in a university teaching hospital setting where an evidence-based culture was operationalised through annual service plans; other therapists did not necessarily have such explicit organisational support.

7.2.4 Engagement in EB activities

When considered individually (Graph 8, Appendix 18), only five of the seven participants reported greater engagement in EB activities on the last day of class than on the first day of class. Two participants (Tom and Ted) had identical scores pre and post module. Both of them, and the one other participant (Dottie) who showed the least difference in pre and post module scores, had all taken another MSc module in the previous term. As part of their academic work they all would have located and read published literature in order to write assignments. Hence, previous to the IETP module their engagement in EB activities may already have been of some consequence.

As a group (Graph 7, Appendix 18) the participants reported greater engagement in EB activities post module (scores range from 7 to 12; median of 11) than pre module (scores range from 5 to 11; median of 9). The post module score of Tamara (15) is considered an outlier by the IBM SPSS software as it is far outside the normal range of values for other cases in this data set. Tamara was different from the other participants

in a variety of ways. During the module she struggled with the conventions of structured academic writing. She appeared to compensate by being a voracious reader, delving into a wide variety of literature on reflective practice and change management theories which she felt provided entirely new perspectives on her clinical practice. In any small sample there is a strong possibility of sampling bias; namely over or under representation of some segment of the population in terms of a particular characteristic or trait which may be of relevance to the question under study. In a larger population sample Tamara's score might not have been an outlier. The one other participant (Mary), whose post module score for engagement in EB activities was considerably higher than her pre module score, was new to the MSc programme. Once again, there is no apparent link between the number of years since qualification and the degree of engagement in EBP activities (Graph 8, Appendix 18).

The EBP literature (Chard, 2003; Khan & Coomarasamy, 2004; McCluskey & Lovarini, 2005; Stevenson et al., 2004) reports that whereas most continuing education markedly increases practitioners knowledge and skills, it has little impact on changing behaviour. As noted above, the participants' post module scores for EBP knowledge and skills were considerably higher than pre module scores. The comparatively small increase in their scores for engagement in EB activities post module, relative to pre module scores, is also consistent with the published literature. It must be kept in mind, however, that the questionnaire only measured changes in engagement in EB activities over the ten weeks of the module. During this same period the participants (of whom six out of seven worked full time) had to complete module readings and assignments. This may have left little time for other EB activities. The EB activities that the participants reported having engaged in between the end of the classes in December and their individual interviews in May to June 2010 (section 7.5) are perhaps more indicative of the module's impact on changing workplace behaviour.

7.2.5 Information sources for clinical decision-making

The questions in this section relate to the participants' use, in the previous 6 months, of ten specific information sources for their clinical decision-making. These information sources were: a) clinical experience; b) opinions of colleagues; c) expert consultation; d) employer sponsored in-service training; e) continuing education outside of workplace; f) clinical practice guidelines; g) textbooks; h) internet resources; i) case studies; and j)

research studies. As a group (Graph 9, Appendix 18), the participants did not report more frequent recourse to these information sources on the last day of class (scores range from 39 to 41; median of 39) than on the first day of class (scores range from 27 to 43; median of 39). Tom's post module score (44) is considered an outlier by the IBM SPSS software. The individual bar graphs (Graph 10, Appendix 18) indicate that: 1) Mary and Tamara actually decreased the frequency of their reliance on some information sources post module; 2) Tara stayed the same; 3) Tom, and Ted increased their use of some sources slightly; and 4) only Dottie and Siobhan greatly increased the frequency of their use of information sources. These figures are perhaps misleading because the scoring procedure is such that respondents receive a higher score for increasing their use of an information source regardless of the nature, or trustworthiness, of that source. Therefore, it may be more informative to examine how individual participants changed their reliance on specific information sources (Table 8).

Table 8 Use of information sources for decision-making pre and post module

	<i>Mary</i>	<i>Tom</i>	<i>Tara</i>	<i>Ted</i>	<i>Dottie</i>	<i>Tamara</i>	<i>Siobhan</i>
<i>Clinical experience</i>	↔	↔	↔	↔	↔	↓	↔
<i>Opinions of colleagues</i>	↔	↔	↔	↔	↔	↓	↓
<i>Expert consultation</i>	↓	↔	↔	↔	↔	↓	↔
<i>Employer sponsored in-service training</i>	↑	↔	↔	↔	↑	↔	↔
<i>Continuing education outside of workplace</i>	↔	↔	↔	↔	↑	↔	↑
<i>Clinical practice guidelines</i>	↔	↔	↔	↔	↑	↔	↔
<i>Textbooks</i>	↔	↔	↔	↔	↑	↔	↑
<i>Internet Resources</i>	↔	↑	↔	↔	↑	↑	↑
<i>Case studies</i>	↓	↑	↔	↔	↑	↑	↑
<i>Research studies</i>	↑	↔	↔	↑	↑	↑	↑

Use of evidence source: ↔ unchanged ↑ increased ↓ decreased

For example, while Mary had a lower score post module than pre module, this is because she decreased her reliance on expert consultation and case studies while increasing her reliance on employer sponsored in-service training and research studies. Post module, Siobhan had decreased her reliance on the opinions of colleagues, but increased her use of: continuing education outside of the workplace; textbooks; internet resources; case studies; and research studies. Tamara demonstrates the most dramatic shift in evidence sources pre and post module. Post module she had decreased her

reliance on: clinical experience, opinion of colleagues, and expert consultation. However, she had increased her use of internet resources, case studies and research studies. As discussed in Chapter one, limited time for consulting evidence sources is the most frequently cited barrier to EBP in the literature (Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Jette et al., 2003; Taylor, 2007; Zipoli & Kennedy, 2005). Hence, it is not only the number of evidence sources one uses that is of concern, the reliability of those sources is of at least equal importance.

7.2.6 Summary of findings from KSAB questionnaire

Post-module all of the participants felt that their EBP knowledge and skills had increased. Everyone had adopted more positive perceptions of and attitudes about EBP. Each participant expressed greater confidence in his/her ability to overcome barriers to EBP in the workplace. On the last day of class, 5 of the 7 participants reported greater engagement in EB activities (two participants maintained the same level of engagement) compared to the first day of class. The nature and frequency of the information sources which underpinned the participants' clinical decision-making changed for six of the seven participants.

The questionnaire evaluated the participants' learning (EBP knowledge and skills) and their attitudes towards EBP. It did not, however, evaluate participants' reactions to the module (satisfaction) and it gave only a cursory evaluation of participants' behaviour (transfer of learning to the workplace). The behaviour-related questions of this quantitative data gathering tool had limited scope and were too few in number (3 questions on engagement in EB activities; 10 choices for information sources for decision-making) to give a detailed picture of behavioural changes.

In summary, post-module responses to the questionnaire indicate that as a result of experiencing the EBP threshold concepts-based learning of the IETP module, the participants reported increased EBP knowledge and skills. They also reported more positive attitudes towards EBP and incipient changes in their workplace behaviour. O'Sullivan (2004) states that a continuing education programme which changes attitudes is most likely to lead to changes in behaviour. Statistical analysis of responses by seven participants to a closed question questionnaire does not permit the establishment of a causal link between knowledge acquisition, attitudes and behaviours.

However, such links can be explored in the open-ended responses on a module evaluation form and comments made during a group discussion about the module.

7.3 Study university module evaluation form

A module evaluation form (Appendix 14) was completed by each participant on the last day of class, immediately before the group engaged in a discussion evaluating the module. In contrast to the KSAB questionnaire's focus on general EBP knowledge, skills, attitudes and behaviours, the participant evaluation form asked questions specifically about the IETP module. These questions were formulated by the researcher before the module began and were included in an appendix in the module handbook. The questions were primarily intended to evaluate the participants' reaction to the module (satisfaction) with the implied assumption that if the participants were satisfied it meant they felt they had acquired EBP knowledge and skills (evaluation of learning) which they would be able to transfer to their workplace (evaluation of behaviour). In general, the participants wrote several bullet point responses per question. Each participant's answer to each question was entered into a master listing of comments, which gave a summative overview of participants' opinions regarding whether and how the module had met the learning objectives stated in the module handbook. The participants' comments were then categorised under three broad headings: 1) the learning environment; 2) the learning content; and 3) the learning process. The findings from the module evaluation forms are discussed in conjunction with those from the group discussion.

7.4 Group discussion to evaluate the module⁶³

Having completed the evaluation forms, the participants chose to exchange viewpoints about the module verbally. The discussion provided an opportunity for them to expand on opinions that they may have only touched on briefly in the module evaluation forms;

⁶³ Observations made by Siobhan, Ted, Tom, Dottie and Tamara, whose group discussion occurred on the scheduled last day of class, are combined with comments made by Mary and Tara, who talked one week later. The latter had asked to be excused from the last day of class to attend job interviews. A later date was scheduled for their oral presentations. On this date they also completed their KSAB post module questionnaires and the module evaluation form before engaging in an audio-taped discussion to evaluate the module.

it is much easier to talk than to write. With their permission, the discussion was audio-taped. The verbatim transcript was read several times and the most salient comments were collated. These comments were then triangulated with those from the participant evaluation forms. In the process, the original three categories were refined and developed into four. Two of the categories have sub-categories due to the participants giving specific and differentiated detail regarding that category. The revised categories/ sub-categories were again compared with the evaluation form master comment list to confirm that they were an accurate reflection of the two data sources. The resulting categories/ sub-categories are depicted in Figure 18.

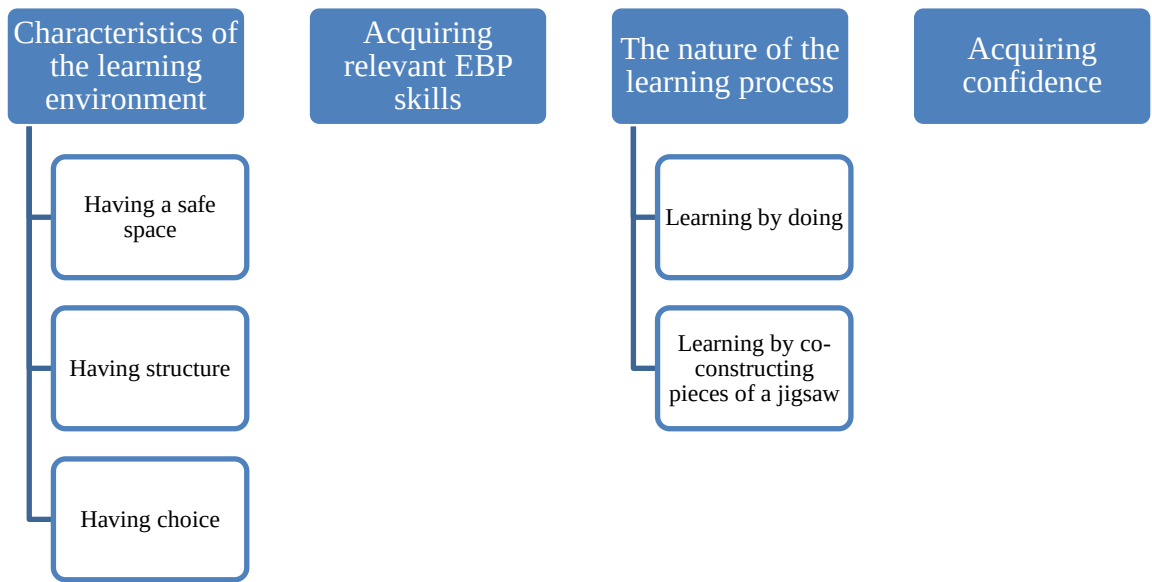


Figure 18 Categories and sub-categories

7.4.1 Category 1: Characteristics of the learning environment

7.4.1.1 Having a safe space

As discussed in Chapter six, an initial focus of the first day of class was to build the participants’ confidence in the classroom as being a safe place. During the group discussion on the last day of class Ted noted that for “*the safety of the space*” is was important that the classes had not been videotaped, an opinion with which Tara

concurred. Another participant credited the physical environment with imparting a sense of safety:

I think it [the classroom] is a beautiful reflective environment and there is a lovely artistic view from every window [...] it is very isolated, private and secure [Tamara].

The participants commented favourably on the desks being in a semi-circle. They felt the arrangement underlined everyone's equal importance and membership in a group. They believed that this safe learning environment facilitated openness where group participation and collaborative learning were clearly valued.

I felt it was a very safe place [...] from session one onward I thought that everybody was very open [...] like I wasn't at all intimidated or stressed about contributing [Dottie].

Sometimes you might express an opinion which maybe isn't acceptable or whatever and it is nice to feel that it can be said within the four walls of the room and it is not going to go back to your workplace or whatever [Tara].

Tom contrasted the sense of safety in the classroom with what he felt was oftentimes a less positive work environment:

... sometimes struggle in a setting where you are trying to have a group discussion and there is no real discussion going on [...] everybody seems very protective of their profession, of their knowledge [...] almost feel competition. You are almost afraid to say something, but here we learned from each other, it was very supportive.

Tom was of the opinion that the safe classroom environment underpinned his learning because it allowed him to practise new skills until he felt confident enough to transfer these abilities to his workplace.

7.4.1.2 Having structure

The feeling of safety was re-enforced by being able to anticipate what was going to happen in each class because of the framework laid out in the module handbook. Mary wrote of how well formulated she felt the handbook to be. Ted agreed:

[...] quite a methodical step by step process [...] in each contact day, to the module programme; handbook, Blackboard.

All of the participants appreciated having articles easily accessible on Blackboard as such a structure allowed them to more time for “*reading them and trying to digest them*” [Tara].

Tom also liked the logic implicit in how the learning unfolded:

I really appreciated how you could integrate the learning from a previous session to the next one and learn in a structured and organised way.

This is not to say, however, that one pace suited everyone.

I agree there were building blocks, but it kind of took me [longer] maybe [I am] a bit slower [...] maybe it is the way I learn, maybe it is the fact that it is longer since I studied than anybody else and sometimes it was just like discrete bits of information [Siobhan].

So having flexibility in the structure was also important. The NGT decisional process gave the participants that flexibility.

7.4.1.3 Having choice

For all of the participants, the ability to decide on what content and activities would be incorporated in each subsequent class was very important. Ted felt that having the NGT decisions integrated into the module enriched their learning because:

I found it [then] goes beyond surface learning [...] someone else would have brought up something that they were unsure about [...] and you went oh yeah [...] consensus was really good in that respect.

It would appear that the participants felt comfortable in exercising this choice as part of a group decisional process (NGT discussions), that none of them desired making such choices purely as individuals.

Usually if you were unclear on something you found that other people in the class were equally unclear, which was a bit reassuring [Tara].

So while having choice was considered positive, the enjoyment of that choice was still predicated on feeling secure within a predictable (broadly structured) group learning environment. These findings are in congruence with Maslow’s (1954) hierarchy of needs theory. He states that first the physiological needs for food, water, sleep, sex, have to be met, followed by the need for safety. Next there is the need for love/belonging, then esteem. Tamara observed that “*there is stress with any new learning*”; however, she and the other participants agreed that the group was cohesive and very supportive of each other in their learning. Lastly, according to Maslow, there is

the need for self-actualisation. As Tamara expressed it, the supportive learning environment facilitated the “*freeing up of thought processes.*” Such a sense of freedom would facilitate reaching goals such as that set by Siobhan: “*to be challenged intellectually.*”

7.4.2 Category 2: Acquiring relevant EBP skills

All of the participants commented that they felt they had achieved the stated module learning objectives (Maslow’s need for self-actualisation). These included being able to: 1) appraise the value of different types of evidence in varying therapy contexts; 2) demonstrate the evidence-based skill cycle⁶⁴; 3) recommend strategies for translating research evidence into decision-making; 4) ascertain how therapy practice integrates change over a professional career; and 5) relate leadership theories to the creation of an EB work culture. Siobhan, however, wrote that while her knowledge in all of these areas had increased, she had not yet had an opportunity to exercise all of the skills.⁶⁵ For Tamara relating leadership theories to creation of EBP culture remained challenging. Tara liked the fact that the principles of change were integrated into the module. Ted appreciated having an opportunity to gain a greater understanding of the wider political, social and professional aspects of EBP. All agreed with Tom that the EBP cycle skills were “*things you can use in your practice*” for they were relevant in wide variety of environments. As Mary stressed, the skills were:

something that clinicians maybe find a bit difficult [but they are] something that is the bread and butter stuff that you need to be good at.

The how of the learning (the learning process) was as important to the participants as the what (content).

7.4.3 Category 3: The nature of the learning process

7.4.3.1 Learning by doing

All of participants underlined how important it was that they learned through actively doing the steps of the EBP cycle. Tom mentioned that he had had difficulty “*connecting*

⁶⁴ Asking a clinical question; acquiring the best evidence; appraising the evidence; applying the evidence; assessing the impact of the knowledge translation (through the use of outcome measures); advising others of knowledge translation process.

⁶⁵ The last day of class was in December 2009. The participants turned in their final written assignment on January 13th 2010. In this paper they were to discuss how they might facilitate an EB culture in their workplace (Appendix 6).

to the learning” during another MSc module because of the didactic teaching approach. To have had the opportunity to repeatedly critically appraise papers (CAPs) and topics (CATs) was of particular importance to everyone. Mary called doing CAPs and CATs:

the cornerstone of EBP, you need to work on that, it definitely helped doing a lot of them.

Other participants mentioned the benefits of role playing a journal club and doing SWOT analyses of their workplaces in preparation for introducing changes in clinical practices. As Tom observed:

they are all things you can use in your practice as well. It was a good exercise so that you could be confident about transferring this hopefully outside and continue doing these types of things.

7.4.3.2 Learning by co-constructing pieces of a jigsaw

Everyone commented that the multi-disciplinary nature of the module widened their perspectives; that the give and take of group discussions was fundamental to gaining new insights. Tom noted, “*some things can get missing from just the occupational therapy perspective.*” Ted elaborated by saying:

We can spot ourselves at home at micro level or whatever, but when you are with other professionals who have experience it is nice to [ask] well why is your profession doing that, what is ours doing?

Siobhan stated that before the module she was questioning things about her practice but that she needed “*to have a better framework than me just doing it all on my own*” to move her learning forward; the IETP module provided that framework. Dottie used the metaphor of the participants “*climbing a mountain*” as group members helped each other along (Maslow’s need for belonging/ esteem→ self actualisation). Siobhan spoke of how they collaborated in figuring out how “*the pieces of the [EBP] jigsaw fit together*”. Ted described class discussions where individuals would de-construct their thinking, and then the group would put it back together again. He credited the learning from each other as the primary motivator for him to engage so actively in the subject of EBP. For Tom, too, it was the learning with and from other people that most advanced his knowledge and skills and made the module enjoyable.

7.4.4 Category 4: Acquiring confidence

Most participants wrote that they were unsure or apprehensive before the module began due to feelings of inadequacy about their EBP abilities.⁶⁶ As the module progressed, however, the confidence levels of all of the participants increased. This, in turn, began to impact how they approached their work:

Tamara: I can do the EBP cycle [...] given a toolbox now. No confidence prior to this [...] now I feel assertive in EBP [...] helped my junior staff [with knowledge gained].

Tom: Became more confident, skilled and knowledgeable in doing the right things right [The module] improved my KSA and confidence in integrating evidence into daily practice.

Ted: You feel a lot more able to argue with, not just your peers, but I have [recently] argued with doctors a bit more often than I have in the past, that is a good skill.

Siobhan: More confidence in [my] own knowledge base. [...] The module has opened my mind more to how to do and implement EBP. [I am] more enthusiastic for making change at departmental level.

Dottie described how, at the request of her manager, she had taught her colleagues the first two EBP cycle steps of formulating a clinical question and how to do database searches.

7.4.5 Summary of module evaluation forms and group discussion

The evaluation forms and the group discussion revealed that the participants: 1) were very satisfied with the module in general (evaluation of reaction); 2) felt that they had improved their EBP knowledge and skills (evaluation of learning); and 3) reported more positive attitudes about EBP. The participants described beginning changes in their behaviour (transfer of learning to the workplace), crediting their greater confidence in their EBP abilities. These findings are similar to those on the EBP KSAB questionnaire, completed on the same day. In contrast to the questionnaire findings, however, a clear causal relationship emerges. The practicing of EBP knowledge and skills (concrete experience) during the IETP module led to increased confidence in their EBP abilities

⁶⁶ A Scandinavian study of five occupational therapists (Fange & Ivanoff, 2009) describes “*feeling professionally competent*” as impacting research utilisation. Feeling professionally competent depended on “*perceiving congruence between research and practice, having the necessary (EBP) skills and making a contribution*” (p. 40).

(attitude) which, in turn, resulted in changes in the workplace (behaviour). This causal progression is affirmed by McCluskey and Cusick (2002). They maintain that therapists engage in EBP activities when they demonstrate a willingness to change their attitudes and values. Hence attitudes are perceived as the driving force behind behavioural change. This is the reason I had chosen to frame the EBP threshold concepts as attitudinal statements. The change in attitudes appears to begin with the participants co-constructing understandings about EBP as they challenge their own and each others' thinking during class discussions. The IETP module had clearly impacted the participants' thinking about EBP and attitudes, but not yet enough time had elapsed to discern whether the module had had a lasting influence on their behaviour. The questionnaires, evaluation forms and group discussion completed the first evaluation of the module by the participants in December 2009. In January 2010 the participants submitted their final written assignment. In May – June 2010, during an individual 60 – 90 minute interview, each participant reflected on what the module had been like for them and what they perceived to be its influence on their subsequent clinical practice. It was data from the individual interviews which were intended to be an in-depth evaluation of behaviour (transfer of learning to the workplace).

7.5 Individual interviews

The findings from the individual interviews supported and extended those from the questionnaires, module evaluation forms and group discussions. The data handling procedure for the individual interviews, however, was more elaborate and detailed than for the evaluation forms and group discussion transcripts. For the latter, I created categories and sub-categories under which I entered relevant quotations after reading the data sources several times. As the participants were primarily making short comments about specific aspects of the module, line-by-line coding was not necessary in order to generate representative categories and sub/categories.

For the individual interviews I also read all seven of the transcripts several times to gain a sense of the overall meaning of the data. I subsequently engaged first in initial, then focused, coding as described in Chapter four. At each stage of the process there were extended periods of reflection while I made extensive notes in a coding diary. Two major themes eventually took shape with an adjunctive quotation bank of evidence. It

also then became clear that sub-themes were emerging within each of the two themes (Figure 19). The participants also raised four distinct issues under the module organisation sub-theme. The inductive reasoning process, particularly for the sub-themes, required repeated adjustment and refinement of the different headings in order to represent a complex matrix of relationships. The authenticity of each emerging heading was confirmed by repeatedly checking the quotation bank.

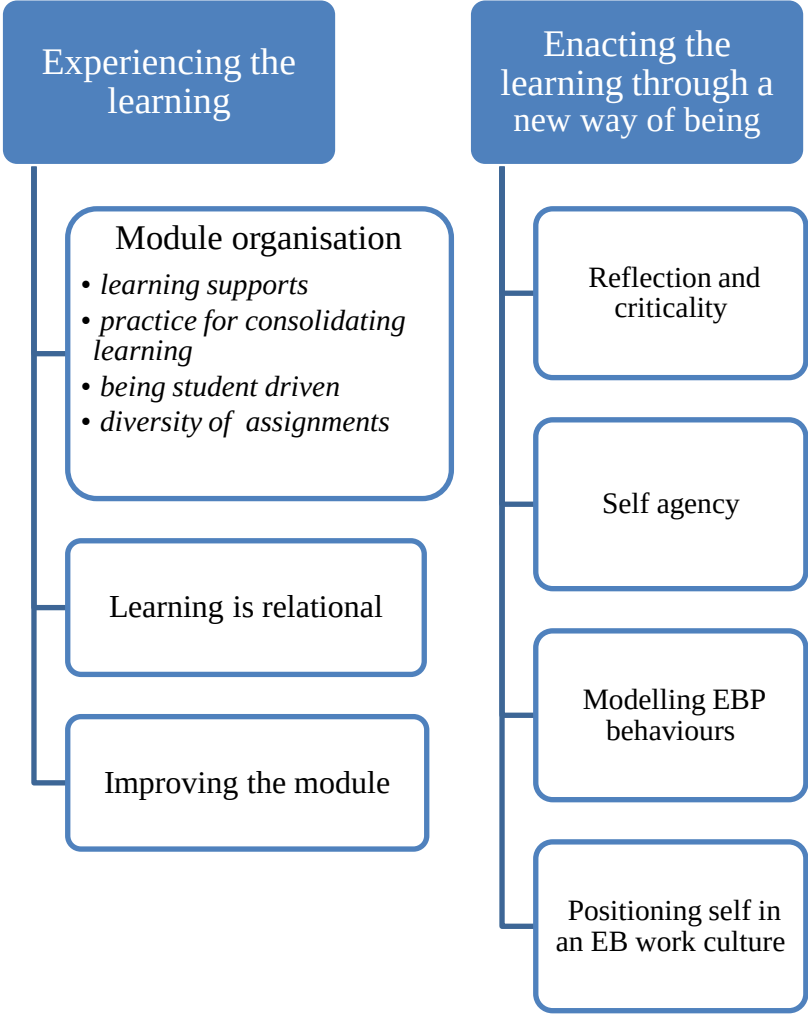


Figure 19 Themes and sub-themes

The remainder of this chapter discusses the two themes and their associated sub-themes. I have chosen a narrative structure in the form of a dialogue to permit the expression of

different voices: the researcher (R), the participants (using their chosen pseudonyms) and a critical voice (CV). The researcher voice frames the context of the narration, making links to the published literature. The critical voice is a literary device which facilitates questioning and making critical comments on issues being raised (Chard, 2003; Curt, 1994; Mulkay, 1985). It also provides a manner for exploring narrative texts about a social phenomenon (engagement in EBP) from which it is sometimes difficult to draw authoritative meaning. The critical voice (CV) expresses concerns I felt while I was analysing the data. Its tone reflects my own thought processes about the findings and what they might mean. The CV is therefore somewhat informal when it challenges the researcher to defend choices made, examine assumptions and to consider alternative explanations of phenomena. Hence, the R and CV voices represent an internal dialogue I conducted with myself during the last step of data analysis described by Creswell (2003): making an interpretation or meaning of the data and beginning the discussion of lessons learned.

7.5.1 Theme 1: Experiencing the learning

R This theme concerned reflections made by the participants during the individual interviews about what it had been like for them to participate in the module the previous autumn. The participants described their learning experience in response to two factors (first two sub-themes): module organisation and the relational nature of learning (interactions with fellow participants and/or with me as module leader). Both are inter-related, however. As Cousin noted in a paper presented at the 4th biennial Threshold Concepts conference in June 2012, students often regard module organisation as reflecting a form of care on the part of the teacher. Hence, the participants' perception of the module's organisation could have influenced their rapport with me and vice versa. This is particularly true due to our being action research collaborators. After reflecting on the nature of the module organisation and their interactions with others, the participants made suggestions (third sub-theme) as to how they felt the module could be improved in the future.

7.5.1.1 Module organisation

R Moon (2004) maintains that good teachers facilitate students' learning through module organisation. For her, the teacher: 1) needs to have a holistic view of the

module and provide enough structure so that the students know how all of the elements fit together; 2) must do good ‘signposting’ so that the students know where they are and where they are going; and 3) must understand how to balance time and workload in relation to the learning outcomes and to pace the classes accordingly. The participants highlighted four issues about the IETP module organisation which they felt impacted their learning: 1) learning supports; 2) practice for consolidating learning; 3) being student driven; 4) diversity of assignments. In many respects, these issues reflect points made by Moon (2004).

7.5.1.1.1 Learning supports

R As during the group discussion in December 2009, in the spring of 2010 all of the participants underlined the importance of: a) the module handbook; b) having a wide variety of readings easily accessible on Blackboard; c) the possibility of individual tutorials. Generally speaking, their principal focus was on how these supports added clarity to the learning objectives and saved them precious time.

Dottie The manual you gave us the first day [...] it was fantastic, there was great direction in it [...] there had been a lot of thought and work put into it (0300)⁶⁷.

Tom I could see that you did prepare for it [...You] put everything on Blackboard, a handbook to get all the readings so therefore you must have spent lots of time doing it. So from a practical point of view I felt that I got something [...] and it made it easier for me to participate in the module. From a knowledge point of view I definitely got lots of things (0136).

CV I have a question please. In Chapter three you mentioned Friere as someone who greatly influenced the educational constructivists who informed your thinking for designing the module. Friere rejected the idea of a clear separation between teachers and especially adult students (Crotty, 2009). He felt that both were responsible for a learning process during which ideally everyone would grow. Were you not perhaps setting up a different dynamic with all these ‘learning supports’?

⁶⁷ The numbers in parentheses refer to the line-number in each individual interview where the quotation commences. If there is a long space between two parts of a quote, both commencing line numbers are given. Short spaces between quoted words are indicated by [...]

R These supports were dictated by guidelines set by the study university (module descriptor with learning objectives) and department (module handbook, all readings on Blackboard). The fact that I took so much care with them was probably influenced by this module being part of my doctoral research. I did not feel, however, that I was taking responsibility away from the participants as they still had a voice in deciding module content and learning activities through the NGT decision-making. I will admit, however, that there may have been something of a reciprocal exchange relationship here. Cousin (2012) believes that any teacher might be perceived as ‘gifting’ a student. From my undergraduate studies in anthropology I know that in many cultures gift relationships imply obligation. If a teacher puts in a lot of effort, does the student feel obligated to respond? In ‘gifting’ participants with my efforts and/or expertise, I think I was hoping that they would repay me with their growth (learning). But is this not why anyone chooses to become a teacher? By extension, students who do not engage might be ones who refuse the exchange relationship.

7.5.1.1.2 Practice for consolidating learning

R All of the participants emphasised the importance of repeated practice of what they deemed to be core EBP skills: 1) database searching; 2) critical appraisal of research literature (CATs – critically appraise topics); 3) being adept at conducting an effectively formatted journal club. Half of the participants also cited the usefulness of knowing how to do a SWOT analysis of their workplace, regarding EBP, so as to apply change management techniques to facilitate the introduction of new intervention approaches. These are the same skills that the participants considered most relevant to their practice in December 2009.

Tom *Each of them [the activities allowing skill practice] contributed a little bit towards my learning, and not just getting the information in, but using the information so it basically becomes consolidated (0366).*

CV The participants appear to be much focused on skill (the ‘doing’) acquisition. What about EBP knowledge (the ‘knowing’)?

R Through the NGT discussions the participants had the possibility to determine both learning content and learning activities. During the NGT discussions they made suggestions, which I implemented, regarding both. At the end of the interviews when specifically asked, they also made suggestions for future changes to the module. These, in part, concerned content. During the interviews, in their reflexive narrative accounts of how the module supported their engagement in EBP, however, they appeared to take their increased knowledge as a given as they spoke almost exclusively of EBP skill acquisition. One explanation for this might be that the transfer of skills into practice is perhaps more obvious than the transfer of knowledge. Though, of course, without deep knowledge one has only ‘cookbook-like’ skills. Moon (2004) maintains that there is a clear distinction between learners who take a ‘deep’ approach and those who take a ‘surface’ approach. The surface, or strategic, learners are only intent on getting the knowledge into their heads for a short time in order to receive a passing mark. In contrast, those who take a deep approach try and make sense of what they learn in terms of what they already know. These learners ‘work’ with the new ideas by trying to integrate them into their work place from the outset. According to Moon, only deep learning has an impact on practice by being represented in action. The participants were clearly taking a ‘deep’ approach to their learning as they felt they had ownership of the learning process through the implementation of their NGT discussion decisions.

CV I assume you will talk about how their learning was represented in action under theme 2: Enacting the learning. However, were the participants’ comments in the spring of 2010 different from what they were saying in December 2009 when they talked about the importance of ‘learning by doing’?

R It is no different except that during the May – June 2010 interviews the participants were able to expand on their thinking more. On both occasions the participants’ emphasis on practice confirms adult learning principles and constructivist instructional approaches (Argyris, 1982; Knowles et al., 2005; Kolb, 1984) which advocate problem solving and the actual ‘doing’ of educational tasks and/or activities. Task-based or experiential learning is a learning approach discussed in the occupational therapy education literature (Hunt & Ryan, 2006; Knecht-Sabres, 2010). In a paper presented at the 4th

biennial Threshold Concepts conference in June 2012, Pace, Diaz, Middendorf and Shopkow attributed ‘bottlenecks’ to students mastering crucial learning to teachers not adequately modelling the behaviours (adequate knowledge appears to be assumed) that specialists in the discipline use (e.g. EBP cycle steps). This modelling, according to their application of the threshold concept construct, should be followed by students having many opportunities to practice those behaviours and receive feedback on their performance.

Ted Despite us having a lot of hours on it [database searching], I just think it is something that you just have to keep tapping away at [...leads to] having a bit more confidence to use different search engines (0410).

Mary That [CATs] is probably the most practical thing you would use regularly at work and that, in some ways, lays the foundation for evidence based practice [...] If you were in a busy setting and if you had just an hour a week to do journal club then that [format practiced in class for journal club] is probably an area [...] that definitely should be included because it is practical and it [can] be used in a work setting (0129).

Tom It definitely helped [...] critically appraising research; how to read a paper and then looking at the different parts of the paper and what to look out for to evaluate the research [...] really helpful [having] practical exercises which I felt we didn't do enough (0405).

CV So they felt they were getting practice but maybe still not enough?

R But does anyone ever have enough practice of a challenging skill? At some point I think the responsibility for deepening skills has to shift to the learner and his/her self-directed learning. Perhaps that critical point is when participants have enough confidence in their skills to begin to question the ‘experts’.

Dottie I'd see how often it is difficult to critique articles [...] and then you go away and start to practice and you begin to think, actually I am not so sure this is high and mighty research (0054).

R Knowles et al. (2005) and Savary and Duffy (1996) underline the importance of adult educational programmes acknowledging and valuing therapists' prior

professional experience. The participants confirmed this premise when they commented on how much they enjoyed having the opportunity to formally debate how they themselves defined ‘gold standard’ evidence for their practice. This is an example of the participants co-constructing understandings about EBP. Developing these understandings involves much reflection on the part of each participant as they challenge their own and each others’ thinking.

