The modification of two tools to measure emotional intelligence in undergraduate student nurses: A mixed method pilot study

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Chapter Three

Methodology

Introduction

The issues underlying the need to study emotional intelligence from a student nurse perspective are first re-examined. The research questions are then elucidated, prior to a discussing the methodology and explaining the study’s design. The chapter concludes with an explanation of each phase of the study. The following chapter details the development of the questionnaire.

Issues Underlying This Study

Nurses need a range of strategies to manage their clinical practice which includes: helping patients to cope with their health problems, patient education and health promotion. Student nurses need to learn some of these strategies, as they are expected to cope with issues associated with the practical nature of nursing, university demands and home life. One strategy offered is the use of emotional intelligence. An ability to monitor and regulate one’s emotions may contribute to the repertoire of coping skills. However, as yet, there is no strategy in place to facilitate the enhancement of EI in student nurses. More importantly, there are no valid and reliable tools that can be used to measure this concept in student nurses.

Methodology

It could be argued that there is inconsistency with terminology and language used in regard to the research process. In laying out a clear pathway to research, it was suggested that a scaffolding model could be used as a frame of reference (Crotty, 2013). Whilst it was argued that scaffolding was not the only way to understand the
research process it does, however, provide stability and direction (Crotty, 2013). Research methods differ from methodology, as they focus on procedures, data collection and analysis (Green, Caracelli, & Graham, 1989). Often, it is the ability to perform techniques and procedures that direct the researcher to the choice of methodology. The methodology is the design or plan of action linked to the methods and the purpose of the study. It involves the epistemology embedded in the theoretical perspective from the initial stages of the research process to the last procedure of inquiry (Tashakkori & Teddlie, 2010). In this study, a variety of methods were proposed to enable the fulfillment of the study aims.

**Aim of The Study**

The initial step in scaffolding was to identify the aim of the study and to identify the research questions prior to selecting a suitable process for fulfilling these aims and answering the questions. The aim was to modify and further develop two instruments: the situational test of emotional understanding (STEU) and the situational test of emotional management (STEM). Permission was granted by Carolyn MacCann to modify the two instruments (see Appendix 2: Consent to Use the STEM and STEU from Dr. C. MacCann). The validity and reliability of the instruments were previously established using a sample of psychology students (MacCann & Roberts, 2008). Hence, there was a need to modify and test the instruments on a pilot sample of student nurses, specifically following an educational intervention aimed at increasing EI.

**Design of The Study**

Given the nature and complexity of the research questions, it was determined that a mixed methods sequential embedded design would provide answers to the research questions. An embedded design means that both qualitative and quantitative data were embedded in all phases of the design (see Figure 3). The aim was to enhance the findings of the underlying phenomena so that interpretation of the data could be integrated (Cresswell & Plano-Clark, 2011; Hashemi & Babaii, 2013). It was
envisaged that the qualitative data set would provide a supportive secondary role and enhance the application of the quantitative phases of the study (Cresswell, Fetters, Plano-Clark, & Morales, 2009).

An extensive discussion has taken place over the last few years as to the definition of mixed methods research (Cresswell, 2010). Much of the discussion has centred around: what was being mixed; the stage of the research process; when the mixing occurred; the breadth of the mixing; and the drive for the research (Cresswell, 2010). Following a review of several definitions of mixed methods the following was utilized.

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. viewpoints, data collection, analysis, inferences techniques) for the purposes of breadth and depth of understanding and corroboration (B. Johnson, Onwuegbuzie, & Turner, 2007, p.123).

Based on the above definition both quantitative (QUAN) and qualitative (QUAL) approaches play a significant role in mixed methods designs. There is no hard and fast rule as to which precedes the other, or the amount that is needed to form a mixed methods study (Cresswell, 2010). The approach used was driven by the research questions. In this study, the QUAN method was required to develop and test the validity and reliability of the tools, while the QUAL element provided the personal experiences of student nurses.

**Philosophical Assumptions of Mixed Methods**

Mixed methodology has been described as the third methodological paradigm (Biesta, 2010). Thomas Kuhn coined the term paradigm to denote an “agreed upon theory, worldview or methodology embodied in the beliefs, practices and products of a group of scientists” (R. B. Johnson & Gray, 2010 pg. 85). It has been suggested that the paradigms of post-positivism and constructivism easily fit this definition of paradigms, as they are distinctive in their ontological and epistemological characteristics (Morgan, 2014). The tendency to label these paradigms as QUAN and QUAL, however, is unhelpful and should be labeled more appropriately as data
collection methods (Biesta, 2010). It has been argued that, from a mixed methods perspective, these two approaches should be viewed as distinct rather than dichotomous (Putnam, 2004). This argument is based on the classical pragmatists such as Peirce, James and Dewey’s notion of “synechism”. This notion regards phenomena as continuous, or of one character, rather than dualistic as in the QUAN vs QUAL schism (p. 70). Likewise, one view of mixed methods is that it acknowledges and adds value to multiple types of realities and attempts to connect the subjective, inter-subjective and objective realities (Biesta, 2010).

A second view of mixed methods research suggests that researchers, using this approach, acknowledge and value differences to create a new synthesis which compromise benefits to create workable solutions in addressing research questions. Dialectical pragmatism has been described as the careful listening and consideration of multiple viewpoints. It used the core tenets of pragmatism as a philosophy and extends the notion by using a dialectical approach, which is advocated for every part of the research process. There is a continual dialogue, between the collection and analysis of data in the making of meaning of the natural tensions, when developing a workable solution to the research question (Biesta, 2010). It is this position that goes to the heart of ‘dialectical pragmatism’.

