Southern Regional Hub-funded project

Project Report

Considering a new way to foster skills for evidence-based practice

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Executive summary

Introduction

Research has shown that effective practitioners use a wide range of sources of knowledge in their construction of evidence based practice (EBP). By contrast, education programmes tend to focus on teaching appropriate use of research literature to provide a credible underpinning for practice. There are many reasons why EBP is not as simple as learning and applying of a set of skills related to evaluating research. This theoretical information needs to be integrated into decision making that also takes account of contextual issues such as the client's circumstances, their needs and opinions, the therapists' knowledge, workplace culture and the resources available (Craik & Rappolt, 2003). Of note, the most difficult aspect is the integration of evidence for decision-making (Thomas et al 2012). Additionally, there may be little or no evidence available in the research literature and, in particular, evidence related to Māori health (Robertson et al, 2013).

Preparing students to transition from an academic environment to the realities of practice is a significant education issue. Recent research related to new graduates (Morrison et al, 2015) indicates that they are reluctant to even consider looking for evidence unless guided by a supervisor and that they lose these skills quickly after becoming qualified (Barnitt & Salmond, 2000). This project aimed to seek new ways of addressing this issue by identifying essential strategies and skills utilised in practice and incorporating them in the curriculum.

Purpose

- To modify the Occupational Therapy curriculum to provide evidence-based practice (EBP) skills that are essential for new graduates
- To work with clinical supervisors to support the development of EBP skills in new graduates

Methodology

A mixed method was used to provide a broad overview of the views of the target audience as well as a measure of change i.e. qualitative and quantitative data.

- Qualitative data were gathered through interviews and focus groups (participant numbers in brackets): Clinicians (11); Lecturers (7); 3rd year students (16); New graduates (2)
- Quantitative data were gathered from: 3rd year student via an on-line survey (22); Clinicians who supervised the students on fieldwork placements or as new graduates (92)

Limitations

The number of students who completed the survey was disappointing.
There was no recognition of Māori views in the project. (See comments later)

Conclusions and Recommendations.

This study has identified that there is a great diversity of thinking about the essentials of EBP varying on a continuum from finding and applying the 'outcomes literature' to being prepared to change thinking on the basis of 'what works'. Although, critiquing research is the most studied aspect of learning how to be evidence-based however, therapists do not spend a lot of time looking for and critiquing research. A more appropriate approach for practice is the more nebulous skill of being a critical thinker and seeking feedback on case management from colleagues. Essential features of

being evidence based include asking relevant questions, being open to challenge as well as receiving and using feedback. These elements were identified as being an area of weakness in the students. While it is often said that EBP is more than using research evidence, there is little clarity about the other components and even less attention paid to how these are integrated into decision making and the students learning as identified in this study. Thus, a model has been developed that is intended to provide a comprehensive guideline for teaching Evidence Based Practice – it is an integrated approach specific to an educational environment (across all years of the curriculum) and inclusive of both academic and fieldwork components of the programme.

The model is referred to as the "The Finger-Print Model" and identifies five components that inform decision making. This includes the usual three (i.e. the client; the literature; the therapist) the additions are the context and the student / new graduate as a learner. This latter component is pivotal in any discussion of teaching EBP as the novice filters information using their own knowledge base. To ensure that all elements are considered in the occupational therapy programme this model will provide lecturers and clinicians with an overview of the essential components of teaching EBP and support a common approach.

Introduction

The purpose of this project was to better prepare occupational therapy students to be effective evidence-based practitioners; and to enhance evidence based practice (EBP) clinical supervision practice.

This was done by identifying:

- EBP strategies employed by experienced clinicians and comparing this with strategies taught in the undergraduate program
- EBP strategies that students and new graduates use in clinical practice
- Supervision processes to promote EBP used by experienced clinicians when supervising junior staff.

The plan is to use this information:

- To implement changes to the Occupational Therapy curriculum to enhance skills and knowledge in EBP
- To support clinical supervisors' promotion of EBP.

Since the advent of the call for 'Evidence based practice" there has been a refocusing of what constitutes evidence from the more formal research results located in the literature to strategies that make use of opinion of experienced therapists and client perspectives. These sources of knowledge have been referred to as 2 cliffs i.e., the scientific evidence cliff and the patient / practitioner cliff (Aas & Alexanderson, 2012). These same authors make that point that there has been more focus on the cliffs and less on the bridge that joins them.

The more tangible sources such as research literature (the scientific cliff) can be readily understood as providing evidence that is 'reliable' but does have the added complexity of needing to fully understand the research methods and to critique the findings in relation to a specific clinical situation. This is a challenge for students and new therapists who have limited knowledge of research but is also difficult for therapists who may also have restricted research knowledge and very little time to find the resources and to critically evaluate them. The less tangible source of evidence arising from therapist / client interaction is an important focus in occupational therapy practice where determination of the client's needs is seen as pivotal (the patient/practitioner 'cliff'). Although being integral to practice it is not readily discussed explicitly.

There is even less analysis of how EBP is taught and then transferred to practice (i.e. the 'bridge'). Lecturer ideals may not be consistent with therapists' realities leading to students getting mixed messages about what constitutes effective evidence-based strategies. This project will help to build a reliable bridge between the two 'cliffs'.

Research question

What EBP strategies are essential for new graduate therapists to utilise and supervisors to promote with junior therapists, and how are these best integrated into undergraduate education.

The following objectives underpin this project:

- To identify the skills and attitudes that are essential for new graduates to be confident and effective evidence-based practitioners
- To describe how clinical supervisors assist the new graduates and students to achieve integration of theory /experience into decision making
- To modify the Occupational Therapy curriculum to provide EBP skills that are essential for new graduates
- To provide information to promote the facilitation of EBP skills in junior staff by clinical supervisors.

Project structure

Stage 1: This longitudinal project began by having a baseline of clinical reasoning and EBP). Clinicians, students and new graduates completed a survey.

Stage 2: The next phase identified students, new graduates, lectures and clinicians' views of how EBP is taught in the curriculum; (interviews and focus groups).

Stage 3: Changes will be implemented in the curriculum based on the findings.

Stage 4: Finally, students and new graduates will be surveyed using the same tool used in the baseline stage to provide a measure of how the changes have influenced reasoning and EBP.