Ted To see what way they [the other participants] reasoned through stuff [...] sort of gelled [their thinking] for a lot of people (0167).

Tamara [I] really [liked hearing] of all those other views as well [...] I loved the ambiguous, I loved to see the two sides (0213).

R In a paper presented at the 4th biennial Threshold Concepts conference in June, 2012, Ryan maintained that deep learning is about being able to live with complexity and uncertainty.

CV So does that mean that all knowledge should be viewed as being in a constant state of flux? Is that not in conflict with the realist ontology you adopted in Chapter two?

R Not at all. A realist ontology assumes that there is a real (physical) world that exists outside of human brains. For this study, however, I also adopted a constructivist epistemology. Hence, the meanings that humans construct about the world may be provisional. Humans viewed the earth as flat then round, even though the earth has not changed since its formation. Ciccone and Meyers, in a paper presented at the 4th biennial Threshold Concepts conference in June 2012, stress how grappling with complexity and ambiguity are a part of any learning process. An opinion supported by Mennin (2010) in discussing complexity and education in the health professions. Cousin (2010) states that it is the threshold concepts which provide provisional stability for teaching and learning. That had been my intent when I framed the EBP threshold concepts for this module. Fortune, Ennals, and Kennedy-Jones, in a paper on occupational therapy education presented at the 4th biennial Threshold Concepts conference in June 2012, maintain that these provisional understandings are a part of the student journey as they master a discipline’s threshold concepts.

CV In your critical analysis of EBP healthcare education literature while designing the module (Chapter five) you stated that you came to believe that the threshold concepts should be formulated as attitudinal statements. Do you still feel that to be true and why?

R The post-module results from the KSAB questionnaire indicated self-reported increased EBP knowledge and skill levels and more positive attitudes towards EBP. McClusky & Cusick (2002) and O’Sullivan (2004) maintain that attitudes drive behaviour. While designing the module I therefore felt that if the participants’ attitudes towards EBP became more positive as a result of mastering the necessary knowledge and skills, they would be more likely to change their behaviour by engaging in increased EBP activities. By framing the threshold concepts (Table 5, section 5.7) as positive statements (attitudes), the participants were encouraged to imagine improved practice and themselves as EB practitioners (behaviours). However, I never explicitly communicated these attitudinal threshold concepts to the students as it was important that they construct their own understandings of EBP and what it means to be an EB practitioner. Meyer and Land (2005) emphasise that grappling with a discipline’s threshold concepts involves a re-positioning of the self as learners redefine their sense of self and beliefs. Wenger (1998) maintains that deep learning is an experience of identity formation. The module provided the ‘liminal’ (transitional) space for that journey of discovery.

All of participants, in their final paper in January 2010, explored the enablers and barriers to research utilisation in the workplace on meso (team) and macro (health organisation or professional network) levels, in compliance with the guidelines for the assignment (Appendix 6). In so doing they expressed a personal stance on the six EBP threshold concepts. Hence they were led to reconsider their professional identity as they critically explored how they could be consumers, generators and communicators of knowledge irrespective of their workplace role. It is not just what the participants would say/ write in regard to these attitudinal threshold concepts, however, but what they subsequently did. This is discussed under theme 2: Enacting the learning through a new way of being.

CV All right, I do not mean for us to get ahead of ourselves. So what else about the module was important to the participants?

7.5.1.1.3 Being student driven

R Feeling that they were in the driver's seat, at least in part. In accordance with Knowles et al.'s (2005) theory of adult learning, the participants wanted learning activities to practice EBP skills which they felt they needed to know.

Mary *I suppose as mature participants we probably have quite a few ideas as to what we want to get out of the module and say what areas we want to cover within evidence based practice (0300).*

Dottie *This module was different because it was much more participant orientated in that the participants decided, to a degree, not completely, on aspects of the course that we wanted to be repeated or do again. We had choice over content. So I think that element was very helpful (0041); we were able to guide the learning process (0449); that system [nominal group technique] worked well in terms of the whole group deciding how we should go forward (0552).*

Tara *I did like the fact that we could drive the classes. But then in terms of the objectives of the course I suppose we eventually hit them but may be not in the way that you [module leader] had [expected] (0491).*

CV Having choice was also mentioned in December 2009. What are they are expressing here?

R I think they are affirming two constructivist learning principles. Firstly, they felt it was important to be empowered to have ownership of the learning process (an attitude). Secondly, this sense of empowerment led to deeper learning as the participants engaged more in the learning process (behaviour). Again an example of attitudes impacting behaviour.

CV What would you have done if the participants had contested the learning objectives set out in the module descriptor?

R I was always cognizant of there being limits to the participants' decision-making. Was I contravening PAR methodology's democratic nature by having

set learning objectives and hence some pre-determined content? Friere was considered a dangerous revolutionary in the 1960s by the junta generals in Brazil as he was an avowed Marxist educating peasant farmers in a very unequal, elitist society. Since his time, however, PAR has been used in many educational and therapy contexts where choices are not completely open-ended (Carpenter & Suto, 2008; Werder & Otis, 2010). Would the participants have preferred having total control over content and learning activities? It was not possible to explore this possibility due to study university guidelines requiring prior curriculum committee approval of a module descriptor. I did not have the impression, however, that they would have welcomed complete control; that they felt that it was my role as teacher to have set general learning outcomes to be achieved.

CV And why would they have conceded that decisional power to you rather than keeping it for themselves as part of the PAR process?

R I think it was based on them considering me an expert in the field of EBP as well as them being given the choice and opportunity to co-construct their own learning about EBP. Either I impressed them during the module that I did, in fact, have considerable expertise in the domain, or they had confidence in the university which had implicitly conferred me with that status by having me teach the module. Already in December 2009, Dottie (section 6.7.3) admitted that she was initially annoyed about the IETP module being part of my doctoral research; that she had paid to have an ‘expert’ delivering the learning. In the end she was happy because she felt that I had had the EBP expertise she needed to support her learning. This possible tension between what I, as module leader/ ‘expert’, felt they should know (expressed formally in module descriptor learning outcomes) and what the participants felt they needed to learn, was unavoidable. In any case, due to the consensual nature of the decision-making process, no one participant got everything they may have individually wanted; a fact to which many of the participants alluded.

CV So you think that the decisional power, as it was divided between you and the participants, worked well?

R The first aim of this study was to develop, in collaboration with the participants, a module providing learning opportunities for acquiring the skills necessary for 1) locating; 2) critiquing; and 3) translating research findings into practice. I think the positive results from the EBP KSAB questionnaires attest to the first two parts of that objective having been attained in the eyes of the participants. In addition, all of the participants received a passing mark in the oral presentations (which were assessed by colleagues) where they had to demonstrate their engagement in the steps of the EBP cycle, including translating research findings into practice. On the module evaluation forms the participants expressed great satisfaction with their learning. So yes, I think the decisional balance worked well especially given that this decisional process was made in collaboration with the participants. In general, the participants appeared happy with the extent of their decisional power, even though Tennant (1986) might have considered it to be a chimera as they were not in total control. The power balance between myself and the participants was more of an issue when it came to being assessed.

7.5.1.1.4 Diversity of assignments

R Some form of assessment is a requirement of the university. This is a foundational aspect of any credit-rated education and was not questioned by any of the participants. The EBP literature (Stern, 2005; Tickle-Degnen, 2000c), supports such demonstrations of learning. The three assessed assignments consisted of a short reflective paper, an oral presentation and a final paper (Appendix 6). Two of the seven participants regretted that more of the module work was not also assessed.

Tara *There is quite a lot of reading to do for each of the sessions and I do think it would be nice if some marks, I am not sure how you would do it, but if there was a continuous assessment of the readings. Because if you sat down and read through all five or six of them, and maybe others may not have, and so the discussion in the class isn't as good as it should be. But you are actively contributing then there is no credit given for that (0399).*

CV Ah, the perennial issue of whether learners are motivated by marks or by acquiring new knowledge and skills. Perhaps she has a valid point?

- R The Sunnyview experience had taught me that solely the latter is probably not sufficient motivation for some people. The IETP module, however, already contained three assessments and the participants would have received verbal feedback on their class comments from their fellow participants and from me. In addition, the second threshold concept around which the module was framed states: Being a professional implies engaging in a life-long, self-directed journey of learning and a commitment to changing practice. Giving a mark for doing class readings would not, in my opinion, support the development of such a professional stance.
- CV What about the required content of the assignments, did any of the participants question that?
- R Not really, though I cannot say why. Either they were genuinely happy with the content or they just automatically conceded to me, the EBP ‘expert’, the power to decide. In any case, they would not have been able to change the assignment guidelines as these were set beforehand in the module handbook. You must remember, students are not used to being able to decide such things. It was probably not always easy for them to step outside of the familiar student role and to assume the role of a research collaborator. Nearly all of the participants, however, commented that they appreciated the diversity in the assessed demonstrations of learning. They felt that the assignments drew on different abilities and developed a range of skills as the healthcare education literature state they should (Khan & Coomarasamy, 2006; Lin et al., 2010; McCluskey & Bishop, 2009; McCluskey & Lovarini, 2005; Moon, 2004; Stern, 2005; Tickle-Degnen, 2000c; Wyer et al. 2009).
- Tom *Rather than having this one big paper at the end [...] it was great having the diversity of the assessments which probably suit different people’s learning styles [...] and again using different knowledge, using different learning strategies in doing that. [...] The reflective paper was more about looking at my own thinking process and my own work because it basically reflected back on myself and my work setting. Which was quite different compared to the final assessment which was looking from the outside, looking at the wider practice setting [...] taking the macro, the bigger perspective. And the [oral] presentation*

I felt was [...] almost like a little practice exercise. I think it was very valuable for the real practice setting [...] and again it was not as academic like essay writing as [that] doesn't suit everybody (0545).

Dottie Because you are having to do an oral presentation and that is very much part maybe of spreading the evidence. Almost transferring evidence [into the work setting]. I think that that is a very useful skill (0248).

R Each assignment was built around one or more of the EBP threshold concepts (Table 5, section 5.7). They required students to perform tasks which mirrored the complexities of their work environment as advocated by Savary & Duffy (1996). In terms of transferring learning into practice, this was effective because some participants commented on how specific learning from the assignments impacted their practice.

Siobhan I did put a lot of effort into that [reflective paper] and I did make it very personal. And actually that was nice because normally I feel that we are not supposed to be so personal, we are supposed to be much more professional and neutral. So it was a nice experience to have that opportunity to do that. And I have been more reflective about things since. I would find myself stopping and thinking (0119).

CV How important was “thinking” or reflection to the overall EBP learning process?

R It was foundational. Researchers (Banningan & Moores, 2009; Taylor, 2007) emphasise that engagement in EBP is underpinned by reflection. Moon (2004) and O’Sullivan (2004) maintain not only that reflection is necessary for deep learning; reflection is the starting point for that learning. And as reflection requires time, the importance of having sequenced learning events (classes spread over three months) is affirmed.

In a paper presented at the 4th biennial Threshold Concepts conference in June, 2012, Land focused more closely on what he and Meyer (Meyer & Land 2005) originally termed ‘liminality’. The liminal space is described as a portal that a learner passes through during a journey of transformative understanding while mastering a discipline’s threshold concepts. Being in the liminal space is usually

experienced as a period of personally and socially constructed creative thinking based on reflection. As some participants can become ‘stuck’ and not emerge through the portal, the role of teachers according to Land (2012) is to assist students in their transition through the liminal space. For Tamara, any academic assignment was challenging as she had difficulty focusing her thoughts. Nonetheless, she revelled in the learning.

Tamara I am not saying I can't write, I just want to write it 50,000 different ways and put 1,000 different things in it [...] I have read [...] I have enjoyed every second. [...] There has to be a reason why you learn and if you have a goal. [...] What does it take to make me sit down and start writing this paper? [...] But you have to measure it by the papers [...] what you produce and that is where I feel my failing has been (2119).

CV Did her difficulties cause you to question any aspects of the module?

R No, though I was disappointed that I was not able to guide Tamara successfully through the liminal space. That said, the journey for this module was measured purely by academic results. In judging professional trajectories other standards might better apply. For instance, subsequent to the module Tamara was instrumental in motivating her multi-disciplinary primary care team to set up a framework for engaging in reflective practice, based on readings she did for her assignments. This work eventually cumulated in her team receiving a national award for best practice from the Irish health service in November 2011.⁶⁸ Again a demonstration of how reflection is the starting point of any transformative process. A process that is enhanced through exchanging ideas with others.

7.5.1.2 Learning is relational

R As discussed in chapters two and three, the teaching approach was underpinned by a constructivist epistemology where knowledge is perceived as being constructed during interactions between human beings and transmitted primarily within a social context (Crotty, 2009). Hence learning is relational through being shaped and re-shaped by social interactions (Tryphone & Vone, 1996). As noted

⁶⁸ The annual Irish Healthcare Awards (‘health Oscars’) are Ireland’s premier awards in the area of health and medicine. They are given to recognise excellence, originality and innovation in patient education and support, pharmaceutical products and healthcare collaboration.

by Cousin (2012), when one looks at the student experience, one must always look at relationships. During the group discussion in December 2009, participants described the learning process primarily as a group journey where they co-constructed pieces of the EBP jigsaw; membership in the student group was emphasised. During the individual interviews in the spring of 2010, fewer explicit allusions were made to a common journey.

CV Not just the time, but also the environmental contexts in which the opinions were being articulated were different. Might this also have had an impact?

R Yes. In December during the group discussion the participants were making statements in the presence of each other in the classroom setting. Each participant chose to have their individual interview in their work setting in the spring of 2010. By that time, the participants' point of reference for belonging to a group had undoubtedly shifted from the classroom back to the work setting and their work colleagues. Some of the participants, though, mentioned that they still remained in contact with each other socially.

There were also similarities, not just differences, in the 2009 and 2010 comments. In the spring of 2010 the participants acknowledged, as they had done in December 2009, that the presence of clinicians from several disciplines had enriched their learning. In 2010 they credited this contact with giving them greater respect for fellow professionals. In addition, at both time periods they stated that being with people equally interested in EBP gave them the opportunity to debate ideas which deepened their understanding of a wide range of issues.

Ted *The group stuff was brilliant [...] from very different perspectives [...] Working with the different professions [in class], that was definitely an insight. Looking at their literature was really interesting; looking at the speech and language literature was amazing (0148). Physio tends to be a lot more quantitative as opposed to qualitative. We tend to learn differently as well, we like to learn in peer group apprentice type ways (0068). Really looking at things very critically and hearing about their [other professions'] ups and their downs with practices, that was vey illuminating (0566).*

Siobhan I thought it was good to see that evidence based practice, it wasn't just one new flaky topic of the year approach for one therapy but that [...] medicine, OT, SLT and physio were all involved in it [...] because there have been a few whacky ideas over the years (0316).

CV How do the findings support, or not, the theme that 'learning is relational'?

R During the group discussion in December 2009, the participants discussed 'learning by co-constructing pieces of a jigsaw'. They made similar comments in the spring of 2010 during individual interviews, but elaborated more. The fact that four to five months after the module they commented at such length about multi-disciplinary socially constructed learning I think underlines the importance of social interactions and social relations to their learning. Their comments also affirm Meyer & Land's (2005) and Wenger's (1998) contention that learning based on threshold concepts is an experience of identity formation as learners re-define their sense of self and beliefs through the juxtaposition of their ideas with those of others. This was a very important finding as it underscores not only that learning is relational, but that it is foundational to skills and new learning being embedded.

Tamara It was the best learning of all [...] boy did it uncover our differences (0377) [...] it got me inside their way of thinking and the respect really comes with it very quickly, there is a huge wealth (0423).

Mary You hear other people's opinions and that definitely guides you [...] you just learn more from the discussions maybe than you would on your own and you have to kind of defend stuff or debate stuff (0194)[...]they are going to stimulate your thinking by asking questions or not agreeing with you (1129).

R The second relational dyad was the one between each participant and me. The participants made no spontaneous reference to this in December 2009. In the spring of 2010, however, they were explicitly asked about module leader – participant interactions (Appendix 15). Moon (2004) states that the primary responsibility of the teacher is to facilitate deep learning by the students while also maintaining: a) the emotional climate of the classroom; b) the students' attention; and c) adequate challenge to the students' intellect. The participants'

reflections seem to imply that all of these were implicitly addressed in the classroom. Not once, however, did the participants describe me as the expert imparting knowledge. For them, my role was to guide, facilitate, and motivate their learning. Not to direct it, at least not overtly.

Siobhan I think it was very good interaction. I think you were very patient [...] you were guiding us through (0552).

CV You were patient? How is that important in facilitating the learning of adults? Sounds more like pedagogy rather than andragogy (section 2.2).

R As Siobhan is a speech and language therapist I find it interesting that she perceives the guiding role, in what was a predominately verbal environment (as opposed to physiotherapy where interactions could also be physical), as requiring a lot of patience on my part. Actually she was right, but not because I ever felt impatient with the participants' verbal exchanges. Several times in my reflexive diary after class I commented on the conscious effort I had to make to be quiet and let the participants develop their own understandings. I found their discussions so interesting I wanted to participate too.

Tamara I really came to accept you as a brilliant facilitator because you could do all these little triggers and you just knew exactly how to question us and to draw out the information. You weren't judgemental (0364).

Mary Well you may have posed questions but you weren't part of the debate, you were kind of guiding it so I think that is better than you taking a side and being like, oh I really think this. You were kind of more just directing the conversation as to [...] move it on or that kind of thing. So I think as lecturer, you have to step back and have an impartial opinion to whatever we are discussing, which mightn't always be easy, but I think it is very important not to put it one way or the other (0238).

CV Again the issue of patience on your part. But there also appears to be concern about impartiality. Is this similar to the need for safety and acceptance, expressed by the participants in December 2009, which had to be satisfied before the participants could reach the level of self-actualisation described by Maslow (1954)?

R Yes, I think so. But I think these exchanges are also underlining an important aspect of constructivist learning theory. Both Tamara (one of the clinicians with the most years of clinical experience in the class) and Mary (the most recently qualified therapist) appeared the most concerned about having their class participation judged by me (and, I would deduce from comments they made in class, by their fellow classmates). Interestingly, they are also the two participants who reported the greatest increase in their EBP knowledge and skills and engagement in EB activities on the questionnaire. Having what they considered a non-judgemental, supportive learning environment was seemingly foundational to their being able to construct their own understandings about EBP.

Tom *I probably wouldn't see you so much as a teacher in the class standing in front of the class presenting the information. [...] It was more like you [...] being the facilitator of the group and [...] structuring the sessions and incorporating the learning from the previous session to the new one [...] asking questions and motivating other people into the discussion [...] I think especially it is quite important when you teach to adult participants [...] you are empowering the participants to be responsible for their own learning [...] not telling us you have to do this [...] [you were] going with the flow but still keeping guiding the learning process (0857).*

CV It sounds like you had a very peripheral role in the classroom. Was your presence really necessary?

R I like to think so. The participants describe what I had intended to be the teaching approach; what I personally, as an educator with a constructivist epistemology, believe teaching should be. I actually thought that I sometimes was a little too directive, that I needed to talk less and listen more. Considering how I had formulated the threshold concepts as attitudinal statements when I was designing the module (Table 5, section 5.7) I am particularly pleased to find that they felt I was an impartial guide who did not impose her own beliefs. In any case, the participants had paid for me to be in the classroom. And while the participants stated that they were very satisfied with the module, they did have suggestions for further improvements.

7.5.1.3 Improving the module

- R When asked about how the module could be improved, one participant was at first surprised by the question.
- Tom *Asked me about what I would improve? That is what I think you did, you improved the module as you went along [by following the participants' suggestions after every nominal group discussion] (1809). If you can I would definitely continue doing these feedback sessions even if you don't do it every session (1884).*
- R The MSc in Evidence Based Practice programme was designed with IETP being the entry module to be completed before other optional modules. All of the participants agreed that the IETP module should ideally be the 'starter' module. This opinion was most strongly expressed by the five participants who had taken other modules before this one. All believed that the number of participants should not exceed 10 – 12 (a maximum of 25 is permitted according to the module descriptor) so as to retain the seminar discussion format which they found so foundational to their co-constructed learning. Many believed that spending additional time on database searching and on statistics (to better critique quantitative research articles) would be helpful for future participants. Tamara felt that tutorials on academic writing would also be useful. Mary (for whom this was the first MSc module) suggested that the final paper should focus more on how to generate research than a theoretical discussion of how to lead an EB culture on meso (team) and macro (professional network, healthcare organisation) levels.
- Mary *I think that [more emphasis on generating research in a work setting] would be more useful than the final paper that we did, you know, it is something that you can take away and use as part of your service plan [annual team designation of future goals] (1253).*
- R As a result of these suggestions, since October 2010 all participants enrolled in the MSc in Evidence Based Therapy Practice programme are invited to attend a free one day workshop prior to classes beginning in the autumn. The morning is spent on basic database searching skills; the afternoon is an introduction to

statistics. These two topics, on a more advanced level, are also still part of the IETP module. Participants newly enrolled in the MSc programme are encouraged to begin with the IETP module. My departmental colleagues and I are currently researching possible on-line tutorials in academic writing, for this is also an area of difficulty for undergraduate students. After reflection and discussion with the external examiner, the final paper assignment has not been changed; specifics on generating research are considered the purview of the programme's research methods module. The IETP module continues to be offered every autumn and, by chance, the number of participants has never exceeded 8. At the end of every class I ask the participants if there are any 'muddy points' they would like to revisit during the next class. This is only done informally as a structured NGT discussion would take 30 minutes. I doubt that this abbreviated process of consultation has given IETP module participants enrolled in 2010 and 2011 the same sense of the module being 'participant driven' as had the 2009 participants. However, during the first class I always tell the students that the module content and learning activities were developed in collaboration with the 2009 cohort.

7.5.1.4 Summary of experiencing EBP learning in a post-qualification student environment

Theme one has explored the learning experience of the IETP module from the perspective of the participants in the spring of 2010, once they had had four to five months to integrate the learning. In many respects, the sub-themes which emerged within the experiencing the learning theme were similar to categories/ sub-categories from the module evaluation forms and group discussions (Appendix 17). The participants, however, framed their thinking differently in the spring of 2010 than in December 2009. In December they were still immersed in the student role. Many of their comments reflected Maslow's (1954) lower level needs for safety and belonging/esteem. For example, in December they were very sensitive about the *safety of the [learning] space*. This concern was less explicitly evoked in the spring of 2010. In December 2009, their chosen discussion points about the module related as much to their need for belonging to a [student] group as to transferring the learning into their workplace. By the spring of 2010, the participants evaluated the module from the perspective of practicing clinicians focused on their professional self-actualisation.

From this perspective they assessed what about the module had facilitated their integration of EBP knowledge and skills. These appeared to primarily be:

1. A supportive learning environment which included elements such as the module handbook and journal articles on Blackboard. These provided a signposted road map as to the general learning journey the participants' would be undertaking, the expected destination (learning objectives stated in the module descriptor) and the requirements of the journey (readings and assignments). This knowledge made participation in the module easier and it saved them time, allowing the participants to direct their limited time resources to targeted learning tasks.
2. Authentic EBP activities, linked to the steps of the EBP cycle, which the participants considered relevant to their work setting and which they could practice as often, and how, they chose during the module.
3. Learning and practice within multi-disciplinary groups which served as a catalyst for the construction of new knowledge and increased the participants' interest and confidence in exploring the ramifications of what it meant to be an EB practitioner. The interactive learning stimulated deeper reflection and discussion by each participant regarding the EBP threshold concepts underpinning the module. This, in turn, supported their competence in completing assignments.

In December 2009 none of the participants expressed any ideas for changing the module. By the spring of 2010 they were more aware of aspects of EBP that they were still finding troublesome and they had suggestions for future improvements to the module.

The data generated by the KSAB questionnaires, module evaluation forms, group discussion and the individual interviews (as expressed in theme one) cumulatively describe the IETP learning experience as a transformative process in some respects similar to Kolb's (1984) experiential learning cycle. Kolb's cycle proceeds through the stages of: 1) concrete experience; 2) reflective observation (reviewing what has been experienced); 3) abstract conceptualisation (interpreting what has happened and its applicability to other contexts) and; 4) active experimentation (considering how to put what has been learned into practice). In contrast to Kolb's cycle, however, the

transformative process of acquiring EBP knowledge and skills during the IETP module had reflection as the starting point. Each day of class, the participants critically reviewed literature examining aspects of one or more of the EBP threshold concepts; beginning on the first day with a discussion of the different types of evidence which underpinned their professional decision-making and why. The re-affirming links between the threshold concepts, constructivist learning principles and the participants' collective appreciation of the IETP learning environment are summarised in Table 9.

Table 9 Experiencing the learning in a post-qualification student environment

Threshold concepts <i>(phrased as <u>attitudinal</u> statements)</i>	Constructivist learning principles	Participants' appreciation of IETP module learning
How I, my profession and my clients value different types of evidence underpins my decision making	Learning environment is a liminal (transitional) space where learners <u>reflect</u> on existing and new knowledge through challenging own & other's thinking	Learning was enhanced through socially constructed, multidisciplinary understandings of EBP developed in a supportive environment
I am a consumer, generator and communicator of knowledge	Learning should integrate the <u>experiencing</u> of authentic, concrete tasks which incorporate the complexities of work environments	Repeated skills practice and feedback on diverse tasks & assignments consolidated their learning
Being a professional implies a self-directed journey of learning and a commitment to changing practice	Encourage learners to embrace ownership of the learning process and to imagine improving practice (<u>attitudes</u>)	Student directed learning went beyond surface learning as they became enthusiastic about making changes in their practice
I can lead the establishment of an EB culture in my workplace irrespective of my work role	Learning is a process of <u>identity</u> formation as learners define a sense of self and beliefs	Confident they had acquired the necessary knowledge & skills, they assumed (primarily during tasks & assignments) the role of an EB practitioner

The reflective discussions during the classes framed the authentic task experiences where the participants learned and performed the steps of the EBP cycle. These concrete EBP experiences resulted in the participants acquiring greater confidence in their EBP knowledge and skills and their ability to overcome barriers to EBP. Acquiring greater confidence (an attitude) increased the participants' motivation to make changes in their practice (behaviour). A causal relationship between attitudes and behaviour is clearly demonstrated as greater confidence was foundational to participants undertaking changes in their workplace. The commitment to change implicit in this attitudinal shift also led the participants to re-consider their professional identity. The participants assumed the role of a consumer, generator and communicator of knowledge while completing diverse tasks and assignments. This new way of being led to changes in work behaviours which became much more manifest by the spring of 2010 when the participants had had time to enact the new learning in their professional environment.

7.5.2 Theme 2: Enacting the learning through a new way of being

R The second theme to emerge from the individual interviews concerned the influence that the participants attributed to the IETP module regarding their current professional practice (evaluation of behaviour: transfer of learning to the workplace). Michie et al. (2005) have identified sources of influence which they maintain impact behaviour change: 1) knowledge; 2) skills; 3) social/professional role and identity; 4) beliefs about capabilities; 5) beliefs about consequences; 6) motivation and goals; 7) environmental context and resources; 8) social influences; and 9) the nature of the behaviour. These cited influences are more detailed than the simpler construct that attitudes direct behaviour reported by McClusky and Cusick (2002) and O'Sullivan (2004). In addition, Michie et al. (2005) highlight the importance of professional role and identity as do Meyer and Land (2005) and Wenger (1998). The study participants' commentaries reflected most, if not all, of the sources of influence effecting behaviour mentioned by Michie et al. (2005).

Applying the construct of Meyer and Land (2005, 2006), the participants had transitioned through a liminal space where they had socially constructed an understanding of EBP. The transformative learning process had included: 1)

reflection; 2) acquiring knowledge and skills through experiencing the steps of the EBP cycle; 3) an attitudinal shift regarding their EBP competencies; and 4) re-consideration of their professional identity. By the spring of 2010, the participants were enacting this EBP learning as demonstrated by their descriptions of their current practice. Land (2012) maintains that students emerge from the liminal space, having let go of an earlier view and/or mode of the self as inadequate. The participants' descriptions of how they responded to challenges in their every day work lives demonstrated that they were developing, in varying degrees and ways, a changed version of their professional self. The participants' descriptions of their new way of being reflected the impact of the behavioural change influences articulated by Michie et al. (2005):

- a. knowledge and skills such as the meta-cognition skills of reflection and criticality
- b. their beliefs about their capabilities, their motivation and goals and their beliefs about consequences as expressed through their sense of self agency
- c. social influences and the nature of the behaviour as demonstrated by their modelling EBP behaviours
- d. the impact of their workplace environmental context and resources and their professional role and identity on how they positioned themselves in an EB culture through meeting various meso (team) and macro (professional network, organisation) level challenges.

7.5.2.1 Reflection and criticality

R Five of the seven participants commented that subsequent to the module they had adopted a more reflective and critical perspective towards their practice. They described increased criticality regarding their own decision-making and the evidence sources they consulted, including research literature. Moon (1999, 2008) maintains that critical thinking is important because it enables: 1) learning from practice and experiences; 2) critical assessment and judgment of one's own learning and performance.

Mary *In terms of my day to day work it is hard to pick out any huge change but I think I would be a lot more aware of looking at the evidence behind certain conditions*

and just even searching them on Google Scholar or checking Pub Med [...] reading the research and picking out what is important and critically appraising it (0357).

- R Frequently the participants spoke of this greater criticality in terms of being more reflective. Moon (2004) and O'Sullivan (2004) maintain that deep learning only occurs when the learner engages in reflective activity. Taylor (2007) frames EBP as one tool for clinical reasoning and reflective practice. Bannigan and Moores (2009) propose a model of professional thinking integrating reflective practice and evidence-based practice. The process of transferring the learning from the student to the professional work environment appears to begin with a period of reflection in the work environment. Just as the learning in the student environment began and continued through iterative cycles starting with reflection.

Tamara But I just didn't examine my work in as organised a way as I would have liked [before the IETP module]. And I think it has seeped into my consciousness, every day it is coming out my mouth, oh we have to put reflective practice on this (0127) [...] It is very easy to become a reactive therapist where you are reacting [...] as [things are] happening [...] but to examine them [...] is actually quite a science (0149) [...] Looking at things, examining the literature [...] you are not just passively absorbing [...] now I feel I would question and think it through (0749) [...] We don't spend enough time with it [reflective practice] deconstructing everything and assembling it again to make a new self (0771) [...] I am in the middle of starting reflective practice with primary care teams (1079).⁶⁹

- CV Is learning, and particularly reflection, just about cognitive processes? You spoke earlier about how 'learning is relational', but our social interactions are founded on more than cognitive understandings, are they not?

- R Yes they are. Land (2012) maintains that the act of learning is both an affective and a cognitive process. I think this is particularly true regarding reflective thinking where subjectivity is implicit. The tone of Tamara's thoughts (when

⁶⁹ Tamara is alluding to the project that eventually resulted in her team getting a national healthcare award in 2011.

you hear her actual voice) has an affective colouring which does not sound as pronounced in the other participants. I think Tamara experienced the module as a sort of emotional roller coaster where at times she felt very capable (taking a stance during class discussions); at other times she felt overwhelmed (writing assignments). Reflection appeared to appeal to Tamara on both affective and cognitive levels.

Like Tamara, Siobhan was another long qualified therapist for whom it took time to feel comfortable in an academic environment. As a speech and language therapist, it was not surprising that her comments frequently related to language. In early classes Siobhan criticised the amount of jargon she thought was being used. During the individual interview she spoke of the module as being a sort of foreign country where she first had to learn a new language before she could adopt a new way of thinking, of doing.

Siobhan I am generally a bit more reflective about what I do [...]the fact that we now have an additional part time post here so I am not as frantically running around, I have actually got a bit more time to be reflective (0687) [...] definitely it certainly changed my practice this year because I took up something [critical reading] that a year ago I wouldn't have (1925).

- R The issue of having and/ or making time for EBP was threaded throughout the participants' narratives. Cousin (2012) maintains that when assessing participant learning (or the enactment of that learning) one must also take into consideration what she calls 'noises off'. She drew her metaphor from staged plays where what happens in the wings (actual events which are only alluded to) is often as important as what happens on stage. These might be, for example, events in the participant's personal life. Or, in this case, work setting enablers or barriers to engagement in EBP. Hence, while discussing a therapist's engagement in reflective practice (centre stage) one also has to weigh the possible impact of the 'noises off' factor of staff shortages. 'Noises off' can manifest themselves as both individual and more social context issues, therefore they illustrate the inter-relationships between micro (individual), meso (team) and macro (organisational) level factors in EBP.

It was not only ‘noises off’ that appeared to impact participants’ level of criticality and reflection. A shift in perceptions of and attitudes towards the EBP evidence triad of clinical expertise, research evidence and clients’ wishes also seemed to play a large role. At the beginning of the module Dottie, a therapist taking her first university module since qualifying 15 years earlier, stated that she based her clinical reasoning almost entirely on her professional expertise and short continuing education workshops on specific treatment approaches. Accepting the relevance of other evidence sources appeared to be a new experience.

Dottie Previous to the module I [would have] bought the book [on a particular treatment method] but I wouldn't have gone to the point of looking up in the databases to look at the evidence (1059) [...] Because certainly there was a period in my professional development where I looked at the research and felt there was nothing in it, nothing in it for me, nothing that is helping me in terms of clinical decisions at work (1178) [...] Now I feel I am more interested and I will go to the databases more to search (1204). [...] I do think we need to look at outcomes and see what works in different approaches and different areas and I think that we can learn from that (1581) [...] In terms of helping you decide which way to go or which type of therapy to implement or what gives the better benefit (1745).

CV When Dottie talks about “*looking at the research and feeling that there is nothing in it*” for her she appears to be voicing an opinion one oftentimes hears in the practitioner community about how research supposedly lacks relevance for real-life clinical situations.

