Doctorate of Education Dissertation

University of Stirling

Emotional Intelligence: Attrition and Attainment in Nursing and Midwifery Education

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Declaration

I declare that this dissertation contains no material that has previously been presented for an academic award and, to the best of my knowledge, contains my own work except where reference is made to other authors in the text.

Robert Rankin

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Acknowledgments

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over many years and I thank them for their understanding and support. I look forward to making it up to them in the near future.

Abstract:

Attrition in Higher Education continues to present academics, researchers and professionals with an ongoing dilemma. Achieving a fair balance between the academic rigour of meritocracy and the wider access agenda of social inclusion, demands that entrance criteria incorporates measures beyond the traditional prior academic attainment.

Emotional Intelligence has been presented in the literature as a valid and reliable predictor of retention and performance in industry and researchers have suggested that similar benefits may be found in education. In this dissertation, the construct of Emotional Intelligence was explored, reviewing contemporary models and their respective measurement tools. A self report tool for measuring 'trait' Emotional Intelligence was selected from the review and used to examine the predictive relationship between emotional intelligence and the outcomes at the end of the first year of undergraduate nurse education namely: clinical practice performance; academic performance and course attrition by nursing and midwifery students.

The sample group consisted of a cohort of student nurses and midwives ($N = 178$) who commenced their training in 2007. A significant predictive relationship was found between emotional intelligence and clinical practice performance ($r = 0.75$, $N = 116$, $p < 0.05$); emotional intelligence and academic performance ($r = 0.16$, $N = 168$, $p < 0.05$) and emotional intelligence and attrition ($r = 0.31$, $N = 178$, $p < 0.05$). Age was also found to predict attrition ($r = 0.25$, $N = 178$, $p < 0.05$) while prior academic attainment was found to predict academic performance ($r = 0.20$, $N = 168$, $p < 0.05$).

The dissertation proposes the inclusion of measures of emotional intelligence as an aid to recruitment and selection processes in nurse and midwifery education. It also recommends that other practice based vocational programmes, within the higher education sector, consider exploring emotional intelligence in their recruitment and selection processes.

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List of Abbreviations:

AES	Assessing Emotions Scale (Schutte et al, 2007)
EI	Emotional Intelligence
EQ-i	Emotional Quotient Inventory (Bar-On, 1997)
FTP	Fitness to Practice Clinical Assessment Tool
IQ	Intelligence Quotient
MSCEIT	Mayer Salovey Caruso Emotional Intelligence test (Mayer at al, 2002)
TEIQue	Trait Emotional Intelligence Questionnaire (Petrides et al, 2003)
SEI	Schutte's Emotional Intelligence Scale (Schutte et al, 1998)

Note: This study included midwifery students along with nursing students and, where possible, this is acknowledged. On occasion the term, 'nursing' is also used to cover 'midwifery'.

Chapter One: Introduction

"The more clearly you understand yourself and your emotions, the more you become a lover of what is."
Baruch Spinoza

"Let's not forget that the little emotions are the great captains of our lives and we obey them without realizing it."
Vincent Van Gogh

The above quotations demonstrate polarised views on the nature and utility of emotion. To what extent do we need to recognise emotions in ourselves and in others to function effectively in life? Should we interact with our emotions or should we merely be guided by them? Spinoza and Van Gogh both died young, and in relative poverty, still apparently searching for true fulfilment in their lives. Perhaps the answer lies somewhere in between.

Introduction

This dissertation explores the relationship between emotional intelligence and the following outcomes in nurse and midwifery education: clinical practice performance; academic performance and student retention at the end of year one. The study population was a cohort of student nurses and midwives who applied to commence their training in September 2007. Chapter one provides a background to the research and justifies the study within a professional context. The theory of emotional intelligence and the theory of attrition are critically discussed in separate chapters, prior to the literature review which focuses specifically on the impact of emotional intelligence on performance and attrition in nursing and related healthcare professions. A model of attrition is presented which outlines antecedent predictor variables and outcome

variables. The measurement characteristics of emotional intelligence and other antecedent variables, along with the measurement characteristics of the outcome variables, are explored and justified in the methodology chapter. The results from the analysis are presented in chapter six prior to the discussion and recommendations in the final chapter.

Background

There is increasing pressure to address attrition in nurse education. Internationally, attrition rates appear to be on the increase. The UK figures of around 15% may compare favourably with countries such as Italy (65%) and the USA (37%) (International Audit office, 2007), yet, in the UK, concern remains regarding the number of students who fail to reach graduation. The personal consequences of attrition for the individual and the professional and financial consequences for the institution cannot be overstated. Each institution will have its own figures which, in some cases, will be significantly higher than the average. The expressed level of concern in the UK may also be related to the apparent lack of consensus over definitive figures. Nursing Standard commissioned a survey in 2006 on student nurse attrition which estimates that the UK average attrition rate is closer to 25% which translates to a cost of £57m for the UK taxpayer (Buchan and Seccombe, 2006).

In line with other institutions, the School of Nursing and Midwifery in the University of Dundee has introduced a number of changes in its selection process to try and address non completion of studies. Increased entrance qualifications, written exercises and a standardised scoring system at interview have been introduced. While there has been insufficient time to

evaluate the changes for a complete cohort, initial analysis suggests that the attrition trend has yet to be reversed. The true cost of attrition needs to be calculated within the context of other expenditure for recruiting and selecting candidates such as: the cost of interviewing; administrative costs; marketing/advertising costs; web maintenance; careers evenings and open days.

A number of studies have tried to find a correlation between student attrition and entrance criteria. Models of attrition in Higher Education, from the early work of Tinto (1982) and Bean (1982) through to Wylie (2004), underline the complex nature of student attrition. External variables such as social demands, programme demands, institutional factors and financial pressure, along with internal variables such as commitment, self management, self efficacy and emotional intelligence are just some of the many factors involved. It is the norm for all HE courses to use academic qualifications as the key predictor of academic success. On the face of it, this appears reasonable. Prior academic success suggests that application has been demonstrated as well as intellect. In a purely academic course, for example, one of the sciences, it may be expected that, prior academic achievement would offer the best predictor of success. However, there are many examples of the poor predictive validity of academic qualifications in career success (Carmeli and Josman, 2006; Lyons and Schneider, 2005) and nursing, with its vocational element, requires more than evidence of prior academic attainment to predict success. A demonstration of academic ability or academic potential, commensurate with the demands of an academic course, is clearly desirable. It would be unreasonable to expect candidates with poor academic prior

attainment to achieve the expected standards in HE. However, academic ability does not always translate into qualifications and candidates without qualifications are not necessarily without the ability to obtain them. Furthermore, high entrance qualifications alone do not guarantee success.

It is difficult to envisage a perfect selection procedure, yet there are institutions whose published results suggest that they have consistently lower attrition rates than the national average. These lower rates would appear to offer a realistic target for other institutions. While there will always be unforeseen factors that lead to students' non completion of studies, a selection process that highlights potential problems, in advance, is preferable to one which overlooks factors that consistently lead to difficulties.

Institutions that use essays to help select nursing candidates have found that the individuals, who personalise their essay and describe their own caring qualities or experiences, are more likely to complete their studies (Sadler, 2003). The non-completers are more likely to talk about 'caring' as something they would like to learn how to do or something they admire about others. The empathic nature of the 'completers' appears to be the most significant difference between the two groups. Sadler (2003) goes on to recommend that 'emotional intelligence', the ingredient she claimed to find in the successful students' essays, should be measured as a pre requisite to nursing. This is a view shared by Cadman and Brewer (2001) and Bellack et al (2001)

Goleman (1995) claimed that emotional intelligence (EI) is a more powerful predictor of occupational success than IQ and the legitimacy of this claim has

been tested repeatedly with more and more authors offering similar results (Sternberg, 1995; Steele and Aronson, 1995; Maas, 1995). Further studies claim to have significantly improved attrition rates in the work place by testing EI in applicants (Bar-On, 1997; Goleman, 1998; McLelland, 1999).

The Case for Studying Emotional Intelligence in Nurse Education

The transfer of Schools of Nursing into the HE sector has been relatively recent in comparison to other healthcare programmes. This has presented the profession with a dilemma of how to attract the candidate who meets the increased academic requirements of University as well as possessing the other qualities that are expected in the individual who seeks to work in one of the helping professions. In order to meet high recruitment target numbers, while adhering to socially inclusive policies, wider entrance criterion were used, allowing individuals with fewer formal qualifications to enter the profession. There is evidence that this has challenged nurse academics with reports of increased remedial work being required by lecturers (Cadman and Brewer, 2001), dissatisfaction by employers (Rochester et al, 2005) and increasing attrition rates among the students (Cadman and Brewer, 2001).

Along with the pressure to increase entrance qualifications, there have also been calls to explore other valid forms of entry criteria and the emerging trend is for nurse educationalists to embrace the notion of EI as a valid measure of suitability for nursing (Vittelo-Cicciu, 2002). There is strong evidence to support the contention that EI correlates with occupational performance (Wong and Law, 2002). Even where IQ scores are low, high EI scores can

predict greater success among college students than those students with low IQ and low EI (Petrides et al, 2004).

There are many unsubstantiated claims made about EI due to the proliferation of publications and its emergence as a popular topic in magazines and newspapers. However, there does appear to be sufficient emerging evidence to support further study of the role of EI in achieving success in industry and in academia. Measurement tools are being refined and developed and there is a growing body of empirical evidence to be positive about EI as a valid predictor of success, given the availability of increasingly valid and reliable measurement tools.

Anecdotal reports from student evaluations suggest that some nurses are able to employ the very effective ego defence mechanism of 'intellectualisation', which is an approach that inhibits the expression and the reception of emotion. Detached objectivity has been accepted in nursing as a safe, fair and uncomplicated way of delivering care (McQueen, 2004). A military style, hierarchical, 'no nonsense' approach was the accepted norm. Neo Freudians, as described by Eysenck (2000), would claim that this approach is taken to prevent over exposure of the nurse's emotions and protect her from the resulting vulnerabilities that might follow. Working with illness and death can be intolerable if the nurse is unable to distance herself from the emotional turmoil that ensues. Intellectualisation protects the nurse from this traumatic experience, to an extent, but it requires a somewhat detached and disinterested demeanor which some nurses appear more capable of adopting than others. Therefore, concealing emotions rather than

expressing them was viewed as a strength which was encouraged by many in the nursing profession (McQueen (2004).

More recently, nursing has moved towards a demonstrative approach to care which allows and occasionally encourages closer professional emotional ties between the nurse and their patient. This is particularly true in mental health with nurses becoming more involved in psycho analytical interventions, where the use of transference is employed to enable emotional expression to be tangibly recognised by clients (Nevid et al, 2006). Somewhere in between intellectualisation and demonstrative care, the majority of nurses are battling with issues such as appropriate self disclosure and person centered care. Both of these require judgments about emotional expression. Possessing an awareness of emotions and the impact that emotion can have on interactions and self knowledge would appear to be an advantage to the contemporary nurse. Consequently, problems with recognising and managing emotions could be a distinct disadvantage in contemporary nursing.

Anticipating patients' needs and providing personalised holistic care are basic expectations of the nurse's role and deeper levels of intimacy and empathy are increasingly recognised as essential components of a positive nurse/patient relationship. Managing one's own emotions and the emotions of patients is a complex and demanding activity. If we could encourage and select nursing applicants who have an apparent ability in this regard, perhaps we could enhance the profession and create a positive impact on patient care. If it was possible to identify these inter and intra personal qualities in prospective students, we would intuitively expect such students to fit into the

profession, with all its emotional demands, more readily than the student who struggled to understand and utilise emotions in a proactive way. The better 'fit' the student has in a nursing programme, the greater her chance of successful completion.

It is not being suggested that high E.I. is essential and exclusive to being a good nurse. There are many other characteristics that matter just as much and possibly more. Subjective judgments will be made regarding the priority of each respective characteristic and its merits, which probably depends on context. It is likely that certain specialties would encourage specific attributes. Palliative care, for example, would require qualities that are more person centred, whereas the operating theatre might look for task orientated skills. The specific demands of the moment will also require certain attributes, regardless of the specialty. However, while the relationship between E.I. and these other characteristics may be of interest, this study focuses specifically on the characteristics of E.I. and its power to predict success in the first year of nurse education studies.

Setting the Study Context:

Clinical practice competence is an essential requirement for nursing students. A student who fails to develop clinical practice competence will inevitably be unsuccessful in the programme and become one of the many students who add to the increasing concerns about attrition rates. If it was possible to predict which students would succeed in a nursing programme by showing that certain prerequisite capacities correlate with programme outcomes, it may be possible to reduce attrition rates.

There is a pervasive belief within the nursing profession that academic ability does not necessarily determine practical ability. Intuitively, this might seem insightful, however, there are some who would hold a more extreme view and argue that intellect can get in the way of 'common sense'. This belief is more likely to be contained in anecdotes than be presented in the literature, which is why it is included here with some caution. This view is not supported within the dissertation but without the prospect of researching this 'hypothesis', it is not possible to support or refute it. Yet, it is important to be absolutely clear that academic ability and E.I. are not perceived in this dissertation as being mutually exclusive. It is not uncommon for nurse mentors to grudgingly pass a student in practice but proclaim later that they would refuse to employ them on qualification. This appears to highlight a distinction between ability and trait. In other words, the mentor recognises that the student can meet the outcomes, but there is something in the student's application of the skill that causes concern. For example, it may be possible for the student to demonstrate empathy for the purpose of their assessment but still not appear to their mentor to be an empathic person. Undoubtedly, this dissonance would be common in most practice based professions. The reasons given for this are typically vague and intangible. However, it would seem that, possessing competence up to a set practice standard, is not enough if certain traits are missing. It could be argued that the student merely has to achieve a 'pass' and, in so doing, the institution has been successful. However, this exposes one difficulty with criterion referenced assessments. The student might succeed in meeting a target once following many attempts, so the criterion

has been met. However, the mentor is more concerned with the unsuccessful attempts and the potential consequences of this in practice.

As mentioned previously, many of the observations above are barely whispered in the literature but the debate is commonplace in wards and staff rooms. The lack of movement in resolving these issues is caused by the failure to publicly explore the debate. Nurse educators have recognised, for some time, the need to try to quantify the so called intangible qualities that give cause for concern in practice assessments. Ideally, this intangible 'x factor' would be identified and quantified objectively. Anecdotally, mentors describe qualities such as 'sociability', 'professionalism', 'ability to work in a team' along with other people orientated skills, but there is little evidence that schools of nursing in the UK have adequately identified and quantified these characteristics sufficiently to enable them to become part of a valid and reliable practice assessment.

The notion that separate skills or forms of intelligence can co exist in each individual was supported by Gardner (1983), who introduced the concept of multiple intelligences, dividing intelligence into seven separate domains: visual/spatial; verbal/linguistic; logical/mathematical; bodily/kinaesthetic; musical/rhythmic; interpersonal and intrapersonal. Gardner's 'interpersonal' and 'intrapersonal' intelligences became the subject of further studies (Goleman, 1995; Mayer et al 2000) which have sought to identify intellectual ability that incorporated social, personal and emotional skills. The term 'emotional intelligence' (EI) is now widely used to incorporate Gardner's 'inter' and 'intra' personal skills.

Payne (1986) was among the first to publish the term ‘emotional intelligence’ in an academic paper, although this is rarely cited in the literature. He defined EI as the ability to express emotions openly. This contrasts with later authors who tend to see EI as an ability to control and stifle raw emotion. Individuals possessing high EI, according to Payne’s concept, may well have difficulties in the caring context. One could imagine the student, who expresses anger or sorrow in a very demonstrative manner, receiving poor feedback on their “inappropriate attitude”. Yet, if Payne is correct in his definition of EI, it should be possible for the emotionally intelligent nurse to express her feelings openly without fear of criticism, so long as the environment supports the application of emotional intelligence. One suspects that, culturally and professionally, open expressions of emotion will always cause concern and the more recent ‘versions’ of EI which involve emotional control and suppression of emotions, will be viewed as superior by the majority of managers. The use of structures such as ‘staff sensitivity groups’ (Thorndycraft and McCabe, 2008) have been employed to provide opportunities for emotions to be expressed in controlled conditions, on the assumption that this is restricted to these opportunities and does not spill over into the work environment. There appears to be a recognition of the importance of emotional expression while suggesting that it still needs to be controlled.

Clinical failure by student nurses is very rarely based purely on practical ability (Halldorsdottir, 1997). It is more typical for the mentor to refer to attitudinal problems relating to expectations at work or difficulties interacting with patients or colleagues. This fits well with recent research (Richardson, 2003) which suggests that problems such as dyspraxia and dyslexia are more easily

resolved in individuals who recognise the difficulties they face and strive to take responsibility for overcoming them. The skills deficits are accepted by the assessor so long as the attitude towards improvement is positive. There is a clear correlation between EI and success for dyslexic individuals (Montgomery et al, 2008). It may be that those who have low EI are more likely to use their disability as an excuse for not trying and as justification for their lack of success. It is likely that students who appear to be trying hard to overcome shortcomings will be viewed more positively, while those who appear to be disinterested or fail to take responsibility would be viewed negatively. On this basis, one may expect there to be a correlation between certain personality traits and clinical success or failure, when based on observer assessments.

EI may also be a helpful mechanism for identifying suitable candidates who have physical and sensory deficits. To respond to socially inclusive policies, individuals with specific disabilities are increasingly likely to be accepted into nursing. For instance, conditions, such as dyslexia, may have previously barred an individual from gaining admission to the programme. While there does appear to be a correlation between learning disabilities and low emotional intelligence, individuals who are high in EI appear to be more able to compensate for certain disabilities, taking control and responsibility for their adjustments (Reiff et al, 2001). Therefore, high emotional intelligence may mitigate for some disabilities by helping the individual to cope and improve their chances of success.

Professional misconduct remains a concern for nurse educators. A significant number of students engage in unacceptable behaviour which would make them unsuitable for working with vulnerable clients. Theft, fraud, aggression, deliberate neglect, abuse and cruelty would all lead to certain discontinuation. There are clear indications that EI correlates negatively with anti social and criminal behaviour (Mayer et al, 2004). The mechanism for this is thought to relate to the empathic element of EI. It is more difficult to behave badly towards an individual if one can empathise with the 'victim'. Reducing the numbers of students who are more likely to engage in professional misconduct would appear to be a positive move in the context of attrition. This process may be described as 'filtering out' the candidates who demonstrate low E.I. on the basis that this group contains a disproportionate percentage of individuals who are more likely to engage in professional misconduct. While it is easy to make the connection between the propensity to behave badly and failure in a nursing programme, not all individuals who are low in E.I. could be categorised in this way. Therefore, it may be discriminatory if such individuals were excluded simply because there is an association for a group.

Not surprisingly, individuals who are high in EI are more likely to have better social support and tend to be more satisfied with their social networks (Mayer et al, 2004). They also seem to be better able to avoid interpersonal arguments and fights and are less likely to use drugs. Professional misconduct would appear to be negatively correlated with good examples of emotionally intelligent behaviour. With regard to attrition, professional misconduct remains a significant factor. The levels of satisfaction with relationships and with the environment that appear to be associated with high

EI, would suggest that EI may well be an important factor in professions which depend on relationship formation and managing complex environments, such as nursing.

To establish the relationship between EI and nursing practice, it is essential to identify the actual competencies which would be assessed in practice that relate directly to the EI construct. It is typical to refer to ‘clinical’ practice in nursing, however, this term has its limitations. The expression ‘clinical’ has connotations of ‘efficiency’ and ‘sterility’. It can also be linked with behaviours such as being ‘detached’ and ‘remote’. Behaviours associated with EI tend to be softer and less visible and often contrary to the images conjured up by the notion of clinical efficiency. As a consequence of this, EI qualities tend to be excluded from practice assessments. More accurately, assessments evolve around observable competencies that are easier to objectively measure. ‘Clinical practice’ is used in this paper to describe the component of the nursing course which occurs in the practice placement, while recognising that, not all practice is viewed as ‘clinical’.

The original and possibly the most commonly discussed model of EI suggests four distinct categories of competence under two separate headings (Mayer and Salovey, 2004):

Personal competence (Intrapersonal Skills):

- Self awareness
- Self management

Social Competence (Interpersonal Skills):

- Social awareness
- Social skills

In order to determine whether EI, as defined above, had relevance to nursing, three focus groups of eight qualified mentors were asked to discuss a range of qualities (traits). The mentors had all been responsible for completing practice placement assessments for a minimum of two years up to a maximum of twenty six years. Nine of the mentors were male and fifteen were female. The qualities were taken from Boyatzis' (1999) clustering of EI traits. The cluster represented a consensus of experts on the traits which most relate to EI. Mayer and Salovey's (2004) four main themes were sub-divided into twenty five traits by Boyatzis' (1999). This was presented to the mentors who were asked to identify which of the traits they would consider to be essential, desirable and irrelevant to nursing.

The following traits were rated:

Self Awareness:	Emotional awareness Accurate self-assessment Self-confidence
Self Management:	Self-control Trustworthiness Conscientiousness Adaptability Innovation Achievement drive Commitment Initiative
Social Awareness:	Optimism Empathy

	Service orientation
Social Skills:	Developing others Accepting diversity Political awareness Influence Clear communication Leadership Change catalyst Conflict management Building bonds Collaboration and co operation Team capabilities

None of the above traits were rated by the experts as irrelevant to nursing. All of the traits were rated unanimously as essential other than 'achievement drive' and 'political awareness' which were rated as desirable by four of the mentors. Expert nursing opinion, therefore, would support the above traits being assessed in clinical practice. At the time of these focus groups, none of these traits were being measured in practice assessments in any of the mentors' departments, despite the fact that experts rated 23 out of the 25 traits to be essential to nursing, with the remaining two considered to be desirable. A practice assessment tool which enabled the above traits to be reliably measured would be valued by the expert focus groups involved in the qualitative exercise. It can be concluded, therefore, that the traits which are consensually agreed as representative components of E.I., should be assessed in nursing practice. This establishes the link between E.I. and nursing practice to the extent that further exploration would be justified.

Inclusion of an E.I. assessment may also help to address the dilemma of students passing their placement, yet failing to satisfy the mentor. Morally, it would appear to be unfair to taint a student's reputation who successfully met

the programme outcomes, yet this happens when the student is permitted to leave the placement with a ‘pass’, but is not welcomed back, should he or she qualify as a registered nurse. Equally, the mentor’s reservations need to be recognised. If the absent, or poorly presented traits, can be improved, it would be desirable to be able to identify and assess them formatively. However, if these traits are fixed, identifying deficits prior to student selection, may help to address attrition.

Summary

This chapter introduced the case for studying emotional intelligence in nursing and its possible relationship with performance and attrition. The nursing profession recognises the urgent need to address attrition and the literature has suggested that emotional intelligence may be a key factor in determining performance and success in a nursing programme. Experts were asked to judge the relevance of EI criteria to nursing practice and they consensually agreed that all of the proposed components of EI were either essential or desirable in a good nurse. The following chapter discusses the theory of EI and examines and contrasts different measurement tools.

Chapter Two: Emotional Intelligence Theory

Introduction

This chapter looks at the historical context of emotional intelligence and the development of the construct. A range of models of EI are presented and the distinction between 'trait' EI and 'ability' EI is discussed. The relationship between IQ and EI is also explored. Different measures of EI are presented and the measurement tool selected for this study is introduced. Components of E.I. are explored and their relationship with behavioural outcomes is discussed.

Historical Context of Emotional Intelligence

Emotional Intelligence has been the focus of wide attention since it was popularised by Goleman in 1995. In an historical context, emotion and cognition have both been recognised as distinct entities with varying levels of importance depending on historical and cultural perceptions. Solomon (2000) describes the ancient Greek philosophical principle that reason was far superior to emotion, whereas the Romantic Movement would consider emotional expression to be crucial to both accessing and developing cognition (Mayer et al, 2000). The term 'emotional intelligence' has appeared in popular literature for over fifty years. Van Ghent (1953) used the term when describing some of the characters in Jane Austen's *Pride and Prejudice.* However, it first appeared in academic literature in the nineteen eighties.

The construct of EI has reintroduced the debate about the extent to which emotions and cognition can be considered as distinct and which, if any, assumes greatest importance in social, academic and occupational success.

Intelligence can be defined as an ability to think in the abstract and to learn and adapt to the environment (Mayer et al, 2004). Binet produced a measure of intelligence which was presented as culturally non biased (Fancher 1985) and a common factor, 'g', is typically used to represent this general ability. Intelligence quotient (IQ) is considered to be a reasonable predictor of suitability for a range of occupations and there is a general acceptance that individuals with a high IQ will be more successful in academic and occupational performance. Neisser et al (1996) claim a correlation of .50 between IQ scores and school grades. Individual teaching styles not withstanding, the relationship between IQ test scores and academic success appears to be universally accepted. However, there is growing evidence which suggests that IQ may not be the most reliable predictor of success (Goleman, 1995). Indeed, there appears to be other elements to intelligence beyond the purely cognitive element which pertains to IQ.

Howard Gardner (1983) introduced the concept of multiple intelligences, dividing intellectual ability into seven separate domains: visual/spatial; verbal/linguistic; logical/mathematical; bodily/kinaesthetic; musical/rhythmic; interpersonal and intrapersonal. Each domain represented a separate and distinct form of intelligence. Gardner claimed that, while each domain need not be independent, it could be possible to excel in one domain yet be lacking in another. This theory enabled educators to develop a wider strategy of teaching and learning styles in order to provide greater opportunities for learning to occur. The teacher can capitalise on better learning opportunities that match the individual's strengths. Gardiner also claimed that, while certain cultures may elevate specific domains with regard to importance, each

domain or ‘intelligence’ has the potential to be considered important in its own right.