Preparing students to transition from an academic environment to the realities of practice is a significant education issue. Research has shown that effective practitioners use a wide range of sources of knowledge in their construction of EBP (Robertson, Graham & Anderson, 2013). However, traditionally education programmes have focused on teaching appropriate use of research literature. Recent research related to new graduates indicates that they are reluctant to even consider looking for evidence unless guided by a supervisor and that they lose these skills quickly after becoming qualified (Barnitt & Salmond, 2000).

For the development of the profession it is essential that junior therapists are able to take a critical view of practice decisions. Commonly, EBP is seen to be related to searching for and critiquing literature to provide a credible underpinning for practice. There are many reasons why EBP is not as simple as learning and applying of a set of skills related to evaluating research. This theoretical information needs to be integrated into decision making that also takes account of contextual issues such as the client's circumstances, their needs and opinions, the therapists' knowledge, workplace culture and the resources available (Craik & Rappolt, 2003). Of note, the most difficult aspect is the integration of evidence for decision-making (Thomas, Saroyan & Snider, 2012). Additionally, there may be little or no evidence available in the research literature and in particular evidence related to Māori health (Robertson, Graham & Anderson, 2013). It may be equally important to use a range of alternative sources such as practitioner networks, clients' stories, workplace protocols, workshop information, and other condensed summaries to find the best basis for decision making within a realistic time frame[1].

This project aimed to seek new ways of addressing this knowledge gap in the undergraduate program by identifying essential strategies and skills utilised in practice and incorporating them in the curriculum. The impact of the curriculum changes will also be measured.

Literature

There are a number of issues in the literature that explore the teaching of EBP with many ideas about what needs to be included and relatively little evidence that any particular stance makes a difference. The one factor that seems to hold most promise is the integration of any proposed teaching into the fieldwork components of the programme. Bridging the gap between scientific knowledge and the social world of practice (Ass & Alexanderson, 2012) remains a bridge too far.

A common theme in the literature is that EBP is difficult to teach. Hebert et al (2013) sum up the issues by identifying two trends. One is the teaching of how to locate and critique the scientific facts which according to Ass and Alexanderson (2012) has always been the focus of teaching about EBP. However, EBP is about more than the research results which leads to the second approach of taking account of multiple sources of evidence such as research, practice expertise, resources and the client information (Herbert et al 2013). The world of practice is dynamic and complex with a focus on being client centred which is a challenge to the simple idea of being able to use a specific research study to support an intervention at a local level (Bunting et al, 2013). These authors also suggest that fieldwork practice plays a key role in the student learning where for instance, research projects facilitated by educators and involving clinicians and students can provide mutual learning about how to implement EBP. This has proven to be a valuable learning as students provide updated information about EBP and clinicians add their wealth of information about resources, 'know how' and client outcomes. It is an approach that provides a two-way mentorship (Herbert et al, 2013) and role models collaboration which is an important component of EBP in the current health environment.

Another consideration is that ethnic and cultural diversity should also be highlighted in any research agenda as it is an integral part of the social world that "shapes health behaviours and health outcomes" (McMurray, 2004, p.14). She argues that the consideration of research evidence for health promotion must respond to the complexities of working with "groups of people to promote cultural sensitivity, advocacy, partnerships and coalitions for change" (p 18). In particular, she notes that those who consider their practice to be best described in the language of caring and social justice should be concerned to ensure that they also incorporate culturally sensitive lines of inquiry into their practice base of evidence. This would lead to an acknowledgment of the diversity of individuals, families and communities. However, while the need to combine scientific evidence with patients' values and life contexts is recognised, the process of how to integrate these components is not well understood or studied (Kirmayer, 2012).

Critical thinking and reflection are potentially a route to the integration of multiple types of knowledge and experience and are cited as being essential components of being evidence based (Bunting, Durkin, Crosby & Guile, 2013). Developing such skills can be a challenge if the learners are not naturally inquisitive. However, asking questions to ensure that the facts are correct, the client's view is heard and the use of resources is understood is essential to having knowledge that is useful and can be drawn on to problem solve in a sensitive manner and to stimulate learning. A fundamental task of an education programme is to assist students to develop knowledge networks that are relevant to practice and provide good starting points to develop these networks further. To achieve this, many health programmes have adopted a social constructivist approach where negotiation and collaboration are actively encouraged (Hitch & Nicola-Richmond, 2017).

Reflective skills are basic to being able to recognise areas of strength and weakness so that this self-knowledge will enable therapists to engage in life-long learning (Zimmerman et al, 2007). Essentially this involves knowing that something didn't go as planned and identifying what it was; or considering what went well – in both instances thinking through the situation and learning from it. This can be referred to as 'double-loop learning' or 'reflexive learning' and is used when it is necessary to change the mental model that inspired the decision-making process. Unlike a single loop, this model includes a shift in understanding, from simple and static to broader and more dynamic. "Effective double-loop learning is not simply a function of how people feel. It is a reflection of how they think—that is, the cognitive rules or reasoning they use to design and implement their actions" (Agrys, 1991). These rules are referred to as a kind of ''master program'' that are kept in the brain, governing behaviour. This double loop learning involves reflection on values and norms as well as the social structures that influenced this thinking (Greenwood, 1998). Students therefore need to be open to change and to recognise the importance of constantly challenging themselves and expanding their horizons (cf. reacting defensively to protect themselves). To develop this attitude to learning, it is important that lecturers and clinicians develop strategies to assist the students to be effective questioners of self and others so that personal knowledge of practice can be integrated with theory to bring about changes in attitudes and behaviour.

A comprehensive picture of therapists who are ready to think creatively about practice is provided by Velde, Wittman and Vas (2006):

> *'The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgment, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit.'*

While fulfilling these criteria seems like a big ask, there are many strategies that can be imbedded in a curriculum to support these qualities of a critical thinker. Some have been described already but one programme in particular, developed by Thomas, Saroyan, and Dauphinee (2011, p.265) has been influential in allied health. The recommended features are to:

1. Consider the learners existing knowledge, beliefs and attitudes regarding EBP
2. Understand the salient role of social negotiation and collaboration with peers in incorporating evidence in clinical decision making
3. Acknowledge that the learning situations, content and learning activities are meant to foster self-analysis, problem solving, higher order thinking and deep understanding; as such, they must be relevant, authentic and represent the natural complexities of the world
4. Support collaborative learning that exposes students to alternative viewpoints and afford them the opportunity for apprenticeship learning
5. Scaffold learners from what is presently known to what is to be known, thereby facilitating the learner's ability to perform just beyond the limits of current ability

To achieve these aspects, it is considered that collaborative and case-based methods are essential to stimulate learning and promote problem solving. However, it was noted by Hitch and Nicola-Richmond (2017) that the first point relating to knowing the prior knowledge and skills of learners is not being assessed so cannot be used as a measure of scaffolding which is the 5th point. Additionally, they state that communication of EBP to varying audiences is rarely addressed and that workplace culture is highly influential in stimulating habits such as those that are essential to being evidence-based. Supporting this latter point, a New Zealand study of occupational therapy graduates

concluded that experienced therapists are essential to demonstrate and motivate evidence-based behaviours (Morrison & Robertson, 2016).