R Yes, an opinion that I first heard Kielhofner confront head on at the World Federation of Occupational Therapists (WFOT) congress in Stockholm in 2002; his remarks were later published in a paper (2005a). He describes a divide between scholarship and practice where clinician’s are not using theory and research to inform their practice. He attributes the divide to academics primary concern being to convince other scholars that their work is sufficiently rigorous and to have their work accepted for publication by scientific journals. Kielhofner maintains that academics are assuming that if the knowledge is disseminated it

will inform practice. We discussed this issue in class. Like Wenger (1998), Kielhofner advocated the communities of researchers and practitioners working together to create theory, tools and practical ‘know how’ through a knowledge creation system similar to the KT model. He emphasised that knowledge users (clinicians) should be partners in knowledge generation.

- CV Which is where the third threshold concept ‘*I am a consumer, generator and communicator of new knowledge*’ comes from?
- R In part and also the KT model and step 5 of the EBP cycle: assessing the impact of applying research evidence (i.e. outcome measures). Kielhofner’s ideas evolved into what is now called the scholarship of practice (Kielhofner, 2005b; Forsyth, Summerfield-Mann & Kielhofner, 2005). Interestingly, PAR is used during the cooperative scholarship of practice process including practitioners and scholars.
- CV And perhaps that class discussion is responsible for Dottie’s changed opinion about research. I have the impression that you consider this to be a tectonic shift in her attitudes.
- R And very important. Shaw and Shaw (2011) argue that it is unethical to rely on weaker evidence sources when higher quality evidence exists. Unsworth (2011) maintains that the entire EBP edifice depends on the routine use of outcome measures. A Department of Health and Children (DoHC) 2010 report on research priorities for the therapy professions in Ireland states that Irish occupational therapists have identified twenty research priorities with the top two being:
1. develop pre and post tools and measures to test specifically for changes in occupational performance as a result of occupational therapy interventions
 2. evaluate the quantitative evidence for the effectiveness and efficacy of a variety of occupation-based occupational therapy interventions and outcomes.

So yes, I think Dottie’s new beliefs laid the groundwork for her enactment of EBP learning. Again an instance of attitudes being the motivating force behind behaviours.

- CV Why did you not re-administer the EBP KSAB questionnaire in May – June 2010? Wouldn't this have been a useful measure of changes in attitudes?
- R Perhaps I should have, but the study was not designed for a third administration. As I stated earlier, the questionnaire served to evaluate the learning. By May – June 2010 I was interested in the next level of educational outcomes: an evaluation of behaviour and the transfer of learning to the workplace. I did not feel that a quantitative tool was the best method for gathering these data; which is why I had decided on qualitative individual interviews.
- CV Good point. Now to return to the importance of reflection and criticality. 'Content of a reflective journal' and 'conceptualisation in critical analysis' were 'muddy points' raised during the NGT discussions. So it would appear that reflection and criticality are instances of 'troublesome knowledge' as defined by Meyer and Land (2005). Why, then, were they not part of your threshold concepts?
- R All of the skills important to being a clinical therapist could not be a threshold concept for just EBP. I recently learned that "*thinking critically, reasoning and reflecting*" is one of five threshold concepts designated by Rodger and Turpin (2011, p. 263) for the entire discipline of occupational therapy. At the time of designing the module, I considered reflection and criticality as meta-cognition skills implicit in every discipline. I emphasise these skills with my undergraduate students. You must remember, the participants were qualified therapists. It is true, however, that throughout the module Dottie found reflective practice a difficult concept to grasp. Land (2012) refers to a teacher's tacit knowledge as being a sort of 'underlying game' which can be difficult for a student to comprehend. I think both reflection and criticality fall into this category. Though several activities were done in class where I tried to model them both, I remember noticing at the time that several of the participants seemed amazed at what I could pull out of a text compared to their own contributions. Tom, however, appeared more familiar with integrating criticality and reflection into his practice. One explanation for this may be that he had already completed three other MSc modules.
- Tom *It [greater criticality] almost comes automatically [now after the module] [...] Just kind of a general shift in attitude and how I would go about being critical*

myself about something or inquiring about the evidence. [...] When I have a new intervention or come across something that I haven't done before then I would ask myself quickly, how do you know that? And then I would go look it up in the literature or speak to people. [...] So I think there is a general shift in attitude or becoming more conscious about it. I have been there to some extent but I think it [participation in the module] has brought it out in the open, this shift in the attitude (0187). This change in awareness of how I would see myself as an evidence-based practitioner and the attitude towards evidence based practice. I sort of question myself more, the approach to therapy or assessment more than I did before, or [am] more conscious about my choices or why I choose a certain intervention over another one. More reflecting back on my practice now (0997).

- CV Is Tom saying here that he now sees himself as an evidence based practitioner?
- R Yes, he is one of the participants who explicitly stated that being an evidence based practitioner was now part of his professional identity. He has identified all the elements which are critical to the transformative process of embedding EBP routinely into his work: 1) reflection; 2) experiencing EBP behaviours; 3) changes in attitudes; and 4) re-consideration of one's professional identity. Tom is highlighting these same elements of reflection, concrete experience and attitudinal shift within his work context; culminating with Tom having re-authored himself as an EB practitioner.
- CV You said earlier that five out of the seven participants commented on having acquired greater criticality during the module. Should you have as a sub-theme a behaviour that is not exhibited by every participant?
- R The participants did not begin the module as blank slates. All of them had 5 to 27 years of clinical experience and their post-qualification educational background also varied. For all of the participants it is difficult to say precisely when one way of being ended and another way of being began; some behaviours undoubtedly started before they were enrolled in the IETP module. This is particularly true for Ted. Subsequent to the IETP module, he described no difference in his capacities for reflection and criticality. In class discussions, he attributed an earlier module he had taken on clinical reasoning as having

dramatically opened his mind, describing a process which mirrors Meyer and Land's (2005, 2006) transitioning through a liminal space. He may have felt that he acquired these reflective abilities at that time. Nonetheless, that learning was transformative and it began with reflection, though in an earlier learning environment. Tara is another participant who did not comment on the module influencing her degree of criticality or reflection. She spoke at length, however, of trying to increase the criticality of others, specifically of her multi-disciplinary work colleagues regarding their customary practices.

Tara *But it has proven difficult I suppose in some situations, trying to get people's heads around, look this is just what the evidence is saying and I am just saying that maybe it is something that we should be considering.*[Tara then gives a specific practice example of a change she wished to introduce based on research literature.⁷⁰] (0580).

R Tara's frustration appears to reflect a lack of a sense of agency to introduce change based on research evidence. The presence of a sense of positive self agency emerged from all of the participant's narratives.

7.5.2.2 Self agency

R As discussed in Chapter one, Zipoli and Kennedy (2005) stress the impact of therapists' feelings of self-efficacy regarding EBP on whether or not they implement their skills in the workplace. Their research underlines the inter-play between beliefs and behaviours as does the work of McClusky and Cusick ('002), Michie et al. (2005) and O'Sullivan (2004). Based on the work of Bandura (1982, 1997), the theory of self-efficacy states that individuals can exercise a measure of control over their motivation, their behaviour and additionally the social aspects of their life. In his later work Bandura (2001, p. 11) maintains that:

Efficacy beliefs are the foundation of human agency. Unless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties. Whatever other factors may operate as guides and motivators, they are rooted in the core belief that one has the power to produce effects by one's actions.

⁷⁰ Specific example not stated as it would compromise participant's anonymity.

- CV Why do you use the term 'self agency'? Self-efficacy or a sense of agency seem to be the more common terms in the literature.
- R Self efficacy is the term frequently used in the healthcare literature (Michie et al., 2005; Salbach & Jaglal, 2010) to refer to an individual's feeling of control over their personal environment. Bandura (2001) in his later work speaks of human agency and expands the focus to include more of a collective agency. By the term self agency I am trying to communicate beliefs that begin with the self but which have ramifications on micro (personal) and meso (team) levels. All of the participants described aspects of their practice which reflected their sense of self agency in terms of enacting the EBP learning. Mary did 6 month rotations in different services of a large physiotherapy department in a teaching hospital. When she could find the time to do so, she would research treatment interventions relevant to her assigned patients in the new service. She would then implement approaches which she felt best met her patients' needs and were feasible within the service.
- Mary *But then when you transfer it [EBP knowledge and skills] into my day to day working, like just time [is] such a problem some days, that it is definitely something you have to do at home in your own time [...] but I think at the same time you still have the skills there so it is just getting the time to use them (0378).*
- CV This appears to be self agency primarily on a micro level. Did any of the participants have a sense of agency on at least a meso level?
- R Tamara communicated a strong belief in her ability to effect change in a manner which implicated more people than herself and her patients.
- Tamara *I feel that I have changed my practice dramatically [subsequent to the module] (1042) [...] I am in the middle of starting reflective practice with primary care teams (1079)[...] which is the lynch pin for starting off and if we get this going as a team this is where we develop and become an evidence based practitioner group (1205)*
- R Here Tamara is affirming that the transformative process of enacting EBP knowledge and skills begins with reflection and ends with a re-authoring of the

self as an EB practitioner, as did Tom. Tamara gave the impression of being a dynamo in her workplace, laughingly admitting that she sometimes drove her colleagues “mad”. She described how she would frequently leave literature which she found interesting in the common areas. It was not clear whether she did this before the module, but she certainly did it after. During the interview she moved quickly from discussing one class inspired reading to another; her thinking was not always easy to follow. Her enthusiasm about EBP was palpable, though, and she obviously thought that her actions had an impact in her workplace. Tamara describes experiencing EB behaviours (leaving literature for colleagues) and belief in her ability to make consequential changes (a positive attitude of self agency) as elements in the enacting the EBP learning process. Tamara never spoke about innovating on her own; it was always about what she could motivate the team to do. Tom’s approach was different. He first talked about experimenting with EB innovations himself, and then communicating the new possibilities to others.

Tom *And then knowing that there is evidence there to support that intervention, I definitely would feel most comfortable to advocate for it and implement it myself [...then] go to my colleagues [...] I would be able to speak from my own experience, I have implemented it myself [...] and it works great [...] so probably start at the departmental level of distributing that information and hopefully we then can implement it into a practice approach and then probably go up to the next level and present it as part of the team presentation like a case conference presentation (1125). I definitely would yes feel comfortable about that especially being able to present it, to go through the process [EBP cycle steps] in the structured way. And knowing as well that the process is based on evidence [...] and present this information confidently to other professionals [...] I definitely would feel more comfortable than I would [have] in the past (1314).*

CV To what do you attribute this varying approach between different learners, e.g. Tamara and Tom? Was it dissimilar personalities or something else as well?

R In part, it may have been different personalities. Tom clearly felt empowered to make evidence-based decisions on his own and appeared confident that his colleagues would be open to his suggestions. Siobhan and Dottie also had a

sense of self agency, though they both seemed to feel that it was largely dependent on the fact that they had been in their current place of employment for a long time. In their eyes, apparently, EBP was not just about cognitive acceptance of new ideas (as in Tom's narrative), it was also contingent on social relationships. The KT model, by definition, stresses the interactive nature of any knowledge exchange (Metzler & Metz, 2010b). Dopp, Steultjens & Radel (2012) maintain that support from OT colleagues and colleagues from other disciplines lead to an increased belief in one's capability to make changes in intervention approaches using research evidence. I asked myself whether the fact that Siobhan and Dottie's perspective appears different from Tom's be in part due to them being women, whereas Tom is a man. I do not have an answer.

Siobhan I think I can make changes here [in her school workplace] now because I have been here a long time and my teaching colleagues are my friends, but I think it would be quite hard [for an outsider] to come in here and say, well the evidence is for doing this, because I think [the outsider] might be told, off you go with your evidence. I think there is not a whole team approach here yet (0850). We are maybe at the very first baby step of trying to get change here and it is not happening very fast. But I think the worst thing to do would be to try and rush it through because they I wouldn't be taking anybody with me so I just have to go very slowly (0928).

Dottie For me to go in and make my workplace a more evidence based practice, like I think I would know how to do that [now]. I would know how to go about it [...] so I think I could bring people along to a degree [...] (1854) But then that is only my department and because I have worked there for such a long time and I know the situation with people, but if you put me in a different situation I am not sure that I would have that ability (1896).

R Siobhan and Dottie's perspective acknowledged concerns raised by French (2005a). French maintains that a wide range of skills are necessary in EBP including those demonstrating an awareness of meso and macro level concerns. These skills include: mediating the values, preferences and working practices of colleagues; the management of professional boundaries; and negotiating organisational intricacies. Considering the complexity of these concerns, it is

hardly surprising that not all of the participants expressed a strong sense of self agency.

Tara Maybe if I was higher up in the organisation I would be able to impact things [more] (0078)

R Nonetheless, Tara was intent on having an impact where she could. For example, subsequent to the module she was instrumental in re-structuring her service's journal club format.

Tara I schedule the in-service training timetable, I have put in a few more journal clubs [...] I suppose our journal clubs were like, oh bring a journal and we'd sit down and have a cup, it just didn't [work]. Whereas now we pick a topic [...] would have the same paper [to read] and then everyone comes in knowing what the paper is about while the leading person goes through it in a format. Which is much better, I think, than what was done before (0800).

CV You spoke earlier of the participants not being 'blank slates' when they began the module. So how can you attribute their sense of self agency to the module?

R I cannot, but perhaps the module further supported their sense of self agency as all of the participants reported greater confidence in their EBP abilities during the group discussion in December 2009. On the post module EBP KSAB questionnaire they also had higher levels of confidence in their abilities to overcome barriers to EBP. Both of these might well contribute to feelings of self agency. And if one has strong feelings of self agency, one is probably more likely to engage in EBP behaviours which, in turn, can lead to increased feelings of self agency. During the individual interview, for example, Ted described how he had been part of a multi-disciplinary practice-based research network in the south of Ireland for over a year. It was clear that Ted already had a well established sense of agency (attitude) in terms of being an EB practitioner. This, in turn, seemingly made him confident in modelling EBP behaviours to other clinicians with whom he had contact. For this reason, one has to be careful about being too reductionistic when generalising from what the participants are saying, as some were further along in the journey of being an EB practitioner than others.

I have noted how in the student learning environment all the participants engaged in a transformative learning process that started with reflection, continued with the experiencing of the steps of the EBP cycle, then progressed to a change in their attitudes about EBP. This attitudinal shift led them to re-consider their professional identity. The participants experienced several iterations of this process during the three months of the module. They reflected on one threshold concept, experienced one or two steps of the EBP cycle, their attitudes began to shift and then they began to re-consider their professional identity in terms of that threshold concept. During a later class they reflected on another threshold concept and so on. Through however many iterations, the process unfolded thus: reflection→ concrete experience→ attitudinal shift→ re-consideration of the professional identity.

In the professional work environment, however, some of the participants had initiated EBP behaviours before the module. It is difficult, therefore, to say whether the concrete experience (modelling of EBP behaviours) came before an attitudinal shift (positive belief in one's self agency) or after. What is clear, though, is that for all of the participants there was a reinforcing dynamic between these two elements. Engaging in EBP behaviours led to greater feelings of self agency which, in turn, motivated further modelling of EBP behaviours.

7.5.2.3 Modelling EBP behaviours

- R Pace et al. (2012) stress the importance of teachers modelling (i.e. the active 'doing') of new learning to their students. As discussed earlier, the EBP literature (Chard, 2003; Khan & Coomarasamy, 2004; McCluskey & Lovarini, 2005; Moon, 2004; Stevenson et al., 2004) report that continuing education generally increases practitioners knowledge and skills, but that it has little impact on changing their subsequent behaviour. We have also seen how learning is relational as it is shaped and re-shaped through social interactions (Tryphone & Vone, 1996). All of the participants, even if they were the sole person of their profession in their work setting, had professional colleagues with whom they interacted. Their colleagues' responses to the participants' behaviour could serve to reinforce their new way of being, or not. Chard (2003) found that new

learning needs to be followed up in the workplace “*through a shared community of learning between practitioner, team and client*” (p. 266). In their narratives, the participants did not depict themselves as acting in a vacuum; their EB activities impacted on their colleagues, their services. As a consequence, they were modelling EBP behaviours to their colleagues and/ or students on clinical placement. In so doing, they were perhaps intuitively attempting to create and/ or sustain Chard’s community of learning. Ted, for example, described a recent month-long self-directed project on a particular intervention⁷¹ which included an extensive critical review of the literature. Subsequent to which, he advised forty colleagues from different disciplines on the research evidence base for different intervention approaches. As a result of his work, the intervention programme with this client group was modified in his department.

CV So if the participants were not acting in a vacuum, was there anything else which affected their efforts besides the responses of their colleagues?

R Yes, the ‘noises off’ mentioned by Cousin (2012); most commonly in the form of staff shortages. For Ted, staff shortages meant that he generally had to use personal time for critically reviewing the literature. In addition, the implemented intervention programme was for eight weeks only, instead of the more ideal ten. At the time of the interview, Ted was involved in applying with others for a multi-site research grant which was to include outcomes research on this programme, the results of which would then be disseminated. Metzler and Metz (2010a, 2010b), Newton et al. (2009) and Parboosingh, Reed, Palmer and Bernstein (2011) emphasise the importance of such networking in facilitating knowledge translation in health care.

CV Was Ted’s modelling of EBP behaviours a result of the IETP module?

R I could not be sure, though I suspect it, like his sense of self agency, pre-dated the module. Participating in the module perhaps further supported these behaviours. On the EBP KSAB questionnaire post module, Ted reported increased EBP knowledge and skills. What I find particularly interesting is that

⁷¹ Details not given to preserve anonymity of participant.

Ted was modelling behaviours as a consumer, a generator and a communicator of knowledge.

CV This is the third threshold concept which you did not want to articulate explicitly to the module participants but which you had hoped would become part of their co-constructed understanding of what it meant to be an evidence based practitioner. We have also seen in the discussion about reflection and criticality how different participants mirrored the threshold concept *how I, my profession and my clients value different types of evidence underpins my professional decision-making*. And in the discussion about self agency the participants demonstrated that *being a professional implies engaging in a life-long, self-directed journey of learning and a commitment to changing practice*. So that leaves the final threshold concept of: *I can lead the establishment of an EB culture in my workplace irrespective of my work role*.

R I think Ted is a good example of that. He is a senior therapist, not a manager, and yet he is part of a developing multi-profession and multi-site research network. This is discussed in more detail under the positioning self in EB culture sub-theme, so we are getting ahead of ourselves again.

Regarding the IETP module having a direct impact on a participant, Tom spoke of modelling EBP behaviours while supervising students on practice placement where he sought to communicate his new EBP knowledge and skills to them. Craik and Rappolt (2006) and Stube and Jedlicka (2007) assert that such mentoring of students is an important aspect of maintaining the capacity to translate research evidence into practice. Stronge and Cahill (2012), in a study on the knowledge, attitudes and behaviour of occupational therapy students in Ireland, state that fieldwork educators not practising EBP was one of the primary barriers to EBP cited by the students.

Tom *Would start out with the theory as what I basically learned from the module and how I applied the knowledge from the module to become an evidence based practitioner in my practice setting [...] what it means to be an evidence based practitioner. What forms of evidence are there? What forms of evidence are accepted? And I would explain the different levels, the hierarchy of the evidence.*

I would emphasise as well the client as a form of evidence and families and carers, it is not just somebody who does research, the expert opinion but to have a balanced view on evidence. Then I would go to the next step how to find the evidence (1374).

- R Thomas, Saroyan and Snider (2012) studied the differences in EBP decisions between occupational therapy students and experienced clinicians. They found that engaging in the initial steps of the process is dependent on formal instruction in the EBP cycle. Integration of evidence into decision-making, however, appears to depend on expert-like behaviours and is therefore a function of clinical experience. Which underlines the importance of the mentoring role of practice educators in developing and sustaining the EBP skills of their students.

Tamara described many opportunities for modelling EBP behaviour. Her descriptions of EBP activities were always framed with her as a member of a team.

- CV Might that reflect her colleagues' opinions of her professional capacities being very important to Tamara?

- R Yes, I think that is probably true. She said herself that having young, recently qualified therapists on the team motivated her to stay current with the literature. She also greatly enjoyed sharing the expertise she had acquired over many years of practice with these younger therapists.

Tamara I am sitting at that computer, I am doing it routinely, I am so proud [doing] disgustingly long literature searches, they have taken all my spare time. I have now become an absolute Professor Clueso⁷² for every topic. And really I am not great at it, I am still learning but I am sitting there and I have just produced a folder this size now [shows a one inch thick folder] Suddenly I was volunteering to do clinical guidelines, I would never have done that six months ago (0857).

- R Dottie, too, framed her EBP activities within a team (meso level) context. She mentioned how after the literature search she had done for her class oral

⁷² Tamara appears to be making a reference to searching out clues in a scholarly way here; perhaps a personal play on words that has some link to the children's board game *Cluedo* or Police Inspector Clouseau, played by Peter Sellers in *The Pink Panther* film series.

presentation, she organised a course for her colleagues on the treatment approach she had researched, which was very well received. Like Tara, she took a leading role in reorganising her department's journal club, using the format learned during the module. She also approached her manager about having the department pay for access to the study university's library database so that every member of the team would routinely be able to do database searches.

Mary worked in a teaching hospital where each department had an annual service plan including projected practice-based research projects. Hence, everyone was expected to model EBP behaviour as a matter of course. She described doing a CAT (critically appraised topic) where she compared two possible intervention approaches with a specific group of clients; the results of which she presented at an in-service. Immediately afterwards, however, she was rotated to a new service. Hence, it was left to therapists who replaced her to set up a practice-based research study with outcome measures comparing the two different approaches. In the end, all of the therapists who worked on the project were to present a conference poster.

Tara's situation was quite different, even though she, like Mary, worked in a teaching hospital. During a class discussion Tara had described formerly working in a private hospital in the U.K. where the staff was expected to implement treatment approaches which had a clear evidence base for being efficacious. In her reflections on her work in Ireland, Tara appeared very self motivated to constantly strive to provide the best service possible. Holm (2001) developed a 'formula' regarding the performance of evidence-based practice:

$$\text{Performance} = \frac{\text{motivation} \times \text{competence}}{\text{barriers}}$$

It would seem that Tara had high value motivation and competence which decreased the impact of barriers. At the time of the interview, Tara was modelling EBP behaviour through working on her MSc research. She was experiencing difficulty in getting staff from other disciplines to assist her in recruiting participants, as they appeared not to be in agreement with the new treatment approach she was researching.

- Tara *I found quite a bit of resistance to what [...] I was suggesting particularly I suppose some of the people that I work with have been there for years [...] I don't underestimate their expertise in the area. But I suppose I see my role as just trying to update people's knowledge and what they decide to do with it after that is completely up to themselves (0567).*
- CV From Tara's earlier comments I understood that she felt she had limited self agency, but she was nonetheless intent on increasing the criticality of customary practices among her colleagues. So why do you place her above comment here and not under the self agency sub-theme?
- R All of the sub-themes are certainly inter-linked. As we have discussed, beliefs are foundational to behaviours which, in turn, influence beliefs. It would undoubtedly be more difficult to model EBP behaviours if one felt that one's actions had very little impact on one's environment. Tara's comment once again underlines the necessity of mediating the values, preferences and working practices of colleagues when engaging in EBP as discussed by French (2005a). Her situation also supports findings from researchers who maintain that potential change agents within an organisation, such as managers and senior clinicians, are central to creating an evidence-based culture where decision-making is expected to be based on the best available evidence (Greenhalgh, 2006; Ryan et al., 2006; Trinder & Reynolds, 2000). However, in the event of senior clinical personnel within the workplace being opposed to new practices, change may not be realised as such personnel can have a large negative impact (Greenhalgh, 2006). Tara mentioned having the support of medical consultants in the service, but not always other critically placed colleagues.⁷³
- CV I also remember that Tara was one of the participants who, during the group discussion, mentioned how useful she had found the class discussions and readings on change theory.
- R Yes. Tara, Dottie and Siobhan were especially animated during the discussions about change management and doing SWOT analyses of their workplaces prior to introducing a change in customary practices. Interestingly, all three of them later successfully introduced a workplace journal club format structured around

⁷³ Professions not specified to preserve the anonymity of the participant.

the first three steps of the EBP cycle. In so doing they were modelling the change management and leadership skills so important to EBP.

Not all of the participants, however, had to contend with the same challenges as Tara. Siobhan described mentoring younger therapists, submitting an article to a peer reviewed journal and presenting a paper at a professional conference; though all of these EB activities had begun before the module started. She credited the module, however, with making her even more competent in these areas.

Like Ted, Siobhan was not only an evidence consumer and generator; she placed a great deal of importance on her role as an evidence disseminator, be it of her clinical expertise and/ or practice-based research. At the time of the interview Siobhan was writing up another article for submission.

Hence, the manner in which the different participants chose and/ or were able to model EBP behaviours was dependent not only on how they perceived such a role (beliefs and attitudes), but also on the contexts in which they worked.

7.5.2.4 Positioning self in an EB work culture

- R The sense of agency sub-theme explored the participants enacting the EBP learning on a mostly micro (individual) level; the descriptions of modelling EBP behaviours were generally on a meso (team) level. Positioning self in an EB work culture addresses how participants described maximising enablers and minimising barriers to EBP on service and organisational (meso and macro) levels. These have been widely discussed in the literature (Chard, 2003; French, 2005a; Ilott, 2003; Jones & Santaguida, 2005; McCluskey, 2003; McCluskey and Cusick, 2002). International researchers studying EBP behaviours consistently cite time as the greatest barrier for therapists (Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Jette et al., 2003; Taylor, 2007; Zipoli & Kennedy, 2005). The allotting of time for EB activities is frequently dependent on service issues, not individual therapist motivation. For example, Murphy and Robinson (2010) cite large workload first and lack of time second for occupational therapists in Ireland; though these two factors clearly impact

each other. Chard (2003) and McCluskey and Cusick (2002) emphasise the role of managers as facilitators of the implementation of new skills in practice.

Dottie described having a manager who was interested in what she was doing during the IETP module, which led to Dottie organising a continuing education course for her colleagues as mentioned above. This manager also appeared open to the idea of funding departmental access to databases. Lin, Murphy and Robinson (2010) emphasise the importance of clinicians assertively asking employers for internet access. Workplace pressures, though, particularly the emphasis on seeing the greatest number of clients as possible, made it difficult for Dottie to have protected time for EBP activities. Dottie was willing, however, to use personal time for database searching as she seemingly had made a personal commitment to EBP. She appeared to occupy a leading position in the establishment of an EB culture in her workplace. Tara worked under constraints similar to Dottie's.

Tara At the moment the X department are down about 30% of the staff so even though the management has said, look you have an hour every week to do your [EBP], I know in my heart and soul that when it comes to 12 o'clock on a Wednesday everyone is so up the wall busy and there are so many patients to be seen that the seniors decide actually we can't do it. We are just too busy. So even though the management are supporting it, there are just not enough people on the ground to actually allow it to happen [...] before maybe it would be seen that the managers aren't being supportive of it but now there are just not enough staff (1187).

R Tara felt strongly that being an EB practitioner involved measuring outcomes on newly applied, evidence-based, treatment approaches (step 5 EBP cycle); which was what she was doing in her MSc research. She felt, however, that additional supports needed to be put in place for this to happen routinely in practice.

Tara I think that unless there is co-funding of posts between the universities and hospitals to actually facilitate more research from clinicians I don't think it will happen [...] because people are so busy and essentially it would take more time to try and draw out research from what we are currently doing (1257).

R Tara worked in a hospital where there was, at least on paper, an established EB culture. She alluded to support for her innovations from medical consultants. Staff shortages, however, appeared to result in this EB work culture existing more in policy guidelines than in actual practice. The lack of support from some team colleagues did not seem to diminish Tara's commitment to improving her practice, though it may have hampered her ability to introduce EB practices utilised by the whole team. Perhaps Tara also drew support from fellow therapists through professional networks in order to sustain her enthusiasm for EBP.

Mary's work place also had an established EB culture. Participation in practice-based research was encouraged and integrated into work planning. Attendance at conferences was supported. In-service sessions, led by senior staff, were regularly scheduled. Because of recent staff shortages, however, journal club sessions had become sporadic. Due to the well structured nature of the EB culture, Mary, a junior therapist, was expected to participate, but not to necessarily assume a leading role. The EB culture would continue to exist with or without her input. In this regard, her position was different from that of some of the other participants in this study.

Tom commented that his department had recently cancelled all subscriptions to profession-specific journals due to a decrease in funding. This reduction of resources resulted in him wondering whether advocating for additional staff to implement new evidence based programmes was worthwhile.

Tom *But what my manager then would have done, I am not sure if [the manager] would have then gone to the next level up, to the management or clinical director and said, we are doing this new approach [...] I don't know, possibly yes.*

R Tom seemingly did not consider the possibility of replacing a customary intervention, which was perhaps not particularly effective, with another new, evidence-based one that might prove to be more efficacious. Such an approach might not require new staff. But perhaps such a suggestion might meet greater resistance from other staff who were used to the older method; adding in is

perhaps easier if at the same time it doesn't involve taking away. His comment again demonstrates the links between micro, meso and macro level factors in creating and sustaining an EB work culture. It is the Knowledge Translation (KT) model (section 5.3) which best reflects how individual clinicians should not be held solely accountable; EBP is a collective responsibility.

Tamara and Ted, on their own initiative, were both members of a recently formed southern Ireland physiotherapy research network. This membership appeared to confer on them the status of being among the leaders of their profession's EB culture. In addition, Tamara's line manager was very supportive of her EB activities and was herself active in this domain. Through this research network, Tamara and Ted had made links with other research interested professionals from other disciplines such as bio-engineering. They appear to be the 'boundary spanners' on whose shoulders Greenhalgh & Russell (2006) feel innovation depends. Staff shortages, however, made Ted very sceptical regarding the Health Service Executive's (HSE) actual commitment to EBP.

Ted It is in our service plan, working towards evidence based best practice, that is tokenism at its best. That is with 500 million less than last year. Like I know there is a lot of reconfiguration necessary but if we are reconfigured anymore, like I'll be split in two. It is that stupid. So I'd like to see what is in their lovely glossy brochures is being put into practice (2003).

CV It sounds as if Ted had a rather cynical, disabused attitude.

R Yes, but his actual behaviour communicated a different attitude as he was very involved in many EBP activities. These activities seemed to be sustained by personal motivation and a manager's support, however, not by belief in an organisational-level Health Service Executive (HSE) EB culture.

CV That would seem to indicate that macro level support, while certainly welcome, is not absolutely necessary.

R If there is at least meso (team) level interest (rather than open resistance), self motivated individuals can perhaps model EBP behaviour and thereby inspire others to do the same. Siobhan appeared to see herself in such a role.

Siobhan I think there are loads of [good] ideas and there are things I would like to change and I would like us to be more evidence based practice here but I am just one person out of 25 but I am the leader of this particular group so we can probably do more things here (1825).

R Siobhan had already agreed with her manager that when the service plan being written in the summer of 2010 (as she worked in a school these plans were always defined during the summer) would explicitly integrate future EBP projects. Lin, Murphy and Robinson (2010) underline the importance of clinicians brainstorming with peers and managers about how to incorporate evidence into practice.

By the spring of 2010, all of the participants were actively promoting an EB culture in their professional environments. Their approaches may have differed, but the goal was the same. They sought to minimise any barriers by, for instance, using personal time for consulting the research literature when professional time was not available. Equally, they tried to maximise any enablers by, for example: 1) seeking support from colleagues and managers; 2) participating in communities of practice; and 3) participating in workplace policy-mandated EB activities where they existed. Macro organisational supports from the HSE appeared to be primarily limited to policy guidelines. This might explain why many participants formed or joined communities of practice on their own initiative without macro level support to do so.

7.5.2.5 Summary of enacting the learning in a professional environment

The second theme to emerge from the individual interviews explored the influence that the participants felt the IETP module had had on their subsequent engagement in EBP (evaluation of behaviour: transfer of learning into the workplace). The participants touched very briefly on this issue in December 2009 when they commented that the module made them feel more confident in their professional abilities. This, in turn, had led to incipient changes in behaviour. Five to six months later, in the spring of 2010, the participants had had occasions to implement their new learning. By then the beginning behaviour changes reported in December had evolved into a new way of being reflecting the participants' enactment of the EBP learning. This new way of being in the professional environment reflected the impact of influences which Michie et al. (2005)

have identified as effecting behavioural change (section 7.5.2). All of the participants, however, did not exhibit the described behaviours solely as a result of the IETP module; in some instances the module further re-enforced already existing behaviours.

A comparison of the transformative process of acquiring EBP knowledge and skills in the student environment and the equally transformative process of enacting that learning in the professional environment is depicted in Table 10.

Table 10 Transformative processes of acquiring and enacting EBP knowledge & skills

Experiencing the learning in a student environment (acquiring EBP knowledge skills and attitudes)	Enacting the learning in a professional environment (demonstrating a new way of being through workplace behaviours)
<u>Reflection</u> on existing knowledge and work behaviours; challenging of current beliefs	Integration of greater <u>reflection and criticality</u> into decision-making
<u>Concrete experience</u> of performing the steps of EBP cycle	<u>Concrete experience</u> of <i>modelling EBP behaviours</i> in the workplace
<u>Attitudes</u> : feeling empowered by student-directed learning and acquiring confidence in EBP knowledge & skills	<u>Attitudes</u> : positive feelings of <i>self agency</i>
<u>Professional identity</u> formation: re-defining beliefs about self in light of new learning	<u>Professional identity</u> formation: <i>positioning self within an EB culture</i>

The inter-play that the participants describe between greater reflection and criticality, the modelling of EBP behaviours, positive feelings of self agency and actively positioning themselves in an EB work culture affirms that they had transferred the module learning to their professional environments. They identify a similar reflection→ concrete experience→ attitudinal shift→ re-consideration of professional identity progression in the student environment. In the professional environment the transformative process began with the participants reflecting on and critiquing their present practice before envisioning and enacting new practices. Other researchers (Bannigan & Moores, 2009; Taylor, 2007) have emphasised the importance of reflection/ criticality to workplace EBP behaviours. Next, the participants actively modelled EBP behaviours (concrete experiences) which, in turn, reinforced their belief

in their ability to make consequential EB changes in their practice (positive sense of self agency). This attitudinal shift led participants to create and/or sustain an EB culture as they re-authored themselves as EB practitioners (new professional identity).