Critics of Gardner argue that he has been very liberal with his interpretation of intelligence (Petrides et al, 2004), while others suggest that he may not have gone far enough. For example, ‘moral or spiritual intelligence’ or ‘artistic intelligence’ may also deserve a place in Gardner’s domains. Gardiner would counter that each domain contains subsets in which other forms of intelligence may or may not appear. Gardner’s critics have also suggested that he has identified special talents rather than forms of intelligence (Neisser, 1996). His theory on multiple intelligence has informed education regarding teaching and learning styles, however, testing the theory remains problematic. Gardiner’s ‘interpersonal’ and ‘intrapersonal’ intelligences became the focus of further studies (Goleman, 1995; Lee et al, 2000; Mayer and Salovey, 1997) which attempted to identify intellectual ability that incorporated social, personal and emotional skills.

Although rarely credited for his work, Payne (1986) wrote about Emotional Intelligence four years before Salovey and Mayer (1990) and subsequently, Goleman (1995) popularised the concept. Payne’s work was not initially cited by key authors on the subject of EI, having been overlooked in earlier literature searches. He focused more on the creative expression of emotion as opposed to later constructs which seemed to highlight control of emotion as more important than emotional expression. For example, Mayor and Salovey (1997) define EI as the “capacity to reason about emotions” and the ability to “regulate emotion”, a definition shared by Goleman (1995) who

makes reference to our need to learn to control and regulate our emotions in order to “follow directions” (p193). This contrasts sharply with Payne, whose chief concern is society’s tendency to historically suppress emotions, resulting in stifled growth and emotional ignorance.

Contemporary studies of EI claim to concentrate on ‘hot’ intelligences which incorporate social, practical, personal and emotional information (Mayer and Salovey, 2004). The literature suggests a growing consensus towards the four-branch ability model of EI (Mayer and Salovey, 1997; Schutte et al, 1998; Goleman, 1998; Salovey et al, 2002; Boyatzis, 1999; Goleman et al, 2002; Mayer et al 2002; Bradbury and Greaves, 2005). The four branches consist of the ability to: perceive emotion, involving the capacity to recognize emotions through non verbal behaviour; use emotion to facilitate thought; understand emotions by analysis and prediction and manage emotions in the context of other personality characteristics.

Bradbury and Greaves (2005) found that the ‘four branch model’ of Emotional Intelligence could be represented by two subscales: personal competence (self-awareness and self-management) and social competence (social awareness and social skills). The same assertion is made by Goleman (2001) who produced a framework of emotional competencies (figure 1).

The four branch ability model serves as the basis for most measures of EI which will be discussed later. More recently, Ciarrochi et al (2003) and Petrides et al (2004) focused on the distinction between ‘trait’ EI and ‘ability’ EI, arguing that this distinction must be made before any attempts to measure

EI are taken. Prior to exploring the debate around trait and ability E.I., the relationship between E.I. and I.Q. will be discussed.

	Self: **Personal Competence**	**Other:** **Social Competence**
Recognition	**Self-Awareness** • Emotional self-awareness • Accurate self-assessment • Self-confidence	**Social Awareness** • Empathy • Service orientation • Organisational awareness
Regulation	**Self-Management** • Self-control • Trustworthiness • Conscientiousness • Adaptability • Achievement drive • Initiative	**Relationship Management** • Developing others • Influence • Communication • Conflict management • Leadership • Change catalyst • Building bonds • Teamwork • collaboration

Figure 1: **A Framework of Emotional Competencies (Goleman, 2001)**

<u>EI versus IQ</u>

What is the evidence that we can scientifically distinguish between IQ and EI? How can we be sure that measures of EI are not simply measuring general intelligence? The development and application of EI assessments can only be justified if they can be demonstrated to measure criteria that are distinct from 'g', otherwise the I.Q. test would be sufficient on its own. The predictability of measures of IQ was widely accepted until Wechsler (1940) defined intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment"

p444. He referred to ‘non intellective’ elements of intelligence such as affective, personal and social factors. These elements, claimed Wechsler, were essential for success in life. Cognitive ability on its own is not enough to cope with interpersonal and intra personal challenges. Hunter and Hunter (1984) claim that IQ accounts for less than 25% of variance in predicting job performance, suggesting that some other ingredient must be present. Sternberg (1995) argues that this figure may be as low as 4%. Indeed Sternberg (1995) refers to ‘tacit knowledge’ and makes the claim that, while tacit knowledge is relevantly independent of scores on intelligence tests, there would be a significant correlation with various indices of job performance. The developing theme is that, on its own, I.Q. would not provide sufficient information to predict job performance.

Another commonly cited example of the limitations of IQ, as a predictor of success, is the Sommerville study (Snarey and Vallant, 1985). This was a 40 year longitudinal investigation of 450 boys who grew up in Sommerville, Massachusetts. The researchers found that IQ was a poor predictor of how well the boys did at work or in life. The factors which made the biggest difference were childhood abilities such as being able to handle frustration, control emotions, and to interact with others (Snarey & Vaillant, 1985). In a longitudinal study of eighty subjects with PhDs, it was found that social and emotional abilities were four times more important than IQ in determining professional success and prestige (Feist and Barron, 1996). This fits with the notion that measures of cognitive ability are distinct from measures of emotional ability.

According to Fernandez-Araoz (2001), IQ measures do not account for large portions of the variance related to performance and career success among top managers and senior leaders. Competencies that integrate cognitive, emotional and social abilities appear to be much more important. IQ may be able to predict certain forms of achievement, such as academic success. However, intellectual ability is too complex to be reduced to IQ. Creating an alternative measure which addresses the qualities that are not accessed by IQ tests, would appear to be a significant advance in psychological measurement.

Goleman (1995) is credited with the bold claim that EI is a better predictor of success than IQ. This assertion by Goleman was unsupported by empirical research, however, the following decade witnessed a proliferation of unrealistic claims which have been wrongly attributed to EI research. “It's not your IQ. It’s not even a number. But emotional intelligence may be the best predictor of success in life, redefining what it means to be smart”, declared Time Magazine (1995) on reviewing Goleman’s work. This led to popular notions and unsubstantiated claims around EI. The statement in Times Magazine highlighted the contradiction that many supporters of the EI construct seem to overlook: namely the paradox of making quantitative claims for the concept’s predictive validity while acknowledging that EI has still to be quantified. Fortunately, fewer erroneous claims about emotional intelligence are being heralded in the literature, enabling researchers to explore the construct more appropriately.

There is already sufficient evidence to demonstrate a positive correlation between academic qualifications and performance. However, given the reliance employers and HE institutions have on academic qualifications as a predictor of success, the correlation might be expected to be more significant. Goleman (1995) claimed that 67% of the abilities deemed essential for effective performance were emotional competencies. This is twice as many as those he identified as being related to IQ. Sternberg (1995) supported this claim with his findings that 75% - 96% of the variance in “real world criteria” such as job performance cannot be accounted for by IQ. Steele (1995) found that academic qualifications could only account for 18% of factors that determine college grades and this was upheld by Maas (1995) who recorded a lower figure of 16%.

Clearly IQ is a predictor of success in HE, albeit less significant than institutions would like. If it can be demonstrated that EI might also provide a similar level of prediction, it may be justified to apply measures of EI in selection procedures. The US Air force made annual savings of $3 million dollars in attrition costs when they introduced Bar-On’s Emotional Quotient Inventory in their recruitment process (Bar-On, 1997). McLelland (1999) found that senior workers in a drinks company were more likely to remain for two years in their posts when selected using emotional intelligence criteria. The previous percentage of staff leaving during the first two years was 50% and this reduced to 6% when EI was introduced to the selection process. Sales representatives were 90% more likely to finish their training when hired according to emotional competence (Goleman, 1998)

The model proposed in this paper is a theoretical representation of the correlation between EI and Higher Education outcomes. EI would be measured following matriculation using Schutte et al's (2007) self report on assessing emotional intelligence (AES) which demonstrated predictive validity in college scores at the end of year one ($r(63) = 0.32$, $p < 0.01$). Discriminant validity was also demonstrated when SAT scores did not correlate significantly with SEI scores ($r(41) = - 0.06$). Were it possible to demonstrate a correlation between EI and persistence and/or attrition, the use of EI measures could be defended in recruitment and selection processes, particularly for self selection purposes.

Mayer at al (2004) suggest that EI is a discriminant construct from IQ and go on to make the following claims: Emotional Intelligence (measured as ability) is distinct from other commonly-measured variables related to personality and intelligence: people with higher EI are likely to have better social support, and fewer problematic interactions with others; people higher in EI are less likely to abuse drugs and alcohol; people higher in EI are more satisfied with their social networks and appear to receive more social support and people higher in emotional intelligence seem to more successfully avoid interpersonal arguments and fights (Mayer et al, 2004, p199).

Mayer et al (2004) also claim there is little evidence to demonstrate that the outcomes highlighted above correlate with measures of IQ, which suggests that measures of EI, while currently unrefined, are measuring something other than IQ. Earlier claims that EI will predict success in life and at work were not supported by empirical research but the data generated by current measures

of EI are beginning to suggest that, as a construct, EI is worthy of further exploration and that there is a clear distinction between the EI construct and IQ.

Ability EI versus Trait EI

Salovey and Mayer (1990) define EI as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990, p. 189). Their model proposes four separate abilities: perceiving emotions; using emotions; understanding emotions and managing emotions. To differentiate between EI and traits such as Extraversion and Self Confidence, Mayer and Salovey (1993) wrote:

> "Although a trait such as extraversion may depend on social skill, or result in it, [it] is a . . . preference rather than an ability. Knowing what another person feels, in contrast, is a mental ability. Such knowledge may stem from g, or be somewhat independent of it. The way in which we have defined emotional intelligence—as involving a series of mental abilities— qualifies it as a form of intelligence". (Mayer and Salovey, 1993, p. 435)

The test that is most commonly used to measure ability EI is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer et al, 2002), which is based on an IQ style abilty test that examines the person's abilities on each of the four components of EI described above. This test is reviewed later in the chapter. The test is claimed to be a criterion referenced test which also assumes that social norms exist. Participant's scores are compared to world wide responses, with higher scores indicating a higher

overlap between the individual and the norm. The MSCEIT has been criticised by Bradberry and Su (2003) who found that it lacked face validity and predictive validity in the workplace. One of the chief concerns is that it is styled on IQ tests yet the answers are not objectively defined. It also would be impossible for respondents to arrive at novel and insighful conclusions and score highly as the norm would always be viewed as the best response. It would seem to be over simplistic to assume that consensus opinion is always correct. This criticism has led researchers to question whether the MSCEIT is indeed measuring genuine intelligence or simply social norms. Follesdal (2008) found that there was no correlation between leaders' MSCEIT test results and the ratings of their subordinates.

Petrides and Furnham (2001) and Petrides (2009) distinguish between the ability model and the trait model of EI. Trait refers to self concept and perceived abilities rather than actual abilities. Trait EI is sometimes referred to as trait emotional self efficacy. Traits can also be ascribed by others. To a certain extent, a personal reference draws on trait theory where the referee provides a profile of the individual's qualities and characteristics. The perceived advantages that a reference may have over a self report is that it is presumed to be objectively based on previous performance. The assumption is that the reference accurately predicts the individual's future performance on the basis of past performances. This overlooks issues around context, occupational roles, new expectations, the envronment, colleagues and a whole raft of other factors that would influence future performance and, as such, we have to question the reliability of such an assessment. Equally, self

reports are regarded with similar reservations. The individual's self concept can only really be tested, for accuracy, in light of their behaviour. Furthermore, their behaviour will impact on their self concept.

Within the context of the clear limitations of trait and ability EI, mixed models have evolved. The notion that EI capacity exists uniquely within the individual and this capacity is met by experience and practice, underpins Goleman's model of EI (Goleman, 1998). He introduces four main components: Self awareness; Self management; Social awareness and Relationship management. Goleman includes competencies within this framework, which he claims are not so much innate abilities as capabilities that need opportunities to be developed. Goleman has received strong criticism of his model, with accusations in some quarters that it lacks scientific rigour and that it panders to populist notions of EI (Mayer et al, 2008). Locke (2005) characterises mixed models as being "preposterously all encompassing" (Locke, 2005, p. 428). However, Goleman's four factor construct of EI has been incorporated into measures that have been acknowledged as fundamental to the conceptualisation of EI.

The premise that self reports measure self efficacy, and that ability tests measure performance, would suggest that there is merit in a study which correlated self reports with objective measures of ability. Kirk et al (2009) found that a self report, which measured self efficacy, correlated significantly with scores on the MSCEIT. Perhaps, the distinction between trait and ability EI is the key to achieving better reliabilty and validity in the field of EI research. While they both measure different facets, as with all human

behavioural research, the goal is to identify antecedents and relate these to outcomes. Matching traits to behaviour would help to clarify the elements of emotional intelligence that might make a difference. Once the distinctions between trait and ability EI are fully established, the mechanism that links them will probably become much more important to researchers than the differences. In all likelihood, trait and ability EI will not be mutually exclusive, therefore, their complementary dimensions will provide researchers with material for decades to come.

The Incremental Validity of Emotional Intelligence

The reported overlap between measures of EI and other personality measures (Petrides and Furnham, 2000; Vitello-Cicciu, 2002) has called into question the validity of objective measures of emotional intelligence. There remains the concern that personality measures are simply being repackaged under the new title of EI. If this were the case, there would be little point in introducing EI measures when there are already well validated personality tools available. Palmer et al (2001) counter this and suggest that it would be surprising if EI measures did not also pick up other personality traits, given that we would expect the emotionally intelligent person to be low in Neuroticism and relatively high in the other 'big five' personality traits: Extraversion, Openness, Agreeableness and Conscientiousness. They argue that the potential overlap is less of a concern than being able to find something new that is beyond the scope of existing personality tests. EI research needs to demonstrate that the construct is meaningfully related to positive outcomes when the effects of personality are controlled for.

EI and Ethical Values

Emerling and Goleman (2003) raise the controversial question about whether emotionally intelligent individuals will possess higher moral standards. To what extent are morals and values related to EI? Psychological research strives to apply a value neutral approach when studying personality traits. However, there is an inference in EI research that the traits associated with EI are intrinsically linked to positive behaviour towards others. Is it conceivable, therefore, that individuals can be high in EI and use this quality in a deliberately negative way? It may be possible that EI allows for manipulation of the emotions of others. There is no guarantee that EI would only be used for altruistic purposes. Gardner (1999) claims that intelligence is neither moral nor immoral. He referred to the persuasive skills of Nazi leaders who could deftly manipulate the emotions of crowds and contrasted this with great comedians who could do the same. There is some support for the altruistic model of EI from Davis and Kraus (1997) who found that manipulative individuals tended to have diminished empathic abilities, which would not fit into the EI model. One of the attractions of EI over IQ is the orientation towards others, which makes it an appealing quality for managers who wish to employ people orientated staff.

A Review of Measures of EI

The approach that we take to measure EI can influence the validity of the construct. Self report measures depend on accurate self concept, whereas performance measures depend on the appropriate setting of tasks and the

accurate judgement of performance. The correlation between measures of ability and measures of trait are considered to be low with Paulhus et al (1998) reporting scores between r = 0.00 to 0.35, which would suggest that we are indeed measuring distinctly different constructs. Bracket and Mayer (2003) define 'emotion' as pertaining to relationship signals and 'intelligence' as pertaining to abstract reasoning. The relationship between the two enables the person to reason with their emotions and for their emotions to improve reasoning. As mentioned in a previous chapter, this portrays an extremely controlled version of EI According to Bracket and Mayer (2003), to broaden the construct, would be to render it inaccessible to rigorous research as it would then include too many confounding attributes. However, several measures of EI have evolved following the development of the construct including self reports (Schutte at al, 1998, 2007; Bar-On, 1997; Petrides and Furnham, 2003), objective performance based measures (Mayer et al, 2002) plus a variety of commercial online measures.

For the purpose of this review the commercial assessment tools will be disregarded, although there is growing consensus regarding reliability and validity of the most recent versions (see Bradbury and Greaves, 2005). There remains little empirical evidence to demonstrate that one particular method of assessment provides the best actual measure of EI, although Mayer et al (2000) argue that performance-based measures are essential to assess emotional competence. Self reports, at best, can only really claim to measure one's own belief about EI, whereas objective, expert-assessed measures would be expected to provide better predictive validity. This argument is countered by the very real problem of identifying scoring criteria in a domain

in which there may be no right or wrong emotional response to a given trigger, even allowing for 'expert' judges' consensual opinions (Zeidner et al, 2001). Indeed, it is conceivable that, where one might expect an empathic response to a specific trigger, the respondent may genuinely feel an alternative emotion. To what extent could this be judged as the wrong response?

MSCEIT

The Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT) (Mayer et al, 2002) incorporates consensual expert opinion in the scoring criteria. The authors argue that EI involves the ability to

> "perceive accurately, appraise and express emotion; access and generate feelings when they facilitate thought; understand emotion and emotional knowledge and regulate emotions to promote emotional and intellectual thought" (Mayer et al 2002, p294)

The MSCEIT is a measure of ability and it involves test items such as: recognition of emotion from pictures of faces; translating feelings into emotions; multiple choice questions on emotional understanding and inclusion of emotions in decision making. Mayer et al (2002) acknowledge that self reports may measure components of emotional thinking that cannot be assessed by performance measures, but they argue that the most relevant factor of EI is how it causes us to behave. Zeidner et al (2001) claim that the MSCEIT fails to meet the standard scoring criteria for cognitive ability tests, having too many contrasting styles of measurement to achieve standardisation.

The MSCEIT is an updated version of the Multifactor Emotional Intelligence Scale (MEIS) (Mayer et al 1999) which has independent evidence of reliability and validity (Ciarrochi et al, 2000). Adults scored significantly higher than adolescents and women scored higher than men, both results which correlate with other measures of emotional intelligence (Carriochi et al, 2000). While there are few independent analyses of the updated MSCEIT, Gignac (2005) reanalysed its factor structure and found different results to the authors. In response, Mayer et al (2005) repeated the analyses and came to the same conclusion as Gignac that the original results were misleading. The explanation given for this was that the correlation software had been modified and was now yielding different results. As a consequence of this, Mayer et al (2005) claim to be re examining their model of EI and are considering an hierarchical structure rather than a four factor model, although they argue that the MSCEIT, in its current form, still retains an acceptable level of reliability and validity in the absence of better ability-based measures. Clearly, more independent psychometric analyses of the MSCEIT are required.

EQ-i

Bar-on's (1997) model of EI could be described as broader than most as he refers to emotional and social intelligence (Bar-On, 2000). He defines EI as "an array of non cognitive abilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, 1997, p 16). It is suggested within the model that EI can improve with maturity and experience and can be enhanced by training. The Bar-On Emotional Quotient Inventory (EQ-i) is a self report measure which provides

fifteen subscales, five composite scales and one overall EQ score. The fifteen components of Bar-On's model of EI are arranged in an hierarchical structure within five composite scales consisting of:

(1) Intrapersonal EI, including: emotional self awareness; assertiveness; self-regard; self-actualisation and Independence.
(2) Interpersonal EI, including: empathy; interpersonal relationships and social responsibility.
(3) Adaptability EI, including: problem solving; reality testing and flexibility.
(4) Stress Management EI, including: stress tolerance and impulse control.
(5) General Mood EI, including: happiness and optimism.

As one of the first measures of EI available, the EQ-I became popular as a self reporting tool having been translated into twenty two languages and used in over fifteen countries (Palmer 2003). The tool consists of 133 items and the participants are requested to respond using a five-point likert scale. The results of this brief test are computer generated and are provided by the publishers, Multi Health Systems. Bar-0n (1997) reports on a number of studies in the manual to help support the construct validity of the tool. EQ-I scores have been shown to positively correlate with other tools measuring, for example, Emotional Stability (Cattell et al 1993) and Life Satisfaction (Kirkcaldy,1995) and negatively correlate with tools measuring poor emotional health such as Depression (Beck and Steer, 1987). Discriminant validity of the EQ-I has been questioned by Mayer et al (2000) and Newsome et al (2000) who claim that there is an overlap between the tool and measures of personality. Indeed Newsome et al state that the EQ-I is merely a measure of

'neuroticism' (Newsome et al, 2000). Petrides and Furnham (2001), however, did find evidence for the discriminant validity of the EQ-I from normal personality.

TEIQue

The Trait Emotional Intelligence Questionnaire (TEIQue) was developed by Petrides and Furnham (2003) to "address the shortcomings of earlier measures" (Petrides et al 2004, p 575). It has been claimed that most questionnaires have been developed without any clear direction in that they purport to use a self reporting measure to assess EI ability (Petrides et al, 2004). The TEIQue is available to researchers and academics online, to encourage wider application and data gathering, suggesting that the tool is still being developed. Its authors claim that it provides distinct "conceptual advantages" over earlier trait measures of EI, essentially because, unlike earlier questionnaires, the TEIQue was designed with the clear intention of measuring 'trait' EI (Petrides et al, 2004). The TEIQue consists of fifteen components collated into four subscales (factors) and one overall score. The four subscales are: well being, including optimism, happiness and self esteem; self control, including emotion regulation, impulsiveness and stress management; emotional Skills, including empathy, emotional perception, emotional expression and relationship skills and social skills, including emotion management, assertiveness and social competence.

The first part of the self report questionnaire comprises of 153 items using a seven point likert scale. The second part asks for more detailed information

such as: age; gender; religious belief; ethnic background; salary and political convictions. Other than the interesting data that may be generated by these responses, it is not clear why such information was requested, although the TEIQue is part of an ongoing study into EI and investigation into correlations on EI and other factors is to be welcomed. Moreover, there is strong evidence to support the variance in EI scores with regard to gender (Petrides et al, 2004) and age (Carriochi et al, 2001).

SEI and AES

Schutte et al's (1998) emotional intelligence measure (SEI) was designed to measure Salovey and Mayer's (1990) construct of EI. In validating the SEI, Schutte et al (1998) found that it correlated with a range of similar constructs such as optimism-pessimism, depression and impulsivity (Salovey et al 1995). It was also found that the scores differed from measures of normal personality and cognitive ability (Schutte et al 1998). In keeping with other EI scales (Mayer et al 1999), the SEI also demonstrated higher scores for psychotherapists than their clients and for women over men.

The self report scale consists of thirty three items, three of which have been negatively keyed, and asks the respondents to agree or disagree on a five-point likert scale. The thirty three items can be collated in four sub scales: optimism; appraisal; social skills and utilisation. Reliability of the subscales was found to be good (Palmer 2003). However, other names have been suggested for the sub scales such as 'managing self emotions' for optimism; 'perception of emotions' for appraisal; 'managing others' emotions' for social

skills and utilisation remained unchanged (Carriochi et al, 2002) The SEI has been found to be a reliable self report measure of EI (Carriochi et al, 2001; 2002 and Schutte et al 1998; 2002). In 2007, Schutte et al (2007) renamed the SEI as the Assessing Emotions Scale. The newly named scale was identical to the original. The authors acknowledged the amendments carried out in 2004 to Mayer Salovey and Caruso's 1990 model (Mayer et al (2004), but were satisfied that the amendments did not substantially alter the fundamental structure of the four branch model.

The internal consistency in the development sample of the AES was measured by Cronbach's alpha to be .90, with numerous other studies reporting a mean alpha score of .87 across all of the reported samples. Test-retest reliability was reported as .78 for total scale scores. Bracket and Mayer (2003) found that the AES correlated substantially with the EQ-I ($r = .43$) and less so with the MSCEIT ($r = .18$). Other studies (Bastian et al 2005) found no correlation between the AES and the MSCEIT scores.

Schutte et al (2007) caution against using the tool for individuals who may be expected to present themselves positively, for example in employment screening, as the items on the scale are transparent. However, Kirk et al (2009) found that the AES was less prone to respondents providing 'socially desirable' responses than may have been expected when scores on the Marlowe-Crowne Social Desirability Scales were found to have no association with AES scores under conditions of confidential responding. Schutte et al (2007) found that the reading scale level was appropriate for adolescents to complete as assessed by the Flesch-Kincaid reading level formula. This may

be a useful characteristic for recruitment purposes, should the scale correlate with positive nursing outcomes. Adolescents, who are pondering a career choice, may be directed by their score on the AES. Further information is available in the methodology chapter on the AES as this scale was chosen for the study. Its psychometric properties are discussed and the results from a validation study were analysed to confirm the scale. Justification for choosing the scale is provided and the factor structure is analysed and compared to similar applications of the scale in the literature.

Reliability of self reporting EI measures has been demonstrated with relation to other criteria such as empathy, alexithymia (the inability to recognise and express emotion) and leadership success (Palmer et al, 2001; Salovey et al, 2002; Schutte et al, 2002). Undoubtedly there are some advantages to self reporting. The measurement tools can be brief and easily administered. Internal experiences may be accessed and such reports may be useful to provide added value to the 'objective' tests referred to above. However, many critics of self reports remain sceptical regarding their validity. It has been argued (McRae, 2000) that self reports are merely mapping onto personality traits rather than measuring EI. Schutte et al (1998) and Bar-On (1997) have demonstrated a correlation between their self reports and theoretically related variables, yet these measurement tools have also been reported as too close to the big five personality dimensions (Newsome et al 2000; Petrides and Furnham, 2000).

The validity of self reports of EI has been questioned frequently in the literature (Derkson et al, 2002), however, much of the discussion relates to

the efficacy of self reporting per se as opposed to self reporting EI. Perhaps the most relevant issue is the purpose of the measurement. If the purpose is to measure EI for prediction and selection of individuals, it would appear that ability tests would have superior validity. If the goal is to measure self-efficacy or self-concept, self reporting would appear to be more valid. Additionally, should one wish to measure the influence of EI trait on ability, one would need to use more than one type of measure. Furthermore, the motivation to participate in ability testing may be influenced by initial self reporting. If the individual perceives himself to be high in EI, he may be more likely to take the ability test. The converse would also be true. Finally, there must be justification for testing for a correlation between perceived EI and performed EI. Currently, there is a poor correlation in existing tests between trait and ability measures (Carriochi et al, 2000) but this does not necessarily mean that the tests are yielding the wrong results. It may be that there is always going to be a problem using the same name, emotional intelligence, to describe both trait and ability. Also, the correlation between ascribed traits and behaviour is complex. This becomes more complicated when we look at whether behaviour is intrinsic or extrinsic (see Sheldon, 2004) and the extent to which this distinction is determined or influenced by EI. For example, a powerful environmental situation may provide an extrinsic influence on the individual's behaviour. However, the extent to which the individual responds to the powerful environment remains intrinsic. Part of this intrinsic process may well be related to EI.