There are many ideas about how to construct teaching so that students integrate EBP into fieldwork and into future practice, but little evidence of the effectiveness of these strategies (Cohn, Coster & Kramer, 2014). As developing competencies related to the implementation of EBP is central to occupational therapy programmes and required by the registering bodies, this is an issue to be further explored so that ways of ensuring that 'habits of the mind' consistent with EBP are integral to our graduates' skills. Thus the challenge remains for occupational therapy lecturers to become more aware of the components of their courses and the extent to which they underpin the students' ability to become confident practitioners ready to question and to pay attention to their clients' values, the research information as well as their own knowledge base. Most of the evidence found in the literature is "exploratory and descriptive in nature" and "lacks rigorous testing" (Hitch & Nicola-Richmond, 2017, p. 1041). This was also noted by Dr Angela Benfield who recently developed a model and a measure of evidence informed professional thinking. (Benfield, 2015).

Summary

There are three main messages in the literature. The first is that principles of critical thinking and reflection are fundamental to the objectives of a programme that plans to instil evidence-based thinking in the learners. Secondly, **t**eaching without consideration of the clinical environment is problematic as the workplace culture is fundamental to the practice of being evidence informed and clinical supervisors have a critical role in modelling EBP to students and new graduates. The third point is that there is little evidence of the effectiveness of the programmes that are promoted as being successful in preparing students to be evidence based. There is therefore a large gap in the literature where the evaluation of such a programme could contribute to an understanding of how to teach EBP.

The Project

A mixed method was used to provide a broad overview of the views of the target audience as well as a measure of change i.e. qualitative and quantitative data. Ethics was obtained from Otago Polytechnic Ethics Committee (appendix B)

- Qualitative data were gathered through interviews and focus groups (participant numbers in brackets): Clinicians (11); Lecturers (7); 3rd year students (16); New graduates (2)
- Quantitative data were gathered from: 3rd year student via an on-line survey (22); Clinicians who supervised the students on fieldwork placements or as new graduates (92)

The questions addressed in the interviews were as follows:

Clinician (focus groups)

- For new graduates and students, how does your work environment facilitate the use of evidence in practice?
- What specific practices and strategies do you use to ensure new grads and students are evidence-based in their practice?
- What strategies do you see new graduates and students utilise when they come to your workplace in terms of using evidence to inform their practice?
- What are the most important tools and practices that students and new graduates should be equipped with to ensure they are evidence-based in their practice?

New Graduates and students (focus groups*)*

- When reflecting on your Occupational Therapy course, what do you feel were/are the most beneficial strategies or tasks to assist you to be evidence-based in practice?
- When reflecting on practice/ fieldwork what strategies or tasks has your clinical supervisor and/or the work environment provided that were helpful to assist you to be evidence based?
- What specific practices and strategies should be included in the OT course to assist new graduates and students to be evidence-based in their practice?

Lecturers (interview)

- What do you feel are the most beneficial strategies or tasks in the current curriculum to assist student/new graduates to be evidence-based in practice?
- What other specific practices and strategies should be included in the OT course to assist new graduates and students to be evidence-based in their practice?
- What do you believe are the most important tools and practices that students and new graduates should be equipped with to ensure they are evidence-based in their practice?

The Survey was developed by Dr Angela Benfield and integrated clinical reasoning with EBP. (See appendix A for further information). This integration is of note as there is often a divide between these two aspects of therapists practice. For instance, in the study carried out in NZ, it was evident that therapists supported this idea of the separation of their reasoning and the principles governing EBP (Graham, Robertson & Anderson, 2013).

Data Analysis

Clinicians - Themes

Opportunities for learning about how to be evidence based in the work environment:

There were many examples offered:

- Use of clinical guidelines / pathways –developed from literature
- Auditing against standards - Providing evidence of OT effectiveness and also used for inter-professional framework
- Induction /training by the company to clarify expectations of the organisation
- Regular staff in-service meetings provide learning opportunities
- Use of theory to inform practice – this contributed to confidence that practice was evidence-based
- Some areas have internal processes e.g. a knowledge translator to assist staff to find and use evidence. Take note of this as an initiative.
- Folders with reports and session plans to refer to as examples to guide practice as well as textbooks - all staff encouraged to contribute to these.

Strategies used to encourage new graduates and students to be evidence based:

There were a number of activities that students or new staff could be directed to attend to as examples of how to make use of local resources. These included

- Contribute to journal clubs – present an article; using a robust methods e.g. PICO, McMasters evaluation; however, the focus of the critique should be on the usefulness of the information to the clinical environments rather than the research
- Seek out non-academic information e.g. the lived experience
- Work with librarians and also be included in monthly emails from librarian / OT re current literature.

The knowledge and experience of senior staff was viewed as a valid form of evidence and could be accessed in a number of ways. Clients with relatively straight forward issues are intentionally allocated to new staff, and the work is checked through supervision, observation and auditing processes. Other ideas for new staff included:

- Encouraging them to observe and question, to openly seek help and advice, and to follow rather than lead in the therapeutic process.
- Learning from more experienced staff and then search for the evidence in the literature,
- Doing literature searches whenever anything complex or unusual came up.

NB: The expectation of use of EBP appears to vary between services, with one participant acknowledging that evidence is not often considered in the development of clinical systems, and another that auditing systems include the use of evidence in practice decisions.

Strategies used to ensure students and new graduates are being evidence based

Encourage students to use skills they have:

- Presentations – based on literature searches; assists to keep staff well informed and re-enforces the importance of sharing knowledge
- Looking up information /evidence and linking this to cases – although their ability to put the evidence into practice was limited, it did improve with practice (so important to ensure this happens in each placement – continuity between placements?)

Students were reportedly more motivated to engage in EBP activities if it was an expectation related to an assignment given by the school.