The differences between the transformative processes in the student environment and in the professional environment are two-fold. First, by the end of the process in the student environment there had only been time for incipient changes in behaviour, hence the participants' re-consideration of their professional identity was mostly hypothetical (imagining improved practice as described by Moon, 2004). In May 2010, when the participants had had four months to transfer their EBP knowledge and skills into their work setting, the behaviours were more consequential. The therapists had had time to reflect in greater depth on the evidence sources underpinning clinical decisions, seek out additional evidence if they thought it appropriate, and model the use of that evidence. The impact of modelling EB behaviours had also had time to manifest itself which reinforced the therapists' confidence in the importance of such behaviour. As a consequence, within the work environment the participants came to not just re-consider their sense of professional self, but to embody an EB practitioner identity. This re-authored self drew on all elements of the EBP triad: practitioners' expertise, clients' values and preferences and best available research evidence.

The second difference between the two environments is the commitment to changing practice. In the student environment, this commitment remained mostly on an implicit level. The commitment to change did not really manifest itself until after the attitudinal shift had occurred subsequent to the participants having greater confidence in their EBP knowledge and skills and their ability to overcome barriers to EBP. In the work environment, however, a commitment to change was explicit throughout the transformative process beginning with the participants reflecting on and critiquing their present practice. Once the commitment to change had been implicitly embraced in the student environment it was transferred to the professional environment and manifested itself throughout the enactment of the EBP learning.

7.6 Conclusion

The second aim of this study was to evaluate the influence of the IETP module on clinical therapists' engagement in EBP. By influence it is meant the capacity of the module to shape or give direction to the thinking and/or behaviour of the practitioners who were enrolled as students. Findings were gathered from four sources at two different points in time. The first three in December 2009: 1) EBP KSAB post module questionnaires; 2) university module evaluation forms; 3) a group discussion to evaluate the module. And the fourth in the spring of 2010: individual interviews.

At the end of the 10 week module, in the questionnaires, evaluation forms and during the group discussion the participants acknowledged that the module had influenced them by improving their EBP knowledge and skills and engendering more positive attitudes about EBP. The acquisition of these EBP abilities was attributed to a supportive learning environment which provided the participants opportunities to co-construct their own understandings of what it meant to be an EB practitioner incorporating micro, meso and macro level perspectives. Few behavioural changes, however, were reported by the participants in December 2009. These findings support the findings of other researchers who have investigated how non credit-rated workshops on EBP improve knowledge and skills, but do not impact subsequent behaviour (Khan & Coomarasamy, 2004; McCluskey, 2003; McCluskey & Lovarini, 2005; Moon, 2004; Stevenson et al., 2004). The IETP credit-rated module, however, exhibits several unique and critical components. First, the framework is based on attitudinal threshold concepts. Second, the learning environment: a) places a great emphasis on reflection and imagining improved practice over several months; b) allows repeated experiencing of authentic EBP tasks integrating the complexities of workplace realities; and c) empowers the learners to assume ownership of the learning process so as to increase their confidence in their EBP knowledge and skills. As a consequence, the acquisition of EBP knowledge and skills was a transformative process where the participants engaged in iterative cycles of reflection → concrete EBP experiences → an attitudinal shift → (*an implicit commitment to change*) → a re-consideration of their professional identity.

Four to five months after the end of the module the participants described a new way of being which appeared to be rooted in the transfer of the EBP learning from the student environment to their professional environment. The new way of being manifested itself through the participants' increased criticality and reflection about their practice, leading to changes in behaviour. The participants either modelled new EB behaviours and/ or continued and expanded those begun before the module. In so doing, they took a position regarding how they could create and/ or sustain an EB culture in their workplace. As a consequence, the participants reconstituted their professional identity to incorporate that of being an EB practitioner. Throughout the transformative process of enacting their EBP knowledge and skills there was an explicit commitment to change. The elements of this process mirrored those demonstrated in the student environment: reflection and greater criticality → concrete experiences of modelling EBP behaviours → an attitudinal shift (positive belief in self agency) → a re-authoring of their professional identity.

The post-module evaluation of participants' reactions (satisfaction), learning (knowledge and skills) and behaviour (transfer of learning to the workplace) clearly demonstrated the positive influence the module had on the participants' subsequent engagement in EBP. The generalisability of these findings to other EBP educational contexts is discussed in more detail in Chapter eight.

CHAPTER EIGHT – EDUCATING THERAPISTS TO BE EVIDENCE-BASED PRACTITIONERS

8.1 Critical overview of the investigation

The initial motivation for this study arose from a clinical practice concern. Over the years as an occupational therapist, I observed colleagues who appeared to rarely embed current research findings into their therapeutic decision-making; despite the fact that most seemed dedicated to providing their clients with the best healthcare possible. After hearing G. Kielhofner address the 13th World Federation of Occupational Therapists congress in June 2002 in Stockholm, Sweden I was inspired to be more critical of the evidence sources supporting my own practice. As a therapy service supervisor, I sought to improve clinical services by justifying the interventions we provided through integrating relevant research evidence with clinical expertise and client wishes. I was surprised by the resistance of many staff members to critically assessing preferred practices. After becoming a university lecturer, I wanted to explore how I, as an educator, could support clinical therapists in transitioning from being primarily experience-based to being more research evidence-based practitioners. I felt this would facilitate therapists to move from possibly ineffective interventions to those which have proven effectiveness.

For this investigation, I initially established an academic - clinical collaboration with a manager and therapists in an occupational therapy department, which I call Sunnyview, located in the south of the Republic of Ireland. These practitioners had expressed an interest in me providing educational sessions aimed at improving their research utilisation skills. During this preliminary two-year service development project, I did a scoping review of the evidence-based practice, adult education and change management literature in order to prepare different aspects of the educational programme. From the literature, and the needs assessment interviews I did with the Sunnyview therapists, I felt I had a good understanding of the EBP knowledge and skill deficits which needed addressing. I was still, however, learning as I went along; because while I was confident

in my own research utilisation skills, I was less confident in my ability to teach those skills to others in a manner which would lead to the learning being transferred into practice. Following a review of the adult education literature, I adopted a constructivist teaching approach at Sunnyview that encouraged the learners to construct their own understandings of EBP through experiential learning activities and reflective discussions about their current practice. The democratic decision-making process allowed the learners to decide on the learning strategies and content for each session. I conceded this decisional power to the manager and the therapists believing that this would increase their motivation to learn through greater ownership of the learning process. My intent was to facilitate self-directed learning as much as possible, as advocated by Higgs (2003) and Knowles et al. (2005); while being sensitive to Tennant's (1986) criticism of constructivist learning theorists. Tennant maintains that the latter act in paternalistic and manipulative ways while espousing support for self-directed learning, as such theorists, in Tennant's view, retain control over the learning processes, though not necessarily of the learning content. Upon reflection, I think I conceded power over both learning processes and content due to my inexperience in teaching EBP to practicing clinicians. I came to regret my decision, though I learned much from the experience. The Sunnyview project taught me the drawbacks of a learning environment which was so democratic and informally structured as to have: 1) no clearly stated learning outcomes from the beginning; 2) no stated commitment from each therapist to actively engage in reflection and EB activities; and 3) no defined endpoint with required formative or summative demonstrations of learning. I had also greatly under-estimated the complexity of work-based team dynamics and the impact they could have on the learning environment. The Sunnyview project gave me an understanding of the type of continuing education (CE) programme that did not adequately support therapists' engagement in EBP. I did not yet have, though, a clear understanding of the type of CE programme that would. I decided, however, that any future study should be within a learning environment that was structured and outcomes-focused; hence I shifted my investigation to a university-based context.

During the main study I retained a constructivist epistemology by employing a participatory action research (PAR) methodology. The PAR approach gave me an action-oriented focus on the problem of how to support clinical therapists' engagement in EBP activities by having practitioners collaborate in developing, monitoring and

evaluating an educational solution. I consulted the healthcare literature regarding existing educational approaches to EBP. There was little evidence that other researchers had explored post-qualification, credit-rated modules as an educational vehicle for clinical therapists acquiring EBP knowledge and skills. Most post-qualification educational offerings were in the form of non-credit rated workshops. Evidence from these (Chard, 2003; Khan & Coomarasamy, 2006; Lin, Murphy & Robinson, 2010; McCluskey & Lovarini, 2005; Moon, 2004; Rappolt, 2002; Roberts & Barber, 2001) suggests that clinicians acquire new knowledge and skills, but that these oftentimes have little impact on their subsequent behaviour. This realisation led me to focus my two research aims on developing, in collaboration with clinical therapists, a module which would not only increase their EBP knowledge and skills, but also result in demonstrable changes in their engagement in EBP activities. The module was evaluated regarding three of the four levels for continuing education outlined by Kirkpatrick (2007): participant reaction, learning and behaviour.

Following university guidelines, I first submitted a module descriptor for the IETP module (Appendix 5) and then I wrote a module handbook outlining general learning content for each class and the requirements for three assignments (Appendix 6). My thinking in writing the module handbook was informed by the literature on methods for EBP teaching, learning and assessment for both pre-qualification credit-rated modules and post-qualification non-credit-rated workshops. In order to give a cohesive overarching structure to the module I used my own interpretation of the Meyer and Land (2005, 2006) construct of threshold concepts. In early 2012, I located two papers on threshold concepts and occupational therapy (Rodger & Turpin, 2011; Tanner, 2011) and I heard several papers on sub-discipline applications at the 4th biennial Threshold Concepts conference in Dublin in June 2012. In the spring of 2009, however, I had no objective evidence supporting the formulation of threshold concepts as attitudinal statements applied to a sub-discipline. Such a formulation, though, helped me to frame my thinking regarding module design. There is extensive research on clinicians' knowledge, skills, behaviours and attitudes regarding EBP; implying an implicit relationship between them. Hence, I felt that the module should aim not only to increase therapists' EBP knowledge and skills, but also to engender more positive attitudes towards EBP and a belief in the importance of EB behaviour to the clinical therapies professions. By linking EBP knowledge, skills and attitudes I hope to build the

participants' confidence in their ability to be a practitioner relying on the entire evidence triad (research, clinical expertise and client wishes). Michie et al. (2005) maintain that not only knowledge and skills influence behaviour change, but also beliefs about capabilities and beliefs about consequences. I never, however, explicitly communicated a personal stance regarding the attitudinal threshold concepts to the participants; rather I encouraged them to individually and as a group to construct their own understandings of EBP and what it meant to be an EB practitioner. The findings from this study confirm the strengths of this approach. The participants not only reported increased EBP knowledge and skills post module, but also more positive attitudes towards EBP and confidence in their ability to transfer their new knowledge and skills into their workplace and make consequential changes in their practice. The unique contribution of this study is that it demonstrates how these transformative processes assure the transfer of learning from a post-qualification student environment to a professional work environment.

Conducting the module using a PAR methodology was a stimulating, rigorous and time consuming process; the results, however, were very rewarding for me as an educator. I felt that the participants and I were genuine collaborators in designing a CE programme that was responsive to their learning interests and needs. The three data collection sources of non-participant observes (NPO) notes, researcher field notes (RFN) and nominal group technique (NGT) decisions richly informed the iterative PAR reflective cycles. These cycles resulted in evidence of demonstrable changes to the unfolding module which the participants felt supported their acquisition of EBP knowledge and skills. During the preliminary Sunnyview project, the power balance greatly favoured the Sunnyview therapists regarding decisional control over learning content and processes. During the main study, however, decisional power was more equally distributed between me (as module leader) and the students (as research collaborators). The module had formal structure in accordance with university guidelines; a structure appreciated by the students in terms of the module handbook and other learning supports. At the same time, the students felt that they exercised sufficient control over learning content and processes through their NGT decisions about class content and activities. The one occasion where I felt conflicted regarding my researcher and lecturer roles was regarding peer marking on the oral presentations. I resolved this dilemma by giving precedence to my researcher role through retaining outlier peer marks in order to

be in congruence with the democratic and transparent nature of PAR decision-making. The external examiner, though, had the option of strictly upholding departmental policy and discounting these peer marks. She did not feel that their impact on the students' final marks necessitated her doing so. The students knew that she was the final arbitrator and would have accepted whatever decision she made. I do not know how important it was to them that I took the position that I did, but it was certainly important to me and how I defined my role as a PAR researcher. My being transparent with the participants meant we openly discussed any ethical and/ or power balance issues as they arose.

Having separate methods and two time periods for evaluating the module generated similar, yet somewhat differently focused, findings. Immediately after the last class, in December 2009, the participants noted how their EBP knowledge and skills had increased and how their attitudes towards EBP had undergone a conceptual (positive) shift. As defined by Meyer and Land (2005, 2006), their acquired knowledge was reconstitutive in that they had redefined their beliefs. From the quantitative and qualitative data there emerged a description of the IETP module learning experience as a transformative process that began with reflection and continued through the experiencing of the EBP cycle steps. Reflection combined with concrete experiences resulted in a shift in attitudes as the participants acquired greater confidence in their EBP knowledge and skills. The transformative process of acquiring EBP knowledge and skills culminated in the participants making an implicit commitment to change as they re-considered their professional identity through the lens of imagining themselves as consumers, generators and communicators of knowledge irrespective of their work role.

What was not yet clear in December 2009, however, was whether the new knowledge, skills and attitudes would be transferred into the work environment as evidenced by changed professional behaviours. Possible explanations for other researchers, cited above, finding little impact on behaviour after short workshops on EBP are: 1) not allowing enough time to elapse before investigating practitioners' behaviour; 2) using a tool to assess the learning which could not adequately capture behaviour change; 3) having a short workshop format which does not facilitate the transfer of EBP knowledge

and skills into practice. The evaluation procedures (methods and time frame) chosen for this study were designed to address these points.

The utilisation of multiple methods to evaluate the module was intended to pinpoint what about the module, if anything, supported the participants' engagement in EB activities. I decided that a third repeat of the EBP KSAB questionnaire would not provide specific additional information on behavioural changes related to the influences described by Michie et al. (2005). Hence, I chose to conduct individual interviews four to five months after the participants submitted their final assignment as I anticipated that it would take time for the participants to translate new knowledge and skills into changed behaviours. O'Sullivan (2004) maintains that only the superficial impact of learning is quickly apparent; deep learning takes time to manifest itself as it depends on a reflective process during which learning and practice are integrated. It is only then, according to O'Sullivan, that the learning enduringly alters the professional's attitudes which, in turn, may result in behavioural changes. The interviews in which the participants took part, in May – June 2010, generated rich data regarding the influence of the module on the participants' engagement in EB activities. The themes and sub-themes that emerged from the data gave evidence of the participants having developed a new way of being underpinned by an explicit commitment to change. As in the student environment, the enactment of EBP knowledge and skills began with a period of reflection before progressing to the participants modelling EBP behaviours. The concrete experience of such behaviours reinforced a positive belief in self agency, an attitudinal shift on the part of the participants. The transformative process of enacting their EBP learning culminated in the participants re-authoring themselves as EB practitioners. These findings underline the importance of factors outlined by Michie et al. (2005) on behaviour change: a) the nature of the behaviour; b) beliefs about capabilities and consequences; c) environmental context and resources; and d) professional identity.

While it is true that the investigation would have been further enriched by similar interviews conducted one year and two years post module to assess the sustainability of these EB behaviours, time constraints would not permit such an extended study at this point, but would be useful at some time in the future.

This investigation has been an unfolding, generative process, not only in terms of knowledge gained but also in terms of what it produced. The IETP module, which the participants helped develop, is still offered every autumn. The response from students and the external examiner continues to be very positive. In 2011, a 10 year qualified clinician told a colleague of mine that participation in the module “*had taught him how to be a professional*”. Such feedback sustains my motivation to teach.

The remainder of this chapter explores the implications of the findings from this investigation for present and future policy and continuing education approaches to EBP. Possible strategies are considered within the framework of the current economic realities in the Republic of Ireland.

8.2 Re-authoring of self as an EB practitioner

Froude (2012) in an editorial in the Australian Occupational Therapy Journal maintains that *most clinicians would consider themselves to be ‘evidence based’* (p. 171). Froude, however, does not define what she, or other clinicians, would consider as being ‘evidence based’. The literature defines an EB practitioner as someone relying on all three parts of the evidence triad for decision-making: research, clinical expertise and client wishes. A recent study of occupational therapists in Australia (Lyons, Brown, Tseng, Casey & McDonald, 2011) reports findings very similar to other studies conducted over the past decade. Namely, therapists have positive attitudes towards EBP and value the use of research to guide client care, but they lack confidence in their EBP knowledge, skills and abilities. The Australian therapists cited difficulties with database searching and critically appraising evidence as barriers to research utilisation. Lyons et al. (2011) state that occupational therapists’ implementation of research findings into clinical practice remains limited.

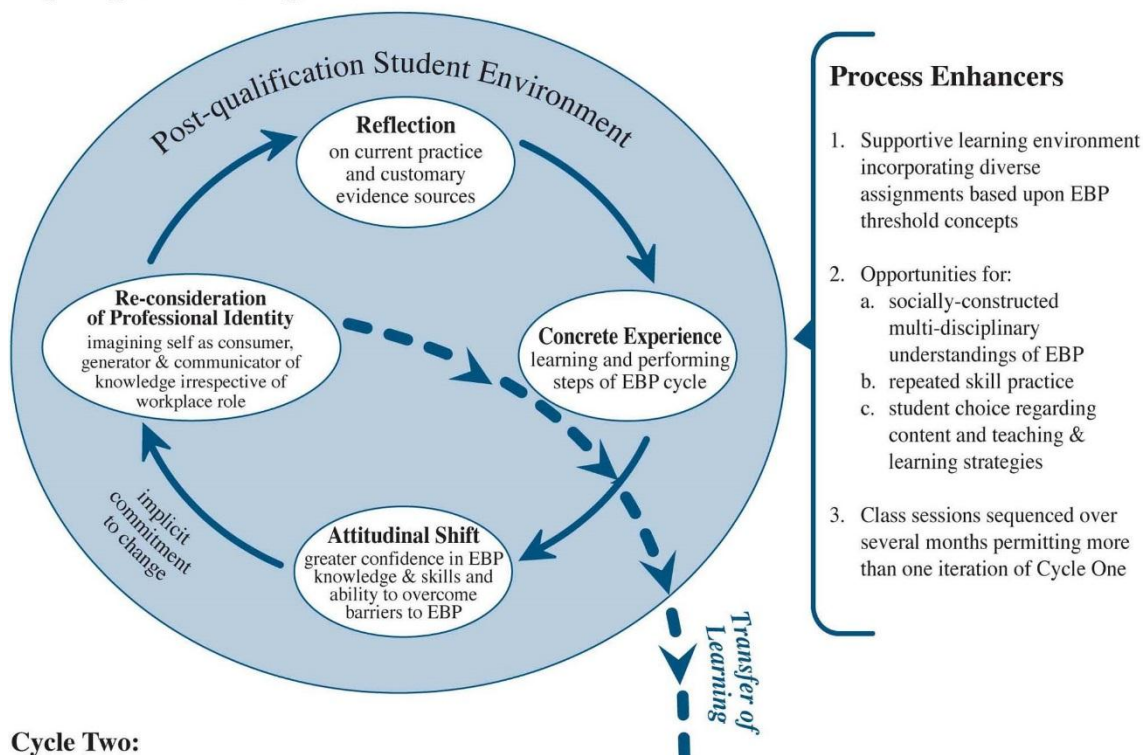
This investigation aimed to develop an educational approach to EBP which would facilitate clinical therapists’ efforts to integrate current research evidence into their professional decision-making. Post-qualification education in EBP is most commonly offered in the form of 1 to 3 day continuing education workshops, even though these have been found to result in few behavioural changes (Khan & Coomarasamy, 2004; McCluskey & Lovarini, 2005; Moon, 2004; Stevenson et al., 2004). The non transfer of

new EBP learning into practice is most often attributed to the teaching and learning processes, rather than the content, of these workshops. This is because the emphasis on the five (now six) steps of the EBP cycle has long been integrated into educational programmes designed to inculcate EBP knowledge, skills and attitudes (Ilott, 2012). The question is how the steps of the EBP cycle are integrated; particularly whether there are opportunities for reflection and repeated practice of the skills.

The mastery of the steps of the EBP cycle may stay on a superficial level where the learner is satisfied with just getting the knowledge into their heads for a short time (to pass an exam, to tick a box for having attended a continuing professional development workshop), without necessarily intending to apply that learning in practice (Moon, 2004). Superficial learners may integrate facts and/ or the relevant vocabulary, but do not enact this learning through actions. Deep learners, in contrast, have been found to need time to integrate their learning into their practice through a process of reflection (O'Sullivan, 2004). It is these learners who subsequently may change their behaviours. Constructivist teaching approaches facilitate deep learning through: 1) interactive learning in a supportive learning environment which facilitates socially-constructed understandings of the subject; 2) sequenced sessions which are spread over time to allow iterative periods of reflection; 3) multi-faceted learning activities which include opportunities for repeated practice of new skills; 4) demonstrations of learning (concrete tasks and assignments) integrating workplace complexities; 5) empowering learners to take ownership of the learning process.

The findings of this investigation affirm that when knowledge and skill acquisition is supported by these constructivist teaching approaches, learners develop new beliefs and attitudes (such as greater confidence) as they reflectively integrate new ideas and imagine a new way of being. The resulting attitudinal shift leads to a re-consideration of the learner's professional identity. Meyer and Land (2005) describe threshold concept-based learning as a re-positioning of self. Wenger (1998) maintains that learning is a transformative experience of identity. This transformative learning process within a post-qualification student environment and the transfer of that learning into a professional work environment is depicted in Figure 20.

Cycle One:
Transformative process of
acquiring EBP knowledge & skills



Cycle Two:
Transformative process of
enacting EBP knowledge and skills

Process Enhancers

1. Availability of professional and personal time for consulting research literature
2. Support from colleagues and managers
3. Participation in communities of practice
4. Implementation of organisational and governmental policy-mandated EB work culture supports

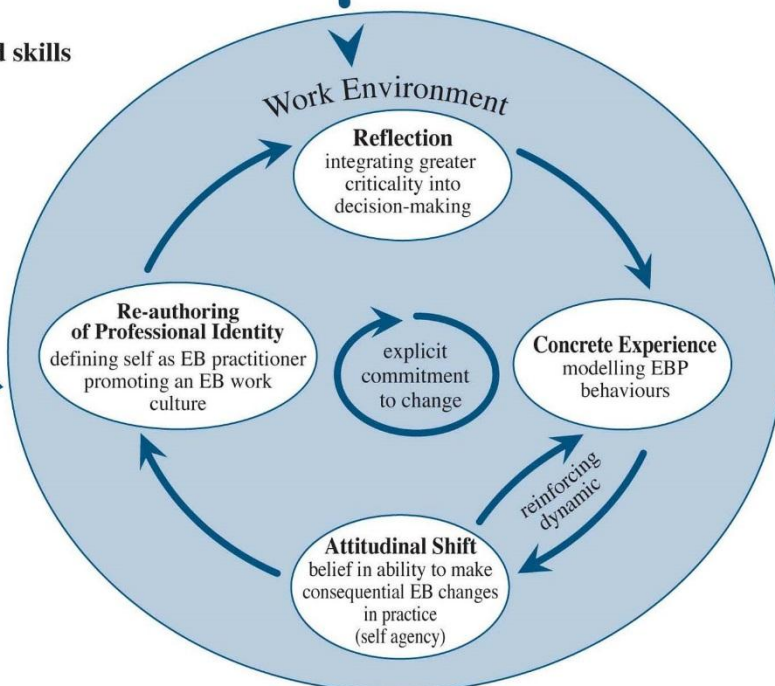


Figure 20 Transfer of EBP learning from student to work environment

The unique contribution of this study is to demonstrate that the successful transfer of EBP knowledge and skills into a work context is contingent upon the learner engaging in two transformative cycles which mirror each other. The components of both cycles are: reflection→ concrete experience→ attitudinal shift→ re-definition of professional identity. The catalyst for the transfer of EBP knowledge and skills from the post-qualification student environment to the professional work environment is the learner re-defining his/her professional identity. This altered identity shapes subsequent behaviour.

The first cycle, acquisition of EBP knowledge and skills in a post-qualification student environment, begins with the learners reflecting on their current practice and customary evidence sources as defined by the first threshold concept (Chapter seven, Table 9). The learners then have the experience of performing each of the six steps of the EBP cycle in turn. With every concrete experience, interspersed with periods of reflection, they begin to acquire confidence in their EBP knowledge and skills and their ability to overcome any barriers to EBP. The resultant attitudinal shift integrates an implicit commitment to changing their practice as they come to re-consider their professional identity. The learners begin to imagine themselves as consumers, generators and communicators of knowledge irrespective of their workplace role. With each iteration of this first cycle, the new qualities of the professional identity are reinforced. It is this identity formation that is the catalyst for the transfer of the learning into the workplace.

The second cycle, enactment of EBP knowledge and skills in the work environment, also starts with reflection as the learners/ practitioners now bring greater criticality to their practice by incorporating the entire EBP evidence triad in their decision-making. In contrast to the first cycle, a commitment to changing customary practice is explicit throughout this second work environment cycle. Once the practitioners engage in reflection and criticality they begin to model EBP behaviours. The concrete experience of these behaviours leads to an enhanced belief in their ability to make consequential EB changes in their practice (self agency). The more they model EB behaviours, the greater their belief in their self agency which, in turn, leads to more modelling of EB behaviours in a constantly reinforcing dynamic. The resulting attitudinal shift exhibited by practitioners provokes a re-authoring of their professional identity as they come to define themselves as an EB practitioner actively promoting an EB culture in their

workplace. I chose the term re-authoring as it describes the creation of an altered professional identity. Practitioners may engage in un-ending iterations of the process throughout their professional career as the demands of their work role and work setting evolve.

Findings from this study also confirm that the transformative process can be enhanced should certain supports reported in the literature (Bannigan, 2007; Chard, 2003; Ilott, 2003; Law, 2010; Legaré, 2011; Wenger, 1998) be present. These include: 1) the learner having professional time for consulting the research literature and, failing that, being willing to use personal time for this consultation; 2) support from colleagues and managers for their modelling of EBP behaviours; 3) participation in communities of practice undertaking specific EB activities; and 4) the implementation of governmental and/ or organisational policies which facilitate an EB work culture.

Due to the very small sample size ($n=7$), the participants in this study cannot be considered a representative sample of Irish clinical therapists. Therefore, caution must be taken when transferring conclusions about the participants' learning to a wider population. The findings from this study, however, reflect what one would expect from the adult education and healthcare continuing education literature, particularly regarding the use of constructivist teaching and learning approaches. The educational approach employed in the IETP module clearly facilitates the transfer of EBP knowledge, skills, attitudes and behaviours into practice and is therefore a model which warrants being considered for wider use in other contexts and settings.

8.3 Implications for continuing education in EBP

If EBP is predicated on the idea that ineffective interventions should be replaced by those which have proven effectiveness, health professional education should also be subject to comparable critical assessment. Continuing education in EBP which results in satisfaction and learning (acquired knowledge and skills), but not transfer of the learning to the workplace (changed behaviour) is not cost effective. Olson (2011) argues that those who provide continuing education in the health professions need to be expert in planning and evaluating the effectiveness of educational interventions to improve the quality of health care. He maintains that practitioners in CE should take a systematic

approach while developing and implementing educational interventions through *“selecting methods with mindfulness, making explicit the rationales for choices to clarify for others and invite critique”* (p. 138). That is what I have attempted to do in this study.

The findings from this study confirm that in order for EBP knowledge and skills to be transferred from the post-qualification student environment to the professional work environment a practitioner needs to engage in transformative cycles of EBP learning acquisition and enactment. The end point of the first cycle is re-defined beliefs about professional identity. This altered identity acts as a catalyst for the transfer of learning to the work environment through an explicit commitment to change which underpins engagement in the second cycle.

These findings would imply that any EBP continuing education approach must also be structured so as to provide a liminal (transitional) space where the learners are able to re-consider and ultimately re-author a professional identity which incorporates being a consumer, generator and communicator of knowledge. Attitudes and beliefs shape behaviour. The focus of the educational experience can not only be on content (learning the steps of the EBP cycle), it must equally be on learning processes (e.g. constructivist learning principles). Whereas attitudinal threshold concepts do not necessarily provide the only adequate liminal space, this study has demonstrated their effectiveness. A particular strength of these threshold concepts is that they address attitudes not only regarding being knowledge consumers, but also those of being knowledge generators and communicators.

What is most important is that the learning processes allow the learners to socially construct understandings of EBP through, ideally iterative, periods of reflection and concrete experiences. It is this process which instils positive attitudes and beliefs about EBP and learners' confidence in their EBP competencies. Such a liminal space does not exist in short workshops as there is no time for: 1) repeated periods of reflection; 2) repeated hands on skill practice; 3) demonstrations of learning as consumers, generators and communicators of knowledge. Many short workshops also do not incorporate public commitment to change statements.

This study does not address implications for under-graduate education and the formation of an initial professional identity. Nor can the findings from this educational approach necessarily be applied to a construct other than EBP. Discussion of the implications of this study within practice and policy contexts will be primarily limited to the Republic of Ireland where the study was conducted.

8.4 Implications for the Republic of Ireland practice context

The participants in this study highlighted the importance of four practice-based factors to their ability to engage in EBP behaviours. These were: 1) resources such as access to databases and protected time for consulting the literature found on those databases; 2) support from colleagues and managers for their EBP efforts; 3) participation in communities of practice; 4) organisational supports; and 5) the implementation of governmental policy-mandated work culture supports. The latter will be discussed in a separate section.

The availability of resources has become a central issue in the Republic of Ireland. According to O’Cionnaith and Ring writing in the *Irish Examiner* (2012, January 17) €2.5 billion have been cut from the budget of the HSE since January 2010 and the workforce has been decreased by 9,000 since 2007. The engagement in EBP activities by participants in this study had already been impacted by these reductions. In some work settings, for example, staff shortages have resulted in decreased frequency of journal clubs and the cancellation of hospital subscriptions to profession-specific journals. Nonetheless, the participants appeared to persevere in their efforts to be EB practitioners by, for instance, doing database searching on their personal time through their continuing access to the study university library resources. Others appeared to compensate for a lack of organisational supports by forming their own networking contacts to advance specific EBP concerns through establishing or joining existing communities of practice. Again, much of this work was being done on personal time though some therapists were seeking an HSE research grant to fund their future efforts. This demonstrates that participants in the IETP module were transferring their learning into practice despite a lack of macro organisational level supports. It is too early to tell, however, if these behaviour changes are irreversible. Long term budgetary constraints could possibly lead to disillusionment, discouragement and disengagement.

At the same time, participants did report receiving encouragement and support from colleagues and managers for their EBP activities. Even though they had to self-finance their enrolment in the module, they were given time off from work by their managers to attend. In at least one instance, the manager was also very active in the same community of practice as two of the participants.

A discussion of how to maximise practice-based supports in the future can best be understood by discussing alternative approaches for EBP continuing education which are currently being developed in the Republic of Ireland and which incorporate many of the components of the IETP module process for acquiring EBP knowledge and skills. An emphasis is placed on the synergistic roles which can be played by educators and managers and by organisations such as professional associations (in particular the Association of Occupational Therapists of Ireland [AOTI]) and the Health Service Executive (HSE).

8.5 Alternative Irish approaches for EBP continuing education

Whereas therapists enrolling in the IETP module have come from as far away as 350 kilometres, most are within a radius of 100 kilometres. There are no current plans or resources to transfer the module into an online or blended learning format. In addition, those who enrol are completely self-financed as the HSE provides no funding for MSc-level coursework. Hence, as an approach for continuing education in EBP it has limited reach in the occupational therapy community of 1200 qualified therapists in Ireland (H. Cornelisson, AOTI World Federation of Occupational Therapists [WFOT] representative, personal communication, 10 August 2012). For this reason alternative approaches should, and have, been explored.

In 2010 the AOTI CPD officer received funding from the HSE to deliver six one-day workshops on EBP in different regions of Ireland (Crausaz, Kelly & Lee, 2011). At the time, the prevailing belief of AOTI appeared to be that attendance at a one day EBP workshop was sufficient for the learning to be transferred into the workplace. Participants in each of the 7 hour workshops discussed the formulation of clinical questions and practiced critiquing two journal articles in small groups. The participants were also encouraged to develop individual action plans for applying their learning to

practice. While a few of the constructivist learning approaches were applied (some interactive and multifaceted learning activities) clearly there was little time for: 1) repeated practice of skills; 2) a session on database searching; 3) demonstrations of learning involving reflection and problem solving taking into account the complexities of the learner's workplace on micro, meso and macro levels. It was encouraging, however, that the HSE was willing to fund workshops on EBP. Consequently, the workshops were free to HSE employees and the interest in EBP on the part of occupational therapists was so great that each workshop of 22 participants was oversubscribed and there were significant waiting lists.

In the autumn of 2010, I was invited by a primary care/ community care (PCCC) occupational therapy department in the north of the Republic of Ireland to head a two-year service development project on EBP. Unlike Sunnyview: a) clear learning objectives were defined from the outset; b) there was an explicit commitment from each of the twelve occupational therapists and the manager to actively engage in reflection and activities related to learning the steps of the EBP cycle; c) there was a commitment from everyone to give public demonstrations of their learning to peers. As this work setting is more than 300 kilometres from where I reside, after a one-day introductory workshop our learning sessions were done by group video conferencing. The therapists have: 1) formulated a clinical question important to the entire team; 2) acquired the relevant research evidence; 3) appraised that evidence; 4) begun to apply that evidence; and 5) put in place mechanisms for assessing the impact of applying that evidence (intervention outcome measures).