Having looked at the construct of EI and its historical development, there does appear to be sufficient evidence to support further research into the use of

measures of EI to explore any possible correlation between EI scores and a range of behavioural outcomes. A review of contemporary measures of EI showed that ability measures and trait measures exist, although a true distinction between the two only seemed to be addressed following the development of some tools. The MSCEIT (Mayer et al, 2002) was established as a measure of EI ability and was presented by the authors as the only valid way to establish EI. Bar-On's EQ-I (1997) was the first nationally accepted self report and while it received some criticism regarding its similarity to other measures of personality, especially in the area of 'neuroticism', there was also support for its discriminant validity from normal personality. The TEIQue (Petrides and Furnham 2003) was claimed by its authors to have addressed the shortcomings of previous questionnaires that were developed without due consideration of the differences between trait EI and ability EI. As the most recent example of self report, there is a need for further analysis of the tool and it is the subject of ongoing research. Schutte et al (1998) produced the SEI in order to measure EI according to Salovey and Mayer's (1990) construct. While the terminology used to describe the subscales was questioned, the general consensus in the literature was that the SEI had construct, predictive and discriminant validity. A later paper by Schutte, et al (2007) introduced the SEI as the Assessing Emotions Scale (AES) and reported many examples of validity and reliability in its recent application.

It would be naïve to suggest that the construct of EI is clear and consensual, however, the various theories are converging. The subject is somewhat cluttered by 'popular' notions of the utility of EI and what it might achieve for the individual and perhaps the company, leading to commercial variations of

the measurement tools. There is clearly a great deal of developmental work still to be carried out in this area, however, the emergence of researched tools has enabled employers and employees to assess suitability for professions with a great deal of reported success (Goleman et al, 2002). The nature of the personality characteristics of EI tend to unite the theorists and there is a definite similarity between the inter and intra personal characteristics of EI and the desirable characteristics of student nurse applicants. Should there be a demonstrable correlation between EI scores and success of the nursing student on the course, this may help to address the significant problems of recruitment and retention.

Can Emotional Intelligence be Enhanced?

One of the contributing factors to the popularity of EI is the belief in the possibility that, unlike IQ, EI may be improved. The prospect of enhancing emotional intelligence is of interest to researchers and educators. There is little question that even a small increase in emotional functioning, could prove to be hugely beneficial to the individual in most areas of their life. Politically, researchers would, no doubt, welcome an opportunity to move away from the 'bell curve' results of intelligence and performance that can appear to support racial and class differences. If EI is, indeed, an intelligence that can be developed, then providing equal opportunities may actually have a positive impact for individuals in difficult circumstances. There is a sense that this might be a refreshing break from the apparently 'fixed' quality of IQ. However, whether it is actually possible to enhance emotional intelligence is far from clear.

There is certainly some resistance to the idea that EI can be developed. For example, McCrae (2000) argues that

> "we know a great deal about the origins of personality traits. Traits from all five factors are strongly influenced by genes (Riemann, Angleitner, & Stelau, 1997) and are extraordinarily persistent in adulthood (Costa & McCrae, 1997). This is likely to be unwelcome news to proponents of emotional intelligence, who have sometimes contrasted a supposed malleability of emotional intelligence with the relative fixity of traditional IQ" (p. 266).

The fact that EI is positively correlated with age (Bar-On, 2000) would appear to support the assertion that it can, indeed, be enhanced. Intuitively, it is likely that nature and nurture work together to enable the individual's capacity to be achieved in the field of EI just as we have found in virtually every area of development.

Most theorists would agree that general intelligence, 'g', is fairly stable. During childhood and adolescence, Piagetian stages of cognitive development occur, involving assimilation of new knowledge into existing levels of understanding. This is followed by accommodation, whereby the individual enhances their understanding and knowledge in the face of new information (Santrock, 2008). These stage-like developments of cognitive ability are very obvious in children and young teenagers but they become less obvious with maturity. However, we can all cite examples of new insights and sudden changes in perspective that accompany moments of discovery, regardless of age. This suggests that knowledge and reasoning may continue to be enhanced but it does not necessarily imply that intelligence has increased. If intelligence is the capacity to learn and represents a potential, then the increasing knowledge is

simply our fulfilling of this potential. Our general intelligence, as measured by IQ, would determine the limits of our potential.

Using the same analogy, emotional intelligence may be a potential capacity for using and understanding emotions, which can only be met through exposure to and increasing knowledge of emotions. Applying this model to emotional intelligence, one could argue that we all have a unique potential to achieve our own level of emotional intelligence and, for this potential to be realised, we require the necessary experiences. Without the correct opportunities, it would be difficult for any of us to reach our potential. Perhaps 'potential emotional intelligence' is best described as 'trait' whereas, the extent to which this potential is being met, is best described as 'ability'.

Liptak (2005) suggests that there are five steps to enhancing EI competencies for the college student: help them to understand why emotional intelligence skills are important; identify the student's emotional intelligence skill deficits; assess the student's emotional intelligence strengths; help the student to explore barriers to being successful in the workplace and the practise the relevant skills. The same model would appear to fit all skills deficits, which tends to detract from its unique application in a research context. Liptak recommends specific assessment tools but he does not provide information on validity or reliability indices. He also does not provide any information regarding an evaluation of the efficacy of this approach.

Meyer et al (2004) found that a small, non significant improvement in EI scores, tested using the MSCEIT, could be found following a one day

intervention in enhancing EI with a group of 15 dental practitioners. The interventions involved group based adventure activities that incorporated team working, decision making and reflection on interactions throughout the day. The small improvement could easily be accounted for by the quick retest, enabling familiarity to have a positive effect. This, along with the size of the sample and the non significant result, would not support the conclusion that EI had actually improved as a result of the interventions.

Boyatzis at al (1995) carried out a longitudinal study at the Weatherhead School of Management at Case Western Reserve University. Students were invited to target personal competencies from Goleman's competency framework that they wished to develop. The students were assessed on graduation and over an additional period of seven years. It was found that the competencies which came under the subscales of self awareness and self management improved by over 40% at two years and the competencies which came under social awareness and relationship management improved by over 70%. Self awareness and self management continued to develop when assessed at seven years and, while social awareness and relationship management reduced, there were still signs of improvement by over 40% after seven years. This suggests that EI competencies can be developed and that this improvement can be sustained over an extended period of time.

The answer to the question: 'can emotional intelligence be enhanced?' would appear to be 'yes' so long as we are judging the individual's ability to improve their emotional knowledge. As with general intelligence, the actual capacity for EI is likely to be fixed.

Summary

This chapter examined the historical and contemporary theories of emotional intelligence. The distinction between trait and ability EI was addressed in the context of a range of measurement tools. Emotional intelligence and IQ were also contrasted. A rationale was provided for using the AES, as the tool of choice, for measuring emotional intelligence in the study.

Chapter Three: Attrition Theories

Introduction

This chapter explores early and contemporary theories of attrition in Higher Education. The characteristics of the student and the institution are discussed in the context of retention and attrition. The specific reasons for attrition in nurse education are discussed and the current methods employed by the institutions to address this are explored.

Historical Context of Attrition Theories

Tinto first created the Student Integration Model (SIM) in 1975, claiming that successful integration of the student and the Higher Education (HE) institution was the key to persistence behaviour. He suggested that the move from secondary education into higher education may be seen as a form of 'social puberty' characterised by the student moving from youthful participation to full adult membership in society. Tinto described five specific factors that he claimed would contribute towards student retention: pre entry attributes; goals and commitment; experience at the institution; external commitments and social and academic integration. He also provides the caveat that student dropout should not always equate with failure. A 'high flying' student may drop out for a number of reasons unrelated to performance or suitability.

Bean (1982), drawing on Tinto's model, postulated that non traditional students were now in the majority, therefore, integration with the institution was less significant due to distance learning, part time study and social demands. He also questioned Tinto's notion of 'social puberty' in that it would

not necessarily apply to the majority of students who were no longer school leavers. Bean questioned why Tinto had not explored the potential similarities between dropping out of work and dropping out of HE. Essentially, Bean was examining the changing face of HE from Tinto's 'traditional student' to that of the 'non traditional' student and, therefore, expanding on Tinto's work. Bean's Conceptual Model of Non-Traditional Student Attrition links non persistence to the interaction of academic and environmental variables. He cites the following five factors as the key to student persistence: routinisation; instrumental communication; participation in academic processes; integration and distributive justice.

Critics of these models point to their longitudinal nature and the failure to recognise the significant importance of the first semester in decisions to drop out. They have also been described as having a tendency to generalise students' needs across a diverse range of HE settings (McInnes et al, 2000). Bean and Tinto would both argue that their models are there to be developed further, however, the theoretical basis upon which they were developed remains sound. Tinto (1986) conceded that existing models of attrition tend to be independent of each other.

Wylie (2004) developed his Theoretical Model of Non-traditional Student Attrition with the intention of revising and refining Tinto's and Bean's models. He based his model on two critical processes that he claimed to be sequential and causal:

- Pre-enrolment evaluation.
- Re-evaluation and disengagement facets.

‘Pre-enrolment evaluation’ incorporates Bean’s background variables (age, gender, high school performance). It also builds on Bean’s concept of academic variables (such as study habits and course availability) and environmental variables (finances and family responsibilities). Wylie’s model includes the individual’s perceptions of utility and course demands, which draws on Tinto (1975) and Bean (1982) in their references to intrinsic (perceptions of psychological cost) and extrinsic facets (others’ expectations). Wylie also incorporates self-worth as one of the factors which will determine whether the student is willing to meet the challenge of the course. These five factors: background variables; academic variables; environmental variables; course utility and self-worth will determine the outcome of the pre-evaluation the student will undergo to decide on whether to undertake the course (Wylie, 2004).

‘Re-evaluation and disengagement’ from the study commitment will be determined by the following five factors: academic self-worth adjustment; social self-worth adjustment; re-evaluation of participation, the disengagement process and emotional intelligence. EI has been added to Wylie’s existing four factors to reflect his observation that intrapersonal skills remain key to the outcome of each of the first four phases. Wylie refers to self esteem, self-efficacy and self-worth throughout. He recognised the importance of the student’s own perception of his academic and social credentials in decisions about persistence or drop out. Ideally, any decisions around this should be based on accurate perceptions. It should also be stated that students’ sense of self worth will be contextual. For example, high achieving students may feel

less successful among other high achievers. Without an accurate self-awareness, the student will be unlikely to judge his capabilities and his potential in the context of other students' performances and the demands of the course. It could be argued, therefore, that self-awareness is one of the most significant factors in decisions which lead to persistence and attrition.

Wylie's model is intentionally limited to the students' own decision making process. In discussing attrition in a wider sense, it is necessary to also consider the institutions' influence over the student's success or failure to persist. A comprehensive model of attrition would need to acknowledge: the student's background; academic variables; environmental variables; perceptions of utility; intrinsic characteristics; extrinsic pressures and self knowledge (self-worth, self-efficacy, self esteem). This would then need to be incorporated within a model which also included: teaching, learning, academic support systems and socialisation. The extent to which the student recognises his progress can be at odds with the institution's perception. Tinto's (1975) concept of individual and institutional integration appears to be a helpful way forward in conceptualising this.

A model of student attrition is proposed which recognises Tinto's and Bean's acknowledgement of individual characteristics and the requirement to integrate with the institution. The model also draws upon Wylie's assertion that the student's perceptions of self will greatly determine decisions about persistence and drop out. It is further argued that perceptions of self are more accurate in individuals who score highly on measures of emotional

intelligence (EI) and individuals who are self-aware are more likely to manage themselves in contextually appropriate ways. This model provides a framework which might help to explore the relationship between aspects of EI, namely self-awareness and self management and outcomes such as persistence and attrition (academic failure, clinical failure and self termination). The model also acknowledges that failure due to professional misconduct might correlate negatively with EI. It may also be possible to demonstrate a positive correlation between EI and temporary self withdrawal on the basis that the individual appropriately recognises the need to take time out.

The function of Higher Education may in itself account for attrition rates which vary greatly across Higher Education institutions (HEIs). Quinn et al (2005) claim that universities are part of the "poverty industry" (p1), emphasised by the perception that one of their functions is to try and respond to failing local industries and provide a pathway to social justice. They suggest that attrition is partly accounted for by 'working class' students voluntarily "climbing down the ladders offered to them", away from university and back to their working class roots. This is supported by the larger rates of attrition in the post 1992 universities which traditionally recruit students from post codes where unskilled or manual labour is the norm (HESA 2004). Government targets of 50% participation in HE demand that families who traditionally view university as unobtainable, 'sign up' to higher education. There is also the contention that 'first generation' HE students have less to fall back on with regard to parental experiences, furthermore, their peer support network, which would

normally serve as a buffer, may well share this disadvantage (Harvey et al 2006). Assumptions are made by first generation students about HE which are not based on experiences. The potential dissonance between these assumptions and the reality can be difficult to overcome.

In Yorke's (1997) research on 'drop out' in the UK, five main reasons were identified: incompatibility between the student and institution; lack of preparation for the higher education experience; lack of commitment to the course; financial hardship and poor academic progress. The links between social class and attrition were more implied by Yorke, rather than clearly stated. However, Forsyth and Furlong (2003) claim that students, from less advantageous backgrounds, were certainly more likely to withdraw. Quinn et al (2005) found that, while poorer students from lower socio-economic backgrounds are more likely to drop out, they also find the experience to have been useful and many hope to return better prepared for success in the future.

Quite clearly, there is no one experience that can be applied to all students. However, two main themes can be identified which are: the process of transition and adjustment to HE and the distinction between being a first year student and being a student who has successfully entered year two. The first theme manages to incorporate the strong notion of integration and the dynamics that support or hamper this, while the second theme recognises the extent to which, persistence into year two is a statement of acceptance by the institution and by the student that integration has successfully taken place.

It would be wrong to imply that year one, in HE, is a stable experience throughout. The early process of induction evolves into a process of assimilation and accommodation and any one of these stages can present a different challenge to the student and to the institution. Should these challenges accumulate, attrition almost takes on a certain inevitability. Perhaps, the focus in year one should be about clarifying the institution's and the student's expectations and identifying challenges for the institution, and the student. At the same time, it should be acknowledged that year one is not too late to recognise that some expectations, and challenges, may never be met. Retention under such circumstances would appear to be undesirable for both the student and for the institution. This issue is best resolved in year one, rather than later in the programme. Regardless of how well prepared the student may perceive himself to be for HE, the reality is likely to be different. A meritocratic system such as HE will assume that not all participants will succeed. So long as the reasons for leaving are not related to a failure on the part of the institution, an early decision by the student to leave is preferable to delaying the inevitable and prolonging the period of unhappiness.

Yorke (2004) compared two studies which examined students' reasons for leaving their programmes early. The studies bridged the Labour Government's funding changes in 1997 with one cohort studying prior to the change in funding arrangements and the other following the change. There were no significant differences in reported reasons for leaving HE, suggesting that self financing was not necessarily an issue for student retention in both groups. Mature students were more likely to claim that they had made better

course choices than their younger classmates but they were also more likely to cite financial difficulties, leading to withdrawal.

An analysis of persistence beyond year one in HE in Northern Ireland (Bailey and Borooah, 2007) of more than 15,000 students, found a range of significant factors:

- Gender: females were more likely to survive than male students.
- Background: students from unskilled backgrounds were less likely to survive than students from professional backgrounds.
- Religion: Catholic students were less likely to survive than other religions.
- Domicile: students who came from outside Northern Ireland were more likely to survive than students from Northern Ireland.
- Prior academic attainment: there was no significant difference in survival
- Choice of course: engineering and information technology survival rates were lowest, accounting and social work were highest.

In summary, Bailey and Borooah, (2007) concluded that the student type with the highest survival rate (96.1%) was female, Protestant and from a professional background who was studying social work. The student type with the lowest survival rate was male, Catholic and from an unskilled or semi skilled background who was studying engineering. Of course, there are many possible reasons for these findings that are not related to the individual student. For example, there may be more options available to

male students and students who live locally. Also, social work may be a much easier course to complete than engineering.

When students who had withdrawn from their studies were interviewed by Harrison (2006), they were asked to try and identify a primary reason for leaving their course. Almost half of all students (48%) claimed that their reason for leaving was related to course choice. One third of respondents had no specific career plans and simply joined University as a natural progression from school. One quarter of respondents cited personal reasons, one quarter cited financial reasons and two thirds claimed to have plans to return to HE in the future. Clearly, the students were permitted to provide more than one reason, which would account for the sum of the fractions being greater than one. Harrison goes on to describe emerging groups of students who do not persist with their studies, such as:

- Academic strugglers and career pathway reviewers. This group view their difficulties as proof of a poor choice of course.
- Unsettled young students who are dissatisfied with full time education

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- Students with non A-level qualifications who have never been exposed to higher level writing.
- Middle class drifters who feel that they should be at University but still do not feel fulfilled.
- Involuntary withdrawal for unforeseen reasons, such as health or changes in family circumstances
- Young men with unrealistic lifestyle expectations who fail to give their studies sufficient attention.
- Low income students with financial difficulties who are required to supplement their income to the detriment of their studies.

Adapted from Harrison (2006)

The model presented below (figure 2) has been adapted from Tinto (1982), Bean (1982) and Wylie (2004). While it may be convenient to assume that a flow chart can accurately represent the complex process of student education, the educational process is rarely so neat and tidy. A diagrammatic representation of the student journey can only reduce it to its simplest form and, accordingly, lose a great deal in the process. Yet it is helpful to be able to link the identified pre requisites of education to the outcomes. The theoretical focus on attrition tends to draw heavily upon sociological and psychological factors, sometimes viewing them as distinct entities.

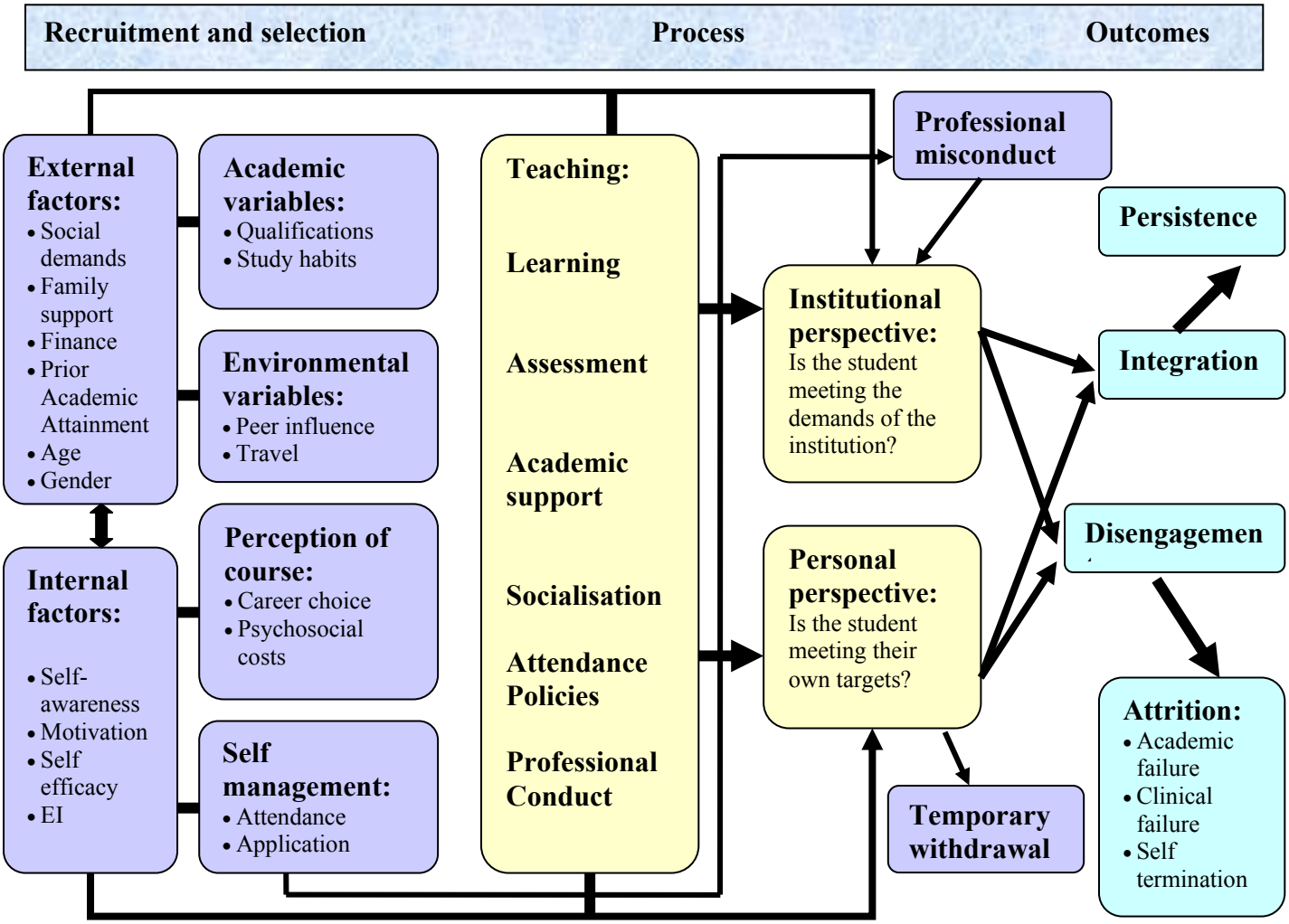

Figure 2: A Theoretical Model of Student Attrition: Adapted from Tinto (1982), Bean (1982) and Wylie (2004)

Sociological factors include: financial status; support networks; environmental issues, whereas psychological factors tend to centre on: self efficacy; IQ; motivation; emotional intelligence. The reality is that, while there may be a distinction between direct indicators, such as financial status, and indirect indicators, such as age and gender, the distinction may not always be as clear as we would like. Equally, the impact of the institution on attrition can never be underestimated. Never-the-less, if any of the pre requisites can be identified as having an impact on attrition, it would be neglectful to overlook this in today's financial climate.

Persistence can be viewed as a success, both for the student and, for the institution. This success will also be welcomed by families, industry and politicians. Selection, recruitment and assessment processes are designed to achieve this successful outcome, yet attrition rates are still having consequent costs to society (Thomas, 2002; Wylie, 2004). Over and above attrition rates, we also need to consider the students who have successfully completed their studies but with a significant personal cost. The student who struggles all the way through their course might feel an increased sense of fulfilment but the risk of a lingering poor self esteem and the impact of the constant struggle on the family might qualify the success to an extent. The positive impact of the success may be weighed by the student against the personal and family costs. It is likely that a small number of students will complete their studies, simply to gain a sense of achievement, even when their enjoyment of the course and, intent to pursue that particular profession, has long since left them. Therefore, the number of students who can claim to have made the

right choice of course or career, may be lower than the numbers who satisfied the selection criteria.

This rather negative picture is merely conjecture but it serves to highlight the importance of recognising individual characteristics, rather than simply applying standardised entry criteria, when fitting the right student to the right course or career. Ideally, the student might make this connection and, while a number of students undoubtedly persist, even when the course does not suit them, some students choose to walk away in the certain knowledge that it is in their best interest to leave. It is difficult to consider this as a failure and, at the very least, it demonstrates self knowledge and mature decision making. Persistence, therefore, can be deemed successful by the institution in all cases, but the extent to which the student deems it a success, will be determined by what they choose to do with the experience as well as the qualification.

The student, who consistently struggles throughout and requires second and third chances to achieve, will still have commenced the programme with the minimum academic qualifications required and may, possibly, have higher entry qualifications than others who succeed with little difficulty. What is it, then, that causes this student to struggle? Furthermore, what is it that enables this student to persist in the face of evidence that the course is not suited to them? The poor fit may be due to poor curriculum design, with regard to student centredness, or it may accurately reflect the student's failings. In either case, the student has not integrated.

‘Attrition’ is an umbrella term, used to cover a range of reasons why students do not successfully complete their studies. The final outcome, attrition, remains constant in that the course is terminated but the processes vary greatly. An accurate picture of attrition, in any institution, could only be obtained by using a complex recording system. In some cases, the student chooses to withdraw. This may just be temporary or it might be a transfer to another course. Essentially, therefore, it is not always a loss to either the institution, or to the student, but the decision to leave is still likely to be related to a rising awareness that the student requires to leave prior to the point where the element of choice will be removed. The student may be withdrawn due to academic failure, or in the case of a vocational course, a failure to satisfy professional standards. Health status may be a factor, or it may even be the case that the student has committed gross misconduct.

Even in cases where the student ‘fits’ the course very well, external issues may impinge on his or her efforts to succeed. The institution also has to satisfy itself continually that it is providing the best possible environment to facilitate academic success. On the basis that the successful students also attend the same institution, and are exposed to the same lecturers, curriculum, and exam diet, as the students who fail, it is fair to argue that success or failure depends greatly on the interaction between the student and the institution, or as Tinto (1997) claims, the degree to which integration takes place.

Looking at specific outcomes related to student nurse education, it is possible to formulate the following examples:

- Self-termination
    - Recognising poor 'fit' with course
    - Pre empting failure
    - Recognising inability to meet academic demands
    - Recognising inability to balance social demands
- Academic failure
- Clinical failure
- Failure due to professional misconduct
- Persistence

Before going on to relate EI to the above categories, it is necessary to examine the other variables which may also impact on each of the above outcomes. Tinto's Student Integration Model (SIM) remains an insightful model of attrition (Tinto, 1975). It identifies a number of factors that must be considered when looking at student attrition: prior qualifications; individual attributes; family attributes; social pressures and academic and institutional support. It may be argued that Tinto's concept of 'individual attributes' could be further divided into personal qualities and prior experience. This assertion that prior experience relates closely to individual attributes is based on the premise that experience is more than simple exposure. It incorporates the individual response to any exposure along with the salience of the experience. For example a student nurse may have worked for a number of years in a care setting, yet learn more from a brief encounter with family illness, than she had learned previously. The experience is more salient, despite the reduced time exposure.