What skills do students lack / need?

Skills needed:

- Be able to work out what to focus on without literature (so where does evidence come from)
- To think about different perspectives – i.e. be patient centred
- Ask questions – and problem solve
- Translate guidelines into practice
- To turn evidence into something useful e.g. language for the family
- Analyse the evidence in terms of clinical utility, so that it is contextualised, and used conceptually rather than as a specific recipe for intervention
- Justify and make appropriate modifications to what is recommended in the evidence to enhance clinical safety and effectiveness
- Use evidence from other disciplines, e.g. physiotherapy and psychology, where the evidence may be relevant and useful but therapists need to be able to apply it from an occupational therapy perspective.
- Occupation and task analysis – also various other skills related to practice in specific areas (is this specific to EBP?)

To be aware that:

- Evidence is more than research literature – rather a blend of literature, clinical experience (self and others) and the client voice
- Best practice is constantly changing

Reflection/self-evaluation

The need to learn from reflection was identified as crucial for ongoing professional development.

Skills needed:

- To ask questions, to acknowledge skill gaps, to talk about what is not going well
- To reflect honestly on what was done personally, not what was done generally
- To hear and accept feedback (particularly on what is not going well)
- Confidence in their strengths and closeness to contemporary theory
- The ability to challenge what they see and to introduce new ideas
- Knowing that they do have a valuable voice and being prepared to use it

Weaknesses included:

- Limited ability to apply theoretical knowledge related to reflective practice and EBP
- Reflections were often superficial or did not facilitate insight into learning needs despite being aware of Gibbs model of reflection

***NB**: Many ideas that were explained were generally about practice rather than specific to being evidence based. This is a quandary i.e. What are the differences between good practice and EBP? Is there a difference?*

Lecturers - Themes

Differences in concerns / understandings: There were variations in what the lecturers thought should be taught and what EBP was.

Role of the client. One said that the link between theory and the person is the 'crux of learning' (10.7) another referred to the need to 'listen to the client' & having a measure of client satisfaction ((G.7); need to pay attention to the physical / social situation / occupational difficulties (E)

Reading research literature was a common theme – i.e. It was considered important that students do this. Articles versus textbooks; how to read articles; what is the expectation of lecturers re what to read; how much; to what extent articles are found or allocated; are they given any criteria on which to base their evaluation of the articles (e.g. McMasters is commonly used); how do expectations differ between years; is there a progression in this? Important to know a range of ways of accessing literature.

Sourcing literature: learn how to use data bases in the library and to use Google Scholar. Some instruction re the use of other data sources that could be readily located in practice e.g. TRIP (turning research into practice), OTNZ-WNA resources

Being critical: different approaches – formally critiquing the research using PICO and McMasters. Consider the difference between their case and the context of the research. Critical reading – not well explained. Interpret, synthesise and reach conclusions. [What does this look like?]

Learning about research is an important aspect of being able to critique it. They do some preliminary work in the first year. Needs to be developed so they are more familiar with research processes.

Use of models as research [NB: – These are reasoning frameworks – this needs to be clarified]

Using the knowledge and experience of others to inform their practice. Observe practitioners, OTs talk to them in classes; clients provide feedback e.g. using client satisfaction tool (community placement) [do they look at protocols?]

Use of self: practice using Gibbs model. *[Lots of reflection but how is this related to EBP*

Need to understand that there are different world views and perspectives; different approaches to treatment; and to understanding a client's situation: need to debate such differences and to include in reporting / reasoning (A, 9, 10). This may require learning a language to talk with others who have different perspective as well as attempting to understand their view of evidence.

Teaching strategies

Learning that there are varying perspectives:

- Find evidence that contradicts others arguments – teach students to argue (F.9)
- Students challenge each other
- Use role play & debates
- Consider a case from a range of perspectives – humanistic, biomed., behavioural cognitive. (D,13,14)

Understanding Research:

- Develop a FW5 research proposal
- When reading research be able to describe the general nature of research i.e. why carried out, the point of the research question.

Literature:

- Use a range of methods to access literature e.g. data bases, Google Scholar, Websites, TRIP. Recent textbooks (B)
- Locate suitable literature (e.g. pre-digested – especially in initial stages)
- Assist student to critique the articles
- Engage with the literature (E.9, 19)
- Appraise articles (F, 8)

Real cases:

- Scenario based learning – lecturer, visiting OT or student cases. cases could be used.
- Find literature relevant to student experience – courses get students to use their own cases (F, 7,8)
- Model use of EBP strategies – use of research
- Learn to read a situation (E.11)

Reasoning:

- Learn to weave together an argument that combines OT knowledge / philosophies / skills (C. 13)
- Find the evidence – e.g. survey clients (G,11)

Consultation / Reflection: *(not clear – however, considered important by clinicians)*

- Check out conclusions re evidence with other professionals (D. 6, 15)
- Use peer review (G)

Other:

Scaffolding needed over the 3 years of the curriculum. (*NB: need to decide what is scaffolded*)
Fieldwork expectations re EBP; developing habits of seeking evidence.
Practice based evidence – [NB: important to clarify what this is.]

Are there discrepancies/gaps in the themes and how to teach students?

Comments: Not a great deal on teaching strategies related to:

- *Reflection*
- *Consideration of the client's view (begs the question what is EBP)*
- *Reasoning (how to integrate all this information to explain ideas / conclusions)*
- *How to critique the literature (also relates to understanding research – (need to work out what to expect at different levels in the programme)*
- *How to scaffold all aspects over 3 years*

- *Direct links with fieldwork*
- *Practice based evidence – understandings of how this works in practice environments e.g. Managerial expectations re the use of protocols; OTs use of data accumulated in practice*

Students summary of data

The point of evidence is to back up / justify what you are doing

Need to know about:
Using referencing
Assessments

Teaching methods:
Use of annotated bibliographies in 3rd year – makes you 'read the article and understand it'

In 1st year – learn about research e.g. Qualitative and quantitative; how to find articles and referencing. Use recommended books

Year 2: Vivas– requires strong rationale for chosen interventions. Increase knowledge of literature types – more than currently taught as too much to pack into year 3.

Viva in 3rd year – most natural; feel confident; definitely evidence based. *[i.e. research literature]*

Models as evidence – *[NB: in fact they are about justification which is how EBP has been explained]*

In fieldwork:
Use the supervisor's knowledge base/experience as a starting point

Observe the supervisor and see 'what works' – discussion, justification with supervisor from time of referral onwards.