In the IETP module participants came into the study university to learn; for the members of the PCCC team their learning is situated in their work context with colleagues as advocated by Khan and Coomarasamy (2006) and Forsyth, Melton and Summerfield-Mann (2005). Their EB activities are relevant to their everyday work, so the transfer of the learning into the workplace is immediate. They must be more self-directed in their learning than the IETP module participants, as the video conference sessions last for only 2 hours. One clear difference between PCCC and Sunnyview is that the PCCC manager actively supports the project whenever possible as advocated by

Hunter (2004).⁷⁴ Once the PCCC project reaches completion⁷⁵, I will evaluate the learning outcomes and benefits to the service with the participants through small group interviews. I will seek to understand whether they have re-authored themselves as EB practitioners. These results could possibly be used as an argument for funding in the future from the HSE⁷⁶ for a part-time research lead post or a clinical research secondment scheme as in the U.K. (McQueen, 2008; Pomeroy, Tallis & Stitt, 2003). Such posts are mandated with clear timelines and supports and would, therefore, most likely avoid the pitfalls of a loosely structured, open-ended arrangement such as existed between myself and Sunnyview.

The PCCC service development project exhibits some rudimentary aspects of the scholarship of practice model (Hammel et al. 2001; Kielhofner, 2005a; Kielhofner, 2005b), but on a much reduced scale as I was the only educator. The PCCC project does not include the detailed scholarship of practice development phases, extensive macro level involvement nor external educators and trainer colleagues (Forsyth, Melton & Summerfield-Mann, 2005; Forsyth, Summerfield-Mann & Kielhofner, 2005). As a result, although the entire OT team is involved, the PCCC project does not attain the level of systemic involvement advocated by Ilott (2003).

While these two alternative practitioner-focused approaches to CE in EBP are modest compared to examples cited in the literature (Brown & Rodger, 1999; Forsyth, Melton & Summerfield-Mann, 2005; Kitson et al., 2008) they are ones which have been

⁷⁴ Hunter (2007) conducted an exploratory study before the current economic downturn on Scottish allied health profession (AHP) managers' perception and understanding of their role as a facilitator in the implementation of EBP. She interviewed 8 managers from five AHP professions. Hunter found that the number and nature of facilitated EB activities appeared to be related to: 1) how the manager defined EBP; 2) the manager's own EBP knowledge and skills; 3) staff readiness; and 4) how creatively the manager was able to use time in applying the best evidence for that discipline. McCluskey and Cusick (2002) propose change strategies that manager's can employ to change *clinician's* behaviour regarding implementing EBP. There appears to be a gap in the literature, however, regarding how to change *manager's* behaviour should they be resistant to EBP as appeared to be the case at Sunnyview.

⁷⁵ It is difficult to project when the data gathering phase will finish as it depends on how many clients who meet the inclusion criteria are referred to the service after June 2012.

⁷⁶ A possible framework to use in assessing this collaboration would be PARiHS (Promoting Action on Research Implementation in Health Services) (Kitson et al., 2008; Colquhoun, Letts, Law, MacDermid & Missiuna, 2010; Ellis, Howard, Larson & Robertson, 2005; Pentland et al., 2011). PARiHS acknowledges the interplay between evidence, context and facilitation while assessing the likelihood of a successful research utilisation process. Weighting is given to the type of evidence, the components of the clinical context and the ways in which the process is facilitated. The PARiHS framework continues to be refined and validated, but it is beginning to accrue a strong evidence base for applicability.

possible within current Irish health funding resources. The practitioner model, where each individual is responsible for applying the EBP process, has its limitations as this investigation has demonstrated. For the transformative process of enacting EBP knowledge and skills to be sustainable in the long term, process enhancers such as organisational and governmental policy-mandated EB work culture supports need to be present. For this reason, in the future it would be better to explore funding possibilities for a more systemic embedded model of knowledge translation. Possibilities include securing funding for a part-time research lead across several occupational therapy services in a region and/ or implementing something similar to the UKCORE model (section 5.3, footnote 24) where academics work in partnership with an occupational therapy service in order to develop and sustain an EB work culture through the routine use of EBP (Forsyth et al., 2005). It is outside the purview of this study, however, to take a stance as to whether one educational environment (university, practice setting, professional association-sponsored workshops) should be promoted to the possible exclusion of others. The pursuit of several EBP educational options has allowed the opening of a dialogue between educators, managers, the AOTI and the HSE. As a consequence, practitioners or their representatives (managers, AOTI) are part of the decision-making process about how to best secure and allocate resources to advance the EBP agenda. What is important is that any option chosen demonstrates a transformative process of EBP knowledge and skill acquisition and enactment resulting in the learner re-authoring themselves as an EB practitioner who consumes, generates and communicator knowledge.

8.6 Practitioners as consumers, generators and communicators of knowledge

Collaborating with participants in the IETP module re-enforced my conviction that being an EB practitioner implies being a consumer, generator and communicator of knowledge as discussed in chapters 1 and 5 (sections 1.3 and 5.3). Knowledge exchange is usually defined as a multi-directional process between knowledge producers and knowledge users (Law, Missiuna & Pollack, 2008). Knowledge producers are the community of researchers. Knowledge users are seen to be knowledge consumers (community of practitioners), knowledge beneficiaries (community of clients) and knowledge brokers (a community of health organisations or policy makers who

facilitate knowledge transfer across boundaries). Portraying the community of practitioners as only knowledge consumers, however, is too limited. Two of the research participants, Siobhan (an SLT) and Ted (a PT), were already knowledge generators even though neither had done a research methods module at the time of this study. They saw this work as part of their professional identity. This view is supported by Du Toit, Wilkinson and Adam (2010) who maintain that occupational therapists cannot be expected to embrace the full potential of the EBP agenda without access to and/ or experience in research. They regret that research appears to be engaged in only when part of formal pre or post qualification education. For when practitioners engage in step five of the EBP cycle (assessing the impact of applying research evidence) they become knowledge producers when this assessment is done through structured data gathering using valid and reliable outcome measures. The knowledge and skills that clinicians lack for being disciplined researchers can be acquired through collaborations with academics. This, I would argue, is a particular strength of the scholarship of practice model which focuses on educating practitioners to contribute to building the occupational therapy knowledge base in order to enhance daily practice (Hammel et al, 2001; Forsyth, Melton & Summerfield-Mann, 2005; Forsyth, Summerfield-Mann & Kielhofner, 2005; Stern, 2005). As more and more clinical therapists in Ireland acquire post-qualification Masters and Doctoral degrees, they will have the knowledge and skills to be practice-based researchers as advocated by Gutman (2009a, 2009b, 2010). Several of the IETP participants are currently engaged in such research activities. The Health Service executive (HSE) appears to becoming aware of clinicians' knowledge generating potential. Policy documents are often formulated linking EBP to knowledge generation.

8.7 Implications for EBP policy in the Republic of Ireland

The HSE's Transformation Programme 2007-2010 priorities having evidence based programmes and treatments. In 2008 the HSE established a committee for education, training and research (ETR) whose 2009 report (HSE, 2009) stressed that health services research and EBP are central to improving HSE services. The Department of Health and children (DoHC) Expert Group on Mental Health Policy (2006) and the Mental Health Commission (2007) have authored policy statements which endorse

EBP. The DoHC (2008) has published a document outlining the importance of developing research capacity and resources in the therapy profession in Ireland, so as to promote an evidence-based health care culture. The Irish Children Acts Advisory Board report (CAAB, 2009) seeks to promote greater use of evidence, in the form of research findings, among practitioners in children's services (child health and welfare, education, justice and community and voluntary organisations). The report identifies barriers to organisational use of research in Ireland as being: lack of a research culture; failure to value research; lack of resources to promote research use; reliance on oral exchange of information; culture of blame and reaction rather than reflection. Facilitating factors are said to be: a) promotion of a research culture; b) provision of resources to support research dissemination and utilisation; c) provision of research training; d) basing policies and protocols on research evidence; e) developing specific research roles; f) promoting incentives and developing performance indicators that value research use (p. 9).

All of these policy documents demonstrate a strong interest on the part of HSE to promote EBP among Irish health and social care practitioners. The organisational support by the HSE for actually minimising the barriers and maximising the facilitators to EBP, however, appears to be patchy at best. For example, front line service delivery budget cuts have resulted in cancellation of some hospital journal subscriptions while national-level research grants are still being awarded. It is also unclear whether the HSE is adopting what Ilott (2003) terms the practitioner-based model, where each individual is held responsible for applying the EBP process, or a more systemic embedded research model. Ilott (2003) maintains that the practitioner-based model was already declining in the UK at the end of the last century. According to Ilott this was due to a systematic review highlighting the complexity of changing professional behaviour. At the beginning of this century, a more systemic embedded research model began to be applied within a quality framework for the National Health Service in the U.K. This led to the use of clinical guidelines and audit where managers and policy makers began to play a key role. In this model, research use is meant to be achieved through embedding research findings into national systems and processes. Ilott's commentary reflects the adoption of a Knowledge Translation (KT) model of EBP. The KT model may have been adopted by Irish HSE policy planners, as evidenced by the CAAB report, but in the current economic climate it is not certain that policies are being transferred from the

paper into practice. Or if they are, it may not be in a manner which reflects the original intention of embedding research findings into practice. For example, Taylor (2007) makes a distinction between: 1) audits (which she defines as assessing practice); 2) EBP (putting evidence into current practice); and 3) research (generating evidence). Audits, for Taylor, involve data collection via records and follow-up of clients in order to compare actual performance against agreed standards of practice with the aim of identifying possible areas for improvement. Participants in this study, however, stated during class discussions that audits in their services were only focused on how many patients were being seen per day per therapist and how many therapy sessions were provided before discharge from the service.

As the HSE and other governmental bodies frequently link EBP and research in their policy documents, any discussion of how to approach evidence-based policy should clearly use the systems-focused Knowledge Translation (KT) model as a starting point. As discussed in Chapter five (section 5.3), unlike the practitioner-focused EBP model, the distinction between the roles of knowledge consumers (engaging in EBP) and knowledge generators (engaging in research) is not so pronounced in the KT model. Law (2010) maintains:

If occupational therapy embraces knowledge creation as a fundamental occupation, we will work together to create the knowledge that is required to ensure vibrant and creative occupational therapy services (p. 16).

Legaré et al. (2011) describe Canadian initiatives which bring members of the CE, researcher and practitioner communities together to collaboratively support knowledge translation and exchange. A similar movement appears to be underway in the Republic of Ireland. In December 2011 the HSE published recommendations proposed by an education and development policy advisory group regarding developing health research capacity in a report titled: *Survey of the research activity, skills and training needs of health and social care professionals in Ireland* (HSE, 2011). Out of a total population of 14,631 health and social care professionals⁷⁷ (HSCP) in Ireland, 373 responded (2.5% return rate); including 35 occupational therapists, 51 physiotherapists and 46

⁷⁷ These professionals include: audiologists, clinical biochemists, clinical engineering technicians, clinical measurement scientists, clinical perfusion scientists, dieticians, hospital pharmacists, medical physicists, medical scientists, occupational therapists, orthoptist, physiotherapists, play therapists, podiatrists, psychologists, radiographer/ radiation therapists, social care workers, social workers, and speech and language therapists.

speech and language therapists. During the period January – June 2011, 48% of respondents (all professions combined) reported being involved in research-related activities including: service evaluations; research projects and reviewing articles. Eighty-four percent of the research active respondents, and 73% of the research inactive respondents, indicated a desire to spend more time engaged in research. The barriers the respondents cited (work pressures, lack of time, unsupportive work environment) were identical to those reported in the literature by clinical therapists regarding engaging in EBP. Research facilitators suggested by survey respondents were also similar: 1) increased protected work time for research; 2) more funded research posts; 3) greater mentorship and support for researchers. The areas of reported research knowledge and skill weakness were: a) applying for funding; b) publishing research; c) quantitative and qualitative research design and data analysis; d) applying for ethical approval. The HSE survey respondents stated that the following training approaches best met their needs: one-to-one mentoring; peer-based learning within research clusters and practice-based workshops.

The members of the HSE advisory group who conducted this survey recommend:

1. On a policy (macro) level, that both national and regional HSPC research leads be named to sit on national and regional HSPC research groups.
2. On an organisational (macro) level, that national awards for practice-based research innovations be instituted and that HSE interview panels examine interviewees regarding research knowledge and practice.
3. On a meso level, that HSCPs should have protected time for research.
4. On a micro level, the responsibility for linking with academic researchers and organising national HSCP research conferences is placed with individuals.
5. That training in research knowledge and skills should be provided via practice-based workshops within the context of a *supportive and organic environment* (e.g., one-to-one mentorship, research clusters or online collaborative hubs) (p. 7).

The report does not explain why linking with academic researchers is the responsibility of the individual, unless they are assuming that all research is done in pursuit of an academic Masters or doctoral degree. The advisory group does not appear to be advocating service-embedded, HSE-funded research leads or UKCORE-style

practitioner – academic partnerships. Perhaps the advisory group places the responsibility for conferences with individuals as these are generally organised by professional bodies for which HSCPs usually donate their time in Ireland. In addition, the advisory group makes no recommendations regarding: a) who should fund practice-based workshops; b) how protected time for research can be guaranteed; c) how research clusters and online collaborative hubs might be facilitated by the HSE. The number one recommendation by this HSCP national education and development policy advisory group is that health and social care professionals also be named to national and regional-level research policy groups. While having a seat at the table where decisions are being made is certainly a beginning, it can hardly be said that the report clearly outlines the HSE’s responsibility to nurture and fund an organisational research culture⁷⁸.

Nonetheless, in 2011-13 AOTI, and in particular the AOTI CPD officer, is actively discussing with the HSE to expand the engagement of the HSE in supporting EBP by occupational therapists. The advantage of the conversation being on the level of professional organisation with governmental body is that AOTI can more easily make their voice heard than that of an individual practitioner, manager or educator. These discussions have highlighted that considerations of cost effectiveness are of particular relevance in the current economic climate. With reduced healthcare resources, it is not only the evaluation of behaviour (transfer of learning to the workplace) which will come under greater scrutiny. As governmental bodies such as the Irish Health Service Executive (HSE) and/ or the Department of Education become more involved in funding CE, they are beginning to request an evaluation of results (impact of learning transfer on patient outcomes); the apex of Kirkpartrick’s (2007) pyramid of CE outcomes. Khan and Coommarasamy (2006) were already advocating such a focus for continuing medical education a half-decade ago.

⁷⁸ Starting in the autumn of 2012 this HSE report was part of the IETP module reading list so as to deepen class discussions about perceived HSE commitment to EBP and how to best develop a systemic EB culture in the Irish healthcare system.

8.8 Implications for future research

Firstly, therapists' knowledge, skills, attitudes and behaviours regarding EBP have been thoroughly researched across diverse practice domains and in innumerable countries. The findings have been similar for the past decade. It is now time to move on from merely studying the 'problem' to studying possible CE 'solutions'.

Secondly, the persistent belief that attendance at CE one or two day workshops on EBP employing primarily didactic teaching approaches might be sufficient for learning to be transferred into the workplace should continue to be challenged. There is sufficient evidence to demonstrate that traditional short post qualification workshops do not effectively provide therapists with the knowledge and skills needed to address the barriers to EBP that they face in their workplace (Forsyth, Melton & Summerfield-Mann, 2005). Other CE approaches to EBP such as academic – clinic partnerships to support workplace-based learning should be explored further and evaluated for transfer of learning to the workplace. Eventually, the impact of such an EBP approach on healthcare outcomes should also be assessed.

Thirdly, whenever possible the focus of CE should be on solutions which adhere to the systemic embedded knowledge translation model by securing a commitment from a wide range of stakeholders including the HSE, AOTI, universities and national voluntary organisations in whichever educational context(s) are chosen. Individual practitioners should not have the sole responsibility and accountability for achieving EBP as evidence has demonstrated that this does not result in a long term sustainable EB culture. Minimally meso (team-level) supports need to be present. Whichever educational context is chosen, attention should be paid to the learning processes incorporating the crucial elements underpinning a transformative experience of EBP knowledge and skills acquisition so as to best ensure the transfer and enactment of that learning in the work environment.

Proposed areas for further research in CE on EBP are:

1. Exploring the process of practicing therapists' re-authoring themselves as EB practitioners and the role educators have in this identity formation. Rodger and Turpin (2011) cite *identity as an occupational therapist* as one of five threshold concepts for occupational therapy. Hooper (2008), however, refers to identity

formation as an *implicit curriculum* and feels that not enough attention is paid to what intentions educators hold for identity formation and how such intentions influence teaching.

2. Exploring how best to address the educational EBP knowledge and skill needs of clinical therapy managers. It should not be assumed that they are the same as for junior and senior clinicians. As demonstrated by McCluskey & Cusick (2002) and Hunter (2007), managers must develop skills in the area of change management and different management styles in order to be effective facilitators of an EB work culture. Managers need to have opportunities to explore how they can be responsive to the EBP support needs of their staff while also meeting the efficiency requirements of higher management; balancing both can be challenging. Managers might also feel more comfortable in a learning environment tailored specifically to managers as many of them may not be comfortable admitting their lack of EBP knowledge and skills to more junior clinicians. Every learner wants a safe-feeling environment in which to learn.
3. Establishing a partnership with another university where the IETP module is offered at the Masters level to qualified clinical therapists. Ideally this would be a U.K.-based university so as not to reduce the student recruitment pool for the study university's Masters programme. Findings on how the module learning supports subsequent engagement in EBP activities by U.K. practitioners could be compared to those of this study.
4. Establishing HSE funded academic – practice partnerships similar to UKCORE to develop practice improvement initiatives including an EBP education component. In the current Irish economic climate these may begin on a reduced scale by supporting the development of knowledge exchanging communities of practice (Law, 2010; Morley, Greenberg, Gruen & Harrison, 2010; Parbooshingh et al., 2011), but build towards systemic knowledge translation partnerships. These partnerships would provide research opportunities not only on Kirkpatrick's (2007) evaluation of behaviour level (transfer of learning into the workplace), but also the final evaluation of results level (impact on society). It is the latter which is of ultimate interest to the HSE.

8.9 Conclusions

EBP has developed and grown over the last 20 years and, contrary to Ilott (2012), I believe it is no longer a contested or controversial concept. EBP is accepted as a necessary support for professional reasoning whereby therapists maintain a critical attitude to their own customary practices as they seek to improve clinical services, reduce variation in service provision and make themselves more accountable to clients and healthcare funders. Clinicians' perceptions of EBP are positive and their interest in EBP is high as evidenced by the many studies of practitioners on the subject; and this despite many barriers to EBP in the workplace. Nonetheless, in the Republic of Ireland many clinical therapists still feel they lack all of the necessary knowledge and skills to be EB practitioners, whether they are recent graduates or long-time practitioners. In the Irish study by Murphy and Robinson (2010), respondents reported limited critical appraisal skills and limited search skills right after heavy workload and lack of time as personal impediments to engaging in EBP. Post qualification education can help address those knowledge and skills needs if the teaching and learning approaches support therapists in transferring their EBP learning into the workplace.

This investigation addressed the EBP educational needs of individual therapists in their individual workplaces, not how to meet all clinicians' educational needs through a systemic embedded EBP model in the HSE. Therefore, addressing many of the systems-level barriers to EBP (lack of protected time for reading research, lack of access to databases, large workloads and staff shortages and a workplace culture which places higher value on clinical experiences than on research), while documented, remained peripheral to the scope of this study

The first aim of this study was to develop, in collaboration with clinical therapists, a university-based multi-disciplinary module on EBP where they would learn the skills necessary for locating, critiquing and translating research findings into practice. Using a PAR approach, the Implementing Evidence in Therapy Practice (IETP) module came into being.

The second aim was to evaluate whether the IETP module had a positive influence on the participants' engagement in EBP. In comparison with short workshops on EBP, the IETP module is a qualitatively different approach to EBP education. The module supported the therapists' subsequent engagement in EBP by being based on

constructivist learning principles which provided extensive practice in all steps of the EBP cycle, thereby giving the participants confidence in their EBP abilities. It has been found that individuals are more likely to engage in EBP when they are ready to change their attitudes and values (McCluskey et al., 2008). By facilitating the participants in co-constructing their own understandings of what it meant to be an EB practitioner, the participants experienced a conceptual shift in their beliefs and attitudes about EBP. The resulting re-consideration of their professional identity acted as the catalyst for the transfer of their EBP learning into their workplace as depicted in Figure 20. The enactment of their learning in their workplace concluded with the participants re-authoring themselves as EB practitioners.

Using similar learning content and learning processes in other EBP CE post-graduate contexts is to be recommended. Having merely a practitioner-focused approach to EBP, however, is not enough. Without at least some meso-level supports (colleagues, managers) the long-term viability of an EB culture in the workplace is doubtful. It may be difficult for individual therapists to maintain their enthusiasm and motivation for EBP when they are not facilitated by others.

It is challenging for managers to facilitate an EB work culture (through protected time for EBP activities, reduced workloads, funding for CE in EBP) without a macro-level (health organisation) commitment that goes beyond issuing policy documents. The HSE needs to demonstrate its commitment to developing and sustaining an EB culture in the clinical therapies by funding systemic knowledge translation initiatives.

The current economic climate in the Republic of Ireland is unlikely to change in near future, which makes the last recommendation problematic at the present time. Ilott (2003) maintains that even when good research is available, professionals may not change their practice due to organizational and economic factors that result in a lack of systems-level support. Eventually, when the economic environment is not so challenging, organisational factors must be addressed. It is only through a systemic embedded approach to knowledge translation that clinical therapists will be truly empowered to be EB practitioners.

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APPENDIX 1 Work completed for D.Occ.T taught modules 2006-2008

Sept. 2006 - May 2007	Jan. – Aug. 2007	Sept. 2007 – Aug. 2008	Jan. – Dec. 2008
OT 5006 <i>Thinking, reasoning and reflecting on practice</i>	OT 5011 <i>Educating for professional development in practice</i>	OT 5012 <i>Independent module</i> Topic: <i>Change theory</i>	CT 5000 <i>Research methodologies</i>
Conducted one group and four individual interviews to ascertain Sunnyview therapists' EBP learning interests and needs Jan. – March 2007	Designed and conducted six 1½ hour EBP skill development sessions with Sunnyview therapists April – August 2007	Facilitated three 1 ½ hour journal clubs (Sept. – Dec. 2007) and three 1 ½ hour sessions on the challenge of professional change (Jan. – June 2008) with Sunnyview therapists	<i>Living with brain injury from two perspectives: Critique of quantitative and qualitative research (3000 words)</i>
<i>Woman deconstructed: A diary of reflection (3000 words)</i>	OT 5011 class presentation: <i>Different needs and different speeds: Guiding a diverse group of learners through a collaborative journey of discovery</i>	*Evidence-based occupational therapy: The challenge of change (8000 words)	Draft research proposal: <i>Bridging the research into practice gap: Supporting therapists' engagement in evidence based practice (10,000 words)</i>
<i>Through the looking glass and what I found there: A quest for understanding (6000 words)</i>	*Putting evidence-based occupational therapy into practice: A programme for collaborative task-based learning (12,500 words)	Interviewed 2 employees of the HSE regarding their perspectives on implementing new organisational guidelines for health care service delivery.	
<i>Weaving narratives: Is the medium the message? (300 words) plus tapestry weaving</i>	*Programme Handbook Putting evidence-based occupational therapy into practice: Bridging the practice-theory-research gap (6000 words)	*The challenge of implementing organisational change within the Irish healthcare context (8000 words)	February 2009 Proposal for main research study submitted for ethical approval
<i>Weaving reasoning: A learning tool (3000 words)</i>		Oral presentation COTEC conference May 2008 <i>Developing strategies for systematically embedding evidence-based practice in therapeutic decision-making</i>	
*The process of inquiry: Intertwining clinical reasoning and evidence (8000 words)			

*Papers cited in thesis and reference list. Full texts will be made available upon request.

APPENDIX 2 Collaboratively developed content of Sunnyview EBP sessions

April – August 2007

<i>Practice Artistry & Evidence</i>	Discuss proposed six session content. Group review of all articles over a two-year period of two different practice-oriented occupational therapy journals (<i>OT Practice</i> & <i>OTNews</i>). Individual flagging of articles of interest.
<i>Appraising & Communicating Evidence</i>	Identify gaps in the literature based on session one review. Group assessment of possible discussion format and reading forms for evaluating and communicating to present and future staff the content and applicability of journal articles. Begin formulation of clinical questions.
<i>Deconstructing Databases</i>	Librarian-led session in study university library resource room on creating a database search strategy based on key words in formulated clinical questions.
<i>Minding Methodology</i>	Group review of four research-oriented occupational therapy journals. Discuss methodological differences between practice and research-oriented articles. Begin classification of articles of interest into meaningful categories. Chose articles for journal club discussion.
<i>Joining a Journal Club</i>	Following pre-determined discussion format, collaborator-led appraisal of the evidence in several journal articles dealing with same topic. Discuss how to utilize the evidence in practice by applying to different clinical settings and client populations.
<i>Parsing the Process</i>	Review benefits of journal club process. Refine clinical questions. Review EBP process to date. Critically assess six sessions. Discuss directions for future collaboration.

APPENDIX 3 Sunnyview MOUs & consent forms

3.1 Memorandum of Understanding 2006/07

Memorandum of Understanding

between X and Janice Powell Crausaz, lecturer, Department of Occupational Therapy, study
university

October 8, 2006

I am a part-time lecturer (Year 2, paediatrics) in the Occupational Therapy Department at study university and also a student in the new Doctor of Occupational Therapy (D.Occ.T) programme. This degree is practice based and entails my outlining a Memorandum Of Understanding (MOU), subject to annual re-negotiation, with one or more services in order to carry out research extending over a period of approximately four years. My particular area of interest is learning about occupational therapists' perceptions of evidence-based practice (EBP). I would like to **explore together with practitioners how best to develop strategies which they might find useful for integrating EBP into their daily practice, keeping in mind the context of their own personal preferences and also existing environmental supports and barriers.**

Focus of Project

I am aware that EBP can seem daunting to many therapists, myself included, but I perceive it as ranging from once a month journal clubs, to exploring strategies for integrating new evidence into practice, to discussing more complex concerns. I envision this collaborative project as being based on clinicians' realities with myself as a facilitator and resource person in the course of discovering together how best to ally evidence and actual practice. Our sessions together can also help identify what you perceive as 'gaps in evidence' in the literature and then our undergraduate students (Yr. 3) might assist you in exploring these areas.

In many respects I will continue being a learner during this on-going process. It has been quite some time since I have worked in a mental health setting but I have been very impressed with the dynamism, openness and enthusiasm of the staff at X whenever you have worked with our students. It is for this reason that I would enjoy pursuing, at a minimum, the first stages of this project with you. Of course anyone is free to decline to participate from the beginning or at any time in the future.

I envision us initially collaborating from October 2006 through September 2007. During this period I will be completing two extended contact modules at UCC: "Thinking reasoning and reflecting on practice" and "Educating for professional development in practice". For the former,

I would like to begin by doing a focus group with the occupational therapy staff in your service where we will engage in a free ranging discussion of present views covering issues such as: your personal experiences with EBP, where you think are the best sources for knowledge, what skills and abilities facilitate its use, how easy or difficult it is/ might be to integrate into daily interventions, anticipated existence or lack of resources for implementation. For several reasons I would like to ask your permission to video the session with the help of a UCC student in multimedia studies. Firstly, as this is my first experience in running such a focus group it would assist me in making a verbatim transcript of the discussion which I will need as data for my research project. In this context, both the service and the participants would remain anonymous. Secondly, I would like to use the video in my course work so as to reflect on my role as a group facilitator. Thirdly, a dvd made from the video could serve as a baseline trace of your current views on the subject which we could easily revisit for comparison at a later time (before and after research design). I would give your service one copy of any dvd which you could use for your own teaching tool, or for CPD.

Starting in February 2007 I would like to conduct individual interviews to explore in more depth thoughts articulated during the focus group. These sessions would primarily be audio-taped but I might ask participants to allow me to video them restating for the camera specific points they have made, short snippets which could then be integrated into the original dvd as hyperlinks making a (hopefully) professional quality learning tool. In this way I would also like to address the requirement of the second module which is designing a specific education programme; in this case for UCC students on EBP as viewed in an Irish context. I ask your permission to use the final dvd outside of my own doctoral coursework such as a classroom teaching support, at a conference presentation or a workshop.

The final form of my action research thesis proposal is still tentative at this point and so I would much appreciate all suggestions or feedback that any of you could give me as we go along. Again, I am very enthusiastic about our collaboration which I believe can be mutually very rich and beneficial.

Note to file 07.07: No dvd was ever made as the multimedia student withdrew from UCC. The group and individual interviews about EBP attitudes led to discussions of staff needs regarding EBP knowledge and skills. Based on this, I proposed an educational programme consisting of six one-hour sessions (Appendix 2). When they concurred with the content and proposed task-based learning activities, I conducted the sessions from April - June. 2007.

3.2 Consent form 2006/07

Consent Form

between staff member of Sunnyview and Janice Crausaz, lecturer, study university

I have read the above information and I consent to participating from September 2006 to September 2007 in Janice Crausaz' pilot project on Evidence Based Practice. I have had an opportunity to ask questions and all my questions have been answered at this time. I have been given sufficient time to consider my participation in this project.

I hereby give my informed consent for my participation. I understand that I can withdraw my consent for my participation at any time. I agree that data from any interview transcript may be anonymously integrated into peer referred papers in journals, conference presentations nationally and internationally, book chapters or national or international workshops and other public fora as long as these are not for profit.

Name: _____

Date: _____

3.3 Memorandum of Understanding and consent form 2007/08

Memorandum of Understanding

between X and Janice Powell Crausaz, lecturer, study university
September 2007

I am a part-time lecturer (Year 2, paediatrics) in the Occupational Therapy Department at study university and also a student in the new Doctor of Occupational Therapy (D.Occ.T) programme. This degree is practice based and entails my outlining a Memorandum Of Understanding (MOU), subject to annual re-negotiation, with one or more services in order to carry out research extending over a period of approximately four years. My particular area of interest is learning about occupational therapists' perceptions of evidence-based practice (EBP). I would

like to **explore together with practitioners how best to develop strategies which they might find useful for integrating EBP into their daily practice, keeping in mind the context of their own personal preferences and also existing environmental supports and barriers.**

Focus of Project

I am aware that EBP can seem daunting to many therapists, myself included, but I perceive it as ranging from once a month journal clubs, to exploring strategies for integrating new evidence into practice, to discussing more complex concerns. I envision this collaborative project as being based on clinicians' realities with myself as a facilitator and resource person in the course of discovering together how best to ally evidence and actual practice. Our sessions together can also help identify what you perceive as 'gaps in evidence' in the literature and then our undergraduate students (Yr. 3) might assist you in exploring these areas.

In many respects I will continue being a learner during this on-going process. It has been quite some time since I have worked in a mental health setting but I have been very impressed with the dynamism, openness and enthusiasm of the staff at X whenever you have worked with our students. It is for this reason that I would enjoy pursuing, at a minimum, the first stages of this project with you. Of course anyone is free to decline to participate from the beginning or at any time in the future.

We will continue to engage in a free ranging discussion of present views covering issues such as: your personal experiences with EBP, where you think are the best sources for knowledge, what skills and abilities facilitate its use, how easy or difficult it is/ might be to integrate into daily interventions, anticipated existence or lack of resources for implementation. I would like to ask your permission to audiotape our sessions so as to make a verbatim transcript of the discussion which I will need as data for my pilot project which will form part of my coursework for the "Research and evidenced based processes" module in my D.Occ.T programme. In this context, both the service and the participants would remain anonymous. Secondly, these transcripts may serve as an evolving indicator of your views on the subject which you could use for a learning/ teaching tool for CPD or for presentations at professional conferences as evidence for other services as to your engagement in collaborative project activities.

The final form of my action research thesis proposal is still tentative at this point and so I would much appreciate all suggestions or feedback that any of you could give me as we go along. Again, I am very enthusiastic about our collaboration which I believe can be mutually very rich and beneficial.

Consent Form

between staff member of Sunnyview and Janice Crausaz, lecturer study university

I have read the above information and I consent to participating from September 2007 to June 2008 in Janice Crausaz' pilot project on Evidence Based Practice. I have had an opportunity to ask questions and all my questions have been answered at this time. I have been given sufficient time to consider my participation in this project.

I hereby give my informed consent for my participation. I understand that I can withdraw my consent for my participation at any time. I agree that data from any interview transcript may be anonymously integrated into peer referred papers in journals, conference presentations nationally and internationally, book chapters or national or international workshops and other public fora as long as these are not for profit.

Name: _____

Date: _____

APPENDIX 4 Ethics approval



Tel: + 353-21-490 1901
Fax: + 353-21-490 1919

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

COISTE EITICE UM TRAIGHDE CLINICIÚIL
Clinical Research Ethics Committee

Lancaster Hall,
6 Little Hanover Street,
Cork,
Ireland.

Our Ref: ECM 4 (pp) 07/04/09

22nd February 2009

Professor Gill Chard
Dept of Occupational Therapy
Brookfield Health Science Complex
University College Cork

Re: Supporting therapists' engagement in evidence based practice (BP)
through a post-qualification university module.

Dear Professor Chard

Expedited approval is granted to carry out the above study at the following site:

The following documents have been approved:

- Application Form
- Participant Information Leaflet
- Consent Form
- Questionnaire
- Research Protocol

We note that the co-investigator involved in this study will be:

- Janice Crausaz
- Dr Eileen Savage

Yours sincerely

Dr Michael Hyland
Chairman
Clinical Research Ethics Committee
of the Cork Teaching Hospitals

APPENDIX 5 Module descriptor

CT 6001 Implementing evidence in therapy practice

Credit Weighting: 15

Teaching period(s): Period 1

No. of students: Min. 3, Max. 25

Pre-requisite(s): None

Co-requisite: None

Teaching Methods: Other (5 x 7 hrs. seminars/ small group work/ lectures; 180 hrs self-directed learning)

Module Coordinator: Ms. Janice Crausaz, School of Clinical Therapies

Lecturer(s): Staff, School of Clinical Therapies

Module Objective: To enable students to validate and expand their evidence-based practice skills in order to support an evidence-based culture in their therapy work settings.