This complication (the difficulty in separating the individual from the influencing factor) is not limited to 'individual attributes' as the same argument could be made for family attributes, based on the assumption that the individual both shapes the family, and determines to an extent, the degree to which family attributes impact on their input into the course. One mother might consider it appropriate to compromise on child care arrangements to achieve her qualifications, whereas, another might not. Taking this line of argument to its logical conclusion, each and every factor that impacts on attrition, could be legitimately linked to individual characteristics. Essentially it is not just the influencing factor that matters but the individual's perception of it that counts. Tinto reinforces this point by designing a model that is entirely based on integration. Social and academic integration are required for the student to succeed, and this can only be realised via the individual student. If the student is bi-passed in the process, there can be no integration.

One can accept, therefore, the influence of a wide range of factors, some of which are beyond the scope of the individual, or indeed the institution, to cope with. Clearly, it has been shown by Tinto that students do report external factors as responsible for their decisions to leave, or for their failure to succeed. We must also accept that, with the support of the institution, the individual can often overcome some of the pressures which lead to attrition.

Many of the identified factors in attrition research apply to nursing education. The problems, faced by all HE students, tend to cross programme

boundaries. However, there are additional concerns that each specialty might encounter that could be more closely related to the choice of programme. Nursing and Midwifery education is a relatively recent addition to higher education, which has brought some advantages and some challenges to the respective professions, but it is likely that the assimilation process has some way to go before there is full integration. For example, entrance qualifications, engagement with research, professional and vocational issues tend to be specific to nursing requirements. Never the less, attrition in nursing is, in the main, similar in terms of percentages to other HE programmes.

Attrition in Nursing:

Funding for student nurses and midwives differs from normal HE student funding in that costs are charged against overall NHS funding and target numbers are prearranged contractually to try and meet the healthcare sector's projected workforce future requirements. It is expected that HEIs and the NHS support each other in achieving realistic target numbers of qualified nurses and midwives. This task is extremely complex due to the current delay in reporting and recording attrition rates, in a meaningful way, that would allow HEIs to identify 'real time' issues around attrition. The variation in attrition rates, throughout the country, appears to suggest that some institutions have successfully addressed this issue. However, the possibility that inconsistent reporting methods might also account for this variation still exists. Attrition data tends to be predominantly anecdotal and qualitative and the typical use of the term 'personal reasons' could easily apply to every conceivable reason for leaving a programme.

One of the fundamental anxieties related to attrition data is the fact that, students who leave voluntarily are not recorded as distinct from students who are removed from the programme. Exit interviews do not resolve the lack of coherent information due to their voluntary nature and there remains the likelihood that, students who are involuntarily removed from the programme, will be reluctant to cooperate in data collection. It is also difficult for students to conceptualise their reasons for leaving, especially if there is a link to ill health or debt (Pryjmachuk et al 2008).

Unlike many HE students, nursing students have full time practice placements to negotiate as well as their course work and study. While this is not unique; student teachers and social work students may have similar demands, the student nurse will be expected to commence at 7am or to finish at 10pm and there is also the expectation that they will complete periods of night shift. Student nurses do not receive the long summer holidays provided for other students, reducing the opportunities for summer employment to help support the student through their term. Such pressures would certainly impact on the student's perception about their suitability for the programme and their motivation to succeed. Nursing students find themselves undergoing multiple assessments, some of which are not legitimately recognised as part of their programme. For example, they will be assessed academically, practically, socially, professionally, interpersonally and intra-personally. Judgements will be made regarding working in teams; using initiative; clarity of communication and multi-professional working. Mentors will comment on qualities such as

conscientiousness, reliability, person centredness and empathy. The student may not fail directly on any of the above qualities but, should they feel through feedback, which could be formal or informal, that they are lacking in these areas, one could understand a lack of motivation to continue. Furthermore, the mentor may identify weaknesses in some areas that they would personally consider a priority and allow this to cloud judgements in assessing other areas.

Interestingly, the majority of students appear to view the above issues as a challenge rather than a threat and, surprisingly, students tend to report less stress in practice than when they are in their theory block (Howard, 2001). Indeed, most students would claim that the 'stresses' of practice provide them with their greatest levels of satisfaction in their training (Kinsella et al, 1999). However, this does not detract from the fact that nursing students, much like other students who have a vocational element to their programme, will be assessed in many more domains and in much more complex forms than most of their HE contemporaries and, as such, have many more opportunities to be unsuccessful or to reflect on their own suitability for the programme.

The challenges of practice stretch beyond the increased burden of assessment. There are many factors associated with the practice element of nurse education which create overwhelming difficulties for the student. The clash of part time work, essential for some students' income, with full time clinical practice is a common cause for concern. It is expected that students work the full time equivalent of 37.5 hours per week while on practice. This can mean giving up part time work that is not flexible enough to accommodate

the student's shift patterns, which involve inconsistent starting and finishing times as well as changes with very short notice. Few part time jobs are flexible enough to cope with these conditions. Finding the time and energy to study and complete course work, while working full time in practice, is another concern for students. The nature of the clinical work is also a factor. Dealing with the pressure of clinical practice and the associated stresses of patients' challenging behaviour; work dynamics; illness and death; hierarchical structures; professional expectations and work politics can be too much for some students.

Travelling to and from practice, while working difficult and inconsistent shift patterns, remains a constant challenge for students throughout their programme. Accommodation is no longer provided for students at the major hospital sites and, even where accommodation is an option, more students have their own homes and families, than in the past and would be unable to take up the offer of accommodation. Students also report that they witness practises that do not follow expected standards and the moral and ethical challenge that this may present can lead to the student questioning their commitment to such a profession. The above challenges have been addressed by most institutions in some form or another to try to support students in practice. Bursaries are provided to compensate for the full time practice requirements. Travel expenses can be claimed to assist students to attend placement. Lecturers support students in practice and there are opportunities for students to reflect on practice dilemmas whether patient or staff generated. Never-the-less, the challenges presented by the practice

element of the programme can, on occasion, be too much for some students to overcome, leading to attrition.

The complex nature of student attrition is compounded by the apparent inconsistencies in reporting systems. To try and address the inconsistencies in reporting student nurse attrition, the following formula was recommended by a joint HE and health sector review (DoH, 2002):

$$\text{Attrition} = \frac{\text{Starters + Transfers In – Transfers Out – Numbers Completing}}{\text{Starters}}$$

This formula can only apply to completed cohorts, which reduces erroneous data resulting from movement between cohorts. It addresses the range of students who are able to use accreditation of prior experiential learning (APEL) to join at a later stage (transfers in) as well as the students who temporarily withdraw or who rejoin following a temporary break. Despite every HEI now applying the above formula, the wide variation in reported attrition remains (DOH, 2007). Clearly, it would be unrealistic to expect parity in attrition when there are so many factors involved that are outside the influence of the individual institution. Geography, demography and local alternatives in HE choices for potential candidates may have a major impact on an otherwise successful HEI. It is also inappropriate to expect zero attrition in a meritocratic system that strives to filter out individuals who fail to achieve the necessary standards to enter the profession.

There is a balance to be found between maintaining students on a programme of nursing and being confident that the public are protected by maintaining professional standards. However, there are sufficient examples of

HEIs greatly improving their attrition rates by addressing the key factors that have been identified as high risk. A number of 'best practice' exemplars have been identified in the good practice guide to managing attrition (DoH, 2007) which appear to have brought positive results to the respective institutions. Most of the changes are related to the following processes:

- Marketing, recruitment and selection
    - Better information about course demands
    - Clear statements about expectations
    - Exploring personal qualities
- Academic and clinical skills failure
    - Clarity of guidelines and clear and accurate feedback to students on areas to improve
    - Positive marking processes
    - Appropriate supervision in practice
- Student support
    - Access to support services
    - Family friendly policies
    - Personal tutor support
- Practice placement issues
    - Allocated trained mentors
    - Contact with HEI staff during placements
    - Formative feedback throughout placement
- Relationships, organisational and programme issues
    - Small group teaching opportunities
    - Choice of elective placements

- Teaching methods and learning styles (DOH, 2007)

In spite of the range of improvements identified above, reported attrition rates remain inconsistent. It is likely that, even where the above innovations have been implemented, their application will differ between institutions. In Porter et al's (2008) evaluation of pre registration nursing curricula throughout Scotland, a wide range of experiences were reported by students which impacted on their feelings towards their studies and their respective institutions. One of the outcomes examined was student reported self-efficacy. There appeared to be a consistent perception of self-efficacy across the various HEIs, regardless of entry gate. However, students within cohorts differed from branch to branch with Mental Health students reporting the highest levels of self efficacy and Learning Disability students the lowest.

Student observed competence was also consistent across HEIs with competencies such as infection control and communication, currently hot political topics in healthcare, apparently being practised at a high level across all of the HEIs. Therefore, despite variations in design of curricula, key outcomes appear to be consistent. Importantly, student satisfaction with their preparation for practice and sense of integration remained fairly consistent throughout Scotland. However, the study goes on to identify a number of inconsistencies which students rate as having an important influence over their sense of integration: inter professional education opportunities; carer and service user involvement in the curriculum; supernumerary status and the role of the lecturer in clinical practice. While these factors may well impact on

student integration and therefore, student satisfaction, there was no suggestion in the study that they had a direct impact on student attrition figures.

Pryjmachuk et al (2008) found that the two main predictors of success in nursing were age and academic qualifications on entry. In their review of attrition in nurse education, they identified that, younger students and those who barely met the entrance qualifications, were less likely to succeed. This was consistent with other studies (Dept of health, 2006; Kevern et al, 1999) and introduced the contentious possibility that entrance age should increase and minimum academic qualifications should be raised.

The Mechanism that Links Models of Emotional Intelligence to Attrition

In this section, the models of emotional intelligence introduced in chapter two are related to aspects of attainment and retention. Payne (1986) first referred to EI as an ability to express emotions. He cited modern society as having a restrictive and negative impact on our ability to access and express our emotions. Salovey and Mayer (1990) and subsequently, Goleman (1995) popularised the concept of EI but their respective models rejected Payne's view that EI is about free expression. Indeed, Mayer and Salovey (1997) go on to define EI as the "capacity to reason about emotions" and the ability to "regulate emotion". Goleman (1995) supports this model and he reinforces the need to control and regulate our emotions in order to "follow directions" (p193). It would be disappointing, however, to conclude that EI correlates with student persistence due to the compliant nature of students who scored high in EI.

Contemporary studies of EI claim to concentrate on intelligences which incorporate social, practical, personal and emotional information (Mayer and Salovey, 2004). The literature suggests a growing consensus towards the four-branch model of EI (Mayer and Salovey, 1997; Goleman, 1998; Salovey et al, 2002; Boyatzis, 1999; Goleman et al, 2002; Mayer et al 2003). As discussed in chapter two, the four branches consist of the ability to: perceive emotion, involving the capacity to recognize emotions through non verbal behaviour; use emotion to facilitate thought; understand emotions by analysis and prediction and manage emotions in the context of other personality characteristics.

Student nurses, who can interpret and match non verbal behaviour with verbal behaviour, are more likely to be in a position to meet the complex needs of their patients as well as satisfy their mentors. Understanding emotions would be a key skill in stressful conditions in clinical practice. An inability to read non verbal behaviour or to understand emotions would undoubtedly lead to problems for a student nurse or midwife. Patient interaction and peer relationships would suffer. If this continued, persistence on the course could be difficult.

Bar-On's (1997) hierarchical model, consists of: intrapersonal EI, including emotional self awareness, assertiveness, self-regard, self-actualisation and independence; interpersonal EI, including empathy, interpersonal relationships and social responsibility; adaptability EI, including problem

solving, reality testing and flexibility; stress management EI including stress tolerance and impulse control and general mood EI, including happiness and optimism. The model can be directly related to performance in nursing and indirectly related to attrition. Successful student nurses would certainly be required to possess most, if not all, of Bar On's characteristics. Self-actualisation is possibly the only characteristic which may not directly impact on the performance of the student. In the clinical setting, interpersonal and intrapersonal skills would be essential. Adaptability and stress management techniques would be desirable and a positive mood would be helpful to cope with adverse situations which are common in healthcare practice.

Petrides et al's (2004) model of EI also consists of fifteen components collated into four subscales: well being, including optimism, happiness and self esteem; self control, including emotion regulation, impulsiveness and stress management; emotional skills, including empathy, emotional perception, emotional expression and relationship skills and social skills, including emotion management, assertiveness and social competence. As with Bar On, Petrides et al's competencies could easily be related to desirable behaviours which would reduce the likelihood of clinical failure. Managing impulses, possessing empathy and demonstrating social skills, are all attributes that mentors would value.

It would be easy to conclude that self-termination of studies is simply self-determination. The student makes a sensible choice to determine her own future based on the evidence around her. This would appear to represent the

type of self awareness that is reported in models of EI. However, this could only be claimed if the student was able to justify to herself that the choice was entirely hers and that it was the correct choice. The student who is compelled to leave by the institution could not be considered to be self aware. It is difficult to disagree that the student, who is more aware of her strengths and limitations, will be more likely to make appropriate choices in academic and occupational contexts. Self awareness is a recurring theme in EI research (Mayer and Salovey, 1997; Schutte et al, 1998; Goleman, 1998; Salovey et al, 2002; Boyatzis, 1999; Goleman et al, 2002; Mayer et al 2003;) therefore, it could be hypothesised that students who choose to end their studies voluntarily should score higher on measures of EI than students who repeatedly fail until they are discontinued. Healthcare practitioners are taught about the powerful impact that they have on the patient's environment. The student, who recognises that the course no longer suits her needs, is entitled to exercise her right to look to a future elsewhere.

Some students pre-empt failure and leave before they are compelled to do so by the Institution. The fact that failure had become inevitable could hardly equate with a rational choice to leave, yet still the outcome seems preferable to the student who waits until they are discontinued. They would still require an element of self regulation and an awareness of the views of others. This also fits neatly with the models of EI identified above and it could be assumed that the student, who bows to the inevitable, would also score higher on a measure of EI than the student who passes on the chance to leave of their own volition, only to be discontinued later. The student, who finds the

academic demands to be too much but continues to scrape through, might also decide that the emotional and social cost of staying in education is not worth the rewards. Self-termination, in this instance, would also indicate a maturity in decision making.

Difficulty in balancing social demands with the pressures of the course is a common reason given for leaving nurse education. The expectation, that students travel to remote placements and work early and late shifts, is easy to agree to in principle. Meeting that expectation, in reality, is more difficult. Leaving the course, because of an ill conceived preconception of the course demands, would appear to indicate a lack of awareness of capabilities, assuming these demands were clearly explained in advance. There is some evidence to suggest that certain types of social 'chaos' reported by students, such as persistent relationship difficulties, are directly related to poor social skills (Cadman and Brewer, 2001). Social skills also feature in every model of EI. The ability to express oneself and interact with others in a social setting is an integral element of EI (Mayer and Salovey, 2004). Therefore, recognition that social demands cannot be balanced with studies appears to indicate current awareness, but an inability to forecast this suggests poor awareness of limitations. Obviously, social circumstances change throughout courses and cannot always be predicted but it would be a reasonable deduction to make that the student who leaves, because she did not fully grasp the demands of the course or because her life is too chaotic to balance with study, may not score as highly in a measure of EI as the student who simply came to realise that the course did not meet expectations.

There is now sufficient evidence to demonstrate that EI is a reliable predictor of academic success for first year higher education students (Schutte et al, 1998). Schutte et al also demonstrated Discriminant validity when testing USA students. Scores of EI were not related to SAT scores, *r(41)*= - 0.06. The mechanism whereby EI predicts academic success is thought to relate to an understanding of strengths and weaknesses along with a motivation to address deficits (Goleman, 1995; Mayer et al, 2004). The student mobilises her resources to maximise opportunities and overcome challenges. The academic challenge is met with the same degree of effort as any other challenge by individuals who score highly in measures of EI.

The student who is discontinued due to academic failure has already demonstrated that they have the minimum qualifications to participate on the course. It has been established that academic potential and academic achievement do not always match up (Goleman et al, 2002). It is also clear that each course has a different set of expectations. For example, the psychology graduate might find it difficult to apply psychological theory to patient centred care despite having the academic profile that easily permits entry into health related courses. Academic qualifications have been used to predict success in HE for many years and this remains the most popular criterion for selection. Prior academic attainment certainly accounts for more than merely intellect. Motivation, application, organisation are just three of the characteristics that are required to achieve satisfactory academic results. In this sense, using prior academic attainment to predict success on an HE

programme would appear to be reasonable. The student who possessed EI, as described in the models above, would recognise the amount of application that was required to achieve the necessary grades. Should they be struggling to meet the demands, they might also be capable of using their interpersonal skills to share this with peers, family and, more importantly, academic supervisors. This would enhance their chance of success.

If emotional intelligence can be demonstrated to be a predictor of attrition, it should certainly be considered as part of the recruitment and selection process along with other pre requisites such as prior academic attainment. The developing theories, relating to EI, do suggest that it may be possible to predict performance in a number of domains. Accordingly, links between EI and attrition are being explored in HE following extensive studies into EI and performance in the business world and EI and mainstream education.

Summary

This chapter explored the key theories of student attrition in higher education. A conceptual model was presented that outlined the factors involved in persistence and attrition. The additional pressures, peculiar to the practice professions, specifically nursing, were discussed and the methods which have been adopted by HEIs to address these pressures were described. The proposed mechanism that links emotional intelligence to attrition in student nurses was discussed. The following chapter reviews the literature that has reported and examined emotional intelligence within the context of nursing and midwifery practice and education.

Chapter Four: Literature review

Introduction

The literature review builds on the previous two chapters by introducing, and critically analysing, the publications which incorporate emotional intelligence in the study of attainment and attrition in nursing, and in other health related professions. The review covers empirical studies which examined selection, retention, clinical performance, working in teams, stress, burnout and the quality of patient care. There were no examples found that reported on emotional intelligence and its relationship to attainment and attrition in student nurses and midwives. The closest examples involved: the relationship between emotional intelligence and practice attainment in qualified nurses; using emotional intelligence criteria to score medical students for selection at interview; emotional intelligence and team working and the protective value of emotional intelligence in avoiding burnout and stress. Each of these studies sought to examine the relationship between EI and outcomes that related, albeit indirectly, to aspects of the dissertation. In the absence of studies which could be replicated, this was the best method of obtaining information that may serve to shape and inform the research. The lack of empirical information on EI in nursing further serves to underline the potential importance of this study.

Nursing literature has identified EI as one of the essential qualities required by nurses to effectively relate to their clients and colleagues, in difficult circumstances, and there have been numerous calls for EI to be embraced in recruitment and selection processes and, in the design of practice

assessment tools, for student nurses (Cadman and Brewer, 2001; Reynolds and Scott, 2000; Connolly, 2002). There are numerous examples of poor clinical practice in nursing (Halldorsdottir, 1997; Reynolds, 1998) and while there may be many factors responsible for this, consensus is growing that there may be a correlation between EI and clinical practice performance in nursing (Cadman and Brewer, 2001). Given the recent developments in producing measures of EI, (Bar-On, 1997; Schutte et al, 1998, 2007; Mayer et al, 2002; Petrides et al, 2003) it may now be possible to establish whether EI could be measured in student nurse applicants and the score used as a predictor of success at the interview stage, along with the ability to achieve outcomes later in practice. There are certainly sufficient examples of robust measurement tools, that would enable the debate to move beyond speculation over the introduction of emotional intelligence in nursing, towards quantitative research.

Despite the claims that emotional intelligence would be a good thing in nurse recruitment, education and practice, there are surprisingly few examples of this being tested in the literature. The vast majority of nursing papers that refer to EI are either editorials, or unsubstantiated articles, which try to apply the business world's experience of EI to nursing. Essentially, EI is reported in the literature as a modern, successful phenomenon that should be adopted into nursing because it seems to work elsewhere but, the evidence that it would enhance nursing practice, or help with recruitment, is patchy at best. There are few empirical studies reported in the literature that attempt to test the theory that EI would be a useful concept to introduce into areas of nursing.

The papers that have been reviewed involve nurses, midwives and doctors. Most of the studies examine post qualified nurses rather than students.

The first study attempted to explore the use of EI as an aid to traditional interview techniques for selecting medical students in the USA. The link with the current study comes from the authors' desire to improve the selection criteria at interview and to select student doctors on the basis of interpersonal skills rather than simply biophysical knowledge.

Emotional Intelligence and Student Selection

Carrothers et al (2000) piloted and analysed a 34 item measurement tool to assess the attributes of medical school applicants in Ohio. 147 applicants were assessed and their scores compared with traditional admission criteria, such as prior academic attainment and interview assessments. The researchers were concerned about the tendency for students to be accepted on the basis of their biomedical knowledge, regardless of their ability to relate to and empathise with patients. The increase in primary care, and the growing awareness of the public in medical matters, demands that doctors improve their interpersonal skills to ensure that their communication is both clear and person centered. Carrothers et al (2000) describe the skills that need to improve in medical students, as emotional intelligence skills.

At the time of the study, 1997, none of the medical schools in the USA stated that they assessed non cognitive skills in their admission procedures. Furthermore, none of the responding schools had any means for carrying out

such assessments. 220 academics and physicians, who were involved in interviews, responded to a request to highlight the types of abilities that should be looked for in admission interviews and the responses contained many references to emotional intelligence. The researchers developed a "semantic differential" measuring tool to assess EI. They referred to the tool as the EI Instrument. A semantic differential tool provides opposites for the respondent to choose, such as good/bad, sociable/unsociable. The rationale for selecting this method was based on the assertion that emotional intelligence is not recognised as a strictly cognitive or rational attribute. In the absence of obvious judgments, direct opposites provided clearer choices. The EI instrument, it was claimed, allowed the researchers to "quantify a qualitative characteristic" (p 457).

Students were brought to interview on the basis of their prior academic attainment, interviewed by the assessor and retrospectively scored on the EI instrument. The assessment was not used during the pilot study to accept or reject applicants, merely to generate data. Validity was tested by correlating data from the traditional interview process, with the EI data. For the pilot study, 792 applicants were received within the consortium of universities involved in the study. 147 students were interviewed. Interviews were carried out with a clinical physician and an academic on the panel to try to reduce professional bias. These interviewers were trained in the application of the EI instrument.

The original EI instrument contained 60 word pairs (items) with a seven point

scale for scoring each item with the intention to pilot the tool and try to reduce the items to between 25 and 35. A small pilot group (n = 112) of Sociology students were asked to rate the following high profile individuals according to the original 60 items: former U.S. Surgeon General, Dr Jocelyn Elders; euthanasia advocate, Dr Jack Krevorkian; Nobel Peace prize winner, Mother Theresa and the discoverer of the polio vaccine, Dr Jonus Stalk. Using a .50 factor loading as a minimum guide, the items were reduced to 36 following this pretest. The items were reduced to 34 following a further factor analysis, producing a five factor solution, which explained 67% of the variance in the observed data. The dimensions were labeled: maturity; compassion; morality; sociability and calm disposition.

It was found that there was a non significant correlation between total and subscale EI scores and American College Test scores (ACT) and between EI scores and Grade-Point Average scores (GPA). A significant correlation was found between the traditional interview assessment procedure (TINT) and all EI dimensions apart from calm disposition. There was also a substantial positive difference between female applicant's scores and male scores in the EI instrument, whereas this was reversed when looking at the ACT and GPA scores.

Carrothers et al (2000) conclude that measures of EI should be used to help in recruitment and selection processes in medical education on the basis that they measure different attributes than traditional processes and, the attributes that are being measured, are regarded by medical experts as essential to the

profession. There was no attempt in the study to match the EI entrance criteria to later performance or to attrition on the course. No conclusions were formed about the potential differences between the students who scored highly on EI and the students who did not. The over riding outcome was that, using EI criteria at interview was very similar to using the traditional interview techniques. There was no relationship between academic scores and either EI scores or traditional interview scores. The authors did not explain the benefits of introducing a technique that does not appear to offer an improvement to the technique already employed. Without demonstrating an improvement in at least one course outcome, it would be difficult to accept the change to current practice.

The paper has limited information to contribute to the dissertation. It is encouraging to note that expert medical staff can recognise the link between EI and practice. It is also helpful to read that EI criteria can be used to make judgments at interview. The lack of relationship between prior academic attainment, and the qualities looked for by the expert interviewers, helps to reinforce the case for assessing predictor outcomes other than academic qualifications, when selecting students who are more likely to relate to patients. The paper is limited to the relationship between existing interview techniques and the use of EI criteria, which seem to be so close as to make the inclusion of EI criteria redundant.

The following paper sought to explore the characteristics of qualified nurses which caused them to stay in their jobs rather than leave. A qualitative study

of nurses' narratives was used to identify the high risk factors that may lead to nurse attrition. While the dissertation seeks to examine attrition in student nurses, the practice element of nurse education can be informed by listening to the factors that cause registered nurses to leave the profession.

Nurse Retention and Emotional Intelligence

Kooker et al (2007) examined the increasing shortages of registered nurses in the USA, using an emotional intelligence framework to help analyse nurses' stories about their professional practice. The qualitative study attempted to identify factors that might relate to nurse retention and improved patient outcomes. Their concept of 'nursing professional practice' was based on Blais et al's (2005) elements: autonomy, accountability, mentoring, collegiality, respect, trust; integrity, knowledge and activism. They also conceptualised the outcomes of professional nursing practice as: quality patient care; professional satisfaction and autonomy in nursing practice. They asked the research question, "Is there evidence in the stories of professional practice that reflect the competencies of emotional intelligence as it relates to improved processes and outcomes for patients/clients and nurses?" (p30). Previously written narratives by nurses for an earlier study (Shoultz et al, 1998) were re analysed.

The model of EI used in the study was based on Goleman's (1995) model, a four factor conceptual model comprising of: self awareness; social awareness; self management and social management. Sixteen nursing narratives were analysed for thematic concepts that were later verified by the original authors.