Some placements are too fast paced so no time to research the context

The practice of keeping up to date can get lost in practice – searching may be more difficult; DHB portals may be used but we don't know how to do this

Standardised assessments may already be in use

Where no OT – pushed to justify your intervention

The client may not be receptive to chosen intervention *[good point re EBP but not explained]*

Reasoning:
Important to draw on past knowledge of similar clients [knowledge networks]
Procedural reasoning based on study. Interactive reasoning – enables understanding of why intervention works – *[NB: This is a good introduction to the topic but interactive reasoning not really well used here]*

[NB: *interesting in relation to all aspects of evidence – seems to read as though there is blame if not doing the best by using external evidence – little mention of the client's participation in all of this or students theoretical or experiential knowledge]*

Rational for the Fingers of Practice model

The model developed from this project addresses the points made in both literature and in the interviews regarding principles required to successfully develop new graduates ready to be evidence based practitioners. The elements that have been addressed include: critical thinking; reflective skills; paying attention to a wide range of evidence; paying attention to the fieldwork environment; ensuring that supervisors are included in its development. One feature of the model is not just the 'fingers' that guide thinking in regard to what evidence to consider but also includes questions that can stimulate enquiry and critical thinking. Students don't always know what questions to ask – this model provides starting points (grouped into 3 levels of questioning) and has the potential to assist them to become confident in both asking and responding to challenging questions.

Development of the model: It is anticipated that the students themselves, will contribute in the development of a bigger bank of questions that they can draw on – at both beginning level and higher level thinking. This element in particular is seen as a dynamic component of the model and one that can be ever evolving. The intention is to develop the format of the model e.g. a more versatile version that can be used in Moodle and also in conjunction with conceptual maps is currently being planned.

A critical issue in all of this is the observation in the literature that new graduates lose their incentive to be evident based and their curiosity regarding practice dilemmas and their skills to be confidence evidence based practitioners. The nurturing of new graduates is practice environments is needed to ensure the education programme works. Strategies to assist could be to

1. Actively encourage those departments who do support new graduates well. Work with them to identify how they do this so that others can learn

2. Work with a range of departments to develop their understanding and ability to support students

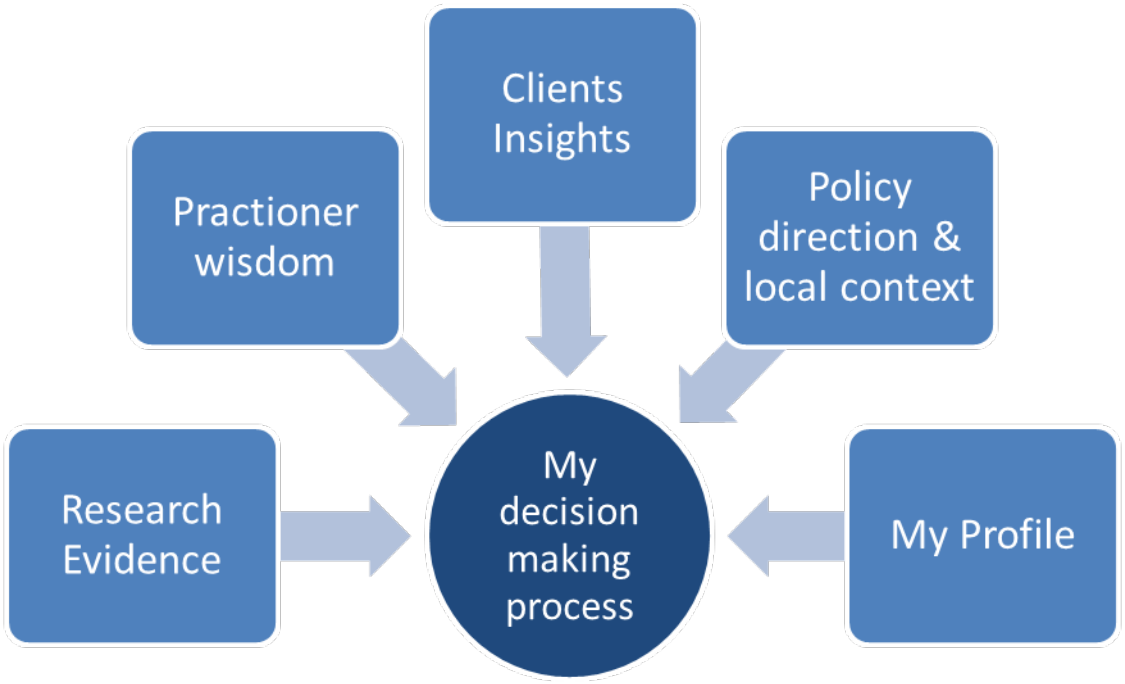
3. Provide a post-graduate opportunity for new graduates that allows them to develop confidence in their skills, despite limited support from their clinical colleagues. Their confidence and skills are essential to make changes to attitudes of departments towards implementing EBP

4. Develop a series of Edubits to assist new graduates to realise their skills. This is not as powerful as having direct input / support from a knowledgeable colleague.

5. Continue to facilitate workshops at NZ occupational therapy conferences

THE MODEL
THE FINGER PRINTS OF PRACTICE

A Guide for teaching EBP



This model has been developed from a research project with clinicians, lecturers, students and the literature to represent the impacts on evidence based decisions. It provides direction to explore the essential information when thinking through practice decisions.

Five aspects were considered to have an important influence on decision making. The purpose of the model is to make these overt so that they can be readily identified to underpin reasoning in practice.

The five fingers are about 'grasping' the ideas and juggling them to create well informed decision making. The decision making process is in the palm of your hand. Each person has a hand that has unique features. So every decision making process may differ depending on what informs it. What is important is that your reasoning is well informed!

Being well informed involves asking questions. Not everything about 'good' practice is in written form; it is often carried by experienced clincians so the way to find out what they know about is to talk to them. Questioning is essential to create clarity, be analytical, create sound working relations, and to challenge assumptions.