Module Content: Participants will draw on their therapy experience and published literature to appraise different approaches to the nature of evidence. The role of therapy experience and research evidence in informing decision-making will be evaluated. The skills under-pinning research translation will be examined and related to therapy practice. Change and leadership theories, as applied to an evolving healthcare profession and context, will be assessed.

Learning Outcomes: On successful completion of this module students should be able to:

- Appraise the value of different types of evidence in varying therapy contexts.
- Demonstrate the evidence-based skill cycle as applied to a therapy concern.
- Recommend strategies for translating research evidence into decision-making.
- Ascertain how therapy practice integrates change over a professional career.
- Relate leadership theories to the creation of an evidence-based work culture.

Assessment: Total Marks 300: Continuous Assessment 300 Marks (1 seminar presentation 75 marks; 1 reflective assignment 75 marks; 1 written paper 150 marks).

Compulsory Elements: Continuous Assessment.

Penalties (for late submission of Course/Project Work etc.): Where work is submitted up to and including 7 days late, 10% of the total marks available shall be deducted from the mark achieved. Where work is submitted up to and including 14 days

late, 20% of the total marks available shall be deducted from the mark achieved. Work submitted 15 days late or more shall be assigned a mark of zero.

Pass Standard and any Special Requirements for Passing Module: 50%. In addition, students must achieve 50% in each element of Continuous Assessment.

End of Year Written Examination Profile: No End of Year Written Examination.

Requirements for Supplemental Examination: Failed elements of Continuous Assessment must be repeated (as prescribed by the School). Marks in passed elements of Continuous Assessment are carried forward.

APPENDIX 6 Excerpts from IETP module handbook

(Entire handbook contained 76 pages)

Readings and learning outcomes for each class; assignment guidelines

Textbooks

You are encouraged to procure one of the three core texts listed below as supplemental readings will frequently be cited in them. Whereas journal articles give a sort of ongoing “snapshot” representation of a subject area; a textbook is more like a continuous stream-of-thought film. The snapshots may be more recent, but there are oftentimes gaps between them. In addition, unlike the journal article readings for this module, copies of book chapters (with one exception from an otherwise peripheral text) are not posted on Blackboard out of respect for the authors’ intellectual property rights. I have selected recent texts written or edited by authorities in the field of EBP from the disciplines of occupational therapy, physiotherapy and speech and language therapy. They are all written in such a manner so as to remain a valuable resource for years to come.

Haynes, W.O. and Johnson, C. (2009). *Understanding research and evidence based practice in communication disorders: A primer for students and practitioners*. Boston: Pearson.

This text is authored by two researchers and academicians at Auburn University, USA. It is an excellent resource with chapters on different aspects of evidence-based practice and applied research: levels of evidence, framing clinical questions, searching and evaluating the evidence, etc. It also has sections on scientific inquiry in general (essentials of experimental control, an introduction to hypothesis testing and inferential statistics), on producing research as a practitioner and on obtaining grants. Though it is 500 pages in length, due to its broad sweep, the discussion devoted to finding, assessing, and especially using evidence is more cursory than in the other two books listed below. It also focuses almost exclusively on quantitative research methods. This text is the only one of the three which discusses databases of particular relevance to SLTs.

Law, M. and MacDermid J. (Eds.). (2008). *Evidence-based rehabilitation: A guide to practice* (2nd ed.). Thorofare, N.J.: Slack Inc.

Mary Law is an occupational therapist, Joy MacDermid a physiotherapist. They are both professors at McMaster University in Canada, the birthplace of evidence-based medicine (EBM) in the 1970s. The Centre for Evidence-Based Practice and the Health Information Research Unit with the McMaster Online Rating of Evidence (MORE) system, which seeks to define the best research to support evidence-based clinical practice, is also based there. This 430 page text

contains chapters written by them and other clinical therapy researchers prominent in the field of EBP: Winnie Dunn, Annie McCluskey, Linda Tickle-Degnen and Cheryl Missiuna among others. Reflecting the diverse expertise of the different chapter authors, the book begins with an excellent general discussion of what it means to be an EB practitioner before leading the reader through the EBP cycle of asking a clinical question, acquiring the best evidence, appraising the evidence and applying the evidence. This text has particularly good chapters on: incorporating outcome measures into EBP; practice guidelines, algorithms and clinical pathways; and communicating evidence to clients, managers and funders.

Taylor, M.C. (2007). *Evidence-based practice for occupational therapists* (2nd ed.). Oxford: Blackwell Publishing.

For therapists who prefer a text with ‘one voice’, this book would be an excellent choice. M.C. Taylor is based in Coventry University in the UK and has been writing and researching on EBP for more than a decade. Her text is very “user friendly” as she guides the reader through the different steps of the EBP cycle; giving many examples and scenarios based in practice along the way. Because this book is written by one author, there are no gaps in the described EBP process which might introduce doubt in the mind of the reader. Her chapter on “Making evidence-based practice work” is particularly helpful as this is the only text which explicitly discusses in any detail the role played by change management in developing an evidence-based culture. Available in paperback, it is the cheapest (and shortest at 207 pages) of the three.

Day One

Required readings:

- Blair, S. & Robertson, L. (2005). Hard complexities – soft complexities: An exploration of philosophical positions related to evidence in occupational therapy. *British Journal of Occupational Therapy*, 68(6), 269-275.
- Grimmer, K., Bialocerkowski, A., Kuman, S., and Milanese, S. (2004). Implementing evidence in clinical practice: The therapies’ dilemma. *Physiotherapy*, 90(4), 189-194.
- Ratner, N.B. (2006). Evidence-based practice: An examination of its ramifications for the practice of speech-language pathology. *Language, Speech, and Hearing Services in Schools*, 37, 257-267.

Aims

- Describe evidence sources for professional decision-making
- Reflect on links between life-long learning and best practice
- Explore attitudes about evidence-based practice (EBP)
- Critically evaluate assumptions implicit in definitions of “best evidence” and “best practice”

By the end of this session you will have:

- Familiarised yourself with the module content and objectives
- Examined your preferred evidence sources
- Discussed evolving definitions of EBM/ EBP
- Compared different clinical therapies' core beliefs and philosophies and their impact on viewpoints about EBP
- Familiarised yourself with the steps of the EBP process
- Begun to formulate a clinical question (step one EBP process)
- Begun to prepare for debating question: "Does 'gold-standard' evidence guarantee good practice?"

Reading from textbooks:

Chapters 11 (Overview of evidence-based practice), 12 (Levels of evidence) and 13 (first half - Framing the clinical question) In W.O. Hayes & C. Johnson, *Understanding research and evidence based practice in communication disorders: A primer for students and practitioners* (pp. 297-304; 305-337; 339-346). Boston: Pearson.

Chapters 1-3 & 5 (Introduction to evidence-based practice, Development of evidence-based knowledge, Becoming an evidence-based practitioner, Asking clinical questions and searching for the evidence) In M. Law & J. MacDermid (Eds.), *Evidence-based rehabilitation: A guide to practice* (2nd ed.) (pp. 3-60; 95-99). Thorofare, N.J.: Slack Inc.

Chapter 1 (Introduction) In M.C. Taylor, *Evidence-based practice for occupational therapists* (2nd ed.) (pp. 1-19). Oxford: Blackwell Publishing.

Hayes & Johnson has the most exhaustive explanation of levels of evidence. The Law & MacDermid text also discusses: controversies that have surrounded EBP; how knowledge develops within a discipline; and the different levels of engagement with EBP that practitioners may display. The Taylor book links formulating a clinical question to "real world" scenarios.

Day Two

Required readings:

Humphris, D., Littlejohns, P., Victor, C., O'Halloran, P., and Peacock, J. (2000). Implementing evidence-based practice: Factors that influence the use of research evidence by occupational therapists. *British Journal of Occupational Therapy*, 63(11), 516-522.

Jette, D., Bacon, K., Batty, C., Carlson, M., Ferland, A., Hemingway, R., Hill, J., Ogilvie, L., Volk, D. (2003). Evidence-based practice: Beliefs, attitudes, knowledge, and behaviors of physical therapists. *Physical Therapy*, 83(9), 786-805.

O'Connor, S. & Pettigrew, C. (2009). The barriers perceived to prevent the successful implementation of evidence-based practice by [Irish] speech and language therapists. *International Journal of Language & Communication Disorders*, 99999:1.

Aims:

- Critically debate applicability of different levels of evidence in varying decision-making contexts
- Explore the ontological and epistemological assumptions of EBP in the clinical therapies
- Appraise the impact of attitudes, facilitators, mediators and barriers in EBP
- Examine different databases and apply search strategies to specific clinical questions
- Develop skills for critically appraising a topic

By the end of this session you will have:

- Defended the use of different evidence sources in professional decision-making
- Discussed the enablers and impediments to EBP in the Irish therapy context and explored common strategies to maximise the former and minimize the latter
- Formulated a clinical question relevant to your practice (step 1 EBP process) and compared different databases as sources of evidence
- Identified journal articles relevant for a “journal club” discussion of your clinical question (step 2 EBP process)
- Experimented with critically appraising a journal article (step 3 EBP process)

Readings from textbooks:

Chapters 13-15 (second half – Searching for the evidence; Evaluating the evidence and EBP: Blending patient values/preferences, scientific evidence and clinical expertise). In W.O. Hayes & C. Johnson, *Understanding research and evidence based practice in communication disorders: A primer for students and practitioners* (pp. 348-417). Boston: Pearson.

Chapters 6-8 (Evaluating the evidence; Systematically reviewing the evidence; Comparison of forms of evidence: systematic reviews versus clinical practice). In M. Law & J. MacDermid (Eds.), *Evidence-based rehabilitation: A guide to practice* (2nd ed.) (pp. 121-192). Thorofare, N.J.: Slack Inc.

Chapters 2-6 (Finding the evidence; Using clinical trials as evidence; Systematic reviews; Qualitative research as evidence and Evidence from other sources). In M.C. Taylor, *Evidence-based practice for occupational therapists* (2nd ed.) (pp. 20-126). Oxford: Blackwell Publishing.

Day Three**Required readings:**

Chard, G. (2000). An investigation into the use of the Assessment of Motor and Process Skills (AMPS) in clinical practice. *British Journal of Occupational Therapy*, 63(10), 481-488.

Plastow N. (2006). Implementing evidence-based practice: A model for change. *International Journal of Therapy and Rehabilitation*, 13(10), 464-469.

Metcalfe, C., Lewin, R., Wisher, S., Perry, S., Bannigan, K., Moffett, J.K. (2001). Barriers to implementing the evidence base in four NHS therapies: Dieticians, occupational therapists, physiotherapists, speech and language therapists. *Physiotherapy*, 87(8), 433-441.

Roberts, A.E.K. & Barber, G. (2001). Applying research evidence to practice. *British Journal of Occupational Therapy*, 64(5), 223-227.

Comment to students: Three of the above four articles were written by occupational therapists. These authors discuss the changes required to develop the skills of EBP in either the individual therapist or the institutional culture. These issues do not appear to have been explicitly addressed, however, in much of the physiotherapy or speech & language therapy EBP literature. The 2009 Haynes & Johnson textbook is silent on the issue. One chapter, written by McCluskey, an occupational therapist, in the 2008 text edited by Law & MacDermid, includes a 3 page discussion of conditions that support therapists in changing their practice. Taylor, in her 2007 book, consecrates 6 pages to change theory; whereas a textbook on EBP aimed at physicians and nurses (Dawes et al., 2005; see Other book resources) contains two chapters (20 pages) on the subject.

Aims:

- Assess best procedures for conducting a journal club
- Validate skills for critically appraising a topic

- Explore process between establishing best evidence and implementing best practice
- Examine how change might be brought about effectively and efficiently
- Discuss how change can be monitored and evaluated

By the end of this session you will have:

- Role played conducting a journal club within an inter-professional team context on your chosen clinical question
- Appraised value of embedding research findings into practice (step 3 EBP process) versus using research for creating new understanding
- Interpreted the impact of psychological responses to anomalous data and knowledge utilisation
- Identified the theoretical stages of change and their application to EBP
- Explored the role of change agents in effecting organisational change

Readings from textbooks:

There are no related readings to be found in

Hayes, W.O. & Johnson, C. (2009). *Understanding research and evidence based practice in communication disorders: A primer for students and practitioners*. Boston: Pearson.

Rather, you might read:

Chapter 3 (Becoming an evidence-based practitioner). In M. Law & J. MacDermid (Eds.), *Evidence-based rehabilitation: A guide to practice* (2nd ed.) (pp. 35-62). Thorofare, N.J.: Slack Inc.

Chapter 7 (Making evidence-based practice work). In M.C. Taylor, *Evidence-based practice for occupational therapists* (2nd ed.) (pp. 125-144). Oxford: Blackwell Publishing.

Day Four

Required readings:

Bannigan, K. and Birleson, A. (2007). Getting to grips with evidence-based practice: The ten commandments. *British Journal of Occupational Therapy*, 70(8), 345-348.

Hammond, A. & Klompenhouwer, P. (2005). Getting evidence into practice: Implementing a behavioural joint protection education programme for people with rheumatoid arthritis. *British Journal of Occupational Therapy*, 68(1), 25-33.

Ketelaar, M., Russell, D., and Gorter, J.W. (2008). The challenge of moving evidence-based measures into clinical practice: Lessons in knowledge translation. *Physical & Occupational Therapy in Pediatrics*, 28(2), 191-206.

McCluskey, A. and Cusick, A. (2002). Strategies for introducing evidence-based practice and changing clinician behaviour: A manager's toolbox. *Australian Occupational Therapy Journal*, 49, 63-70.

Aims:

- Assess the application of practice guidelines, algorithms and clinical pathways in the Irish therapy context
- Examine methods for researching one's own practice
- Discuss the importance of leadership in establishing an evidence-based work culture
- Investigate knowledge communication channels to clients, managers and funders
- Contrast different knowledge translation (KT) strategies in providing evidence-informed interventions.

By the end of this session you will have:

- Identified the strength and weaknesses of practice guidelines, algorithms and clinical pathways commonly used in your profession
- Developed an understanding of how you might use outcome measures to research your own practice (step 5 EBP process; assess the impact of applying new evidence)
- Identified different leadership styles and their possible impact on leading workplace change
- Assessed the applicability of “push-out”, “push-down” and “pull-up” KT strategies to your own practice (step 6 EBP process; advise others of your KT experience)

Readings from textbooks:

Chapter 16 (Producing research as a student or practitioner). In W.O. Hayes & C. Johnson, *Understanding research and evidence based practice in communication disorders: A primer for students and practitioners* (pp. 425-457). Boston: Pearson.

Chapters 4 & 8-13 (Incorporating outcomes measures into evidence-based practice; Comparison of forms of evidence: Systematic reviews versus clinical practice guidelines, algorithms, and clinical pathways; Evaluating the evidence: Economic evaluations; Strategies to build evidence in practice; Practice guidelines, algorithms, and clinical pathways; Communicating evidence to clients, managers, and funders; Research dissemination and transfer of knowledge). In M. Law & J. MacDermid (Eds.), *Evidence-based rehabilitation: A guide to practice* (2nd ed.) (pp. 63-94; 161-314). Thorofare, N.J.: Slack Inc.

Chapter 9 (Developing and using guidelines for practice). In M.C. Taylor, *Evidence-based practice for occupational therapists* (2nd ed.) (pp. 156-167). Oxford: Blackwell Publishing.

Day Five

20 minute oral presentation by each student followed by class discussion

Aims:

- Discuss the bi-directionality of knowledge construction: shaped by sender and receiver.
- Describe the intersection of knowledge producers, consumers and beneficiaries
- Explore common strategies for KT: what we're purported to do, what we're supported in doing.

By the end of this session you will have:

- Presented to your peers a critical review of a workplace concern following the EBP process
- Formulated how evidence can be made relevant, comprehensible and framed in a manner which enables clinical decision-making and action
- Discussed your future role as an EB practitioner and supports needed to facilitate an EB culture in your workplace and in the Irish healthcare context at large.

(Students then had four weeks of self-directed learning to prepare final paper.)

Assignment guidelines

ASSIGNMENT 1: REFLECTIVE PAPER

When seeking to be an evidence-based practitioner, it is very important to be aware of how you personally react to ideas which you encounter. It is human nature to be drawn to information which supports your existing beliefs and to be sceptical of information which may contradict those beliefs. EBP does not mean accepting every new idea (especially those that are still controversial) which comes to your attention. Nonetheless, as a professional you have a responsibility to keep an open mind and to push yourself to consider a range of possible alternatives, every day of your professional career. Hence, being an EB practitioner involves critically analysing both the evidence and your reactions to that evidence. This will help assure that new information is given its due consideration, resulting in best possible professional practices being implemented.

The challenge of introducing changes to customary practice can be observed on individual (micro), team & service (meso), and organisational (macro) levels. Drawing upon the theories of micro (personal) responses to new situations (Lewin; Rogers; Gardner; Prochaska, DiClemente & Norcross; multiple intelligences; Chin & Brewer) reflect upon your journey as a life-long learner. Discuss what facilitators, mediators and barriers impacted on the process from your own perspective. For example, what personal, service and organisational factors supported/ impeded you along the way? This paper is neither a factual listing of CPD activities, nor a psychoanalytic exercise. The emphasis is on reflecting on the meaning and implications of being an engaged, inquisitive learner within an ever-evolving healthcare context. Situate your past, present and future possible trajectory within the debate about addressing all aspects of the evidence triad (practitioner expertise, best current external evidence and patient's wishes).

ASSIGNMENT 2: ORAL PRESENTATION

In order to utilise research in everyday practice, you need to understand how research articles are structured. Professionals can draw different information from different parts of an article which in turn can be translated into guideposts for evidence-based decision-making. For example, you can compare the population with whom you work to that in the research article. You can assess whether or not the measures used in the study document behaviours which are important to you and your clients. You can determine whether the intervention(s) described might be manageable in your practice.

Beginning with your chosen clinical question, describe the process of how you formulated a question to fill a knowledge/ evidence gap and then began acquiring evidence to address this question. Appraise the evidence from 3 articles of your choice, which may include the one you discussed during your journal club. How do they apply to your question, in terms of their importance, validity and applicability within the context of your own professional practice? Taking into consideration change theories, discuss how approaches presented in these research articles might possibly be introduced in your work setting in a manner that would best assure their successful adoption. For example, is there a way to implement research transfer strategies which acknowledge different team member learning styles and team cultures? The perspective of this presentation should widen from the predominantly personal (micro level) of the first assignment, to encompass team/ service (meso level) concerns.

This presentation is both formative and summative. During the question/ discussion period your peers can use their lateral thinking and share ideas to aid you in reconsidering certain aspects of their work. This will help you deepen your awareness of your reasoning which can be carried over into your final module paper. Peers may also give you suggestions of other papers which might be applicable to your clinical question.

ASSIGNMENT 3: FINAL PAPER

This paper should build on the work you have done for the two earlier assignments. However, the scope should now broaden and deepen and demonstrate a thorough critical analysis and synthesis of related literature. This literature should include a wide spectrum of readings from the domains of EBP, your particular discipline and that of other clinical therapies, and management and change theory. Interweave personal insights and reflections with published research and theoretical perspectives as you discuss how you might facilitate an evidence-based culture in your workplace. The thread throughout this paper should not be on just addressing one clinical question, but on methods for routinely transferring research findings into practice. Why would some methods be better than others? How might you create new evidence in your own workplace? What structures might be put in place, and why, to disseminate new knowledge to intra and inter-professional colleagues, clients and managers? The in-depth analyses of your own working environment (or the prospective environment you wish to create) will discuss the factors which promote or inhibit EBP. The micro and meso level perspectives of the earlier assignments should now widen to encompass macro level concerns. What workplace/ governmental/ professional association policies and procedures support the creation of a sustainable EB culture? Which impede it? How might you

address these? What resources/ partnerships might be explored to help create, promote, evaluate and sustain a system for knowledge transfer and exchange (KTE) in your workplace/ in your professional association? How might you help build and maintain communities of practice within your profession which facilitate KTE?

APPENDIX 7 Expert panel members

1. Diarmuid Leonard: Expert panel chairperson. Now retired, Diarmuid was a teacher in Northern Ireland schools and then worked in teacher education at St. Mary's University College. He later headed teacher education at Thomond College and was subsequently an Associate Professor of education in University of Limerick. His interest and activities include action research, curriculum development and evaluation and the professional development of teachers and head teachers. He is a former editorial board member, and later editor, of the *Irish Journal of Educational Studies*, and was an associate editor of the *Journal of Educational Action Research*. His publications focus on themes including action research in Ireland, the context of reflective practice in Ireland, the process of reflective practice in professional development and leadership and innovation in education.
2. Dr. Auldeen Alsop. Now retired, she held the post of Professional Lead for Occupational Therapy and Vocational Rehabilitation at Sheffield Hallam University, U.K. for eight years. She managed a team of 22 therapists delivering Bachelor's Masters and work-based learning pre-registration programmes in Occupational Therapy and an MSc in Vocational Rehabilitation. She was also an Adjunct Professor with the University of Alberta. Auldeen has authored two books, one of which is on continuing professional development and evidence-based practice. She worked extensively with the College of Occupational Therapists in the U.K. as a council member and chair of the Learning and Development Board.
3. Dr. Bettie Higgs. Bettie is a senior lecturer in Geology in the study university and Co-Director of Ionad Bairre, the study university's Teaching and Learning Centre. Her research profile has a dual focus in Geology and Teaching and Learning. She was appointed Carnegie Scholar of the Carnegie Foundation for the Advancement of Teaching in 2005. She was awarded the study university's President's Award for research into innovative teaching in 2002 and 2004 and secured funding for the Irish Integrative Learning Project in 2008.

4. Dr. Marian McCarthy. Marian has been teaching since 1977 and is presently Co-Director of Ionad Bairre at the study university. Her doctoral research was in the area of Teaching for Understanding and the Scholarship of Teaching and Learning. She has published widely in the field of teaching and learning and is particularly interested in encouraging staff to research the teaching of their discipline and its impact on student learning. In 2009 both she and Bettie Higgs received a special commendation from the National Academy for the Integration of Research Teaching and Learning (NAIRTL) for their contribution to higher education in Ireland.

5. Clare James. Clare qualified as an occupational therapist in 1980. She is presently manager of Occupational Therapy at the Lavanagh Centre Cork, Enable Ireland. She received an MSc in Advanced Healthcare Practice from the study university in 2009.

APPENDIX 8 Nominal Group Technique (NGT) description

(sent to expert panel)

Nominal Group Technique (NGT)

The NGT provides a structured method of collecting and organizing the thoughts of a group resulting in a democratic consensus on an issue⁷⁹. Unlike the perhaps more creative brainstorming approach, where people throw out ideas and opinions but where no particular closure is sought; NGT encourages participants to view questions through the lens of constructive, rapid problem-solving. The latter is necessary in the case of my research as the student discussion will be limited to 15-20 minutes after each all-day class session. The discussion will need to conclude with concrete suggestions to the following questions:

- 1. What was the “muddiest point” during the day which they would like to re-broach in the next session?**
- 2. Which learning activities particularly supported their learning?**
- 3. What type of learning activities would they like to see integrated into the next session?**

This process prevents a single person dominating the discussion, encourages all group members to contribute ideas and results in a set of prioritized suggestions that represent the group’s preferences. NGT is a four step process: 1) generating ideas, 2) recording ideas, 3) clarifying ideas and 4) voting on ideas.

At the beginning of the session I will write the first question on the whiteboard and make sure everyone understands it. Silently and privately each student will write their thoughts and ideas, one per 3 x 5 card. I will then collect the cards, mix them up (to guard anonymity) and then read them out one at a time. If an idea is unclear, the group may discuss it, but only for clarification of meaning, not general debate. The agreed final wording of each idea is then transcribed onto the whiteboard.

A vote is then taken with each student voting silently and privately by writing five ideas on a card with his/her ranked vote for each (i.e. their most preferred idea getting five

⁷⁹ Potter, M., Gordon, S., Hamer, P. (2004). The nominal group technique: A useful consensus methodology in physiotherapy research. *New Zealand Journal of Physiotherapy*, 32(3), 126-130.

points, next preferred 4 points, etc.) I will then collect the cards, shuffle them as before, and write the value of each vote against the appropriate idea on the whiteboard. The rank order of the ideas is then written against each idea. The top 1-2 ranked ideas will be retained for the next class session. The same procedure will be followed for the 2nd and 3rd questions noted above.

If after the first class session the group prefers that different questions (than the three noted above) be asked, they can be altered. If the group no longer wants to proceed in an anonymous fashion, but rather speak out their ideas, this can also be done. However, each student must make at least one contribution in turn. Also, people could take turns walking to the whiteboard and marking their votes if the group prefers this (faster) approach.

APPENDIX 9 Expert panel review questions

(In italics are the formulations questioned by the panel during the first meeting and which were re-formulated for the second meeting in order to respond to panel member suggestions.)

September 2nd 2009 meeting

- 1) Within the PAR methodology, what is my role as researcher/ facilitator?
- 2) Will the PAR methodology enable me to determine whether the module supports therapists to engage in EBP?
- 3) Are my methods of data generation congruent with my PAR methodology?
- 4) Specifically, will my methods (gathering data through researcher field notes, researcher reflexive diary, NGT discussions, post-module interviews) allow me to demonstrate how *I influence* the students?
- 5) Do the proposed methods reflect a social context imbued with cooperation and consensus?
- 6) Do the proposed methods demonstrate a commitment to *improving my* teaching practices through *improving* learning?
- 7) Does my proposed data generation demonstrate adequate rigor?

November 30th 2009 meeting

- 1) Does the panel find my data generation methods clearly defined, appropriate and open to review? (critical judgment on study's dependability)
- 2) Is there adequate evidence that the procedures described are actually taking place? (judgment on data generation confirmability)
- 3) Does it seem that my now in-process data generation methods reflect a social context imbued with cooperation and consensus?
- 4) Are the methods demonstrating a commitment to *modifying and adapting the module's* teaching approaches?
- 5) Epistemologically speaking, are the different forms of data so far generated (*non participant observer notes*, researcher field notes, researcher reflexive diary, NGT discussions) based on comparable assumptions about what can legitimately constitute evidence for demonstrating *the module's influence* on student learning?

APPENDIX 10 Participant research information document

Title of Study: Bridging the research into practice gap: Supporting therapists' engagement in evidence based practice

Name of Researcher:

Janice Crausaz, Lecturer,
Department of Occupational Science & Occupational Therapy,
School of Clinical Therapies,
Study university

You are being invited to take part in a research project. Before you decide to agree to take part in this project it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Once you have read the information you may ask questions. If you decide to take part in the study, please sign the consent form.

Thank you

▪ *What is the purpose of the study?*

The purpose of this research study is to support therapists in their efforts to be evidence based practitioners. If you choose to participate, you will collaborate with the researcher and module coordinator, Janice Crausaz, in monitoring and adapting this module's learning programme. The focus of the study is Janice's teaching practices and how they influence your learning. You will explore with her which approaches facilitate your learning of EBP skills. If you suggest she do something different, you will reflect on whether the modified teaching ensures better learning. Four months after the module, you will be interviewed individually to discuss with Janice if and how the learning programme empowered you to translate EBP knowledge and skills into your clinical practice.

▪ *Why have I been chosen for the study?*

You have been chosen because you are a practicing occupational therapist, speech and language therapist or physiotherapist who has enrolled in the MSc module "Implementing evidence in clinical practice".

▪ *Do I have to take part?*

No. It is up to you to decide whether or not to take part. If you sign and return the consent form, this will be taken as your agreement to take part in the study. If you decide to take part you are still free to withdraw at any time and without giving a reason. If you chose not to participate, this will have no effect on your participation in this module or on your assessed coursework. All assessed module work will be marked by another staff member in the School of Clinical Therapies and not the researcher.

▪ *What will happen to me if I do take part?*

You will be asked to complete the same questionnaire on EBP, which you already filled out before today. You would do this a second time at the end of the module. At the end of each class session you will be asked to reflect on how different learning opportunities

have influenced your learning and what you might like to see modified. This will take approximately 15 minutes and may be audio tape recorded. You will be asked to keep a brief checklist of EBP activities you engage in from the beginning of the module until 4 months post-module. You will be asked to agree to be interviewed 4 months after the module finishes. These interviews will be audio tape recorded.

▪ *What are the possible disadvantages of taking part?*

There are no negative consequences in taking in this research study. It will have no impact on your assessed coursework. You might find that your opinions are challenged, but the supportive nature of the after class discussions will give you the opportunity to explore any issues. Should you experience distress during the individual interview, I will stop the tape recorder and give you time to decide whether to continue with the interview, re-schedule it for a later time or to discontinue the interview altogether.

▪ *What are the possible benefits of taking part in the study?*

The information collected will form an integral part of a collaborative action research project to develop an EBP learning programme which therapists feel supports their efforts to engage in EBP. As such you will be helping to shape the future development of EBP within the Irish healthcare context.

▪ *What if there is a problem?*

If you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, you should contact X, head of the Department of Occupational Science & Occupational Therapy at the study university.

▪ *Will my taking part in this study be kept confidential?*

Yes. All the information about your participation in this study and any information which is collected about you and your opinions during the course of the research will be strictly confidential. Any information that may allow you to be recognised will be removed. Completed questionnaires, tapes and transcripts of the after class discussions and interviews will be given an anonymous identification number and will be kept in a safe, locked place with me until 2019 when they will be destroyed.

▪ *What will happen to the results of the research study?*

As this is an academic study, an academic thesis will be prepared based on literature, parts of your commentaries and my interpretations of them. The research findings may be disseminated in conference papers and articles for peer-reviewed journals. However, no references or information will compromise your anonymity.

▪ *Who has reviewed the study?*

The research project has been reviewed by the study university Ethics Committee.

▪ *Who should I contact for further information or to comment on the study?*

For further information about the research project, please contact:

Janice Crausaz

Lecturer

Study university

APPENDIX 11 Main study participant consent form

Title of research study: *Bridging the research into practice gap:*

Supporting therapists' engagement in evidence based practice

Researcher: Janice Crausaz

Conditions of agreement:

1. The purpose and nature of the study have been explained to me in writing.
2. I have had the opportunity to ask questions about the study.
3. I am participating voluntarily and I know I can withdraw from the study at any time.
4. I am aware that the experiences I relate and the opinions I express will be treated as confidential and that my name and personally identifying details will not be used.
5. I understand that access to the tapes and transcripts is restricted to the researcher, Janice Crausaz, unless specific additional agreement is obtained.
6. I agree that the material on the tapes and in the transcripts may be used to provide the basis for the final document on this study.
7. I accept that the researcher may write or talk about this study in other academic situations but always maintaining confidentiality.
8. I request that my own name will not be used in the research documents. I choose the name _____ as my name for the study.

I agree to take part in this study. I understand that if I have any further queries regarding my participation I may contact J. Crausaz at xxx xxxx or j.crausaz@

Signed _____

Date:

APPENDIX 12 Researcher Field Note (RFN) template

FIELDNOTE CONTACT SUMMARY SHEET

Contact Type:

Place of Contact:

Date of Contact:

Duration of Contact:

Date Written Up:

Details on persons present

1. What events, situation and themes were involved?
2. What were the main flagged up themes/issues in the contact?
3. What aspects of research question did the contact address most centrally?
4. What new hypotheses, speculations or guesses about the field situation were suggested by the contact?
5. Where should the researcher place more energy during the next contact?
What sorts of information should be sought?