The participants were selected by the researchers on the basis that they were considered to be “reflective individuals” and “visionaries beyond the boundaries of their own position” (Kooker et al, 2007, p32). As a contradiction to this claim, the authors also state that they tried to represent the broader nursing community. The dangers of selector bias appear to have been overlooked by this attempted justification which was compounded further when the authors disclosed that the participants had all represented a high degree of retention in the profession.

Micro and meta analyses were used to locate sections of each narrative into one of the four subsets of emotional intelligence. Social awareness (30%) had the highest representation followed by social management (28%), self awareness (27%) and self management (15%). On the basis of these findings, the researchers recommend that future nurses should be screened for emotional intelligence competencies to identify candidates who would be more likely to stay in the profession. The difficulty with this recommendation is that the authors did not analyse narratives of nurses who chose to leave the profession early. Nor did they randomly select subjects, leaving them open to accusations of selector bias. The representation of the narratives, within the EI model, did not quantify the volume of emotionally intelligent elements of the narratives. It simply represented those that were present as a percentage of the whole. Therefore, it cannot be deduced that those who participated were any more emotionally intelligent than the nurses who leave the profession early. A comparative study would be required to be able to conclude that nurses who stay in the profession are more emotionally intelligent than those

who leave.

In keeping with other studies into emotional intelligence and nursing, the findings have to be taken in context. The authors have tried to identify whether EI would be a reasonable framework to use to help to identify certain traits that enable nurses to remain in the profession. To an extent, they have demonstrated a method that can highlight aspects of EI in nursing narratives but they would have to be able to compare the levels of EI between the nurses who persist in the profession and those who do not, before any claims can be made that EI should be screened in prospective candidates as a measure to reduce shortages. There is scope to develop this study further to compare the emotionally intelligent content of narratives between nurses who persist and nurses who leave the profession. If it can be demonstrated that there is a significant difference, there could be some merit in screening for elements of EI in prospective recruits.

The following paper examined the qualities of a group of nurses who were identified by their managers as possessing superior practice attributes. EI criteria were used to make the subjective judgments about the sample. This paper is of interest as it attempts to map EI to clinical practice performance.

Measuring the Qualities of an Effective Nurse Using Emotional Intelligence Criteria

Rochester et al (2005) carried out a survey of 17 graduates from two teaching hospitals in inner city Sidney and in the region of New South Wales. The survey was to try and identify the capabilities that were regarded as most

important within the first five years of qualified practice. The researchers were interested in the degree to which the undergraduate programmes were preparing nurses for practice. It was found that, while technical proficiency remains important in nursing, emotional intelligence capabilities were identified by managers and by the graduates as the most significant factors that enhanced practice. The survey involved a semi structured interview, based on a 'Graduate Capability Framework' and 'Productive Adult learning Framework' (Scott et al, 2001). Seventeen registered nurses were identified by "key staff" as high early career performers. Managers were given the task to identify individuals who were performing at a high level of excellence when compared to their contemporaries. Five separate Universities were identified as the undergraduate institutions.

Once the individuals had been identified, the managers were interviewed to ascertain the criteria that they used to make their judgment. Three main areas were used: consistent delivery of work to a specific standard by an allotted time; high levels of client satisfaction and high levels of co-worker satisfaction. This was in keeping with a previous study carried out by Scott and Yates (2002). The selected nurses were asked to complete a 38 item questionnaire using a five point likert scale. The sub categories in the scale were: Emotional Intelligence-Personal; Emotional Intelligence-Interpersonal; Intellectual Capacity; Profession Specific Skills and Knowledge and Generic Skills and Knowledge. The researchers identified items that were ranked highest and lowest on importance and on performance.

The items that were ranked highest came from the emotional intelligence sub-scales with interpersonal emotional intelligence emerging as the strongest category. The highest ranked item on 'importance' was 'the ability to empathise and work productively with people from a wide range of backgrounds'. The lowest ranked item of 'importance' was the 'ability to chair and participate constructively in meetings'. The item that was ranked highest in importance but low on performance was 'being able to remain calm under pressure or when things go wrong'. The item ranked highest in importance and performance was 'being able to set and justify priorities'.

The researchers conclude that high performing nurses demonstrate emotional and social intelligence and operate in a contextually appropriate way. It is difficult to make the connection between the reported results and this conclusion. Paradoxically, the researchers claim that being calm in difficult situations is key to high level nursing despite the fact that this item was rated low in performance by the participants. In qualitative feedback, which is reported only minimally in the paper, participants are quoted as claiming that aspects of emotional intelligence were not adequately addressed in their undergraduate programmes. This conclusion is drawn from two of the participants' comments: "the theory intellectual abilities are most covered in University…the personal skills are acquired within time at work…..courses need to focus on personal skills" (p 187) and "face to face learning, that is, in University settings caters for development of intellectual abilities and to a lesser degree other capabilities. Clinical practice facilitates greater interpersonal and personal capabilities, which can be built on when in the

work force…" (p 187). While these comments could be interpreted as a call by nurses for emotional intelligence to be included in the undergraduate curriculum, this appears to be an interpretation of the authors, rather than a true reflection of the comments.

Other limitations in this paper relate to the narrow theoretical discussion. Six of the fourteen references cited were from previous work by one of the authors, whose work was used to justify the methodology, the data collection tool and the research method. The remaining references were cited together to support one point in the conclusion. The small sample size would also be deemed as a limitation, given the lack of wider supporting evidence. The limitations not withstanding, the study was able to demonstrate that high achieving practitioners could be identified by managers for the purpose of researching the qualities that go beyond the usual, high visibility, technical qualities. Providing the participants with a validated measurement of EI may have enabled data to be used to correlate EI with high level performance.

The recognition of practitioners and managers of the importance of EI qualities in practice is encouraging for this dissertation as it provides support for exploring the relationship between students' EI scores and their clinical practice performance scores.

The next paper looked at the relationship between job satisfaction and organisational commitment in nursing. Specifically, the application of EI, as a mediating influence in the relationship, was explored. The link between EI and

job satisfaction could be deemed to relate to the dissertation, particularly within the context of self concept and 'fit' for the profession and the impact that this could have on attrition.

Job Satisfaction and Emotional Intelligence in Nursing

A study which explored the mediating effect of job satisfaction between emotional intelligence and organisational commitment of nurses (Guleryuz et al, 2008) was carried out using a 45 item questionnaire completed by 267 subjects. The authors' conceptualization of emotional intelligence was based on a four factor model with the following dimensions described as: awareness of own emotions; awareness of others' emotions; managing own emotions and managing others' emotions. The second variable, job satisfaction, was defined as a "significant, therapeutic interpersonal process" (p1627). The third variable, organisational commitment, was defined as "the strength of an individual's identification with an involvement in a particular organization" (p1627). The study hypothesised that job satisfaction is a mediator between emotional intelligence and organisational commitment. The questionnaire was a 7 point likert scale with 16 items on emotional intelligence (four questions for each subscale), 14 items on job satisfaction and a third component described as a unidimensional measure of organizational commitment with an undisclosed number of items.

A factor analysis confirmed four factors in the EI component which corresponded with the conceptualised factors highlighted above. A single overall EI factor also emerged. Two factors emerged in the job satisfaction

component: internal and external job satisfaction. One overall factor also emerged for overall job satisfaction. A single factor emerged for organisational commitment.

The study found a positive relationship between emotional intelligence and job satisfaction. This supports other findings (Sy et al, 2006) which claim that individuals, who are high in emotional intelligence, are more likely to experience job satisfaction. The study also found a positive relationship between emotional intelligence and organisational commitment, which reinforced other studies (Gardner, 2003) who reported that individuals, who are high in emotional intelligence, are more committed to their organisation. However, this significant relationship could only be demonstrated when 'job satisfaction' was introduced into the model. Furthermore, the only significant relationship of the EI subscales when job satisfaction was introduced was between 'managing own emotions' and 'organisational commitment' ($\alpha=0.65$, $p<0.05$). The researchers concluded that job satisfaction, did indeed mediate between emotional intelligence and organisational commitment but only when job satisfaction was present and only in the sub set of EI described as 'managing own emotions'.

The limitations of the study identified by the researchers relate to the inherent difficulties in using self report scales. They also concede that confounding variables such as culture, age and gender were not considered. The generalisability of the study may be limited since all subjects were from the same organization and there were no comparable studies upon which to

draw. Guleryuz et al (2008) call for further work to be done on the relationship between EI, job satisfaction and organisational commitment, suggesting that their study fills an important gap in the nursing literature. Having demonstrated a positive relationship between emotional intelligence and organisational commitment, there is scope for further examination of the impact on organisation commitment and persistence in the profession.

The following paper examines the impact of 'trait' EI on team working. Teams are a fundamental component of nursing structures and practices. The ability to function within a team is essential in the profession and a study which was able to relate EI to effective team working would provide helpful information. Personal barriers to team working would appear to mitigate against important aspects of successful clinical practice performance.

The Impact of trait Emotional Intelligence on Nursing Teams

In a study looking at the impact of 'trait' emotional intelligence on nursing teams' performance and cohesiveness, Quoibach and Hansenne (2009) found a positive correlation between measures of quality in health care and 'emotional regulation'. A modified version of Schutte et al's (1998) Emotional Intelligence Scale (SEI) was presented to 421 participants who comprised of 23 teams. There was no explanation as to why Austen's (2004) modified version of the SEI was used rather than the original. The authors reported a lower internal consistency in their study (α= 0.75) compared to Austen (α= 0.85). They measured the team EI by aggregating individual's scores and creating a mean score for each team. Quoibach and Hansenne (2009)

hypothesized that: team EI would relate to group experience quality; team EI would relate to team output; team EI would relate to team viability; team EI would relate to team legitimacy and team EI would relate to team cohesiveness.

To measure team cohesion, a Group Cohesiveness Scale (Buchanan, 1998) was presented to the individuals within the teams. The internal consistency of the Group Cohesiveness Scale was reported as (α= 0.84). Performance outcome measures included the four dimensions suggested by Savoie and Brunet (2000): group experience; team output; team viability and team legitimacy. Group experience was measured using a self report job satisfaction questionnaire designed for health care workers. The tool was a five point likert scale which, the authors claimed, had been validated in a number of studies reported in Langer (2004). Team output was measured by undercover observers who commented on 33 “objective” quality criteria such as “before installing a transfusion, the nurse observes the necessary safety measures”. The authors do not explain the details of this ‘undercover’ observation, nor do they provide details of the stated safety measures.

Team viability referred to the team’s ability to work as a unit. The criterion that was used to measure team viability was the ratio of staff who left the team, by choice, over the study period (4 months). Team legitimacy was measured by managers using a job performance questionnaire which was a 15 item, 4 point likert scale, with items such as “I often receive positive feedback from patients or visitors about this team”. This scale was reported to have an internal

consistency of α= 0.85. A correlation matrix of team EI and the four performance outcomes reported only one significant correlation which was between one of the author's components of EI, 'Optimism/ Mood regulation' and 'team output'. The other performance variables showed no significant relationship with any subscales of EI or with overall EI. Quoibach and Hansenne (2009) created another independent variable by dividing the two teams into low and high EI scorers. They found that there was a significant relationship between group cohesion and overall EI scores ($t = 3.43$, $P<0.05$). The study concluded that the "sweeping generalisations" (p36) about EI and its relationship with performance are unhelpful. The authors claim that subsets of EI are more important than overall EI when attempting to find correlations with behavioural outcomes. However, their three factor version of EI did not match with the four factor model described by their original references (Mayer and Salovey, 1997).

Limitations of this study were acknowledged by Quoibach and Hansenne (2009) who reported the sample size (23 teams of 421 participants) as being smaller than they would have liked, which seems rather harsh. They also refer to the lack of adequate psychometric data available to support the modified EI tool and this would seem to be a legitimate criticism. Beyond their reported limitations, the lack of psychometric data for any of the outcome measures would also appear to be an oversight. Despite the limitations and the restricted findings of this study, Quoibach and Hansenne (2009) have managed to demonstrate a significant correlation between aspects of EI and team performance in nursing. This is encouraging and it helps to forward the

proposition that there is scope for further research into EI and nursing practice.

The fact that Schutte et al's (1998) emotional intelligence self report was used is helpful for the dissertation. However, it was a modified version. The modifications were not explained nor justified with regard to validity. The significant relationship between aspects of EI and team working in nursing is encouraging and serves as a positive factor in pursuing Schutte's et al self report as the assessment tool of choice.

Burnout and stress are well documented causes of nurses leaving the profession. The inclusion of EI in this debate is less common. The following paper examines EI as a protective element against stress related attrition due to burnout.

The Impact of Emotional Intelligence on Burnout and Stress in Nursing

Gerits et al (2005) examined burnout among 380 nurses in the Netherlands who work with individuals who have learning disabilities and severe behavioural problems. Using Bar-On's EQi (Bar-On, 1997), Gerits et al found that while female nurses, who were high in EI, were not necessarily protected, low EI scores tended to be associated with burnout. However, the authors also found that, possessing poor social skills, also protected against burnout, leaving the reader confused as to the predictive relationship of EI to occupational burnout. Humpel and Caputi (2001) found no significant relationship between EI and perceived stress among 43 mental health nurses

using Mayer et al's (1999) multi factor EI scale (MEIS). EI scores were found to be lower in female nurses, with less experience in mental health, than was found in inexperienced male nurses.

It would appear that EI has a relationship with stress and burnout in nursing at the lower end of the scale, with low EI predicting burnout. However, there are suggestions that EI might increase the type of stress that comes with enhanced awareness of risks and an absence of this awareness may actually be a protective mechanism against stress and burnout.

In a study of midwives and their ability to spot and manage post natal depression, a self report tool was used to assess the link between EI and the incidence of depression. The interesting feature of this study is the observation that is made between the relationship of the self report tool and the outcome of depression. It is suggested that expression of emotion will be able to mitigate against suffering from this affective disorder. Knowledge of the utility of EI and its application in practice would require nursing and midwifery curricula to adopt EI models in patient assessment.

Emotional Intelligence and Care of Pregnant Mothers

Akerjordet and Severinsson (2009) developed their own emotional intelligence scale (EIS), in conjunction with an Emotional Reaction and Thoughts scale (ERTS), to measure aspects of mental health in post natal mothers. The purpose of this study was to provide a tool that could be used by midwives to assist new born mothers to express their emotions and thoughts. The

rationale for using this tool would be to help the midwives to identify features of post natal depression, thereby improving patient care. The scale was based on Goleman's model of EI (2002; 2005), which they claim to be an adaptation of Mayer and Salovey's (1997) four factor model. They describe this model of EI as: "the ability to accurately perceive emotions; the ability to assess and utilise emotions; the ability to understand emotions and emotional knowledge and the ability to reflect on and regulate emotions to enhance both intellectual and emotional growth" (Akerjordet and Severinsson, 2009, page 58).

The 23 item, four point likert self report scale was factor analysed, yielding a three factor solution that explained 51% of the variance. Four items were removed due to the low magnitude of their loadings (< 0.45). The three factors were labeled: Self-management and creativity (α= 0.89); Social capacity (α= 0.83) and Emotional self awareness (α= 0.74). The overall Cronbach's coefficient was α= 0.93, demonstrating high internal consistency. Akerjordet and Severinsson (2009) acknowledge that their measurement tool is yet to be validated. A subsequent paper will report on its application in practice. They recognise the limitations of commending their tool at this early stage and they also point to the psychometric challenges presented by a self report tool. There was no information in the paper to explain the link between emotional intelligence and depression other than the assertion that, based on the literature, emotional intelligence enhances coping skills that might protect against depression. This study has some way to go to be able to demonstrate a link between measuring emotional intelligence and improving practice and care. However, it is beginning to achieve the goals demanded in the literature

which is to explore methods of assessing and applying EI in the practice of nursing. Akerjordet and Severinsson (2009) have three further papers in press, which will provide information on the validation and application of their EI measurement tool.

This particular study has yet to be reported in full. Should there be a positive link between measures of EI and appropriate management of post natal depression, it would be useful to be able to employ nursing and midwifery students who could demonstrate emotionally intelligent practices.

Summary

This chapter explored the literature that reported studies of emotional intelligence in nursing and other health related professions. While few empirical studies have been carried out on the impact of emotional intelligence on attainment and attrition in nursing, there have been examples in related professions, and with registered nurses, where EI has been assessed and used to predict performance, success and attrition. The positive relationship between EI and nursing and midwifery has been established in the literature, but there remains a gap in empirical studies that prove the predictive relationship of EI and attainment and attrition in nursing students.

Chapter Five: Methodology

Introduction

This chapter introduces the research methods, the methodology and the epistemology which underpins the study. The characteristics of the study participants are presented; sampling is justified and ethical considerations are discussed. The measurement characteristics of the antecedent and outcome variables are presented and the measurement tools are confirmed using data from the validation study. Finally, the tests used for analysis of the results are clarified.

Research Aims

The aim of the study was to explore the predictive relationship between emotional intelligence and the outcomes: clinical practice performance; academic performance and attrition among first year nursing undergraduates at Dundee University. As outlined in the previous chapter, it was hypothesised that students who possessed higher levels of EI would perform better clinically and academically than students with lower levels of EI. It was also hypothesised that students who scored higher in EI would be more likely to progress to year two.

Theoretical Perspectives

A range of theoretical perspectives exist in the study of emotional intelligence, with researchers differing in their fundamental understanding of the EI construct. EI has been described as a trait (Schutte et al 1998) involving the application of self reports which claim to identify relevant attributes within the

individual that might predict emotionally intelligent responses. EI has also been described as a set of skills (Goleman, Boyatzis and McKee, 2002) involving the application of ability measurements to test whether certain tasks can be performed more effectively. Low correlations between measures of trait and ability EI have been reported (O'Connor and Little, 2003; Warwick and Nettlebeck, 2004). Clearly there is a distinction between how an individual may expect to behave and how he may actually behave and it could be considered inappropriate to judge 'ability' on the basis of a self report questionnaire and equally invalid to make judgments on perceived traits using an ability test. The self reporting subject may over or underestimate their perceived characteristics and the subjects whose ability is being tested may over or underperform on the occasion of the test.

Measures of EI need to be clear on whether it is ability or trait that is being judged. Petrides et al (2004) suggest that too much research has been carried out on EI without due regard to the distinction between trait and ability. The key differences between measures of trait and ability have been summarised by Petrides et al (2004), who suggest that trait measures: would not correlate with 'g' (where 'g' is general cognitive ability); have good discriminant and incremental validity vis-à-vis personality; be easy to administer and demonstrate good psychometric properties, whereas ability measures would have strong correlations with 'g'; limited predictive validity; be difficult to administer and have weak psychometric properties.

Essentially, the number of self reporting (trait) measures available compared to objective, expert scoring (ability) measures suggests the trend is moving towards researching EI as a trait, rather than an ability (Petrides et al, 2004). Regardless of their perspective, the above theorists converge in their respective beliefs regarding the positive impact of EI on occupational attainment. They also agree with the premise that EI differs significantly from the cognitive abilities which are measured by IQ. This study explores the relationship between EI, attainment and attrition in nursing while controlling for the effect of the covariates identified in the model below.

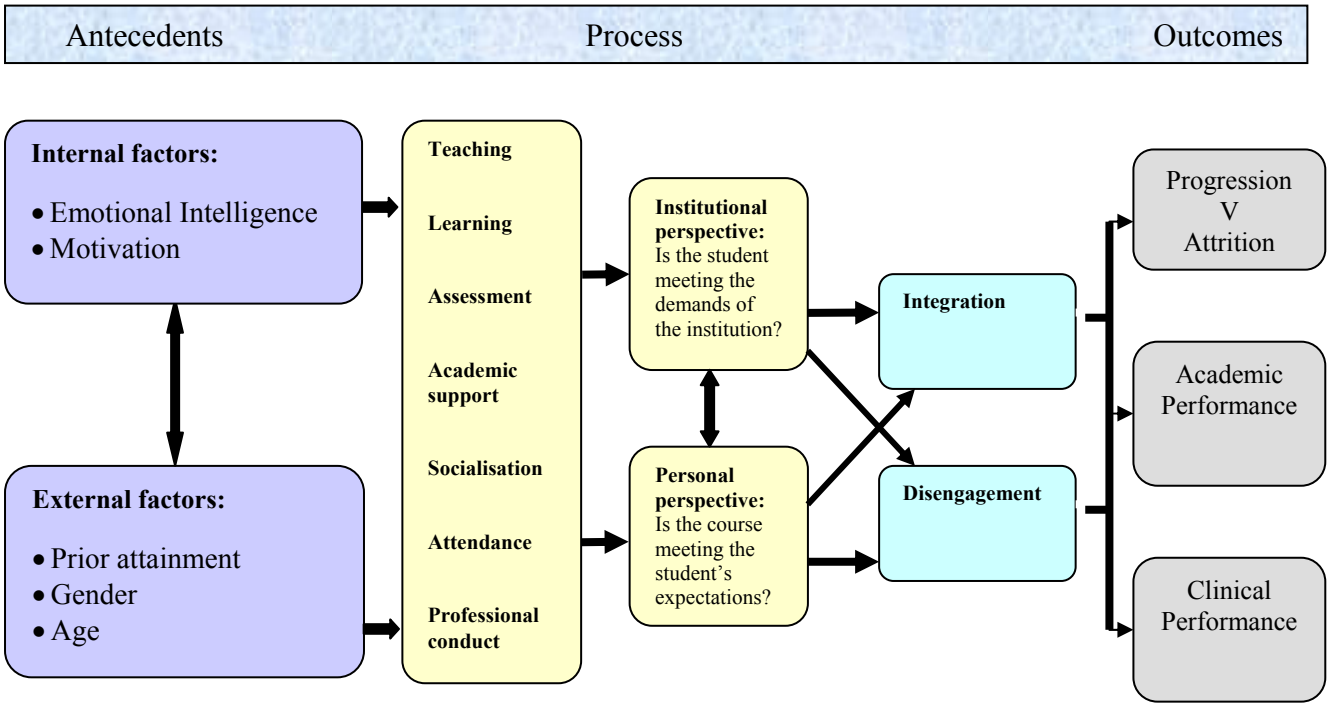

Figure 3: Theoretical Model of Student Attrition (Adapted from Tinto (1986) and Wylie (2004)

Establishing the Model

To establish the relationship between emotional intelligence, attainment and attrition in nursing, antecedent and outcome variables were defined and quantified. The study makes the assumption that EI can be measured and that it is possible to discriminate between the effects of EI and other antecedent variables. It also makes the assumption that the outcome variables: clinical performance; academic performance and attrition can be reliably measured. The model presented in figure 3 has been abstracted from the more comprehensive model presented in chapter three. This model represents a theoretical relationship between the variables that are examined in the study. This chapter examines the measurement characteristics of the antecedents and the outcomes presented in the model.

For the purpose of this study, the covariates: prior academic attainment; age and gender were examined. The rationale for selecting these variables was to control for the possibility that age, gender and prior academic attainment could also contribute to the course outcomes identified above. Previous chapters have discussed the potential impact of a wider range of antecedents on the identified outcome variables, however, many of these antecedents would be impossible to quantify, within the scope of this study, such as 'family support' and 'alternative HE options for the student'. The model above represents the antecedents that have emerged from the literature as both relevant and quantifiable.

Justifying the Survey Method

The survey method was used to quantify 'trait' EI. Participants were asked to complete Schutte et al's (2007) Assessing Emotions Scale (AES) prior to commencing their programme of studies and their responses were used to produce data for the predictive variable, 'trait' EI.

There were some clear advantages to applying the survey method: it was possible to access the whole study population; it would be feasible, with regard to cost and practicality to apply a similar approach as part of the recruitment and selection process, should the results prove to be significant; a suitable measurement tool had been identified as a result of the literature search which was consistently supported as a reliable and valid instrument and standardised questions were asked of the participants. The limitations of the survey method include: challenges in creating standardised questions which address all of the perceived issues; avoidance of bias in the structure of the questions; the potential difficulty for participants to be completely accurate in their responses and, when compared with direct observation studies, surveys can rarely deal with concerns around context. To test its application to first year undergraduate nurses, the self report was validated with an earlier cohort.

Non-response is an important potential source of bias in survey research which is likely to persist regardless of the survey design. However, while there is no universal consensus on an 'acceptable' response rate, it could be argued that, so long as the design and methods contain no bias, non-response

should be a predominantly random process. Even with a high response rate, a representative sample is not necessarily guaranteed, especially any accurate representation of low-responding subgroups. However, with a higher response rate, more confidence can be placed in the representation of the sample. In a survey of medical staffs' response to postal questionnaires, Barclay et al (2002) found a higher mean response rate when the subjects were in training or recently qualified and younger than 35. There was no significant gender difference. Subjects from a rural location were less likely to respond.

Edwards et al (2002) found that the odds of response were more than doubled when a monetary incentive was used. Response was also more likely when the following conditions were applied: short questionnaires; personalised questionnaires and letters; the use of coloured ink; sending by recorded delivery and the use of stamped return envelopes. Questionnaires designed to be of more interest to participants were more likely to be returned, but questionnaires containing questions of a sensitive nature were less likely to be returned. Edwards et al (2002) also found that questionnaires originating from universities were more likely to be returned than were questionnaires from other sources, such as commercial organisations. In contrast, Nakash et al (2006) found no significant difference with the use of incentives or personalised information and cited reminder letters and telephone contact as having the biggest influence. The literature reveals such a wide range of 'average response rates' for questionnaires that there appears to be a lack of consensus regarding the rate that most researchers would accept as satisfactory. For example, Harrison and Cock (2004) claim that, any increase

in response rate, even from 20.9% to 30%, represents a successful outcome. Their survey involved patients who were about to receive medical treatment and who clearly had a vested interest in the research outcomes, yet less than one third of the survey population completed the questionnaire. Response rates from around 30% up to 60% were considered acceptable by respective researchers.

Establishing the Efficacy of Self Report Measurement Tools

Self report measurement tools have a number of advantages over other data collection tools, however, they also have their limitations. Significantly, the advantages often relate to issues around pragmatism and resourcing rather than lofty claims around validity and reliability (King et al, 2004), however, the use of validation studies and the increasingly sophisticated statistical tests, which can be carried, out have raised expectations regarding the validity and reliability of self reporting questionnaires. The limitations of self reporting tools relate to the inherent problems in placing confidence in the accuracy of individual respondent's choices. There can be many reasons for the respondent to select a specific response which might not be genuine. However, it is possible to improve reliability by identifying and removing items that reduce reliability coefficients through factor analysis of validation data.