THE FIVE FINGER PRINTS	THE HAND IN ACTION:
Research Evidence	This is the literature i.e. research articles, books, reports that provide information about the value of an intervention
Practitioner Wisdom & skills	A clinician works with similar cases and acquires a lot of 'know how'. This is often not spoken about but is ideal information for the new therapists as it provides ideas for informing about practice.
Client Insights	This is a pivotal aspect of practice. The client has an understanding of what will make a difference to them and is able to identify 'what works' from their perspective
Policy & local context	This is about national polices that impact on practice and provide direction for service such as clinical guidelines, specified assessment or practice models. Local services will use these to underpin practice and to develop their own culture. Practice areas may also have a peculiar culture that brings its own expectations for practice excellence (e.g. Māori Health Models; schools; private practice)
Novice profile	What do you bring to the situation? What experience and knowledge informs your clinical reasoning? Think of the 3 'P's: Propositional knowledge (theory) Practice knowledge (FW experiences) and Personal knowledge (other life experiences)
My decision making process	This is the OT process. Identify the cues, the assessments used, the problem that you will address, the plans to manage the problem, the outcome and the evaluation of the intervention i.e. What outcomes were pivotal?

Guidelines for Reasoning

*NB: The following questions have been divided into question to ask at **3 levels of thinking**. They can be regarded as appropriate for 1st year, 2nd year then 3rd year but can also remain flexible*

5 FINGER PRINTS OF REASONING	QUESTIONS I CAN ASK
Research Evidence: Literature –e.g. research; systematic reviews: Books. Web sites. ***Questions about the literature:*** ***Questions about the books and web sites:*** Use the ACCODS framework to evaluate.	Where was the study carried out? What did the researchers want to know? What did they find out? What similarities and differences exist between the research context and the scenario you are considering (e.g. community, hospital)? In what way is the client group similar or different to the scenario you are considering? What criteria was used to select the participants? --- Are the researcher's skills & motives described? Are any biases evident? Is the research method qualitative, quantitative or a mixed method? Why was the method chosen? Is there a specific research question? What is it? How were the participants selected? Why use this method? How was data collected and recorded? Is this consistent with what the researchers want to know? Are implications for policy / practice identified? What are they? --- What ethical considerations were taken into account? Can the results be generalised beyond the specific group studied?
Practitioner Wisdom and skills: ***Question to ask a therapist:*** Gain understandings of an experienced OT (or another member of the IP team) Engage with peers/colleagues/supervisors to evaluate clinical experiences.	What did you identify as being a problem? How did you assess this client? What did the assessment tell you? What was your goal? Why are you doing this Intervention? How do you know that the intervention has worked? How will you report the outcomes? What is the likely long-term outcome for this client? --- Do you use a particular model? How did you identify the clients concerns? --- What influenced your approach to this client? What impact did the team have on how you worked with this client? How was change measured?
Client insights/evaluations: ***Questions to ask of the client*:** (*could involve the family*)	What do you find difficult? What changes have you noticed? Do you have any pain? Can you: get dressed, open your hand, prepare breakfast etc?

The clients understanding of their situation; you are beginning to understand their life	--- What frustrates you at the moment? What progress would you like to make in xx days? What progress have you made? What has worked well? What's important for you? --- Is there anything else you would like to achieve? What do you think the solution is?
Policy direction / local context: ***Questions about protocols & Policies: (the rules!)*** The impact of national standards on the intervention. The use of local protocols. Realities of the work context. Social structure & culture	Are there protocols that guide the intervention? What are they? Do I need to look for evidence if there are protocols? Are there health and safety policies (e.g. related to moving and handling) --- How do national guidelines/policies impact on the service provided? How does the organisation of the workplace influence OT practice? What cultural perspectives have an influence? --- Can the rules be bent? Can procedures be modified? (if yes, under what circumstances?) Are the policies justified from a social justice perspective?
Novice profile: 1. ***Questions about Myself:*** My knowledge (e.g. theories, medical conditions) and skills (e.g. in relating to clients, in assisting people to carry out specific tasks, in paying attention to cognitive aspects) that will have an impact	What knowledge and skills do I have that I can draw on? What am I unsure about? How will I get the knowledge/skills that I need? How did my role and perspective impact on the encounter? (Values, personal interest, life experience, culture) Did I find literature or evidence summaries? What is the quality of this? Did I understand this? What did I learn? --- What will I do differently next time? What will I do with the knowledge I have gained? What will I do to gather more information? Is there suitable information from other professional literature? --- I noticed that the client said xxxx or did xxxx what were you thinking at this point? What do you think the future is for this client?
2. ***Questions about using my initiative.***	Did I discuss my observations and reasoning and seek help and advice? Did I carry out literature searches when anything complex or unusual was evident? --- How did I use literature when working with a client? What knowledge and skills do I need to be developing?

	What has 'stumped' me? What am I doing about this? Did I offer to present to staff? Did I find opportunities to talk to clients to get their perspective on progress / outcomes /why positive changes occurred? What did I find out? What are the implications for my practice? --- What were the best learning experiences for me? Why? What was the most important information for me? What did I learn? Did I miss any learning opportunities? What implication will this have for my future practice/placements?
Decision Making: **i.e. OT Process**	**Questions I can ask** **(of myself or my supervisor)**
Trigger for problem solving What prompted the situation?	What happened (to this person)? What were the consequences?
The cues What information gave me a greater understanding of the situation? What assessments were carried out?	What did I see? What did I hear? What did I read about Were there contradictions? Were there other assessments that could be used? Were the assessments informal? Standardised? Reliable and valid?
The problem What is the concern and whose concern is it? What is the OT Diagnosis / OT Problem	Is this consistent with the clients understanding? Does the team agree with this? Is it specific to OT?
The plan Theoretical perspectives, the pragmatic factors (e.g. time frames, resources)	What theoretical model is influencing my planning? Why is this a good fit? What restriction are there? What options have been considered for an intervention? Why is the chosen plan the best one? How can I justify my approach?
The Intervention Did this go as expected?	What were the unanticipated factors? What else did I learn about the client? Did I need to change my ideas? If so, what did I do and why? What was their evidence for this approach? What literature can I now find to support the intervention?
The evaluation What has been achieved?	What is the client's view? What is the family's/carer view? Did the team support my approach? How can I measure the outcome?

	What was successful about the intervention? What needed to be modified? What did I learn from this experience?

NB: The development of this model is still a work in progress. It will be refined when feedback is received about its use.