APPENDIX 13 EBP Knowledge, Skills, Attitudes & Behaviours questionnaire

This questionnaire was developed by M. Clare Taylor and was used with her permission. She first piloted it on a small group of occupational therapists in the UK and then translated and used in a research project with occupational therapists in Italy. She communicated to me that this questionnaire was based on measures used in previous research studies which explored occupational therapists' knowledge, skills and attitudes towards EBP. Her research sources for developing the questionnaire were:

- demographic information [5 items]
- perceptions of, and attitudes towards, EBP [23 items] (Pollock, et al, 2000; Jette, et al, 2003; Stevenson et al, 2004; Zipoli & Kennedy, 2005; Upton & Upton, 2006)
- knowledge and skills of EBP [10 items] (Pollock, et al, 2000; Jette, et al, 2003; McCluskey, 2003; Stevenson et al, 2004; Upton & Upton, 2006)
- perceived barriers to EBP [36 items] (Closs & Lewin, 1998; Pollock et al, 2000; Stevenson et al, 2004; Zipoli & Kennedy, 2005; Upton & Upton, 2006)
- level of EB activities [13 items] (Jette, et al, 2003; Zipoli & Kennedy, 2005)

Evidence Based Practice Knowledge, Skills and Attitudes Questionnaire

My name for the purposes of this study: _____

Demographic information:

1. How many years have you been qualified as a therapist? _____

2. Are you (circle one)

- a. an occupational therapist
- b. a physiotherapist
- c. a speech and language therapist

3. How would you describe your work setting?

- a. Hospital based
- b. Community based
- c. School based
- d. Other _____

4. Are you:

- a. Female
- b. Male

5. Do you work:

- a. Full time
- b. Part time

6. Is your work role primarily:

- a. Clinical
- b. Managerial
- c. Other

Perceptions of, and attitudes towards, EBP:

	Strongly agree	Agree	Disagree	Disagree strongly
7. Treating patients is more important than reading research				
8. Finding and reading research is not a high priority				
9. Keeping up to date with literature/research is important to me in my job				
10. It is difficult to see patients and keep up to date with literature/research				
11. There is a definite divide between research and practice				
12. Evidence-based practice is a waste of time				
13. I stick to tried and trusted methods rather than changing to anything new				
14. Application of EBP is necessary in the practice of my profession				
15. Literature and research findings are useful in my day-to-day practice				

16. I need to increase the use of evidence in my daily practice				
17. The adoption of EBP places an unreasonable demand on therapists				
18. I am interested in learning or improving the skills necessary to incorporate EBP into my practice				
19. EBP improves the quality of patient care				
20. EBP does not take into account the limitations of my clinical practice setting				
21. EBP helps me make decisions about patient care				
22. EBP does not take into account patient preferences				
23. EBP removes the 'art' from clinical practice				
24. EBP improves clinical outcomes				
25. EBP is impractical for everyday clinical practice				
26. The research findings published in professional journals are not very relevant to my own clinical practice and expertise				
27. Clinical practice should be based on what other clinicians and specialists have used as treatment protocols over the years				
28. Clinical practice should be based on the best available evidence				
29. We should change our practice if good quality evidence suggests we should				

Knowledge & skills of EBP:

How would you rate your knowledge and skills in the following areas [using the scale 'low', 'medium' or 'high']

	Low	Medium	High
30. General computer skills including use of internet			
31. To generate a question in preparation for searching databases			
32. Awareness of types and sources of research evidence			
33. To find relevant research to answer my clinical questions			
34. To carry out literature searches using databases			
35. To read and understand the research literature			
36. To understand and interpret statistics and research findings			
37. To critically appraise research literature			
38. To review and evaluate own practice			
39. To change own clinical practice in response to new evidence			

Perceived barriers to EBP:

	Strongly agree	Agree	Disagree	Strongly disagree
40. I feel confident in my ability to read and understand research literature				
41. I feel competent in carrying out literature searches on work-related topics				
42. I need further training in critically appraising research literature				
43. I get put off when I see statistics used in published research				
44. Keeping up to date with the literature/research is a high priority in my department				

45. I am encouraged by my manager to attend research conferences/ workshops				
46. I feel confident that the findings of most published research are reliable				
47. I find it easy to transfer research findings into my daily practice				
48. My workload is too great for me to keep up-to-date with all the new evidence				
49. I resent having my clinical practice questioned				
50. I have the professional time to participate in EBP				
51. I have the resources (e.g. access to Worldwide Web, databases, libraries, etc.) to participate in EBP				
52. I would find it difficult to change what I already do in clinical practice				
53. I have support from management to undertake EBP				
54. Research articles are easy to read				
55. There is sufficient time on the job to implement new ideas				
56. I do not have time to read research				
57. I do not feel capable of evaluating the quality of the research				
58. Implications for practice are not made clear				
59. I do not feel I have enough authority to change patient care procedures				

60. I am unaware of the relevant research				
61. I do not feel that results can be generalised to my own setting				
62. Research reports/articles are not readily available				
63. The research is not relevant to my own practice				
64. Doctors will not cooperate with implementation				
65. I am isolated from knowledgeable colleagues with whom to discuss the research				
66. I am uncertain whether to believe the results of the research				
67. Other staff are not supportive of implementation				
68. The conclusions drawn from the research are not justified				
69. I feel the benefits of changing practice will be minimal				
70. I am unwilling to change or try new ideas				
71. I see little benefit for myself				
72. I do not see the value of research for practice				

EB activity:

In a typical month	0	1 or 2	3 - 5	6 - 10	11 +
73. I read research/literature related to my clinical practice. Number of articles:					
74. I use professional literature and research findings in the process of clinical decision-making. Number of times:					

75. I use MEDLINE or other databases to search for practice-relevant literature/research Number of times:					
--	--	--	--	--	--

In the last 6 months, I have used the following sources of information in clinical decision making:					
	always	often	sometimes	rarely	never
76. My own clinical experience					
77. Opinions of colleagues					
78. Expert consultation					
79. Employer sponsored in-service training					
80. Continuing education outside of my place of employment					
81. Clinical practice guidelines					
82. Textbooks					
83. Internet resources					
84. Case studies					
85. Research studies					

Thank you for taking the time to complete this questionnaire.

APPENDIX 14 University module evaluation form

(printed over three pages to give adequate space for responses)

IMPLEMENTING EVIDENCE IN THERAPY PRACTICE ACADEMIC YEAR 2009- 2010

Learning Outcomes:

On successful completion of this module students should be able to:

- Appraise the value of different types of evidence in varying therapy contexts.
- Demonstrate the evidence-based skill cycle as applied to a therapy concern.
- Recommend strategies for translating research evidence into decision-making.
- Ascertain how therapy practice integrates change over a professional career.
- Relate leadership theories to the creation of an evidence-based work culture.

1. Considering each of these objectives:

Are you happy that you have achieved these objectives?

If yes, comment:

If no, comment:

2. What helped you most to reach these objectives for your learning?

(consider content, organisation of course, teaching methods etc)

3. What helped you least in reaching these learning objectives for you personally?

(consider content, organisation of course, teaching methods etc)

4. Did you achieve other learning objectives than those listed? If so, comment/
explain.

5. What motivated you to take this module?

6. What were your expectations before the module?

7. Were your expectations met? Yes/no comment:

IDEAS AND RECOMMENDATIONS:

8. Do you have any recommendations for improvements or changes to the course
content, teaching methods or course work/ assignments? If so, comment:

ANY OTHER COMMENTS:

APPENDIX 15 Interview guide

The purpose of this interview is to get information that will help me improve the module. As someone who has completed the module you are in a unique position to describe what the module accomplishes and how it affects people. And that's what this interview is about: your experiences in taking the module and your thoughts about your experiences.

- 1) *What was the module like for you?*
- 2) *Now I'd like to ask you about specific things that occurred during the module. What were the*
 - i. *learning activities like for you?*
 - ii. *peer interactions?*
 - iii. *module leader – student interactions?*
 - iv. *assessment process?*
 - v. *collaborative research process?*
- 3) *Now I'd like to ask you to think about the impact of the module. What changes do you perceive in yourself as a result of the module?*
- 4) *What do you DO now in your practice that you maybe didn't do before the module?*
- 5) *The next question is aimed at getting your perspective on the EBP culture in your workplace today. Suppose a new person came to work where you are. And they asked you how they could best use research to support their treatment choices considering the realities of your work context. What would you tell them?*
- 6) *The next question is particularly important for the future of the module. How do you think the module can be improved?*
- 7) *What do you think should stay the same in the module and why?*
- 8) *Is there anything else you want to tell me?*

Possible prompts:

You said that _____ (supported/ inhibited) your ability to _____ What do you mean by _____?
Can you give me an example of that?
Would you elaborate on that?
How do you feel about that?

APPENDIX 16 Summary of class teaching approaches and content

Day One: What it means to be an evidence-based practitioner

Learning aims

Students were given opportunities* to:

1. Examine their pre-module knowledge, skills and attitudes (KSA) regarding EBP by completing a self-assessment questionnaire which they would again complete on the last day of class
2. Reflect upon their customary evidence sources for their professional decision-making and their response to an articulated professional obligation (AOTA, 2006) to provide services that are cost effective, client-centred and supported by evidence
3. Explore the core beliefs and philosophies of occupational therapy, speech and language therapy and physiotherapy and the impact these might have on a profession's stance regarding evidence-based practice
4. Discuss evolving definitions of EBM/ EBP and to critically evaluate assumptions implicit in definitions of 'best evidence' and 'best practice'
5. Familiarise themselves generally with the 6 steps of the EBP process and to begin formulating a clinical questions (step one)
6. Develop their skills for doing database searching

*As there had not yet been any NGT discussion where students were able to suggest/ modify class content and learning activities, all of the above had already been set out in the module handbook for the first day of class.

Teaching methods (in chronological order)

- *Required pre-readings (3) to inform class discussions.* These readings were emailed to the students prior to the first day of class. The students accessed all subsequent readings on Blackboard. One article was selected from a journal representing each of the three clinical therapies (*British Journal of Occupational Therapy*; *Physiotherapy*; and *Speech and Hearing Services in Schools*) where conundrums inherent in defining evidence were critically discussed (Appendix 6). Recommended readings for this first class included

introductory chapters on EBP from any one of three textbooks written by authors representing the three clinical therapies (Hayes & Johnson, 2009; Law & MacDermid, 2008; Taylor, 2007).

- *Validating the students as co-researchers.* The students were given a self-assessment questionnaire about their current knowledge, skills, attitudes and behaviours (KSAB) regarding EBP. I explained that they would complete the exact same questionnaire on the last day of class. However, the second time they would use a different colour ink so that their pre-module responses could be distinguished from their post-module responses. These questionnaires would give some indication as to whether or not the module has possibly influenced changes in their attitudes towards EBP and their self-assessed level of EBP knowledge and skills. The data from these questionnaires were both for them and my research (provided they had consented to participate in the study). All seven students agreed to complete the questionnaire, though Dottie had not yet decided whether or not she would participate in the research.
- *Creating a supportive group learning environment.* These activities were intended to facilitate the students in becoming acquainted and comfortable with each other, with me and with being in an academic environment (one student had finished her initial training more than 25 years previously). The class began with an introduction to the overall module learning objectives (see Appendix 5 IETP module descriptor), general content and assignments as laid out in the module handbook (Appendix 6). Next, the students were encouraged to set their own ground rules for class discussions (which were then posted on Blackboard for easy reference) before sharing with the class a description of themselves and a typical working day.
- *Class discussion.* Defining ‘what is evidence?’ and ‘what is your definition of EBP?’ (personal opinions/ attitudes, no reference yet to published literature). Students explored their attitudes about EBP and possible assumptions implicit in definitions about what is evidence.
- *Individual reflective activity.* Aim: to begin exploring why therapists might or might not be drawing on the entire EBP triad of evidence sources (Figure 1.1, p. 4) and which factors (micro, meso and macro - definitions p. 86) might impact practice. Each student noted bullet points on a recent client

they had seen and 1) what interventions they had used and why; 2) what were their preferred evidence sources for their decision-making; 3) what indicators did they employ for ascertaining that their intervention was effective. They then shared with the class whatever reflections they wanted regarding their preferred evidence sources.

- *Pair reflective activity.* Aim: to introduce the issue of needing to question customary practice by considering new ways of working. Students were asked to think of a ‘treatment fact’ learned during their initial training that was later called into doubt. They shared with partner from what sources were this ‘fact’ initially questioned, how they reacted to this doubting of customary practice. Whole class then discussed how such ‘facts’ can most effectively be challenged.
- *Powerpoint lecture.* Eight slides on the historical development of EBM/ EBP and definitions of the terms ontology & epistemology.
- *Class discussion.* Of assigned reading during which the students explored what the articles communicated about the different professions’ ontology and epistemology and how they felt these were evolving regarding EBP.
- *Powerpoint lecture.* Three slides on the six steps of the EBP Process, then focused on formulating clinical questions (step 1) following PICO format.
- *Individual experiential activity.* Each student was asked to formulate a provisional clinical question relevant to a personal practice conundrum.
- *Class discussion.* The students gave peer feedback on each clinical question in terms of: 1) clarity of PICO formulation; 2) suggestions for finding relevant research literature on the topic; 3) subject relevance for clinicians.
- *NGT discussion.* All students participated in the end-of-class 30 minute NGT discussion except Dottie, who had not yet consented to participate in the research.
- *Library computer lab session.* Students spent 1 ½ hours with university reference librarian learning the basics of what was a database, which were available at the study university and how to access literature through different search strategies.

Preparatory activities for the next class (held 3 weeks later)

- a) Required readings: see Day Two summary IETP module handbook (Appendix 6).
- b) Students were encouraged to download (from Blackboard) and read some of the suggested articles listed in the module handbook at the end of the Day One chapter and to reflect on stimulus questions intended to help guide their thinking.
- c) Students were required to formulate a clinical question with key words which they were to email to me prior to the next class so that I could pass them on to the reference librarian. This would allow him to tailor their next library database searching session specifically to the students' topics.
- d) Students needed to source evidence to support the arguments of their team for their Day Two formal debate of the question ***Does 'gold-standard' evidence guarantee good practice?***
- e) I suggested that students begin a reflective journal as a resource for their first reflective paper assignment. They were encouraged to include reflections on class discussions, readings, stimulus questions and critical incidents in their workplace.
- f) I suggested that students start an EBP activity log where they documented their present and future professional learning and development.

Day Two: Attitudes, Facilitators, Mediators and Barriers in EBP

Learning aims:

Students were given an opportunity* to:

1. Formally debate the applicability of different levels and forms of evidence in varying decision-making contexts
2. Identify enablers and impediments to EBP in the national and international clinical therapies context and explore strategies to maximise the enablers and minimise the impediments
3. Brainstorm (in pairs then whole class) approaches to writing entries in a reflective journal
4. Brainstorm (in pairs then whole class) formulating clinical questions
5. Critically appraise an assigned paper in pairs then as a whole class

6. Examine different databases and apply search strategies to their specific clinical questions

*In underlined italics are the content areas and learning activities receiving the highest number of student votes during the Day One NGT discussion. These were integrated into this day's class.

Teaching methods

During the NGT discussion after Day One, additional learning activities requested by the students for the next class were: whole class discussions, reflective exercises and small group exercises where the main points would be reported back to entire class.

- *Required pre-readings (3) to inform class discussions.* These again included one article representing each of the three clinical therapies. Each article discussed attitudes, facilitators, mediators and barriers which research had shown to impact the implementation of EBP (Appendix 6). Suggested readings included relevant chapters from at least one of the three recommended textbooks.
- *Validating students as co-researchers.* I began by outlining (one powerpoint slide) how the day's content and teaching/ learning approaches would reflect NGT discussion decisions taken at the end of the previous class. I asked the students if that which was proposed meet with their approval. Five of the six students present (Siobhan had been excused to attend a professional conference where she was presenting) responded yes. One student objected that "round table workshop" had not been included; however, this had not been on the list of submitted possibilities during the previous class. When I asked the student what exactly was meant by round table workshop and how this differed from small group exercise or whole class discussion, the student had difficulty articulating his/her thinking. I suggested that he/she re-submit this choice during NGT discussion at the end of the day if he/she so wished. The student did not do so.
- g) *Formal debate.* Question: Does gold standard evidence guarantee good practice? Against: Tom (OT), Tara (PT) and Mary (PT). For: Ted (PT), Dottie (SLT) and Tamara (PT). At the end of the first day of class I had assigned students to the pro or con team as I wanted a mix of clinical professions on each team. When possible, I preferred that each student have the experience of arguing *against* their current attitudes. For example, from the first class I had the impression that

Tara highly favoured quantitative research; I assigned her to the team which had to argue that ‘gold standard’ evidence (i.e. randomised control trials [RCTs]) was an evidence source which should not be favoured over others. I assigned Ted, who had expressed great confidence in qualitative evidence, to the pro RCTs team.

- *Class discussion.* After the debate ended, students were allowed to express any opinion regarding how they felt the traditional hierarchy of evidence might have impacted different discipline’s ontology and epistemology including the emergence of research in the disciplines and the place of research methods in undergraduate education.
- *Reflective exercise→ feedback in pairs then to whole class.* As per the NGT decision, I gave an explanation reflective journaling (2 powerpoint slides) and Kolb’s (1984) model of a reflective learning cycle. I then asked the students to write a short ‘journal entry’ about their experience of participating in the debate. Working in pairs, the students give peer feedback on their ‘entry’. I then asked the whole class to share examples of their reflective comments and requested that they link such comments to other work experiences. Finally, I asked them to articulate what the sum of the experiences had taught them. I concluded this topic by giving them photocopied selections from reflective journaling I had done some years previously.
- *Pair experiential exercise→ group brainstorming.* I again described the PICO format to formulating a clinical question and gave an example question from research I had done while working as a clinician (2 powerpoint slides). I then split the group into new pairs asking students to peer critique questions they had prepared for today. Next I asked each partner to present the question to the whole class (e.g. Mary presented Tara’s question, ex cetera). The entire class gave suggestions regarding each question in turn.
- *Powerpoint lecture.* Two slides introducing the Knowledge Translation (KT) model with its description of communities of knowledge producers (researchers), knowledge consumers (clinicians) and knowledge beneficiaries (clients) and different KT strategies (e.g. a ‘push out’ strategy [Law, MacDermid, Vrkljan and Telford, 2008] of having critically appraised topics posted on databases such as OTseeker, PEDro and speechBITE).

- *Class discussion.* Concerned the three assigned readings about attitudes, facilitators and barriers to moving evidence into practice. Students were asked to comment on which of the latter were present in their own workplace and how they might maximise the facilitators and minimise the barriers.
- *Pair experiential exercise*→ *feedback to whole class.* Following a standard format for critically appraising a paper (CAP) the students worked in pairs to critique a research study (O'Connor & Pettigrew, 2009) on barriers perceived by Irish speech and language therapists to implementing EBP. Each pair then summarised their comments back to the entire class.
- *NGT discussion.* Six students participated (Siobhan was absent due to attendance at a conference); the discussion lasted 30 minutes. One student, however, was generally out of synch with the discussion. For example, while other students were writing 'muddy points' on slips of paper, this student was flipping through a book or trying to engage a neighbour in a side conversation. When other people handed up their slips to be shuffled and then have their suggestions noted on a flip chart, we would have to wait for the student to finish deciding and writing; this caused some impatience on the part of other group members.
- *Library computer lab session.* Students again spent 1 ½ hours with the study university reference librarian. This time they were guided in doing specific databases searches using the key words of their formulated clinical questions.

Preparatory activities for the next class (held two weeks later)

- a) Required readings: see Day Three summary IETP module handbook (Appendix 6).
- b) Students were encouraged to read some of the recommended multi-disciplinary articles and book chapters in preparation for the third day of class and to reflect on the proposed stimulus questions in the IETP module handbook section on Day Two.
- c) Students were encouraged to continue their reflective journaling and EBP activity log.
- d) Students were required to complete their database search around their clinical question and to critically assess one located article applicable to their question. During Day Three they would be role playing a journal club with a fellow student by presenting their critical appraisal.

Day Three: Meeting the challenge of change

Learning aims:

Students were given an opportunity* to:

1. Practice critically appraising a paper (CAP) skills (step 3 EBP cycle) through role playing a journal club with a fellow student using a research article they had located (step 2 EBP cycle) which addressed their clinical question
2. Compare and contrast qualitative and quantitative research designs
3. Familiarise themselves with discipline-specific databases such as OTseeker, PEDro, speechBITE and CINAHL (step 2 EBP cycle) and receive short individual guidance from reference librarian
4. Reflect on human psychological responses to anomalous data within the framework of conceptualising a critical analysis of their past personal responses
5. Identify the theoretical stages of change and their application to EBP
6. Begin to examine how change might be brought about within their own workplace (implementing new evidence, step 4 EBP cycle) and how the change process might be effectively monitored.
7. Receive guidance on the reflective paper assignment due on Day Four.

*In underlined italics are the content areas and learning activities requested by the students.

Teaching methods

- *Required pre-readings (4) to inform class discussions.* Three of the four selected articles (which discussed the changes required to develop the EBP on either the part of the individual therapist or within the institutional culture) were written by occupational therapists. This is because these issues did not appear to have been explicitly addressed in much of the physiotherapy or speech & language therapy EBP literature prior to 2009 (Appendix 6). There were also suggested readings from two of the three recommended textbooks (the SLT text was silent on the topic of change management).
- *Validating students as co-researchers.* Just before class, Dottie returned her signed consent form, agreeing to participate in the research study. Once again, the day began with one powerpoint (ppt) slide describing how the day's content and teaching/ learning approaches would reflect the NGT decisions of the

previous class. The six students present (Tara was at a conference) stated that they felt that every one of their decisions were being implemented.

- *Class discussion.* Re-visited attitudes, facilitators, barriers and mediators to moving evidence into work practice (discussion supported by 3 ppt slides) which were first introduced during Day Two. Reframed by comparing/ contrasting Knowledge Translation (KT) paradigm (2 ppt slides) to EBP paradigm.
- *Group brainstorming.* Students practiced assessing the impact of facilitators, barriers and mediators by doing a SWOT analysis of either their own or a generic workplace's possible enablers and impediments to engaging in EBP.
- *Pair experiential exercise→ whole class discussion.* In order to again practice the skills necessary for doing a CAP, I had the students role play conducting a journal club. Each student had been requested to bring to class a research article which they had already critically appraised and which they were to present to their 'work colleague', advocating a possible change in team interventions with clients. The pair roles were then reversed. I felt that having them follow a journal club format (rather than a more academic CAP template) might better mirror work setting complexities (Savery & Duffy, 1996). I placed the students in inter-professional pairs when possible. I deliberately paired the student who appeared to be easily distracted with a student who was always well prepared and highly task focused; the pair worked well together. After the pair discussions, the class came together as a whole and discussed the value of journal clubs: whether they should be uni or multi-disciplinary, how they fit with the steps of the EBP cycle, how the discussion should best be structured.
- *Class discussion* (supported with 3 ppt slides). Students examined similarities/ differences between quantitative and qualitative research. This discussion was linked to Day One & Day Two discussions of different professions ontology & epistemology. Discussion was extended to considering possible strategies for systematically locating and reviewing different types of research evidence.
- *Library computer lab session.* At student request, the one hour session was held earlier in the day (before lunch, rather than at the end of the day). The session was focused particularly on three websites (OTseeker, PEDro and speechBITE) which post CAPs (critically appraised papers) and CATs (critically appraised topics) for the busy practitioner. Students were able to assess the utility of these websites and also received individual guidance from the reference librarian on

their specific database search regarding the key words derived from their clinical question.

- *Individual reflective exercise*→ *whole class discussion*. The topic was how individuals respond when confront with “anomalous data” using stages described by Chin & Brewer, 1993 (as cited in Dunn, 2008) to ‘name and frame’ the discussion. Students first individually (using steps of Kolb’s cycle) wrote a bullet point description of how they had responded to learning something that challenged their previous beliefs. For example, one physiotherapy student noted how using a specific modality with a particular group of clients fell into disrepute. Next, they reflected on how they responded to the challenge (using Chin & Brewer ‘levels’). Then, they engaged in abstract conceptualisation about what they learned from the experience. Finally they planned (active experimentation) how they might instrumentalise what they had learned about how they tended to respond to ‘anomalous data’. Class discussed how they found using the Kolb learning cycle to critically analyse and gain reflective insight about their professional behaviour. Once the students had constructed their own understanding about how they responded to change based on their experiences, theoretical models (see below) were discussed.
- *Powerpoint lecture*. (4 ppt slides)→ *class discussion*. Topic: theoretical models of individual responses to change over a lifetime (Gardner, 2006; Lewin, 1951; Prochaska, DiClemente & Norcross, 1992). Students were encouraged to express their opinions about the strengths and weakness of these models.
- *Powerpoint lecture*. (2 ppt slides)→ *class discussion*. Topic: theoretical models of personal & organisational change (Kotter, 1996; Rodgers, 2003). Students were encouraged to express their opinions about how they perceived the possible applicability of these models when trying to introduce a change in customary practices in their workplace. This discussion integrated the day’s assigned readings.
- *Class discussion*. We reviewed together the guidelines and marking criteria for the reflective paper assignment (Appendix 6) which was due on the date of the next class. As suggested by Moon (2004), I had decided that the students would be required to write a short paper demonstrating *an awareness of the nature of their current practice* [relative to the evidence sources they favoured] *and to anticipate or imagine the nature of improved practice* (Moon, 2004, p. 8). The

students were encouraged to integrate new theoretical and experiential learning about their personal response to change and what this meant in terms of being a life-long learner.

- *NGT discussion.* Five students participated (Ted had to leave early due to personal reasons and Tara was absent at a conference) in the 40 minute discussion. As X was absent from the study university, another colleague, Y, had sat in class and had written the NPO notes. The students appeared to have had no objection. After today's class, no 'muddy points' were flagged by students and they did not again cite the conceptualisation phase of the Kolb learning cycle as posing difficulties. They continued, however, to want to do group CAPs. After three sessions with the study university reference librarian, they appeared confident in their database searching skills.
- *Tutorials.* Two students requested after-class tutorials on the reflective paper assignment. The idea was that they would describe the broad outlines of their paper and I would give them general feedback. This appeared to work well for one student who had a clear understanding as to the purpose and proposed content of the paper; less well for the student whose ideas were still at a very preliminary stage. The first student primarily needed confidence boosting as the person has been away from academia for many years and "*needed to get academic bearings again*"[Siobhan]. The practitioner member of my expert panel had alluded to this being a concern of quite a number of therapists who return to a university setting many years after receiving their first professional qualification.

Preparatory activities for the next class (held 2 weeks later)

- a) Required readings: see Day Four summary in IETP module handbook (Appendix 6).
- b) Students were encouraged to read some of the recommended multi-disciplinary articles and book chapters in preparation for the fourth day of class and to reflect on the proposed stimulus questions in the IETP module handbook section on Day Three. This additional reading and reflecting would support the writing of their first assignment.

- c) First assignment: Reflective paper. In writing this paper they could draw upon entries in the reflective journal and EBP activity log that they had been encourage to be keeping since the first day of class.

Day Four: Using and generating evidence in practice

Learning aims:

Students were given an opportunity* to:

1. Develop their skills for doing a critically appraised topic (CAT), as opposed to just a critically appraised paper (CAP); this activity was based on two of the day's assigned readings, chosen by the students, about introducing change into the workplace
2. Identify, on an individual level, the strengths, weaknesses, opportunities and threats inherent in applying different change strategies in their workplace with the aim of introducing new work practices
3. Analyse in greater depth the applicability of various change strategies to different workplace contexts through offering suggestions to fellow students who described change processes with which they were presently involved at work (group 'think tank')
4. Assess the application of practice guidelines, algorithms and clinical pathways in the national and international therapy context
5. Examine opportunities and methods for researching one's own practice
6. Discuss the role of leadership in establishing an evidence-based work culture
7. Explore possible knowledge communication channels to clients, managers and funders
8. Familiarise themselves with the guidelines for the oral presentations they were to give on Day Five.

*In underlined italics are the content areas and learning processes requested by the students.

Teaching methods

Due to extensive overnight flooding in the city and county the class began more than 30 minutes late. Even though the study university was officially closed (which was announced on the radio), with the permission of the security staff the students decided in favour of the class going forward due to great difficulties for them, as working

clinicians, to re-schedule. All seven students were present, though Tamara arrived an hour late and left for 2 hours at mid-day for personal reasons. The NPO, X, had to absent herself during the middle of the day due to an emergency meeting about flooding on campus; Y stepped in and took notes during her short absence. The students opted to have a shorter lunch period and no afternoon break in order to depart while there was still daylight.

- *Required pre-readings (4) to inform class discussion.* The articles, as those for Day Three, focused on strategies for introducing change into clinical practice. The supplemental textbook readings, however, focused on issues which are less discussed in the journal literature: 1) practitioner-generated research; 2) the implementation of practice guidelines and care pathways; and 3) the dissemination and transfer of knowledge through various communication channels.
- *Submission of reflective paper assignment.* All students, except one, meet the morning deadline for submitting 2 hardcopies and one electronic version of their reflective paper assignment. This student submitted by the end of the day. Of the six students present at the beginning of the class, all seemed confident about how they were able meet the guidelines and criteria for the assignment.
- *Validating students as co-researchers.* In June 2009 I had received a grant from the National Academy for Integration of Research & Teaching & Learning (NAIRTL) to support development of the IETP module. As part of this grant work, I presented a poster at a NAIRTL conference in Dublin in November 2009. The students were acknowledged (as a group) as my PAR collaborators on this poster; hence I shared the poster with them at the beginning of class.⁸⁰
- *Class discussion.* I modelled how to do a CAT (as opposed to a CAP) on the research evidence for the use of relaxation therapy for children and adolescents with headache. The class then discussed the different levels of evidence provided (ppt slide with evidence pyramid and PEDro system for scoring a CAT) and how useful they found these different rating systems.

⁸⁰ In October 2010 (four months after I had conducted, but not yet analysed, individual interviews with each of the students where they evaluated the module) I had to file a final report with NAIRTL on my research-to-date. In this short report, each of the students was named as a collaborative partner. In November 2010 I invited the students to a celebratory tea and I gave each of them a copy of the final report as supportive documentation for them noting their research collaboration on their CVs. Two did not attend (one had moved out of Ireland); I mailed them copies of the report.

- *Group activity.* The class (with the support of one ppt slide outlining framework used by OTCATs) did a CAT based on two of the day's assigned readings. The class then discussed the strengths and weaknesses of a CAT as opposed to a CAP and whether they felt a journal club should ideally be structured around one or the other and why. The importance of having a 'facilitator', leader or 'driver' in any journal club was underlined by the students.
- *Group activity.* Using their individual clinical question as a starting point for their thinking, the class brainstormed how they would go through steps 2-5 of the EBP cycle (acquiring, appraising, applying and assessing evidence) and what might be the core issues that would need to be addressed at each step. This mirrored what each student was going to have to do individually, and in depth, during their oral presentation on Day Five. The class determined that applying the evidence (introducing changes to customary practices) would probably be the most challenging step. Unfortunately, the discussion had to be prematurely drawn to a close because of the shorter class day due to flooding and the need to consider other topics.
- *Individual reflective activity.* SWOT analysis of their own workplaces (based on change models discussed in day's assigned readings) regarding how they might go about introducing a new framework for their workplace journal club. Students wrote bullet points on a sheet of paper summarising their own thinking
- *Group 'think tank' brainstorming.* Two students (Tara and Siobhan) agreed to share their SWOT analyses so that the group could offer additional suggestions about how they might further an agenda of re-configuring their workplace journal clubs. Interestingly, Siobhan subsequently took these suggestions back to her workplace and her colleagues agreed to completely revamp how they conducted their journal club. When five of the seven students met informally with me in November 2010, Siobhan reported on how successful this restructuring had been and how it had resulted in the team implementing changes in customary practice.
- *Powerpoint lecture.* Two slides defining: 1) the personal characteristics/ traits of a leader and those of a manager (Tomey, 2009); 2) approaches a leader or a manager could take to facilitate an EB work culture. As only one of students (Tamara) worked in a (part-time) managerial post, my idea was to emphasise the

pro-active role each of them could assume in leading an EB culture in their workplace.

- *Class discussion.* Students developed the topic by formulating and attempting to answer the following questions: What makes a good leader? How important is charisma? Are managers the implementers and leaders the visionaries? Or does one person need both skills to support an EBP culture?
- *Powerpoint lecture.* Five slides comparing and contrasting clinical practice guidelines (CPGs), algorithms and clinical pathways (CPs) and what were the strengths and weaknesses of each.
- *Class discussion.* Students related their professional experiences with CPGs & CPs (students were not familiar with algorithms) and how they might be involved in implementing same, though they felt they did not have the resources/ contacts necessary to undertake developing either.
- *Powerpoint lecture.* Three slides on step 5 EBP cycle: assessing the impact of applying new evidence through the use of outcome measures. Included strategies for identifying outcome measures for one's practice and barriers & facilitators to the use of outcome measures.
- *Class discussion.* The students took as their point of departure for the student-led discussion a conference poster they had viewed in the hallway outside of classroom during Day Three. The poster reported on a doctoral study on the use of the AMPS (Assessment of Motor and Process Skills) in practice and how the AMPS was fully embedded in practice by only a small number of those who took the AMPS course and that this process could take up to two years. Ted spoke of the 'overload' of outcome measures; Siobhan of the oftentimes prohibitive cost of assessments. Short discussion on how the use of outcome measures in step 5 becomes a sort of 'mini' research project generating knowledge that can be shared with others.
- *Powerpoint lecture.* Two slides on possible knowledge communication channels and forms of knowledge translation (diffusion, dissemination and implementation models). Topic was only introduced due to lack of time; re-visited afternoon of Day Five.
- *Class discussion.* Topic: Marking of oral presentation. We reviewed together the guidelines and marking criteria for the oral presentation assignment (Appendix 6) which they were to give the next class. There is a tradition in this department

of the study university for MSc-level oral presentations to also be peer marked. I asked the students to decide what they wished the relative weighting to be for peer and external assessor marks. They decided on 50/50. I cautioned them, however, that the standard procedure was that if any peer mark was inordinately high or lower than the external assessors' (reference) mark, such a peer mark would be considered an 'outlier' and be eliminated from the grade moderation process. The students appeared to understand and accept these guidelines. There was also a discussion as to whether the content of the presentations should receive a summative mark, but that the student's presentation skills (confidence of oral delivery, effective use of non-verbal skills, clarity of ppt slides, effective time management) would receive only formative feedback. Ted wished both to be marked (he had experience with doing oral presentations for other MSc modules); the other students did not. By majority vote it was decided the presentation skills would receive formative feedback only

- *NGT discussion.* For the first time, all seven students participated in the 30 minute discussion. Again, after today's class no 'muddy points' were flagged by the students. However, they requested that we continue the discussion of knowledge communication channels next time as it was cut short due to time constraints and begin a discussion of macro approaches to EBP. These issues are relevant not only for their oral presentation, but also for their final paper assignment. The students also wanted to repeat doing a CAT. Interestingly the articles which they cited as being most supportive of the day's learning were the two (McCluskey & Cusick, 2002; Ketelaar, Russell & Gorter, 2008) which they had chosen at the end of Day Three to use in their group CAT of how to introduce EB practices into a clinical setting.
- *Tutorials.* The same two students, as for the reflective paper, requested a tutorial before the oral presentations. Again, one student was very well organised and well along in his/her thinking; one student arrived with heaps of papers and books and seemed to look to me to sort his/her ideas out for him/her.

Preparatory activities for the next class (held 3 weeks later)

- a) No new readings
- b) Stimulus questions to aid their reflections on day's topics were proposed in IETP module handbook section on Day Four.

- c) Provisional marks (subject to review by the external examiner in May 2010) and comments on the reflective paper assignment were returned to the students within 1 ½ weeks of the turn-in date. This was so that they could learn from this first assignment while preparing the second (oral presentation).
- d) Students were to prepare a 15 minute oral presentation demonstrating their knowledge and skills while engaging in all six steps of the EBP cycle (Appendix 6). The students were to ask a specific clinical question, acquire the best evidence addressing that question and appraise the evidence (2 research articles). However, their discussion of steps 4-6 (applying the evidence, assessing the impact of the evidence and advising others of their knowledge translation) would necessarily be hypothetical.