Ciarrochi (2009) claims that self reports have progressed over the last forty years and that we are more able to determine the factors which lead to bias. If we want to measure emotionally intelligent behaviour, we need an ability test. However, if we want to measure EI as a trait, a self report, if properly

constructed and properly administered, is appropriate. Mayer (2009) disagrees and counters that the only true measurement of 'intelligence' involves the measurement of ability, for example, a criterion assessment, although he concedes that self reporting of personal emotional states may be acceptable. Mayer goes on to propose that the term 'self report data' should be discarded, as it is ambiguous and misleading. Answering the question "Is capital punishment effective?" would be considered a self report but in a different sense to the question, "How do you feel about capital punishment?" The answer to the former question might have a basis in fact, the latter answer would not. However, the answer to the former question could also be disputed, yet the second answer could not. Mayer argues that this ambiguity is often used unfairly in the criticism of self reports:

> "...some psychologists have criticised self-report data as involving deliberate faking, lack of insight, and unconscious defensive reactions. Surely, however, self-reports such as "I am 20 years old," or "I am female" are trustworthy in many contexts" (Mayer, 2004, p. 208)

Funder (2009) proposed a 'Realistic Accuracy Model' of personality judgment using self reports, which is a four stage model requiring the following: relevancy of information emitted by the subject; availability of the information to the assessor; the ability of the assessor to detect this information accurately and the assessor's ability to use this information correctly. Funder adds that, empirically, there are four variables that affect the accuracy of this model: properties of the assessor (judgmental ability); properties of the subject (judgability); the trait being judged (visibility) and the information upon which the judgment is based (quality and quantity).

Applying Funder's model to any measurement tool would seem to be the minimum expectation.

Self reports measure self efficacy with regard to emotional intelligence rather than ability. They may provide information on how the person feels about himself and also on issues around intent. The only way to be absolutely sure of the reliability of self reports is to compare and correlate the individual's self concept with specific and related behavioural outcomes. This study incorporates a well established self report which has been tested for validity and reliability in a wide range of contexts and it was validated with a cohort of students who shared similar characteristics with the study group. The tool was used to test for behavioural outcomes. In this regard, the application of a self report was appropriate as it could be validated through correlation with outcome variables.

Essentially, the application of a self report tool is justified by the intention to utilise it as an aid to self selection. The scores would help to inform the candidate regarding their potential suitability for the programme. In this regard, the tool is fit for purpose and valid in the context.

Analysing Data Using Ordinal-Interval Scales

Stevens (1946) introduced the four classifications of measurement scales that are used today: Nominal; Ordinal; Interval and Ratio. The scales vary in their psychometric properties and in their measurement capabilities. Ratio scales are considered to be the most comprehensive, allowing accurate

computations of: frequency; all forms of central tendency; standard deviations and coefficients of variation. Nominal scales are restricted to computations of frequency. An ordinal scale is limited to an accurate representation of the rank order of data. A number is assigned to an object or an event to enable a judgment to be made regarding where this data is placed within the rank order. It is acceptable to compute medians and percentiles using ordinal scales. Interval scales are used to measure quantitative attributes and they have specific units of measurement, which have equal weighting. The mode, the median and the arithmetic mean can be calculated using interval scales.

Ordinal and Interval scales are commonly misrepresented in psychological research with some theorists claiming that cognitive skills can be measured using interval scales (Von Eye, 2005), while others claim that cognitive attributes can only be measured using ordinal scales (Mitchell, 2008). The decision whether to use parametric methods to analyse ordinal scales depends on the researcher's confidence in the robustness of ANOVA and other statistical inference methods as well as the extent to which the data are normally distributed (McCulloch and Searle, 2001). Harwell (2001) describes how ordinal data can be rescaled to interval data using a technique called item response theory. The weighting of each item is calculated according to the distribution of responses and intervals are then created which have the same value.

The original author of the taxonomy of measurements of data admitted that there is some merit in not being too tied by the categories in the behavioural sciences:

> "As a matter of fact, most of the scales used widely and effectively by psychologists are ordinal scales. In the strictest propriety the ordinary statistics involving means and standard deviations ought not to be used with these scales. On the other hand, there can be invoked a kind of pragmatic sanction. In numerous instances it leads to fruitful results." (Stevens,1951, p. 26)

This study uses two scales to collect data: the AES to quantify emotional intelligence and the FTP tool to quantify practice performance. Both tools withstood scrutiny using validation data. Factor analyses demonstrated good internal consistency and the scores were normally distributed.

Characteristics of the Validation Group

First year student nurses and midwives who commenced their programmes in September 2006 were surveyed using Schutte's et al (2007) Assessing Emotions Scale (AES). The students were accessed in April 2007. They were approached face to face by the researcher, a member of staff, in existing groups of students consisting of: midwifery students n= 20, two streams of Tayside based nursing students, n=60 and n=64, and one stream of Fife based nursing students, n=62. The total number for this cohort at the time of data collection was 206 students out of 250 who enrolled in nurse education

at Dundee University in 2006. However, some students were absent on the day the questionnaires were presented, providing a group of 185 students. Three questionnaires were not returned and one questionnaire was spoiled and could not be used, leaving a final total of 181 for the instrument validation. This number is considerably less than the initial number of 250 students, who commenced in the cohort. The reduction was due to attrition throughout the year, including temporary withdrawals. Unfortunately, the students who had already discontinued from the programme could not form part of the validation study. However, as the purpose was to confirm the validity of the AES with student nurses, this was not considered to be likely to invalidate the task.

The response rate was very high: 182 out of 185 (98.4%) subjects who received the questionnaire completed it. This would appear to justify the face to face approach but it also highlights the potential influence the researcher may have on the respondents which must be considered. It may be argued that subjects felt more compelled to complete the questionnaires in the presence of the researcher, however, the right of the student to opt out was reinforced in an effort to assuage any concerns. Further, as the sole purpose was to validate the instrument, there was no sense that the students were at risk from participating.

Ethical Considerations: Validation Group

Permission was obtained from the institution's research committee to access students for research purposes. The subjects in the validation study (2006 cohort) were approached during one of their classes and informed of the

intention to study emotional intelligence in nursing students. They were all presented with a letter (appendix 1) informing them of the purpose of the research which clearly stated that it was the right of the student to choose whether to participate or not and that it would be possible to withdraw, without consequence, at any time. The subjects who agreed to participate were provided with an envelope to return the questionnaire along with a signed consent form. There was sufficient time provided to enable each subject to read their information letter and complete the questionnaire in class but the subjects were also informed that they would be able to complete it at a time that suited them and return it post free in the envelope provided. A small number took the latter option.

The reason for approaching the validation students in person rather than by post was two fold. Firstly, it was considered that it may boost the response rate if the subjects were provided with time to complete the questionnaire while they were already in the School and secondly, the researcher was available to answer questions about the process. Mail questionnaires often have a low response rate, as explained earlier. It was felt that the researcher would be able to take advantage of existing contact with the subjects to reassure them that their participation was of potential value to the School. The validation subjects were familiar with the researcher and had little apparent concern regarding his access to their records as this was already considered by the students to be an expectation as part of his role. Because of this familiarity, it was emphasised that this information would be used specifically for research purposes and would not be viewed by any other member of staff.

It would also not be used to make any judgments about the students in relation to the programme.

Questions were asked by the participants from each group before and during completion of the questionnaires and, to avoid inconsistencies, where possible, the researcher referred the subjects to the information contained in the accompanying letter. It was explained that some questions could not be answered prior to completion of the questionnaires as this might influence responses. One example of this was: “What is emotional intelligence?” Other questions such as: “Was ethical clearance obtained?”; “Who will get access to the results?”; “Can I find out my score?” were answered at the time.

Establishing the Measurement Characteristics of the Antecedent Variables:

The antecedent variables consist of emotional intelligence, prior academic attainment, gender and age. While gender and age are readily established, emotional intelligence has complex measurement characteristics that can only be established using sophisticated tools. The measurement tool that was used to establish emotional intelligence was Schutte et al’s (2007) Assessing Emotions Scale which was validated prior to the study. Prior academic attainment was established by scoring the students according to the SQA Qualifications Framework and will be addressed later in this chapter.

Factor Structure and Validity of the Assessing Emotions Scale (AES)

The Assessing Emotions Scale (Schutte et al, 2007) is a 33 item self report measure of emotional intelligence (appendix 2). This self report, initially called

Schutte's Emotional Intelligence Scale (SEI) (Schutte et al, 1998), was based on Salovey and Mayer's (1990) 'four branch' model of emotional intelligence which comprised of the sub-scales: 'perception of emotions'; 'managing own emotions'; 'managing others' emotions' and 'utilisation of emotions'. Schutte et al (1998) reported that 33 items out of an original pool of 62, loaded onto one factor and these items comprised the final tool. They initially suggested a one factor solution. However, Petrides and Furnham (2000) reported that the SEI did offer a four factor solution and recommended further exploratory and confirmatory factor analysis. Petrides and Furnham (2000) described their four factors as: 'appraisal of emotions'; 'optimism/mood regulation'; 'social skills' and 'utilisation of emotions'. Saklofski et al (2003) also found that both a one-factor and a four-factor solution could be achieved. Their four factor solution matched the factors described by Petrides and Furnham (2000) and, consequently, the same names were provided for the sub-scales.

Gignac et al (2005) examined the factor structure of the scale to try to establish whether the original four factor EI model, had been adequately represented. They argue that further divisions could be applied. 'Appraisal of emotion' could be sub divided into 'appraisal of self' and 'appraisal of others', 'Regulation' could be divided between self and others and 'Utilisation', according to Gignac et al (2005) may be sub divided into four further categories: 'flexible planning'; 'creative thinking'; 'redirected attention' and 'motivation'. Along with 'expression of emotion', this creates nine categories, although Gignac et al (2005) concede that 'utilisation of emotions' is preferred to the four smaller categories, which leaves six primary dimensions in their

emotional intelligence model. Gignac et al (2005) categorised the 33 items into their six dimensions where five items remain unclassified. Their categorisation was based on a "qualitative analysis", however, the basis of this analysis was not provided and hence it is of limited relevance to the description of the AES.

Ciarrochi et al (2001) support a four factor solution in line with Schutte et al (1998) and Petrides and Furnham (2000) but they have identified a low reliability in the 'emotion utilisation' factor. They also prefer to call the 'social skills' category identified by Petrides and Furnham (2000) as 'managing others' emotions' which fits with the model proposed by Salovey and Mayer (1990) and supported by Schutte et al (1998). A full presentation of their factor analysis was not available.

Schutte et al (2007) carried out a review of literature that tested their SEI. In this paper, they renamed their unchanged measurement tool the 'Assessing Emotions Scale' (AES). Their literature review supports the four factor model with the most common representation of the subscales as follows: Perception of Emotions: items 5, 9, 15, 18, 19, 22, 25, 29, 32 and 33; Managing Own Emotions: items 2, 3, 10, 12, 14, 21, 23, 28, and 31; Managing Others' Emotions: items 1, 4, 11, 13, 16, 24, 26, and 30 and Utilisation of Emotions: items 6, 7, 8, 17, 20, and 27. While there are similar loadings in all of the studies presented above, there is some movement of items from one factor to another.

Confirming the Emotional Intelligence Scale (AES) with the Validation Group

An exploratory and confirmatory factor analysis was carried out to test the four factor theory using the 2006 cohort of first year undergraduate nursing students. The reliability coefficient for the complete questionnaire, when validated with the 2006 cohort, was 0.85. The internal consistency of each of the four factors identified from the literature (table 1), as measured by Cronbach's alpha, produced coefficients ranging between 0.67 and 0.76 when all of the items were included. Removing items, which loaded at greater than 0.2 on another factor, did not increase the reliability coefficients in any case. When items with loadings on the principal factor of less than 0.4 were excluded from the component matrix, two of the sub-scales had four items, each of whose loadings did not cross-load, and the other two sub scales contained three items. For these two subscales, two further items were identified with loadings on the principle factor with values which were at least 0.3 higher than their cross-loading on a second factor. In the subscale, 'Managing own emotions', item 28 had a primary loading of 0.64 and a cross-loading on 'utilisation of emotions' of 0.3. Item 18 had a primary loading of 0.63 on 'perception of emotion' and a cross-loading of 0.21 on 'managing others' emotions'.

Table1: Factor Structure of AES from Validation Data

	Component			
	1	2	3	4
Q31	.665			
Q20	.559			
Q23	.523		.272	
Q27	.514			
Q17	.445		.271	
Q13	.441	.371		
Q7	.439			
Q26	.439	.342	-.225	
Q12	.433	.235	.329	
Q2	.417	.249		
Q6	.409			
Q14	.342	.333	.222	.231
Q11		.622		
Q9		.587	.276	
Q8		.570		
Q30	.314	.521		
Q16		.490		
Q24	.339	.481		
Q4	.239	.437		
Q28	.291		.643	
Q22		.221	.580	.305
Q3			.569	
Q19			.504	
Q21	.273		.492	.205
Q10			.453	
Q1		.287	.414	
Q33		.204	.367	
Q25				.677
Q18		.208		.633
Q29				.627
Q15				.592
Q32	.256			.590
Q5			.243	.479

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. A Rotation converged in 9 iterations.

Table 2 compares the factor loadings from the validation group with other studies identified in the literature which applied the AES. The items highlighted appear in the same subscales in each independent study.

Table 2: Comparison of Factor Loadings from the Literature with the Validation Group (Items which load on the equivalent factor in all three studies are highlighted in yellow)

Item	Schutte et al (2007)	Saklofski et al (2003)	Validation Study a = 0.85
	Utilisation of emotions	Utilisation of emotions	Factor 1 a = 0.76
q31			*
q20	*	*	*
q23			*
q27	*	*	*
q17	*	*	*
q13			*
q7	*	*	*
q26			*
q12			*
q2			*
q6	*	*	*
q14			*
	Managing others' emotions	Social Skills	Factor 2 a = 0.67
q11	*	*	*
q9			*
q8		*	*
q30	*	*	*
q16	*	*	*
q24	*	*	*
q4	*	*	*
	Managing own emotions	Optimism	Factor 3 a = 0.67
q28	*	*	*
q22		*	*
q3	*	*	*
q19		*	*
q21	*	*	*
q10	*	*	*
q1		*	*
q33			*
	Perception of emotions	Appraisal of emotions	Factor 4 a = 0.69
q25	*	*	*
q18	*	*	*
q29	*	*	*
q15	*	*	*
q32	*	*	*
q5	*	*	*

From the factor analysis, four items were identified for each of the four subscales. The four subscales, were identified as: Perception of Emotion;

items 15, 18, 25 and 29 (α = .63); Managing Own Emotions; items 3, 10, 19 and 28 (α = .54); Managing Others' Emotions; items 8,9,11 and 16 (α = .56) and Utilisation of Emotions; items 7,20,27 and 31 (α = .58).

It is concluded that the Assessing Emotions Scale (AES) is internally consistent for use with nursing and midwifery students. A reliability coefficient of 0.85 is considered to be good, being above the 'rule of thumb', minimum acceptable coefficient of 0.70 (George and Mallery, 2003; Brace et al, 2006). The four sub-scales identified in the study were also confirmed, although the reliability coefficients were lower as would be expected for sub-scales with just 4 items per sub-scale. Swailes and McIntyre-Bhatty (2002) suggest that the effect on Cronbach's alpha is particularly noticeable when the number of items, in a measurement tool, falls below seven. They urge caution in judging estimates of internal consistency stating that low coefficients may not always indicate a problem with the construction of the tool. While the recorded reliability coefficients for the subscales are too low to be able to make crucial decisions on individual cases, they would be sufficient for identifying relationships between emotional intelligence sub-scales and the outcomes for the whole group.

Establishing Prior Academic Attainment

The predictor variable, prior academic attainment, was quantified for the study group by ascribing a numerical score to each student according to where their entrance qualifications appeared in the Scottish Credit and Qualifications Framework (SQA, 2008). Table 3 shows the score that was ascribed to each

level. The mean entrance qualification score for females (N = 168) was 2.01. The mean score for males (N = 10) was 2.7. However, the high risk to the validity of this measure must be acknowledged, given the diversity of quality between programmes and between individuals within programmes.

Table 3: Scores Ascribed to SQA Qualifications Framework

Prior academic attainment: Entrance qualifications	Ascribed score	% of Students in each level (N= 178)
Masters Degree	6	0.5
Degree	5	3.0
DipHE, HND	4	5.5
CertHE, HNC	3	15
Higher, SVQ3	2	44
Standard Grade, SVQ1, SVQ2, Access	1	32

Figure 4 demonstrates that there is a normal distribution of prior academic attainment with the study group when based on the students' entrance qualifications according to the SQA Qualifications Framework.

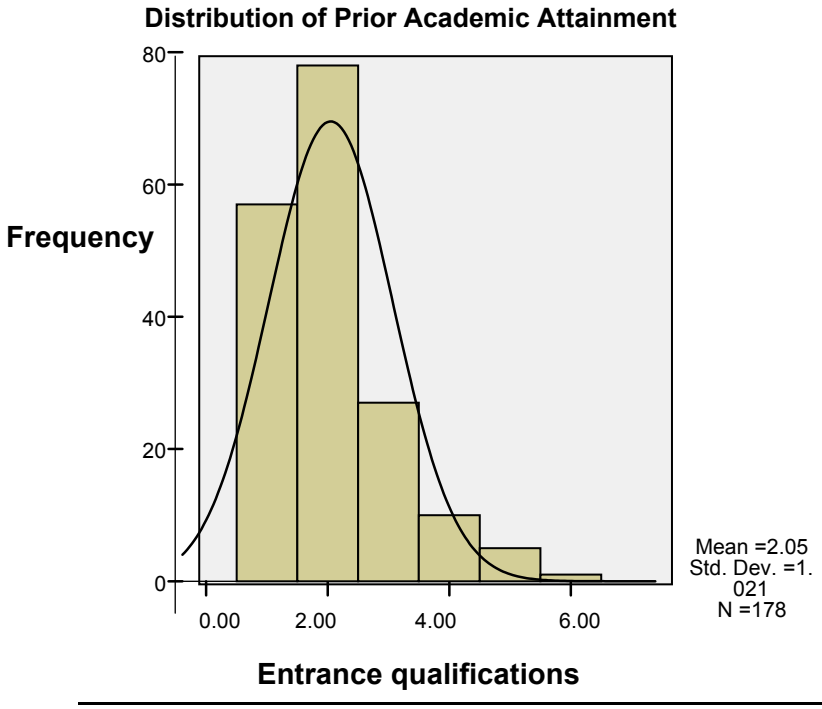

Figure 4: Comparison of the Distribution of Prior Academic scores

Controlling the Antecedent Covariates

An analysis of covariance was carried out using the validation data to test for age and gender. Both variables have been linked as predictors of emotional intelligence (Petrides et al 2004) with older subjects and female subjects scoring highest. It is important, therefore, to control for the possibility that any correlation between EI and clinical attainment can be accounted for by either age or gender. With 'total EI' score as the dependant variable, there was no significant correlation between age and EI, or gender and EI (Table 4). This contrasts with Petrides et al's (2004) findings, however the number of male subjects was low (n=10), which would make it difficult to achieve a statistical significance for this particular cohort. The absence of a statistically significant relationship between the predictor variables age and gender and the independent variable, emotional intelligence, may be due to the small numbers but the threat still cannot be excluded.

Table 4: Relationship between the predictor variables: Emotional Intelligence, Age and Gender Dependent Variable: Total Emotional Intelligence Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	869.37	3	289.79	2.23	.09
Intercept	18367.08	1	18367.08	141.10	.00
age	192.17	1	192.17	1.48	.23
sex	6.86	1	6.86	.05	.82
age * sex	71.00	1	71.00	.54	.46
Error	23040.00	177	130.17		
Total	2868057.00	181			
Corrected Total	23909.37	180			

The Relationship Between Prior Academic Attainment and Emotional Intelligence

To establish the relationship between emotional intelligence and prior academic attainment, a correlation analysis was carried out. This analysis

was performed using data from the study group as the validation group's entrance qualifications could not be obtained. If the relationship between EI and prior academic attainment was strong, there would be less justification in considering them as distinct entrance criteria. The overall EI score, along with the four subscales were correlated with prior academic attainment with the following results (table 5). There is a zero order correlation between prior academic attainment and overall emotional intelligence (r = .01, N = 178, p = .89). Of the four subscales, 'managing own emotions' has a significant relationship with prior academic attainment (r = .15, N = 178, p < .04). The remaining EI subscales did not correlate with prior academic attainment. This result is encouraging as it justifies the application of measures of EI as a distinct predictor from other antecedents such as prior academic attainment. Having established the measurement characteristics of the antecedent variables, the outcome variables will now be explored.

Table 5: Correlation between prior academic attainment and emotional intelligence

N = 178		Perception of Emotion	Managing own Emotions	Managing others Emotions	Utilisation of Emotions	Total Emotional Intelligence
Prior academic attainment	Pearson Correlation	-.003	.15(*)	.025	-.07	.01
	Sig. (2-tailed)	.97	.04	.73	.36	.89

*Correlation is significant at the 0.05 level (2-tailed).

Establishing the Measurement Characteristics of the Outcome Variables

The outcome variables identified in the study consist of: clinical practice performance; academic performance and progression to year two of the programme. Clinical practice performance was measured using an existing tool: Fitness to Practice Assessment Tool, which was analysed using the validation study data.

Factor Structure and Validity of the Clinical Practice Assessment Tool (FTP)

Data for the validation group's clinical practice assessments were taken for analysis. The 'Fitness to Practice' (FTP) assessment contains mentors' rating of students' clinical performance. The measure consists of 21 items (appendix 3) that are rank ordered from 4 to 1. Students who were rated as 'never requiring support and guidance' for the specific outcome received a highest score of 4. Students who required 'occasional support' scored 3. 'Frequent support' scored 2 and students who 'always required support and guidance' were scored at 1.

The FTP assessments have been used in local practice for the last five years and were not altered as part of this study or mapped to the emotional intelligence subscales prior to this analysis. The rationale for this was to avoid the possibility of contamination by changing the study group's clinical outcomes. The limitations of this are discussed later in the chapter. The hypothesis investigated in chapter 6 is that subjects who scored higher in measures of EI would perform better in practice. It was therefore important to examine the measurement characteristics of the FTP assessments.

The FTP assessments which were examined, in the validation, related to the first clinical placement and the final clinical placement in year one. This would enable progression to be measured for each outcome as well as for general progression. A comparison of frequencies between the results of the first practice placement assessment (FTP 1) and the final placement (FTP 2) is

shown in table 6. While there is little difference between the two mean scores, 72 and 75.74, the mode for the final placement, 84, was the highest score that could be achieved. By contrast, the mode from the first placement was 65. This suggests that there was an overall progression by the study group in their mentors' perception of fitness to practice when comparing the first placement in year one with the final placement. 11 out of 181 students (6%) achieved full marks in placement one. This number rose to 25 in placement four (13%). While the distinction between the first placement scores and the final placement scores does not appear to be particularly large, an allowance might be made for the possible effects of increased expectation by mentors in the final placement compared to the initial one.

Table 6: Comparison of frequencies of total Clinical Practice Performance (FTP) scores in the first and final practice placements

N = 157	First Placement	Final Placement
Mean	72	75.74
Median	75	78
Mode	65	84
Std. Deviation	8.25	7.26

An exploratory factor analysis of the clinical practice assessment (FTP) tool was carried out on the final data set using principal component extraction and varimax rotation. The factor analysis demonstrated that none of the items had a communality lower than 0.85, which would justify retaining all of the items for analysis. The KMO value of 0.95 suggests that an acceptable level of factorability exists. Bartlett's test indicates that the data is probably factorable with $p< 0.05$. All of the items load onto one factor, indicating that a single factor solution would be the best fit**.** The FTP tool collects data using an ordinal-interval scale. Total FTP scores in the validation group were normally

distributed. Figure 5 shows a comparison of the distribution of total scores in the first placement and in the final placement. Only the 157 students, who completed both placements in the validation group were included to enable a true comparison between performances.

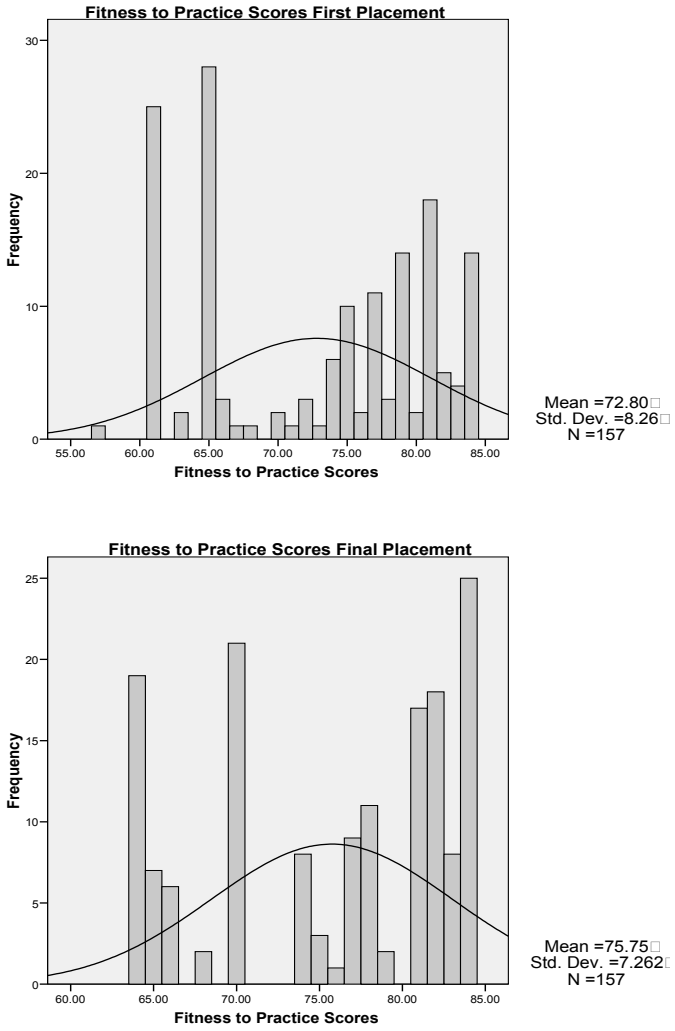

Figure 5: Comparison of the Distribution of Clinical Practice Performance Scores from the Validation Group from the First Placement and the Final Placement

Confirming the Clinical Practice Performance Tool (FTP) with the Validation Group

Internal consistency of the FTP assessment tool was measured using the validation data. First placement scores and final placement scores were both analysed. Cronbach's alpha for the FTP tool from the validation group's first practice placement was 0.95. The alpha score for the final placement was 0.94. Both scores suggest a high level of internal consistency. However, Cronbach's alpha is based on the assumption that the variances of each item are equal. This assumption is not necessarily valid for a tool that was not produced for research purposes and had not been tested prior to the validation study.