Comparison of old and new curriculums

PROPOSED CHANGES IN STUDENTS "HABITS OF THINKING" AND THEIR EBP SKILLS

It is anticipated that the implementation of this model will result in changes in the curriculum, and ultimately on student learning and specifically, their clinical reasoning. The integration of the new curriculum has already commenced and is being rolled out over a 2 year period. [2019 – 2021]
Pre-post-test: At the end of this period it is anticipated that students who have experienced the new curriculum will be asked to complete a survey. This will be compared to the results prior to the curriculum changes.
The following table proposes changes to the new curriculum based on the integration of the findings from the EBP study. (NB. This table is still a work in progress and needs great input from lecturers and clinicians)

IMPACTS ON EBP	OLD CURRICULUM	NEW CURRICULUM
RESEARCH EVIDENCE: • **Literature critique**	Literature Searching experienced over the 3 years Critiquing the research – too much expected in an UGrad curriculum	More direction to encourage the use of an extended range of sources Critiquing of research graded over 3 years. Specific guidelines provided
• **Identification of outcomes relevant to a practice area / client**	Left to chance in fieldwork settings i.e. Encouraged by some clinicians	Expected to check with clinicians and report in FW manuals and in FW debriefs
• **Searched a data base or peer reviewed a journal**	Expectation of the current curriculum – especially in FW case presentations and in classroom exercises	Identify 2 'best finds' and report back in FW debriefs. Work in partnership with librarians in clinical settings
• **Used outcome measures /trialled a new one**	Left to chance in fieldwork settings i.e. Encouraged by some clinicians	Expected to check with clinicians and report in FW manuals and in FW debriefs
• **Formulated a PIO/PICO**	Left to chance in fieldwork settings i.e. Encouraged by some clinicians	Expected to check with clinicians and report in FW manuals and in FW debriefs
• **Use of Theory**	Fundamental to justification; range of models applied	No change to theory. Clarity re theory guiding reasoning rather than being evidence.
CONTEXTUAL CONSIDERATIONS	Elements of this taught	Integrated into all courses where case scenarios are taught; greater

• **protocols and government directives**		repetition of this material; used in preparation for FW
• **Use a clinical guideline /protocol**	Left to chance in fieldwork settings i.e. Encouraged by some clinicians Taught in some courses	Expected to check with clinicians and report in FW manuals and in FW debriefs Taught specifically in all case scenario courses
• **Specific guidelines related to a local model (e.g. Māori health, schools)**	Attention to how this could impact on practice decisions noted but not investigated thoroughly	Explored in depth in the practice area – questions developed to deal with the specific orientation of the practice
CLIENT PERSPECTIVES • **Client views attained**	Client centred practice encouraged	Students directed to multiple ways of accessing clients views; greater use of FW experiences; examination of divergent views
• **Reflected on the views of clients / family members**	No particular direction in the current curriculum?	Report back in FW debriefs Exercises included in the scenario courses??
THERAPIST WISDOM • **Accessing therapists reasoning.**	Students well aware of this when in FW	Guided questions to extend students repertoire of questions to ask in FW re therapists justification of action taken; encourage the use of experienced OT's summaries in written form – presentations, book chapters
• **Collaboration with IP team**	Sharing clinical experiences has not been encouraged	Students to identify / report instance when they sought advice about their practice decisions.
LEARNER KNOWLEDGE BASE • **Impact of self on reasoning**	Limited exploration of knowledge base – both personal theoretical and practical	Greater focus on reflective exercises to ensure students examine their own knowledge and experience, critique this and take action to fill gaps. Integrated into FW feedback – bring their questions from FW for exploration.
• **Student experience**	Limited challenge to ideas	Greater personal challenge to their reasoning
OTHER ASPECTS		
Lecturer approach	Multiple perspectives of EBP	Consistency across lecturers in essential components that underpin being evidence informed [Use of the Finger Prints of Practice model]. Re-enforcement of the skill of asking critical questions.
Clinical Reasoning	Taught separately to EBP	Integrated into exercises around evidence informed thinking

FW experiences	Limited use of fieldwork experiences integrated into teaching/learning.	More critique of personal FW experiences; use material more frequently as teaching exercises.
FW supervision	Limited support given to clinicians to encourage students to be EBP	Work with clinical to develop resources and teaching methods that will encourage an evidence based approach with students.

Final comments

The 'new' approach to evidence based practice is a much more generic one than the traditional approach where a critical analysis of formal research literature has been a central tenant. The literature is now regarded as only one aspect of providing evidence for practice outputs. Aspects such as the influence of the therapist and the client's input is given more credence. There is also a softening of research that specifies interventions that can be reliably used as a basis for 'best' practice. What is needed is a way to make these outputs meaningful i.e. one such method is to collate them within the workplace and use practice experience to define the outcomes that are meaningful. Modern test theory (or item response) provides a framework for this where items are selected by identifying unidimensional items and placing them into a probabilistic Guttmann scale, converting ordinal data to ratio level data. This contrasts with the usual approach where reliability and validity are established with each population. This allows the tools to become population free, which is critical when working with different populations. Following through on this could provide an exciting project for clinicians and students however it is beyond the scope of this project. (See Benfield, 2015).

At the outset it was stated that: This project will help to build a reliable bridge between the two 'cliffs'. – meaning the world of academia and the world of practice. Changing a curriculum and engaging all staff is in itself a big task, bringing clinicians on board with a new learning programme is also complex and requires a lot from a very busy work force. However, it's an important issue. If occupational therapy is to keep abreast of current thinking about being 'evidence informed' then we need to understand what evidence 'counts' and how to support those who are new to practice and will be the next generation of occupational therapists. The model that has been derived from this work is simple, workable and can be readily modified to meet both different levels of understanding and different practice areas. This model is a work in progress. We are grateful for the input of many people and look forward to continuing to engage with them during the implementation of this work.

Future Research

1. To identify what difference has been made in the curriculum resulting from
   The implementation of:
   - The Finger Print Model to support teaching
   - Specific teaching strategies that were identified in the literature and in the research.

2. Work with clinicians to explore better ways of implementing EBP skills in their support plans for new graduates and students. Work towards identifying better ways of including essential information in the curriculum.

Strategies:

1. Use the original survey with all students in the final year of the updated programme
2. Develop a questionnaire that provides an overview of the value of revised teaching methods in the curriculum. Lecturers to complete
3. Work with clinicians, students & new graduates in fieldwork areas to identify which EBP strategies are most helpful in particular practice areas.

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Appendix A

10 May 2017

Linda Robertson
65 Ravenswood Road
St. Clair
Dunedin

Dear Linda

Re: Application for Ethics Consent
Reference Number: 721
Application Title: *Fostering Skills for Evidenee Based Practice*

Thank you for your application for ethics approval for this project.