Day Five: What's purported, what's supported

Learning aims:

Students were given opportunities* to:

1. Demonstrate, through a 15 minute oral presentation (with 5 minutes for questions), their capacity to engage in all six steps of the EBP cycle. This presentation included the students doing a CAT of the literature relevant to their clinical question
2. Discuss the bi-directionality of knowledge exchange and translation within the context of the intersections of knowledge producers, consumers and beneficiaries in the use of evidence
3. Discuss strategies for knowledge translation and research utilisation
4. Brainstorm macro/ meso/ micro perspectives on EBP
5. Brainstorm how to build an EB work culture
6. Familiarise themselves with the guidelines and marking criteria for the final paper due in January 2010
7. Compare the evolution of their EBP knowledge, skills, attitudes and behaviours (KSAB) since the beginning of the module through filling out the same EBP KSAB questionnaire they completed on the first day of class
8. Evaluate the IETP module by completing a module evaluation form (study university requirement)

9. Discuss as a group different aspects of the module which they felt had supported, or not, their learning

*In underlined italics are the content areas and learning processes requested by the students.

Teaching methods

Mary (a physiotherapist) and Tara (also a physiotherapist) had requested permission to be absent so as to attend HSE senior panel interviews; they did their oral presentations the following week. They agreed, however, to there being available on the re-scheduled day only one external assessor, an occupational therapy colleague. Ted (a physiotherapist), Tom (an occupational therapist), Siobhan (a speech and language therapist), Dottie (a speech and language therapist) and Tamara (a physiotherapist) attended on the regularly scheduled class day. Consequently Mary and Tara each received two marking forms (one from the external assessor, one from their classmate) each counting for 50% of the final mark. The other students were meant to receive seven (3 from external assessors, counting for 50% of the mark; 4 from peers counting for 50% of the mark). The peer marking was anonymous.

- *Oral presentations.* (Appendix 6). These presentations took the entire morning and were assessed by an occupational therapy colleague, a speech and language therapy colleague and a physiotherapist. In this manner, all three of the clinical professions were represented. Having others mark all of the module assessments was a recommendation of the expert panel (see chapter 3, section 3.7). The students had mixed opinions about ‘outsiders’ being involved in the oral presentation assessment process (the students were only familiar with the physiotherapist who had spent a half-day observing the class during Day Four). All students appeared happy to have a member of their profession involved in the marking. However, I found one student in the corridor at lunch time standing outside the room where the external markers were conferring. This person angrily stated that “*the externals [were] altering the marks!*” I again explained that when there were several markers it was customary to have a consensual process of moderating marks through discussion; their agreed mark would count for 50% and the peer marks (if they were not ‘outliers’) for the other 50%.

- *Class discussion.* Topic: the bi-directionality of knowledge exchange and translation (supported by 3 ppt slides). Students then discussed who they felt were the decision makers (clients/ family, managers, funders/ professional bodies). Students elaborated further on the role of the professional and the relationship between the client and the professional. Dottie and Ted led the discussion while others listened intently.
- *Class discussion.* Topic (supported by 2 ppt slides): Three forms of research utilisation (RU) – indirect (changes thinking but not behaviour), direct (applying research to clinical practice), persuasive (where RU is used as a political tool to influence funders and decision-makers). Siobhan related some of the RU approaches to her own work; Ted & Dottie also give specific practice examples. Dottie, Siobhan, Ted and Tamara spontaneously began discussing the role of professional registration in the RU process. Students asked me for clarification as to how these forms of RU linked to KT ‘push-out’ , ‘push-down’ and ‘pull-up’ strategies.
- *Brainstorming.* Topic: Macro/ meso/ micro challenges and benefits of EBP. Students threw out suggestions which I noted on the flip chart, deciding themselves which were of what level. They debated each suggestion among themselves. I asked permission, which was granted, to take the sheet of their suggestions and share them with Mary & Tara (who are not present) when I would see them the next week for their oral presentations.
- *Brainstorming.* Topic: How to build an EB work culture: what therapists are purported to do (explicit expectation); what they are supported in doing (what actually happens). Siobhan suggested that everyone in the classroom was an early adopter and advocate for EBP and that their colleagues would follow over the next few years. Others appeared to agree.
- *Class discussion.* Topic: guidelines for final paper.
- *Validating students as co-researchers.* Near the end of the day the students completed the EBP knowledge, skills, attitudes and behaviours (KSAB) questionnaire (which they first filled out on Day One) in a different colour ink so that they could see how their KSABs had changed over the 12 weeks of the module. They returned the questionnaires to me. Students then completed a module evaluation form (study university requirement) which they also returned to me. Finally, as there was no NGT discussion, the students spent 30 minutes

discussing the module. I sometimes interjected prompts to elicit more detail about what was being said.

- *Tutorials.* All of the students requested private tutorials before submission of their final assignment. I did not read drafts, but rather engaged them in discussions about their proposed broad outlines for their paper.

Preparation for the final assignment (due one month later in January 2010)

- a) No required readings, but students were given a list of suggested readings to assist them in preparing their assignment.
- b) Provisional marks (subject to review by the external examiner in May 2010 as the oral presentations were video-taped) and copies of external assessor and peer marking sheets with formative and summative feedback were returned to the students within 2 weeks of their oral presentations in order to assist them in preparing their final assignment.
- c) Students were to do a critical analysis and synthesis of EBP literature and that concerning leadership and change theory. They were to reflect on: 1) what workplace/ governmental/ professional association policies and procedures supported the creation of a sustainable EB culture, which impeded it, and how they might address the latter; 2) possible strategies for transferring research findings into their practice; 3) how they might create new evidence in their own workplace; 4) what structures they might advocate for the dissemination of new knowledge to intra and inter-professional colleagues, clients and managers. They were then to submit a 3000 word paper (see Appendix 6, IETP module handbook for details) interweaving personal reflections and experiences with published research and theoretical perspectives.

APPENDIX 17 Linkages between different data sources evaluating IETP module

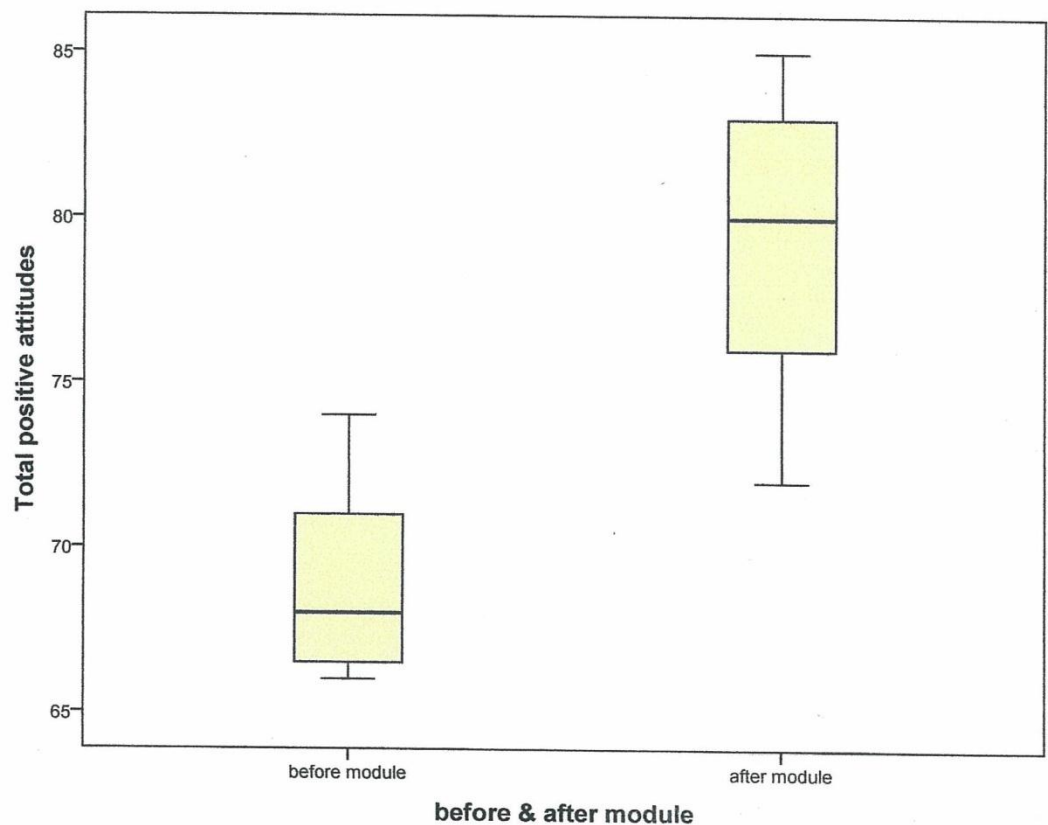
Individual interviews 2 themes/7 sub-themes/ 4 issues May 2010	Module evaluation forms and group discussion 4 categories/ 5 sub-categories December 2009	EBP KSAB questionnaire post module scores from 5 sections December 2009
I. Experiencing the learning		
1) <u>Module organisation</u>	1) Characteristics of the learning environment*	
i. learning supports	<u>having structure</u>	
ii. practice for consolidating learning	2) Acquiring relevant EBP skills 3) The nature of the learning process <u>learning by doing</u>	1) increased EBP knowledge and skills
iii. being student driven	<u>having choice</u>	
iv. diversity of assignments		
2) <u>Learning is relational</u>	<u>learning by co-constructing pieces of a jigsaw</u> <u>having a safe place</u>	
3) <u>Improving the module</u>		
II. Enacting the learning through a new way of being	4) Acquiring confidence	
1) <u>Reflection and criticality</u>		
2) <u>Self agency</u>		2) more positive perceptions about and attitudes towards EBP
3) <u>Modelling EBP behaviours</u>		3) greater engagement in EB activities 4) increased frequency of use of different information sources
4) <u>Positioning self in an EB culture</u>		5) a reduction in perceived barriers to EBP

- Sub-categories of category 1 (in blue) are also in blue; sub-categories of category 3 (in red) are also in red.

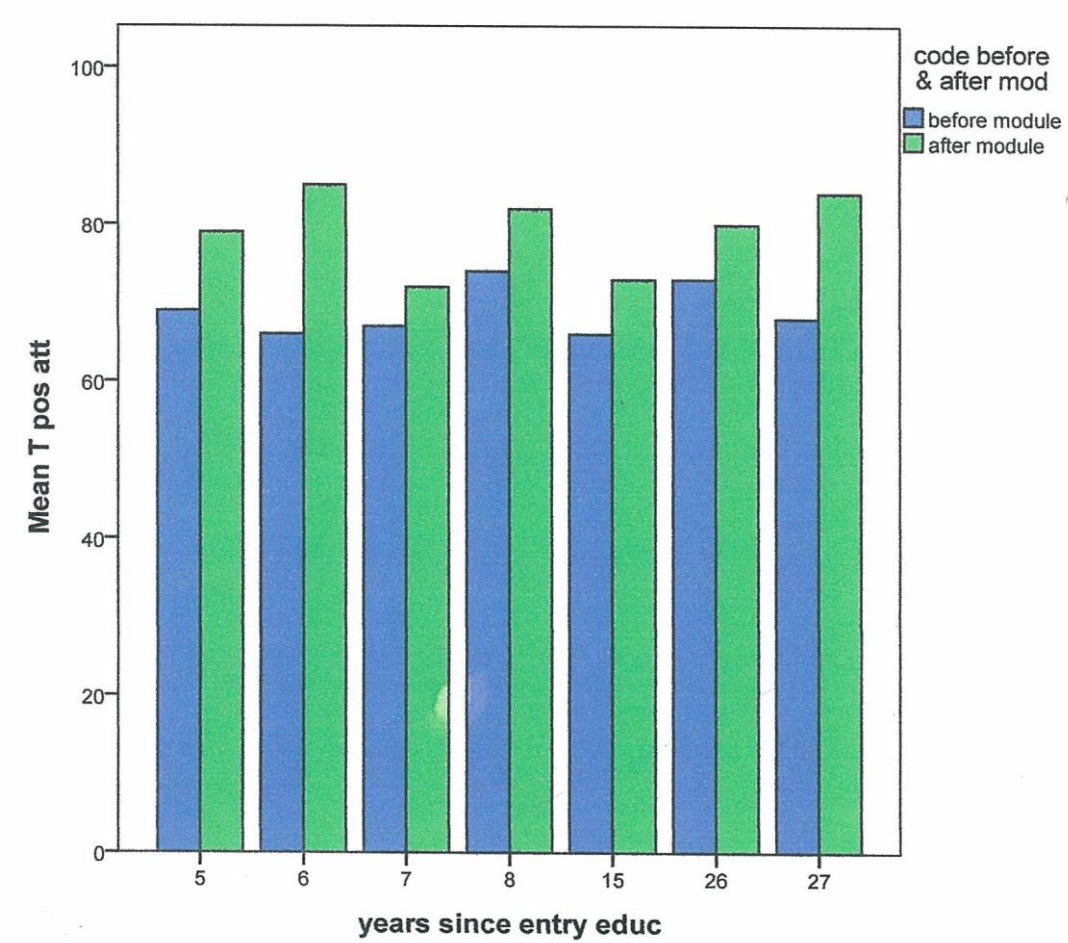
APPENDIX 18 EBP KSAB questionnaire pre and post module graphs

Graph 1 Group perception of and attitudes towards EBP

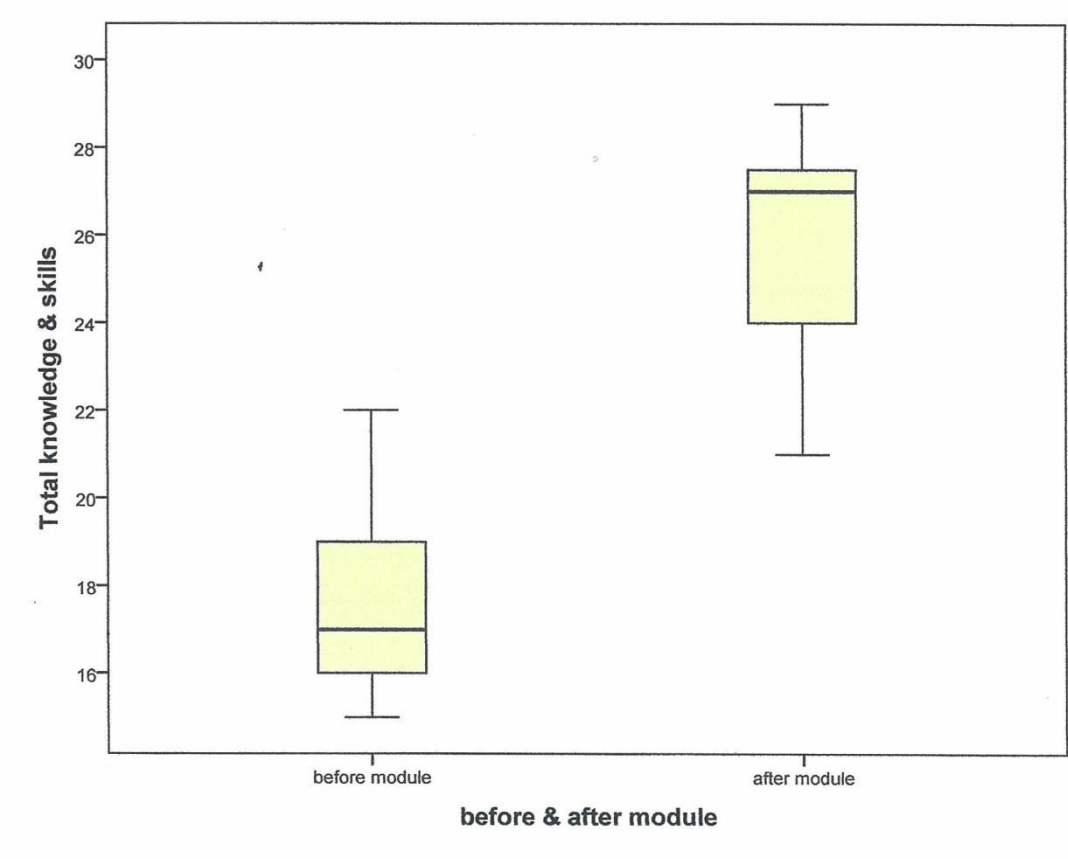
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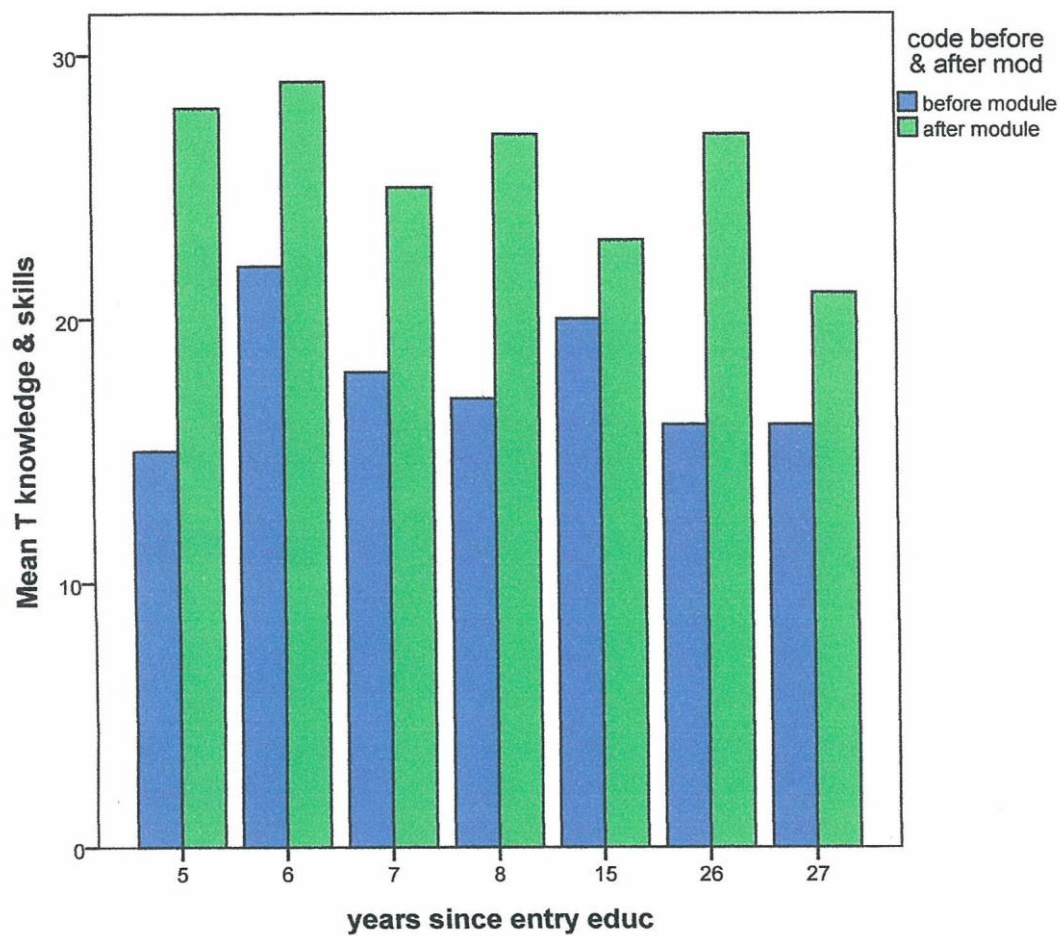
Graph 2 Individual perceptions of and attitudes towards EBP



Graph 3 Group EBP knowledge and skills

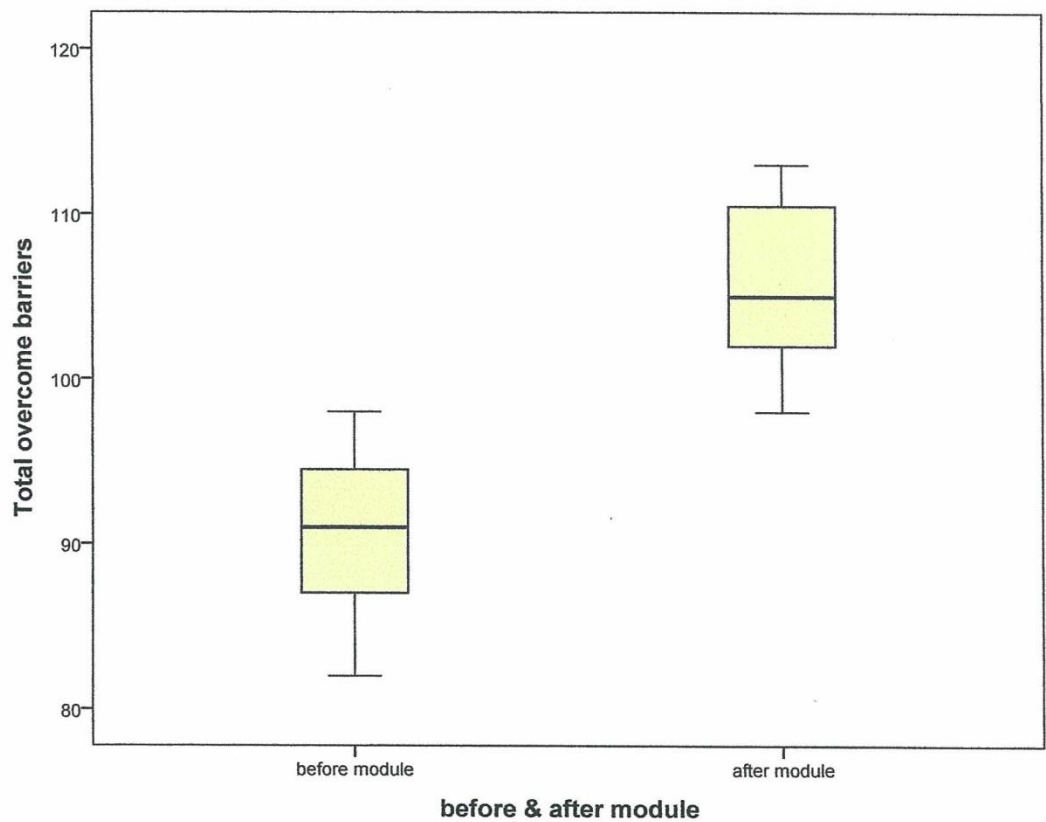


Graph 4 Individual EBP knowledge and skills

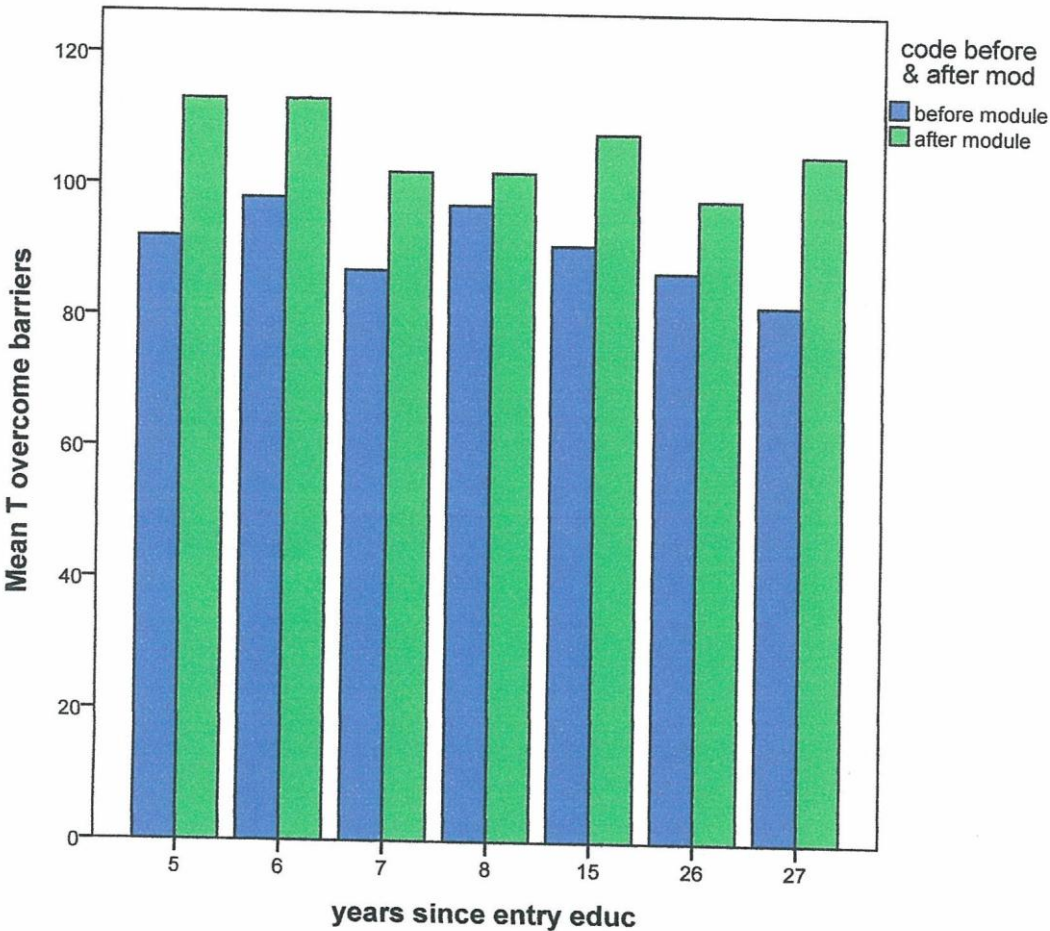


Graph 5 Group perceived ability to overcome barriers to EBP

T overcome barriers

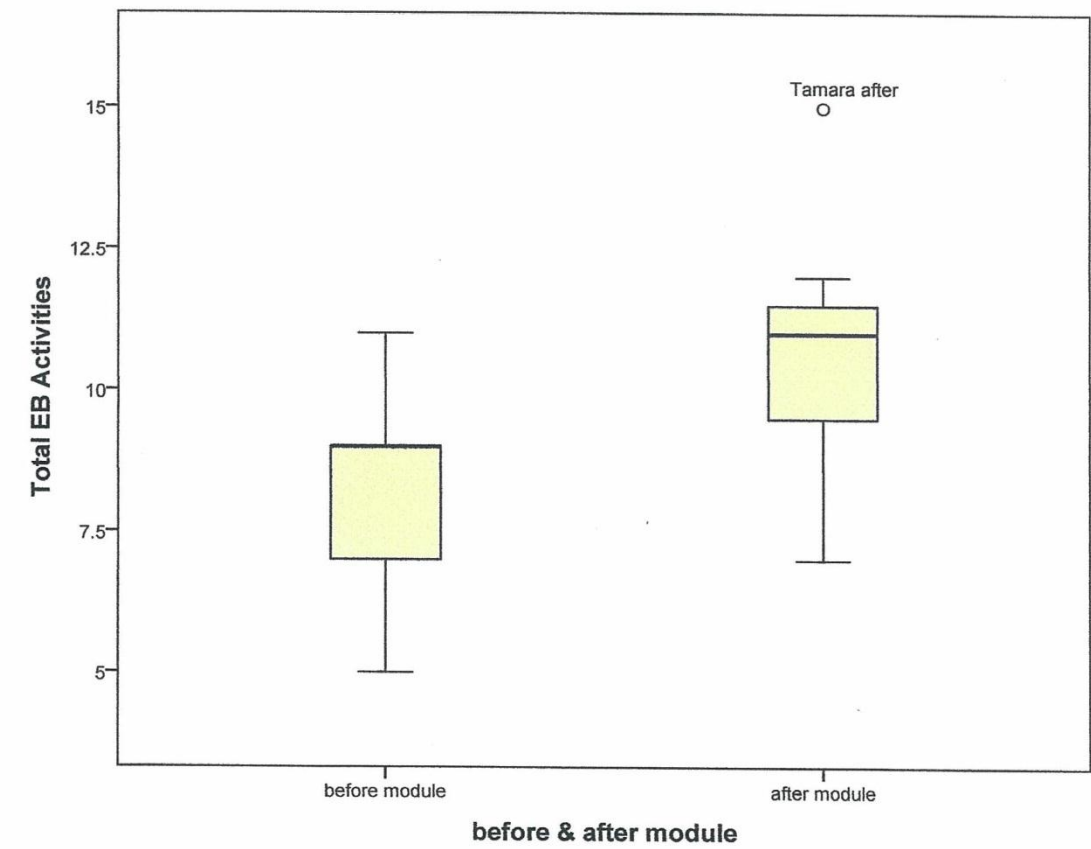


Graph 6 Individual perceived ability to overcome barriers to EBP

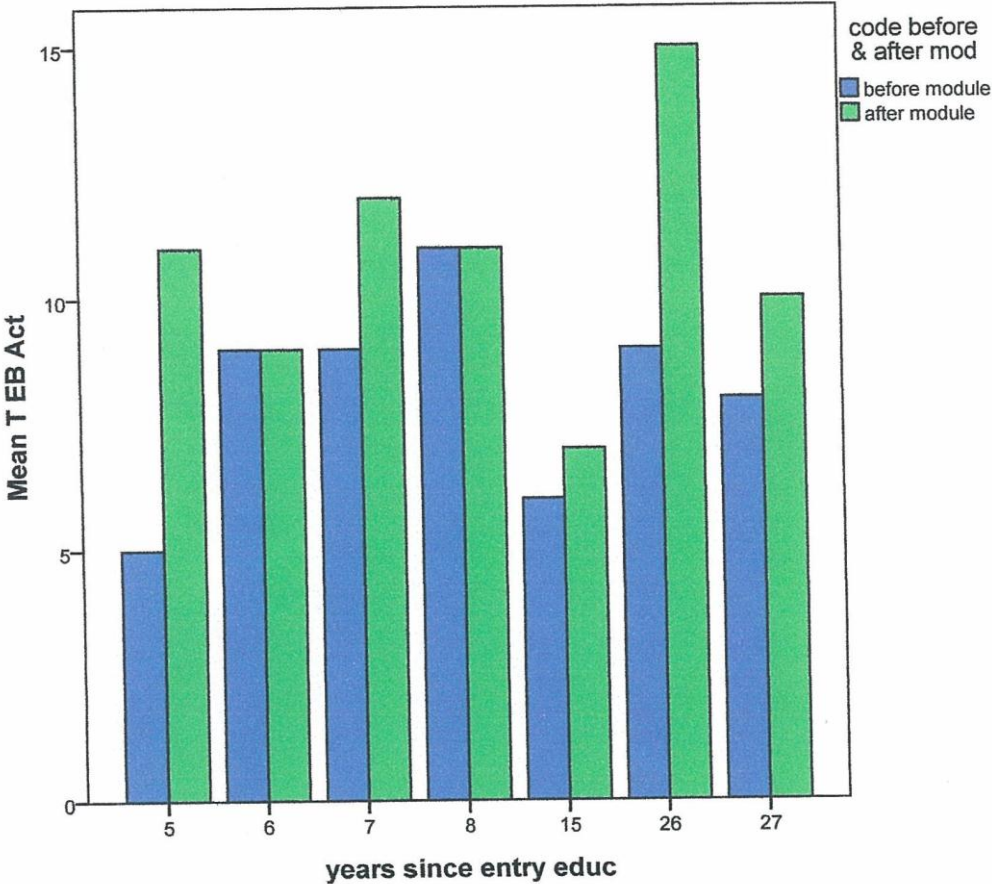


Graph 7 Group engagement in EBP activities

T EB Act

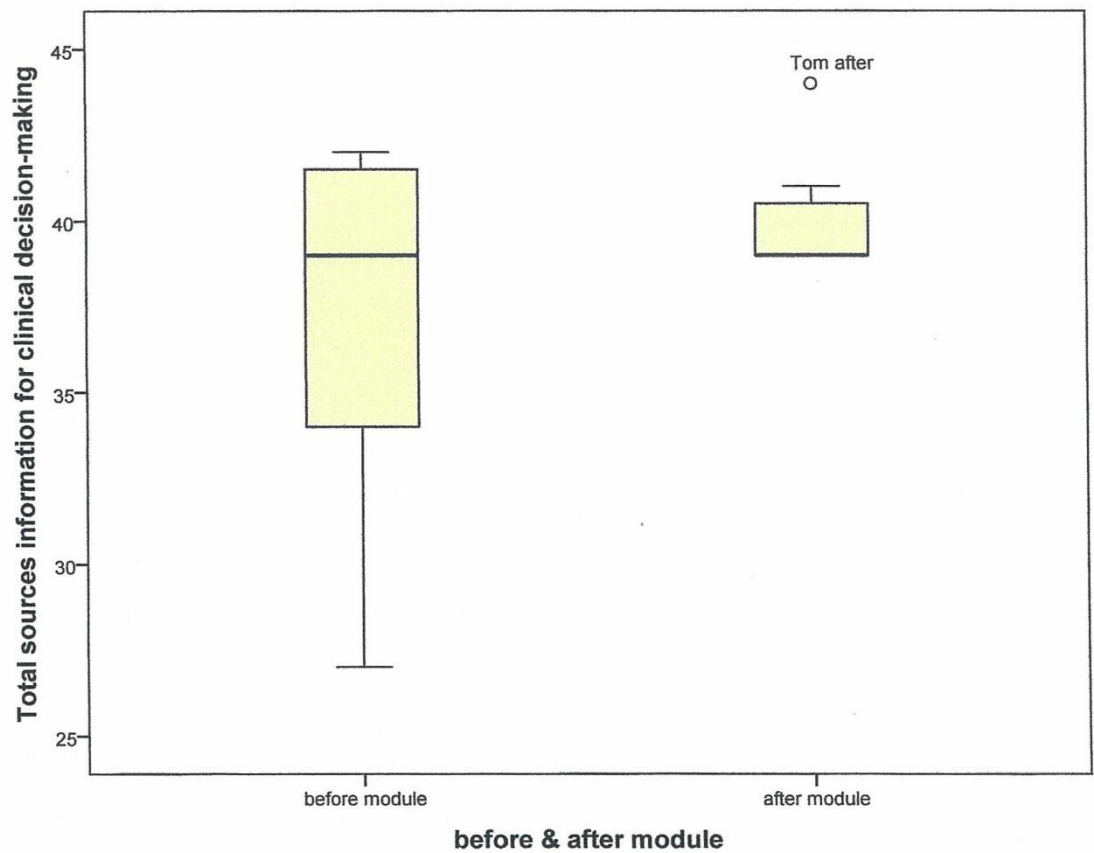


Graph 8 Individual engagement in EBP activities



Graph 9 Group information sources for clinical decision-making

T sources info



Graph 10 Individual information sources for clinical decision-making