An analysis of the measurement characteristics of the clinical practice assessment tool suggests that it meets the necessary criteria to be considered, as an outcome measure, for clinical performance. There is evidence of improvements in performance from the first practice placement to the last. The scores are normally distributed in keeping with parametric tests. The items in the scale all load onto one factor with communalities higher than 0.85 and a reliability analysis provided alpha scores of 0.94 and 0.95.

Quantifying Academic Performance

The students were required to complete five assignments during year one. To enable the data to be used for analysis, the academic grade awarded for each assessment in year one was assigned a corresponding number. Fifteen potential grades were used for each assignment for this cohort with 'A1' representing the maximum grading, scored at '15' whereas 'BF' (bad fail), the

minimum grading, was scored at '1'. Mean scores were obtained for each student. Students who failed to submit any assignments were excluded from the analyses leaving a group of 168 students. The mean score across all assignments was 7.68 (SD = 2.23). Table 7 shows the individual means for each assignment. To test for consistency across the five assignments, the results for each assignment were compared. Only the students who completed all five assignments were included in this analysis (N = 135). In a correlation of the five assignments (table 8), assessment one stands out from

Table 7: Comparison of means for the five assignments

	Assessment one	Assessment two	Assessment three	Assessment four	Assessment five
N Valid	135	135	135	135	135
Missing	0	0	0	0	0
Mean	4.81	9.83	8.46	7.31	7.79
Median	5.00	10.00	9.00	7.00	8.00
Mode	5.00	9.00	9.00	8.00	4.00
Std. Deviation	.92	2.78	2.47	2.70	3.11

the others which all demonstrate a significant relationship with each other. While assessment one is significantly related to assessment four, the relationship is not as strong as the correlation between the other assessments. To control for the effects of the inconsistency between assessment one and the other assessments, the data for assessment one was excluded from any analysis that examined academic performance.

Table 8: Correlation of Academic Assignments

N = 135		Assessment one	Assessment two	Assessment three	Assessment four	Assessment five
Assessment one	Pearson Correlation	1	.14	.14	.21(*)	.10
	Sig. (2-tailed)		.11	.11	.02	.26
Assessment two	Pearson Correlation	.14	1	.48(**)	.25(**)	.25(**)
	Sig. (2-tailed)	.11		.000	.003	.003
Assessment three	Pearson Correlation	.14	.48(**)	1	.42(**)	.37(**)
	Sig. (2-tailed)	.11	.00		.00	.00
Assessment four	Pearson Correlation	.21(*)	.25(**)	.42(**)	1	.27(**)
	Sig. (2-tailed)	.02	.003	.00		.001
Assessment five	Pearson Correlation	.10	.25(**)	.37(**)	.27(**)	1
	Sig. (2-tailed)	.26	.003	.00	.001	

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

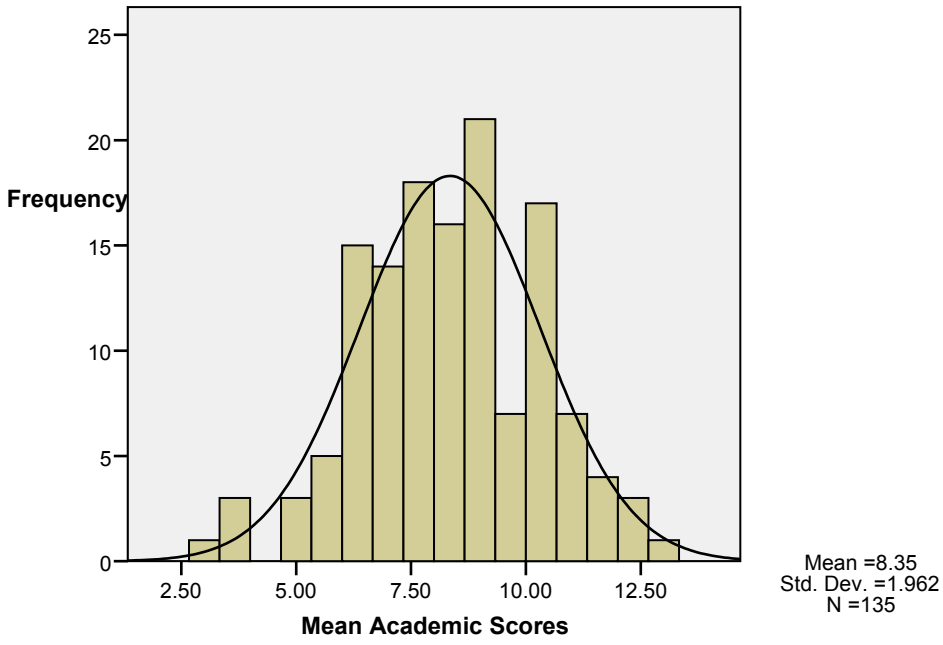

Figure 6: Distribution of Mean Academic Scores

Figure 6 shows that there is a normal distribution of mean academic scores when assessment one is excluded.

Quantifying Student Attrition

Attrition, in this study, is defined by the students who failed to progress to year two. As demonstrated in the literature review, the highest level of student drop out is typically during the first year of study. Of the study group, 116 students progressed to year two and 62 students did not (table 9). Attrition for the study group was measured at 34.8%. This figure included students who had temporarily withdrawn. Students who transferred in after the emotional intelligence scale had been completed, were excluded from the study.

Table 9: Comparison of Student Retention Numbers with Attrition Numbers

	Frequency	Percent
Students who progressed to year two	116	65.2
Attrition Numbers	62	34.8
Total	178	100.0

Characteristics of the Study Population

A cohort of student nurse and midwifery applicants was invited to complete Schutte et al's (2007) Assessing Emotions Scale (AES) (appendix 2) prior to commencing their studies. From a total of 307 candidates, 192 questionnaires were returned providing a response rate of 62.5%. Eight questionnaires were returned by candidates who did not enrol onto the course and a further six questionnaires were incomplete and could not be used, leaving a total number of 178 for the study group. 275 out of the original 307 candidates enrolled onto the programme. Table 10 provides a comparison of the characteristics of the validation group, the study group and the study population. The emotional

intelligence scale (AES) and the clinical practice assessment tool (FTP) were validated with an earlier cohort of student nurses (n= 181) to confirm their reliability and factor structure for use with nursing students on the assumption that both groups would have broadly similar characteristics. Table 10 confirms that both groups are comparable.

Table 10: Characteristics of 2006 Respondents (validation), 2007 Respondents (study group) and 2007 Cohort (study population)

	2006 Survey N = 181 %	2007 Survey N = 178 %	2007 Cohort N = 275 %
Gender:			
Female	90	94	92
Male	10	6	8
Age:			
Under 20	23	24	33
20-29	49	38	40
30-39	19	25	16
40 and over	9	13	11
Ethnicity/cultural Background:			
White UK	93	95.5	90
Other White	4.5	4	4
Asian Pakistani	1		1
Asian Bangladeshi			
Indian			1
Black African	1.5	0.5	2
Black Caribbean			
Chinese			1
Other			1
Branch/programme:			
Adult Nursing	65	65	61
Mental Health Nursing	15	20	21
Child Nursing	11	4	9
Midwifery	9	11	9
Entrance Qualifications:*			
Standard Grade, SVQ1, SVQ2	24	32	
Higher, Advanced Higher, A level	39	44	
HNC	21	15	
HND	8	5.5	
Degree	7	3	
Masters	1	0.5	

* To observe ethical protocols, only the entrance qualifications for students who consented to the study were obtained

One year prior to the validation group commencing, the Government introduced new regulations for students receiving bursaries in Higher Education. Only UK residents and individuals who have been resident in the EU for three years are entitled to their course fees and bursaries paid by the Scottish Awards Agency. This had a dramatic effect on the percentages of non UK students. The previous cohorts would normally have up to 15% non UK students, mainly from Zimbabwe and the Republic of Ireland. Therefore, the validation group and the study group may not be representative of previous cohorts and this would also need to be acknowledged with future cohorts should the policy change. However, the validation group and the study group were both drawn from the same population, hence the findings from the validation group are likely to apply to the study group.

Ethical Considerations: Study Group

The study group comprised of candidates who applied to commence their training in the September 2007 cohort. It was arranged that every student who attended for interview from May 2007 onwards would be presented with the information pack and questionnaire and provided with the opportunity to complete it prior to or immediately following their interview. In keeping with the validation, candidates were informed that there would be no negative consequences of opting out. The packs were handed out by receptionists, along with other interview information sheets which were unrelated to the research study. The interviewers were deliberately blind to the questionnaires to eliminate bias. The reception staff were aware that all those who attended for interview should be handed the pack and asked to read it fully before

deciding whether to respond. Any questions were to be directed to the researcher. It was a deliberate strategy not to involve interviewers in the distribution or collection of the questionnaires to make sure that no decisions could be taken at interview which may be influenced by the questionnaire.

In both the validation and study groups, participants were asked to provide consent for their academic files to be accessed. Confidentiality was assured, with only the researcher having access to the research data. Students were anonymised, using identity numbers, once the data was obtained. The participants were also reassured that no judgments would be made on their actual performance in the programme on the basis of any information taken as part of the study. There was no impact on patient care and the participants' assessors, throughout the study, in practice and in theory, were blind to the research.

Outline of the Statistical Tests

An analysis of covariance was performed to look at the effect of emotional intelligence on each of the outcome variables while partialling out the effect of the other predictor variables. This was followed by a multivariate analysis of variance which examined the relationship between the outcome variables. Multiple regression was used to test for emerging sets of predictor variables and a univariate analysis of each variable was carried out.

Summary

This chapter has provided information on the methodology of the research study. The aims of the study were stated and the theoretical perspectives were discussed. The conceptual model containing the antecedent and outcome variables was presented. The research method was justified and the design of the study was outlined, confirming the validity and reliability of the measurement tools. The characteristics of the validation group and the study population were presented and ethical considerations were discussed. The tests that were used to analyse the data were justified.

Chapter Six: Results

Introduction:

Statistical analysis was carried out using SPSS software version 15. An analysis of covariance was performed to look at the effect of emotional intelligence on each of the outcome variables while partialling out the effect of the other predictor variables. This was followed by a multivariate analysis of variance which examined the relationship between the outcome variables. Multiple regression was used to test for emerging sets of predictor variables and, finally, a post hoc univariate analysis of each variable was carried out.

Establishing the Relationship between the Antecedents Using ANCOVA:

An analysis of covariance was carried out to examine the effects of the model.

Effect of Predictor Variables on Progression

With progression on the course as the dependent variable, total emotional intelligence scores were categorised into two groups. Group one (N= 89) contained scores that were below the mean EI score of 127.5 and group two (N=89) contained scores above the mean. To enable both groups to have equal numbers, the subjects whose scores were on the cut off point, were randomly assigned to each group. With progression on the course as the dependent variable, a significant relationship (table 11) was demonstrated between emotional intelligence and progression ($F(1,173) = 13.6$, $p < .005$) and age and progression ($F(1,173) = 14.39$, $p < .005$. There was no significant relationship between the antecedents: gender and entrance qualifications, and progression on the course.

Table 11: Comparison of the Effects of the Predictor Variables on Progression
Dependent Variable: progression on the course (N = 116)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.72(a)	4	1.43	7.14	.00	.14
Intercept	.49	1	.49	2.46	.12	.01
Entrance qualifications	.04	1	.04	.20	.66	.001
age	2.88	1	2.88	14.39	.00	.087
sex	.09	1	.09	.43	.51	.002
Emotional Intelligence	2.73	1	2.73	13.60	.00	.07
Error	34.68	173	.20			
Total	116.00	178				
Corrected Total	40.40	177				

a R Squared = .142 (Adjusted R Squared = .122)

Effect of Predictor Variables on Clinical Practice Performance

When clinical practice performance was identified as the dependent variable, only subjects who had completed both their placements (N = 116) were included in the test to control for the many possible reasons for non completion. Table 12 shows a significant relationship between emotional intelligence and practice performance ($F(39,73) = 3.67$ $p < .005$). There was no significant relationship identified between practice performance and the other antecedents: entrance qualifications; gender and age.

Table 12: Comparison of the Effects of the Predictor Variables on Clinical Practice Performance
Dependent Variable: Fitness To Practice clinical assessment score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3466.45(a)	42	82.53	3.69	.00	.68
Intercept	18805.15	1	18805.15	842.52	.00	.92
Entrance qualifications	37.42	1	37.42	1.68	.20	.02
age	35.54	1	35.54	1.59	.21	.02
sex	26.07	1	26.07	1.17	.28	.02
Emotional Intelligence score	3199.37	39	82.03	3.67	.00	.66
Error	1629.37	73	22.32			
Total	707412.00	116				
Corrected Total	5095.83	115				

Effect of Predictor Variables on Academic Performance

With academic performance as the dependent variable, mean scores for the assignments were calculated. Subjects who did not complete all five assignments were excluded from the test. The results for the remaining subjects (N = 135) are shown in table 13. There is a significant relationship between emotional intelligence and academic performance ($F(41,90) = 471.44$ $p < 0.05$). There was no significant relationship identified between academic performance and the other antecedents: entrance qualifications; gender and age.

Table 13: Comparison of the Effects of the Predictor Variables on Academic Performance
Dependent Variable: Mean Academic Performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	348.54(a)	44	7.92	445.01	.00	.99
Intercept	240.37	1	240.37	13503.45	.00	.99
Entrance qualifications	1.47	1	1.47	.00	.99	.00
age	.04	1	.04	2.50	.12	.03
sex	.03	1	.03	1.74	.19	.02
Emotional Intelligence score	344.07	41	8.39	471.44	.00	.99
Error	1.60	90	.02			
Total	8230.04	135				
Corrected Total	350.14	134				

a R Squared = .995 (Adjusted R Squared = .993)

Analysis of the Relationship between the Antecedents and the Outcomes Using Multiple regression

Multiple regression can help to establish the relationship between predictor and criterion variables. It is essential that the criterion variables, or outcomes, are measured on a continuous scale for multiple regression to be deemed acceptable. Data also requires to be isotropic to obtain the best results. Ideally, each interval on a scale should be equal in magnitude and weighting

(Mitchell 2008). One of the outcomes, clinical practice performance, was recorded using a pre existing tool which was completed by students' mentors. In this tool, the mentor must decide between the following responses to score their student's performance:

- Always requires support (1)
- Frequently requires support (2)
- Occasionally requires support (3)
- Never requires support (4)

The design of this tool could not be subjected to the necessary scrutiny to establish the weighting of each interval between the possible responses and this could be deemed to be a limitation in using multiple regression in this study. However, as discussed in chapter five, the tool has been demonstrated as having a high internal consistency and a strong factor structure.

Other requirements appear to have been met. Tabachnick and Fidell (2001) suggest that a large number of observations are required for multiple regression. They recommend that *N* should be greater than the number of predictors times 8 plus 50. This would equate to 82, requiring a minimum number of 83 participants to exceed this amount. This study has 178 participants which more than meets the target number. The data has also been screened for normality. The nominal data, such as age and gender, are dichotomous and are, therefore, acceptable for multiple regression.

To test the relationship between the predictor variables and the outcome variables, a multivariate analysis of variance (MANOVA) was performed. Progression on the course could only be achieved by meeting all of the

clinical and academic outcomes. Therefore, to limit the test to the subjects who completed all of their assignments or practice placements would render the outcome, 'progression', redundant. In effect, non progression would be determined by failure to complete assignments or placements, ruling out the possible effects of the predictor variables. To overcome this, academic performance was calculated by totalling the subject's assignment scores and dividing this by the number of assignments completed. Clinical performance was calculated by adding the placement scores together and dividing them by the number of placements completed. This ensured that academic and clinical performance could be quantified for the students independent of their progress. Students who failed to submit an assignment and students who did not complete their first placement were excluded.

Correlation between the Outcome Variables

Brace et al (2006) recommend that, prior to conducting a MANOVA, a correlation of the outcome variables should be carried out to establish existing relationships. Tabachnick and Fidell (2001) suggest that there should be no correlation between dependent variables to ensure that each variable reflects different aspects of the study construct.

Table 14 shows that there are no significant correlations between the different outcome variables when mean scores are used for clinical and academic performance.

Table 14: Correlations between the Outcome Variables: Progression, Clinical Practice Performance and Academic performance

Outcome Variables		Progression on the Course	Clinical Performance (Mean FTP scores)	Academic performance (Mean Assignment Scores)
Progression	Pearson Correlation	1	.106	-.04
	Sig. (2-tailed)		.24	.57
	N	178	123	168
Clinical Performance	Pearson Correlation	.11	1	.14
	Sig. (2-tailed)	.24		.11
	N	123	123	123
Academic Performance	Pearson Correlation	-.04	.14	1
	Sig. (2-tailed)	.57	.11	
	N	168	123	168

The MANOVA on SPSS uses Box's Test to check whether the data violate the assumption of homogeneity of variance-covariance matrices. Box's Test of Equality was non significant, $F(12,750) = 0.76$, $p = 0.69$, confirming that the assumption had not been violated. MANOVA enables the dependent variables to be combined to check for any possible relationship. A new dependent variable is created, representing a linear combination of each of the original dependent variables. The mean differences among groups on the combined dependent variable, are examined to test whether they are larger than expected through chance (Brace et al, 2006).

Relationship between the Predictor variables and Combined Outcome variables

When the outcome variables were combined into one dependent variable (table 15), the only predictor variable to achieve a significant relationship was emotional intelligence, $F(120,231.6) = 2.36$, $p < 0.05$; Wilk's Lambda = 0.09; partial ή2 = 0.55. Wilk's Lambda is recommended by Tabachnick and Fidell (2001) for general use when data is unproblematic. The remaining predictor variables' relationship with the combined dependent variable were non

significant: age, $F(3,77) = 2.41$, $p = 0.07$; gender $F(3,77) = 0.75$, $p = 0.52$; and prior academic attainment, $F(3,77) = 2.11$, $p = 0.10$;

Table 15: Relationship between Predictor Variables and Combined Outcome Variables

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Age	Wilks' Lambda	.91	2.41	3.00	77.00	.07	.09
Gender	Wilks' Lambda	.97	.75	3.00	77.00	.52	.03
Prior academic attainment	Wilks' Lambda	.92	2.11	3.00	77.00	.10	.08
Emotional Intelligence	Wilks' Lambda	.09	2.36	120.00	231.60	.00	.55

Relationship between the Predictor Variables and Individual Outcome variables

A multivariate analysis of the relationship between the predictor variables and each individual outcome variable, (table 16), showed a significant relationship between emotional intelligence and clinical practice performance, $F(40,82) = 6.6$, $p < 0.05$, partial ή2 = 0.76.

Table 16: Relationship between Emotional Intelligence and Individual Dependent Variables

Predictor Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Emotional Intelligence score	Progression	2.67	40	.07	1.39	.10	.40
	Clinical Performance	4766.90	40	119.17	6.62	.000	.76
	Academic Performance	138.59	40	3.46	1.09	.36	.35
Error	progression	3.93	82	.05			
	Clinical Performance	1476.52	82	18.01			
	Academic Performance	259.52	82	3.16			
Total	progression	116.00	123				
	Clinical Performance	720496.50	123				
	Academic Performance	7616.03	123				
Corrected Total	Progression	6.60	122				
	Clinical Performance	6243.42	122				
	Academic performance	398.11	122				

The relationships between emotional intelligence and the variables, progression and academic performance, were non significant in the multivariate analysis using a Bonferroni adjusted alpha level of 0.017 (0.05 divided by 3), recommended by Brace et al (2006), when three dependent variables are present (table 16).

The relationship between prior academic attainment and the variables progression, clinical practice performance and academic performance were non significant in the multivariate analysis using a Bonferroni adjusted alpha level of 0.017 (table 17)

Table 17: Relationship between Prior Academic Attainment and Individual Dependent Variables

Predictor Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Prior academic attainment	Progression	.28	4	.07	1.30	.27	.04
	Clinical Performance	165.93	4	41.48	.80	.52	.03
	Academic performance	28.85	4	7.21	2.30	.06	.07
Error	progression	6.32	118	.05			
	Clinical Performance	6077.49	118	51.50			
	Academic Performance	369.27	118	3.13			
Total	progression	116.00	123				
	Clinical Performance	720496.50	123				
	Academic Performance	7616.03	123				
Corrected Total	Progression	6.60	122				
	Clinical Performance	6243.42	122				
	Academic performance	398.11	122				

The relationship between age and the variables progression; clinical practice performance and academic performance were non significant in the multivariate analysis using a Bonferroni adjusted alpha level of 0.017 (table 18)

Table 18: Relationship between Age and Individual Dependent Variables

Predictor Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Age	Progression	.52	3	.17	3.37	.02	.08
	Clinical Performance	210.02	3	70.01	1.38	.25	.03
	Academic performance	10.4	3	3.47	1.06	.37	.03
Error	progression	6.08	119	.05			
	Clinical Performance	6033.43	119	50.70			
	Academic Performance	387.72	119	3.26			
Total	progression	116.00	123				
	Clinical Performance	720496.50	123				
	Academic Performance	7616.03	123				
Corrected Total	Progression	6.60	122				
	Clinical Performance	6243.42	122				
	Academic performance	398.11	122				

The relationship between gender and the variables progression; clinical practice performance and academic performance were non significant in the multivariate analysis using a Bonferroni adjusted alpha level of 0.017 (table 19)

Table 19: Relationship between Gender and Individual Dependent Variables

Predictor Variable	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Gender	Progression	.02	1	.02	.44	.51	.004
	Clinical Performance	8.35	1	8.35	.16	.69	.001
	Academic performance	.25	1	.25	.07	.78	.001
Error	progression	6.58	121	.05			
	Clinical Performance	6235.07	121	51.53			
	Academic Performance	397.87	121	3.29			
Total	progression	116.00	123				
	Clinical Performance	720496.50	123				
	Academic Performance	7616.03	123				
Corrected Total	Progression	6.60	122				
	Clinical Performance	6243.42	122				
	Academic performance	398.11	122				

Testing the Significance of the Model Using Multiple Regression

The stepwise method of multiple regression was used to analyse the relationships between the antecedents and the outcomes. The stepwise method sequentially adds each variable while assessing its value. Only variables that contribute significantly to the model are retained, enabling the smallest possible set of predictors to be included.

Testing the Relationship between the Predictor Variables and Progression on the Course

When the stepwise method was applied to test the relationships between emotional intelligence, age, gender and prior academic attainment with progression on the course as the dependent variable, two significant sets emerged: set one with EI only as a predictor variable (F (1,176) = 18.04, p < 0.05) and set two with EI and age as predictor variables (F (2,175) = 18.00, p < 0.05). Set one explains 8.8% of the variance (adjusted R squared = 0.088) and set two explains 16.1% of the variance (adjusted R squared = 0.161). Table 20 provides information on the correlations between the predictor variables and progression on the course.

Table 20: Correlation between Predictor Variables with Progression as the Dependent Variable

		Emotional Intelligence	Age	Gender	Prior Academic Attainment
Pearson Correlation	Progression on the course	.30	.27	.02	-.01
Sig. (2-tailed)		.00	.00	.37	.454
N		178	178	178	178

Summary of Descriptive Statistics for Predictor Variables Included in the Analysis

N = 178	Mean	Std. Deviation
Progression	.65	.48
Emotional Intelligence	127.54	10.91
Age	22.8	9.8
Prior academic attainment	2.05	1.02

Tables 21 and 22 provide the regression coefficients for the variables included in the models. Prior academic attainment and gender were excluded by the Stepwise analysis as they did not significantly strengthen either of the models.

Table 21: Unstandardised and Standardised Regression Coefficients for the Variables Included in Model 1: Emotional Intelligence as a Predictor Variable with Progression as the Outcome

Variable	B	SE B	β
Emotional Intelligence	0.01	0.00	0.30

$p < 0.05$

Table 22: Unstandardised and Standardised Regression Coefficients for the Variables Included in Model 2: Emotional Intelligence and Age as predictor variables with Progression as the Outcome

Variable	B	SE B	β
Emotional Intelligence	0.01	0.00	0.31
Age	0.14	0.03	0.28

$p < 0.05$

Therefore, when all of the antecedents are included in the analysis as predictor variables, Emotional Intelligence on its own and Emotional Intelligence combined with age both emerge as the strongest predictors of progression on the course.

Testing the Relationship between the Predictor Variables and Clinical Practice Performance

Using the stepwise method to analyse the relationships between emotional intelligence, age, gender and entrance qualifications with clinical practice performance as the dependent variable, it was necessary to exclude the subjects who did not complete all of the practice placements. One set emerged (table 23) showing emotional intelligence to be a significant predictor of practice performance (F (1,114) = 98.04, p < 0.005). The set explains 46% of the variance (adjusted R squared = 0.46).