The review panel has considered your revised application including responses to questions and issues raised. We are pleased to inform you that we are satisfied with the revisions made and confirm ethical approval for the project.

Many thanks for your careful responses to our recommendations.

We wish you well with your work and remind you that at the conclusion of your research you should send a brief report with findings and/or conclusions to the Ethics Committee. All corrspondence regarding this application should include the reference number assigned to it.

Regards

Liz Ditzel

Liz Ditzel (PhD)
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Appendix B

Subject: Mean person scores and ranges for 2017 students

CCR (N=15)
Mean:5.6542
Standard Deviation: 1.28535
Range:2.78- 8.06

EBP: (N=13)
Mean: 4.4207
Standard Deviation: .76861
Range: 3.25-5.91

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Mean CR measure est 16	15	2.78	8.06	5.6542	1.28535
Mean EBP measure est 16	13	3.25	5.91	4.4207	.76861
Valid N (listwise)	13				

In thinking about this, it is important to also think about the curriculum - i.e. the frequency of reflection activities and EBP activities

Appendix C

NZOT conference 2017 - Abstract

Themes:

1. Practice and Society (making sure clients are involved in EBP processes??!)
2. Consultation and Engagement (we plan to have people share knowledge)

Workshop (90 mins):

Title :

What are the essential evidence based practice skills for students and novice practitioners?

Abstract – 300 words

Learning Objectives:

Participants will:

- Explore and share the teaching of evidence based practice in undergraduate programs - both campus and fieldwork components.
- Identify essential evidence based practice skills and methods
- Explore options for the facilitation of evidence based practice skills in occupational therapy students and novice practitioners [both imbedded and tangible sources of evidence]
- Evaluate/develop a tool for enhancing teaching and facilitation of evidence based practice skills in an undergraduate programme: in fieldwork and educational (campus) contexts.

Teaching Methods:
Presentation:
An introductory presentation will orientate the audience to what is known about teaching and learning evidence based practice based on current literature. The rational for the research project "fostering skills for evidence based practice" will be presented, along with the preliminary findings.

Discussion groups:
The audience will be divided into groups such as educators, fieldwork supervisors, novice practitioners and clinicians who are supervisors and/or managers of novice occupational therapists. Each group will discuss and explore the findings that were presented. They will be invited to add points and share ideas based on two questions:

- What evidence do students need to learn to consider?
- What teaching strategies are useful in your context?

Development of a tool:
Participants will be invited to develop a tool that could guide teaching strategies related to EBP. To stimulate this 'think tank' a draft of a potential tool with be provided. The groups will be invited to edit/expand this.

Conclusion: A summary of what each group has developed will be facilitated for the whole audience to benefit from.

Appendix D

OTNZ-WNA Clinical Workshops 2018

Title: Evidence Based Practice – Keeping it Simple, Sustainable and Suitable.

Presenters: Linda Robertson & Helen Jeffery,

Abstract

Evidence based practice is understood to be a critical component of effective and safe practice, and informs clinical reasoning. Evidence to support practice comes in part from research and theory based literature. However, there is a growing understanding of the value of the evidence that the client and the therapist bring to the situation. The client's expertise of their situation, and their hopes and aspirations play an important role in informing practice. The therapists' knowledge, past experience and skill in utilising available evidence in clinical reasoning is the crucial link in facilitating a successful intervention.

When using research and literature-based evidence there are challenges in terms of time and resources required. There are also difficulties associated with relying on clinician and client expertise as evidence for intervention decisions. This workshop presents findings from research into the evidence based practice strategies that are essential for new graduate therapists to utilise and supervisors to promote with junior therapists. Themes from the data presented will stimulate ideas of how to keep evidence based thinking central to practice and manageable.

Goals of the workshop:

- To share the findings of research exploring evidence based practice strategies employed by experienced clinicians, new graduates and students in New Zealand.
- To expand on findings that demonstrate sustainability in terms of use of resources and sharing evidence
- To allow participants to reflect on their evidence based practice strategies in terms of effectiveness and sustainability
- To explore strategies participants can use to enhance integration of evidence in their practice sustainably.

This workshop will begin with an overview of how evidence-based practice could be included in the curriculum and the skills the new graduates should acquire. This will incorporate research and literature, experience of self and colleagues, and the client experience as described in the findings of this research. These results lead on to how EBP can be sustainable, including time efficient ways of finding and disseminating evidence, strategies for teams to enhance overall use of evidence-based practice collaboratively, resources readily available and strategies to develop and maintain evidence resources.
Small groups will encourage participants to reflect on their work environment in relation to the use of evidence, and to consider changes to enhance and streamline evidence-based practice; including the supervision of new graduates.

Appendix E

AUSTRALIAN OT conference 2019 [yet to be confirmed]

Theme: Knowledge translation: Bringing evidence into practice

TITLE:
Equipping new graduates with skills to integrate multi-dimensional facets of evidence into their practice

Abstract:
Introduction / rationale
Preparing students to transition from an academic environment to the realities of practice is a significant education issue. Research has shown that effective practitioners use a wide range of sources of knowledge in their construction of evidence based practice. Traditionally education programmes have focused on teaching appropriate use of research literature. This research explores students, lecturers and clinicians perspectives of the use of evidence in practice by novice practitioners.

Objectives

- To describe how clinical supervisors assist novices to achieve integration of theory & experience into reasoning.
- To integrate a wide spectrum of evidence into the academic and fieldwork learning environments.

Method
Descriptive qualitative methods were used to shape the data collection process, which was grounded in the experience and views of students, new graduates, lecturers and clinicians. Students and clinicians participated in focus groups, and lecturers were interviewed in order to determine their perceptions of how EBP is best conducted in practice and the skills and supports that are necessary for this.

Results
Themes that dominated were strategies to enhance the use of research literature, the value of in-service education, the use of experienced clinicians as evidence for what to do, the need to develop the capacity to respond to feedback and the impact of the environment on reasoning.

Conclusion
Evidence based practice literature emphasises the use of research, with little focus on how knowledge & experience brought to practice influences decision-making. To fill this gap, a model was developed from the data to underpin teaching evidence based practice in the curriculum. It proposes that there are five ways of integrating evidence from a number of perspectives. Together these strengthen problem-solving practice and emphasises the importance of critical thinking. This model will be presented.