Most protagonists of mixed methods champion philosophical pragmatism as an epistemological framework for conducting such research (Biesta, 2010; Cresswell & Plano-Clark, 2011b; Greene, 2008; B. Johnson & Onwuegbuzie, 2004; Morgan, 2007; Morgan, 2014; Tashakkori & Teddlie, 2010). The tenets espoused by the classical pragmatists were combined in a complimentary whole, aimed at providing a partner philosophy (B. Johnson & Onwuegbuzie, 2004). Apart from the rejecting dualism, other principles include the view that reality is complex and multiple, and that there are multiple routes to knowledge. Dewey’s theory on knowledge was especially significant, since it argued that knowledge comes from the interaction between the person and the environment (Biesta, 2010). This perspective challenges subject object dualism (Biesta & Burbules, 2003). Whilst QUAN studies partner post-positivism, and QUAL’s philosophical paradigm is constructivism, dialectical pragmatism has been espoused as the middle philosophy that can free researchers to creatively construct new research projects (R. B. Johnson & Gray, 2010).
It has been suggested that Dewey’s theories about knowledge construction offer a more useful and developed form when debating mixed methods methodology (Biesta, 2010). Unlike the Cartesian view of reality, Dewey posits that ‘knowing’ is an intervention between mind and matter. It is concerned with grasping the relationship between actions and consequences, with reflection on these behaviours and outcomes playing a significant role. In summary, knowledge is the outcome of active intervention and is a construction of objects. Thus, this form of constructivism is transactional and, it is argued, thereby debunks the hierarchy between knowledges: objectivism and subjectivism. Whilst the proponents of objective reality hold that it is true knowledge, Dewey posits that “knowledge can only ever be subjective because one can never be certain that minds can really access the ‘world out there’” (Biesta, 2010). That is to say, “different knowledges are simply the result of different ways one engages with the world” (Biesta, 2010).

From a mixed methods perspective, Dewey’s ideas speak to the notion that different approaches generate different outcomes and different connections between actions and consequences. Thus, an assessment of knowledge claims needs to be judged pragmatically, with respect to the processes and procedures used in the inquiry (Biesta, 2010). Given that these techniques are part of the design phase of research, this is where philosophical problems can occur. As suggested, however, if intervention or non-intervention methods feed into each other, combing the two is a non-event, when conceived through the knowledge theory proposed by Dewey (Biesta, 2010). Thus, it was envisaged that using an embedded design would fulfill the criteria of mixed methods research and suit the aims of the study.

Synopsis of Study Design

It was intended that this study would be a pilot for further studies. As previously mentioned, a mixed method embedded design was used, constituting three sequential phases, with one phase informing the next phase.
Each phase of the study comprised several steps. Phase One was subdivided into two parts. Phase 1A was subdivided into five steps. Step One was to create a bank of scenarios that could be applied to nursing. This was achieved by identifying the scenarios from the original STEM and STEU. Step Two was to conduct focus groups of student nurses to collect critical incidents to formulate nursing scenarios. Step Three involved identifying university, home life and clinical practice from the critical incidents, as discussed by students in the focus groups. In Step Four scenarios of the incidents were added to the bank. Step Five concerned the validation of the bank scenarios. As can be seen in Figure 4, Phase 1A used qualitative methods to create the bank of scenarios.

Phase 1B had four steps. Step One was to develop possible responses to the banked scenarios. Step Two was to use subject matter experts (SMEs) to rate and develop a marking scale for the STEM. Step Three was the modification of the STEU and STEM. The aim of Step Four was to test both the STEU and STEM for clarity, using SMEs. Phase 1B used quantitative methods to develop a scoring key.
Phase 2 of the study involved test/re-test reliability of the developing modified STEU and STEM instruments using quantitative methods. Phase 3 of the study was the administration of the modified instruments to student nurses pre-and post an educational intervention developed by the researcher. The intervention was aimed at enhancing EI. This final phase was concerned with testing the modified STEU and STEM, using both qualitative and quantitative methods for analysis.

**Ethical Considerations**

Research places a moral and ethical obligation on the researcher. Ethical clearance, (Number 013115F) was obtained from Notre Dame University to access the students of the School of Nursing and Midwifery. The researcher approached the Dean of the school to identify which semester students would be recruited to ensure those students would not be part of the researcher’s teaching load.

It is the responsibility of the researcher to ensure that the research benefits student nurses, as well as ensuring that there is no negative impact or disadvantage to the students. To facilitate this, the student nurses were given full information about the research in the form of a letter outlining the research and their potential involvement (see Appendix 3: Research Information and Participants Information Sheets). Information included why participants were a representative group and how they were chosen. The researcher was not in a dependent teacher/student relationship even though the groups were conducted during semester.

The students and SMEs completed a consent form prior to participating in the study (see Appendix 4: Consent Form). The rights of the participants were respected and an assurance was given that withdrawal from the study at any stage would not affect university performance or employment. All personal data was de-identified by number and stored in a locked cupboard. According to UNDA protocol, the information will be destroyed after a period of five years. Electronic data is password protected. Results were presented at a research seminar and will be published in the future.
Conclusion

This chapter provides an outline of the study design. It postulated the rationale for using a mixed methods study design and discussed its philosophical underpinnings. The phases and steps were detailed. Since modification of the STEU and the STEM formed a substantial part of the study the first two phases and the steps taken in each phase are provided in Chapter Four.