Table 23: Correlation between Predictor variables and Clinical Practice

		Emotional Intelligence	Age	Gender	Prior academic attainment
Pearson Correlation	Clinical Practice Performance	.68	-.21	-.05	.03
Sig. (2-tailed)		.00	.01	.31	.39
N		116	116	116	116

Summary of Descriptive Statistics for variables included in the Analysis

N = 116	Mean	Std. Deviation
Clinical practice performance	76.39	6.84
Emotional Intelligence	129.96	10.46
Age	24.7	9.5
Prior academic attainment	2.04	1.07

Table 24 provides the regression coefficient for the variable emotional intelligence. Age, gender and prior academic attainment were excluded by the Stepwise analysis as they did not significantly strengthen the set.

Table 24: Unstandardised and Standardised Regression Coefficients for Emotional Intelligence as a Predictor Variable with Clinical Practice as the Outcome

Variable	B	SE B	β
Emotional Intelligence	0.49	0.04	0.75

$p < 0.05$

Using the Stepwise multiple regression method, Emotional Intelligence was found to be the only significant predictor of clinical practice performance.

Testing the Relationship between the Predictor Variables and Academic Performance

The Stepwise multiple regression method was used to analyse the relationships between emotional intelligence, age, gender and prior academic attainment with academic performance as the dependent variable. Academic performance was quantified by calculating the mean assignment scores for each subject. Assessment one was excluded from the analysis following the correlation results in the previous chapter with the validation group. Only the subjects who submitted all of their remaining four assignments (N = 138) were included in this test. One set emerged which contained all of the predictor variables (F (4,163) = 2.84, $p < 0.05$). The set explains 6.5% of the variance (adjusted R squared = 0.065).

Table 25: Correlation between Predictor Variables with Academic Performance as the Dependent Variable

		Emotional Intelligence	Age	Gender	Prior academic attainment
Pearson Correlation	Academic performance	.16	.13	-.04	.14
Sig. (2-tailed)		.02	.04	.31	.03
N		138	138	138	138

Summary of Descriptive Statistics for variables included in the Analysis

N = 168	Mean	Std. Deviation
Academic performance	7.68	2.25
Emotional Intelligence	127.592	10.97
Age	22.5	9.7
Prior academic attainment	2.06	1.03

Table 25 gives information for the predictor variables entered into the model. Emotional intelligence was a significant predictor, but the other three were not as shown in table 26.

Table 26: Unstandardised and Standardised Regression Coefficients for the Variables Included in the Model

Variable	B	SE B	β
Emotional Intelligence	0.03	0.02	0.16**
Age	0.31	0.18	0.13
Gender	-0.51	0.76	-0.05
Prior academic attainment	0.31	0.17	0.14

** $p < 0.05$

Having examined the model for relationships between the antecedents and the outcomes, emotional intelligence and age are the strongest predictors of progression or attrition; emotional intelligence is the strongest predictor of practice performance and emotional intelligence is the strongest predictor of academic performance. A further analysis of the relationships between specific antecedents and outcomes was carried out.

<u>Univariate Analysis of the Relationship between the Predictor Variables and the Outcome Variables</u>

The Components of Emotional Intelligence and Attrition

Given the evidence from the literature search that attrition figures are significantly higher in the first year of any programme of study, it was hypothesised that subjects who return low total scores of EI using the AES would be less likely to progress beyond year one. This was supported by Pearson's correlation which showed a significant correlation between total EI scores and progress on the course (r = .31, N = 178, p < 0.05). Each of the four modified subscales (see chapter 5) produced significant correlations with progression on the course: Perception of Emotions (r = .18, N = 178, p < 0.05); Managing own Emotions (r = .19, N = 178, p < 0.05); Managing others' Emotions (r = .17, N = 178, p < 0.05) and Utilisation of Emotions (r = .19, N = 178, p < 0.05). Therefore, each of the four sub-components of Emotional Intelligence, as measured by the AES, contribute to the relationship between EI and attrition with this study group. While the correlation had greater significance between the total EI score and progression, the subscales also produced results which were consistent in their significance with no subscale standing out from the others. The lower reliabilities of the sub-scales may be a contributing cause of the lower correlations. The mean emotional intelligence score for students, who progressed to year two, is almost 7 points higher than the mean score for the attrition group (table 28). Schutte et al (2007) do not refer to the scoring in the AES as having a pass mark and a fail mark. The mean score for this cohort is 127.5. The mean score for the group who failed to progress to year two was 123. Perhaps this number should be the score that triggers concern for interviewers and for applicants. This issue is explored further in chapter 7.

Table 27: Relationship Between Emotional Intelligence and Progression on the Programme

N = 178		progression
Total EI score	Pearson Correlation	.30(**)
	Sig. (2-tailed)	.00
Perception of Emotions	Pearson Correlation	.18(*)
	Sig. (2-tailed)	.02
Managing own Emotions	Pearson Correlation	.19(*)
	Sig. (2-tailed)	.01
Managing others Emotions	Pearson Correlation	.17(*)
	Sig. (2-tailed)	.02
Utilisation of Emotions	Pearson Correlation	.19(*)
	Sig. (2-tailed)	.01

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 28: Comparison of Emotional Intelligence scores between Students who Successfully Progressed and the Attrition Group

Progression/Attrition	Mean EI score	N	Std. Deviation
Attrition group	123.00	62	10.35
Progression group	129.96	116	10.46
Total	127.54	178	10.91

The Components of Emotional Intelligence and Clinical Practice Performance:

Further analysis was carried out to examine the relationship between EI scores and clinical practice performance. Students who did not complete their practice placements were excluded from this analysis to obtain a true measure of performance and to control for the other factors that may lead to non completion of placements. When data from subjects who failed to record clinical practice scores were filtered out, the following results were obtained (table 29): Total EI scores were significantly correlated with clinical practice scores in the first placement in year one (r = .81, N = 123, p < 0.05), the final placement in year one (r = .65, N = 116, p < 0.05) and the total scores for

practice placements throughout year one (r = .76, N = 116, p < 0.05). Only students who completed both placements were included in the total scores.

Table 29: Correlations between Emotional Intelligence and Clinical Practice Performance

		First practice placement (FTP1)	Final Practice Placement (FTP2)	Overall practice placement score (Total FTP)
Total EI score	Pearson Correlation	.81	.64	.75
	Sig. (2-tailed)	.00	.00	.00
	N	123	116	116
Perception of Emotion	Pearson Correlation	.48	.37	.42
	Sig. (2-tailed)	.00	.00	.00
	N	123	116	116
Managing own Emotions	Pearson Correlation	.49	.43	.47
	Sig. (2-tailed)	.00	.00	.00
	N	123	116	116
Managing Others Emotions	Pearson Correlation	.60	.47	.55
	Sig. (2-tailed)	.00	.00	.00
	N	123	116	116
Utilisation of Emotions	Pearson Correlation	.55	.48	.54
	Sig. (2-tailed)	.00	.00	.00
	N	123	116	116

Correlations are significant at the 0.05 level (2-tailed).

The table also shows that all of the four subscales were significantly correlated with practice in placements one and two and in the overall score. It may be concluded that EI, as measured by the AES, is significantly correlated with clinical performance of nursing and midwifery students in their first year when assessed by mentors using the fitness to practice assessment tool. It would appear reasonable to conclude from the relationship, demonstrated above between EI and clinical practice performance, that the AES would be a useful tool to help predict whether the student would have the desirable qualities to (a) help them to meet clinical practice outcomes and (b) continue on the course.

The strong relationship between the clinical practice assessment tool (FTP) and the emotional intelligence tool (AES) requires further analysis: While the FTP tool has been used locally for a number of years, it was specifically devised to help mentors to identify some of the qualities that they had found difficult to comment on with previous assessment tools, such as self awareness, empathy, conscientiousness and other traits which do relate to emotional intelligence. It is less likely that such a strong relationship would exist between the AES and practice assessment tools which focused entirely on task related outcomes.

It could be argued that the FTP is measuring the extent to which ascribed traits impact on clinical practice performance. The traits measured by the FTP are formative and can not lead to a fail in practice. In this regard, the assessor is free to comment genuinely without fear of failing the student. It was impossible to distinguish between the students who were failing clinically and those who withdrew or were asked to leave as the ‘pass’ or ‘fail’ judgment can only be made at the end of the practice placement period. Therefore, all students who did not submit their practice assessment were deemed to have been unsuccessful, regardless of the reason. Essentially, therefore, the close relationship between the AES tool and the FTP tool is likely to be influenced by the rationale for producing the FTP tool which was an attempt to highlight behaviours in students that related to attitudes towards clients and colleagues. It is not surprising that such a tool would tend to measure similar qualities to those described in emotional intelligence literature.

The Components of Emotional Intelligence and Academic Performance:

To establish the relationship between academic performance and emotional intelligence, mean assignment scores were calculated. Students who did not complete all of their assignments were excluded from this analysis. Academic performance was significantly correlated with total emotional intelligence scores (r = .16, N = 138, p < 0.05). This supports Schutte et al's (2007) assertion that EI can predict academic performance. The results of the EI subscales correlation with the corrected academic scores were interesting, with two of the subscales showing higher levels of significance than the total EI scores and the other two showing no significant correlation. Perception of Emotion (r = .24, N = 138, p < 0.05) and Managing Own Emotions (r = .18, N = 138, p < 0.05) were both significantly correlated while Managing Others' Emotions (r = .09, N = 138, p = .23) and Utilisation of Emotion (r = -.03, N = 138, p = .72) were not significantly correlated (table 30). Interestingly, It could be argued that the two subscales that proved not to correlate significantly with academic performance, 'managing others' emotions' and 'utilising emotions', may be the most amenable to instruction and learning on the course. Appropriately supervised exposure to real scenarios in practice should provide opportunities to develop the necessary skills to manage the emotions of others and to utilise emotions.

Table30: Correlations between Emotional Intelligence and Academic Performance

N = 138		Total Emotional Intelligence	Perception of emotion	Managing own emotion	Managing others emotion	Utilisation of emotion
Academic Performance	Pearson Correlation	.16*	.24**	.18*	.09	-.03
	Sig. (2-tailed)	.04	.00	.02	.23	.72

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Prior Academic Attainment and Attrition

The model proposed in this study identifies prior academic attainment as one of the antecedents which may have a relationship with outcomes such as: clinical performance; academic performance and attrition. It is essential to be able to distinguish between the predictive validity of EI and other antecedents, such as prior academic attainment, to enable EI to be confidently used as a predictor. Pearson's test of correlation shows that there is a non significant relationship between entrance qualifications and progress on the course (r = 0.01, N = 178, p = 0.89). This is a highly relevant piece of information given that entrance qualifications are currently deemed the priority factor in the selection process. This result demonstrates that prior academic attainment does not appear to predict attrition.

Prior Attainment and Clinical Performance:

There is a widely held belief, among nurses, that academic ability is unrelated to clinical practice performance. Anecdotal evidence is often cited by practitioners to support this notion. Table 31 demonstrates that, with this cohort, there is no relationship between entrance qualifications and performance in the clinical area when mean clinical performance scores are used (r = 0.06, N = 123, p = 0.52).

Table 31: Relationship between Prior Academic Attainment and Clinical practice performance

		Prior Academic Attainment
Mean clinical performance score	Pearson Correlation	.06
	Sig. (2-tailed)	.52
	N	123

This would support the argument for considering emotional intelligence before prior academic attainment when predicting clinical performance.

Prior Academic Attainment and Academic Performance:

There is a significant relationship between prior academic attainment and mean assessment grades obtained on the course (r = 0.20, N = 135, p < 0.05). Therefore, while there is no relationship between entrance qualifications and progression to year two on the programme, academic performance by those who complete year one assignments does appear to be significantly correlated with entrance qualifications. Academic success on the programme does not guarantee progression without clinical practice success.

Table 32: Relationship between Prior Academic Attainment and Academic Performance

		Prior Academic Attainment
Academic Performance	Pearson Correlation	.20
	Sig. (2-tailed)	.02
	N	135

The Relationship between Age and Gender and the Outcome Variables:

As mentioned previously, it is widely reported that emotional intelligence tends to be higher in females and in older people than it is in males and younger people. The model of student attrition, presented above, includes age and gender in the list of antecedents. Neither age nor gender could be considered as grounds for selection of candidates, so this is purely an academic exercise rather than a professional one. However, it is important to understand the relationship between the two antecedents and course outcomes. Table 33 shows the correlation that age and gender have with attrition, academic

performance and clinical performance when mean assignment scores and mean practice scores were used. Students who did not complete all their placements or assignments were excluded from this analysis.

Table 33: Correlations between Age and Gender and the Outcome variables

		Age	Gender
Academic Performance	Pearson Correlation	.16	.02
	Sig. (2-tailed)	.07	.78
	N	123	123
Progression on the course	Pearson Correlation	.25(**)	.06
	Sig. (2-tailed)	.005	.50
	N	123	123
Clinical Practice performance	Pearson Correlation	-.15	-.04
	Sig. (2-tailed)	.09	.68
	N	123	123

** Correlation is significant at the 0.01 level (2-tailed).

There is a significant relationship between age and attrition (r = 0.25, N = 123, p < 0.05). No other significant relationships were identified between age, gender and the outcome variables.

Summary of Results

Having examined the model, it has been possible to identify a number of significant relationships which exist between some of the antecedents and the course outcomes. Emotional Intelligence, as measured by the AES, appears to be a strong predictor of attrition in year one of the programme. The scores from the complete questionnaire and the subscale scores all have a significant correlation with progress on the course. The relationship between emotional intelligence and clinical practice performance is exceptionally strong. It is, therefore, possible to predict clinical practice performance, as

assessed according to the FTP tool, using the AES. The strength of this relationship is very likely to be due in part to the motives behind the design of the FTP, which was purposefully designed to address deficits in the previous practice assessment tool by measuring personal qualities in students rather than simple task outcomes. By coincidence rather than by design, the AES and the FTP appear to be looking for very similar qualities.

A relationship between emotional intelligence and academic performance has also been demonstrated. Therefore, it can be concluded that EI, as measured by the AES, can predict academic performance. Only two of the AES subscales, 'Perception of Emotion' and 'Managing own Emotions' returned significant correlations with academic performance. The other two subscales had non significant correlations.

Prior academic attainment remains the criterion of choice in selection processes despite the moves towards wider access. This implies that entrance qualifications should help us to predict outcomes such as attrition, clinical performance and academic performance. There was a significant relationship between entrance qualifications and academic performance. No relationship was demonstrated between prior academic attainment and the outcome variables: clinical performance and attrition. Age has been shown to relate significantly to attrition, with older students demonstrating persistence. There is a non significant relationship between age and the outcome variables: academic performance and clinical practice performance. There were no significant relationships identified between gender and any of the

outcome variables. Figure 7 summarises the relationships between the antecedents: emotional intelligence; prior academic attainment; gender and age, and the outcomes: progression; clinical performance and academic performance.

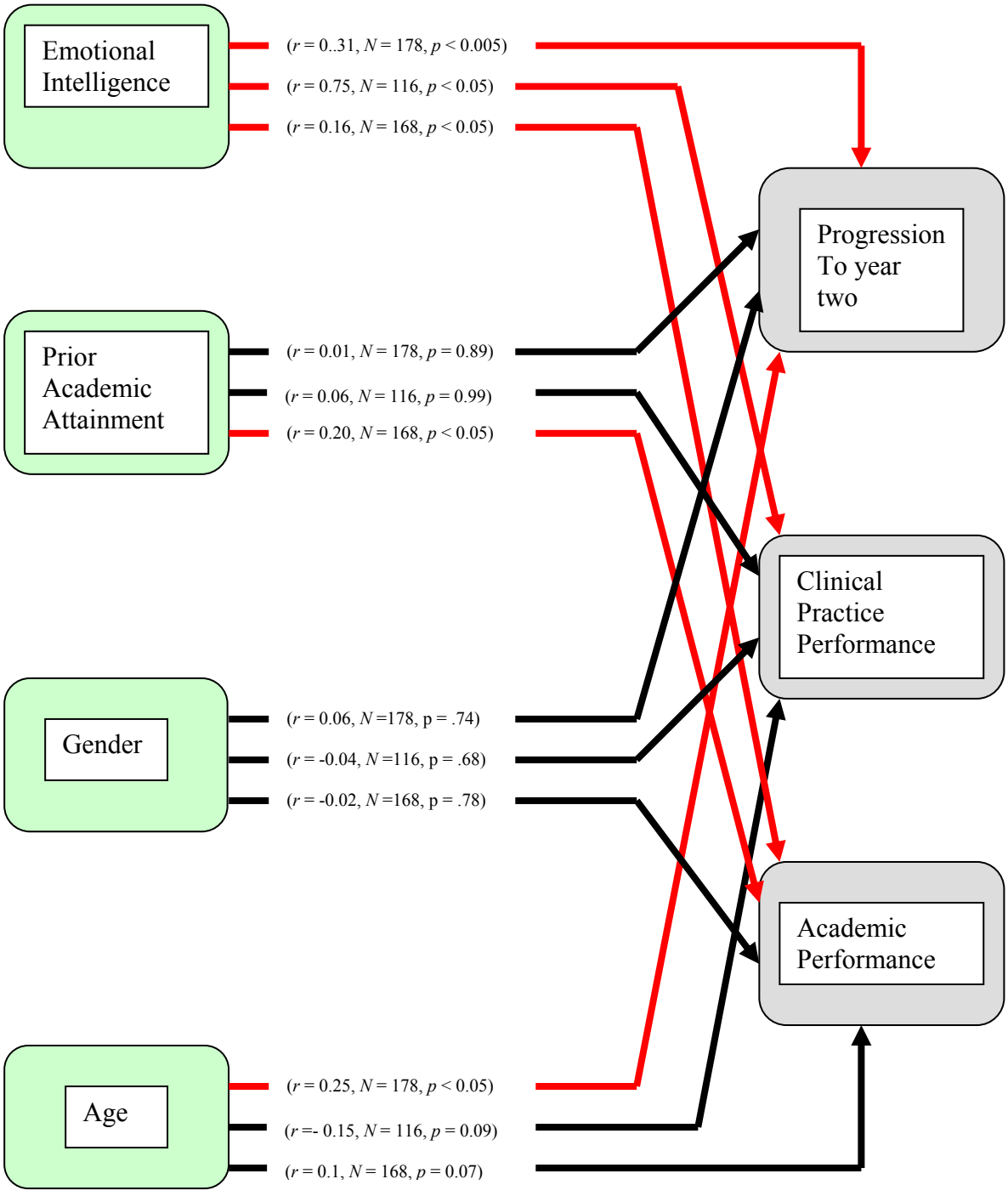

Figure 7: Diagrammatic Representation of the Correlations between Antecedents and Outcomes. (Significant correlations are linked in red)

Chapter Seven: Conclusions, Limitations and Recommendations

This study examined the relationship between emotional intelligence (EI) and programme outcomes for student nurses. In particular, it sought to explore the predictive validity of a self report measure of emotional intelligence, Schutte et al's (2007) Assessing Emotions Scale (AES), on specific outcomes such as clinical practice performance; academic performance and progression beyond year one of an undergraduate Degree/Diploma nursing programme. A significant correlation between EI and performance and EI and attrition would enable educationalists to explore the use of measures of EI in recruitment and selection processes to help to address increasing concerns regarding high attrition rates as well as reported concerns about students' fitness for practice.

A review of the literature highlighted the pressing need to address attrition in nurse education and, while a number of measures have been implemented by HE institutions (Sadler, 2003; Carrothers, 2000), with some localised measures of success, there has been little impact on the overall picture. There is some evidence that most of the factors which contribute towards attrition have been identified, yet it has not been possible to produce one unified cause which can be, satisfactorily and consensually, addressed. Within this multi-factorial context, emotional intelligence continues to emerge as a factor worthy of further examination. Indeed, there have been calls for nurse education to introduce the EI construct into recruitment and selection procedures in the firm belief that Goleman's (1995) claims that EI is a better predictor of success than IQ, has some merit (McQueen, 2004).

Emotional intelligence theory was examined to try to establish the validity of Goleman and subsequent authors' claims that EI can be identified, quantified and assessed. Increasingly, debate in the literature is polarised towards 'trait' EI and 'ability' EI and it has been argued (Petrides et al 2004) that we need to be very clear as to which form of EI we are referring. Some of the key differences between measures of 'trait' EI and measures of 'ability' EI are essentially related to the assessor. 'Trait' EI tends to be self assessed, whereas, 'ability' EI is usually measured by an observer. This introduces contentious debate, around objectivity and subjectivity, leading to further claims regarding reliability and validity. This debate was explored in chapter two.

Attrition theories were discussed in chapter three and the literature clearly demonstrates that attrition in HE shows little sign of improving, despite the extensive work being carried out by local and national organisations to apply current findings to practice. There is an apparent consensus regarding the factors that can lead to attrition, yet there also appears to be an accepted inevitability that, within the meritocratic environment of academia, there will be winners and losers and those who do not persist in their studies, merely fall into the latter category. However, the variation in attrition figures between similar institutions tends to suggest that continued research in this area is worth the effort. Accordingly, factors such as EI remain high on the research agenda in the study of attrition.

A model of student attrition was proposed which identified potential antecedents, academic processes and potential outcomes. The antecedents included the variables: prior academic attainment; age; gender and emotional intelligence and the outcomes included: academic performance; clinical practice performance and persistence on the course beyond year one. The model focussed on antecedents that could be reliably measured with the assumption that emotional intelligence could come into this category. Certainly, gender and age were unambiguous and prior academic attainment could be quantified in line with the SQA awards framework. The existence of other antecedents needs to be acknowledged when discussing attrition. Family support, health, geographical circumstances, past experiences, available alternate choices along with many more variables, will determine attrition and student performance. Such variables would be virtually impossible to quantify, however, the dissertation does not dismiss their impact on student attrition.

Where possible, the design of the study controlled for confounding variables. For example, correlations with academic performance were only measured where the students could be provided with a mean score for the assignments that they completed. In recognition of the many reasons why the student might not complete an assignment, students who failed to submit were excluded from the analyses. This guaranteed that academic performance was not contaminated by the many reasons for non completion. This did not allow for the impact of other variables, such as health, on the actual performance of subjects, who did undertake some or all of the assignments, but it did enable

actual performance to be quantified more accurately. The same process was applied to clinical practice performance measures where non completers were excluded from the calculations. However, persistence/attrition purposefully included all subjects, which was essential to be able to identify those who did not complete year one.

Schutte et al's (2007) Assessing Emotions Scale was chosen as the measurement tool for this study for a number of reasons. Along with other measures of EI, the AES has been the subject of intense scrutiny in the literature, consistently demonstrating high levels of predictive validity (Saklofski et al, 2003). It has been used in academic research previously to predict first year university students' scores. The AES also conforms with other measures of EI in that: females score higher than males; there is no relationship with cognitive ability; there is no relationship with alexithymia (inability to recognise and express emotion) and there is a positive relationship with life satisfaction and happiness but a negative relationship with loneliness and depression (Saklofski et al, 2003). The use of a self report tool was preferable in this study design due to the degree of access it offered to the subjects along with the practical advantages of data collection within given time constraints. The author of the AES provided permission for her tool to be used for academic research purposes. Not withstanding the potential limitations of a self reporting tool, it appeared to be the best fit for this particular study which was exploring the application of such a tool as a self selection component of the recruitment and selection process. One key consideration for choosing the AES, above commercial tools was the prospect

of being free to apply the tool without concern regarding costs or the pressure to endorse commercial products. Commercial tools may prove to be equally effective but the costs would have been prohibitive. Future use of the AES would require further permission from its author.

The AES was validated with an earlier cohort of student nurses and midwives who shared similar characteristics with the study group. A confirmatory factor analysis suggested a four factor solution that provided reliability coefficients of between $\alpha = 0.67$ and $\alpha = 0.76$ with an overall score of $\alpha = 0.85$. The four subscales helped to reinforce Salovey and Mayer's (1990) four factor model of EI and the overall score confirmed that the measurement tool was reliable with the validation group.

It was important to control for covariates within the study, such as: gender; age and prior academic attainment, all of which may relate to the programme outcomes. An analysis of covariance was performed on the validation data to test for age and gender. There was no significant correlation found between age and EI or gender and EI. This was unexpected given the typically strong relationships that have been reported between EI and gender and EI and age in other studies using the same tool (Schutte et al, 1998). For the study group, the additional covariate, prior academic attainment, was introduced and the only significant relationship that was identified between the antecedents, EI, age, gender and prior academic attainment was between gender and prior academic attainment. The small sample of male subjects in the study (N =

10), who were only placed within the narrowest range of entrance qualifications reduces the relevance of this result.

The stepwise method of multiple regression was carried out to establish the relationship between the predictor variables: prior academic attainment; age; gender and EI and the criterion outcomes: academic performance; clinical practice performance and attrition. The one predictor variable which correlated significantly with all of the criterion outcomes was emotional intelligence which predicted academic performance, practice performance and attrition. Other predictor variables did relate to specific outcomes with prior academic attainment predicting academic performance and age predicting practice performance and attrition. Gender did not predict any of the outcomes, however, there was an insufficient number of males in the study to draw any conclusions about gender.. It can be concluded from the findings, therefore, that emotional intelligence is a predictor of the criterion outcomes: practice performance; academic performance and attrition. Prior academic attainment, unsurprisingly, predicts academic performance and age predicts practice performance and attrition. Significantly, there is a zero order correlation between EI and prior academic attainment, which reinforces the argument for including measures of EI as part of the recruitment and selection package.

The results confirm the hypothesis that emotional intelligence is a factor in the attainment and retention of student nurses and midwives. It has been demonstrated that EI will predict academic performance, clinical practice

performance and attrition with sufficient confidence that it can be considered as a better predictor of overall success in nurse education than the conventional criterion of prior academic attainment. In the current climate of widening entry gates and increasing access to higher education, it would seem to be important to consider the potential importance of these findings. Of the four EI subscales, 'Perception of Emotion' and 'Managing Own Emotions' demonstrated a significant relationship with academic performance. Perception of Emotion relates to self awareness which is a characteristic that enables the individual to prepare for challenges realistically. A self aware student is more likely to approach an assignment with the appropriate degree of preparation according to their perceived capabilities and, consequently, perform better. This may explain the correlation between this subscale and academic performance. Managing Own Emotions tends to be referred to, in the literature, as 'optimism'. It includes application and a positive outlook. Individuals who possess this expect to do well. Managing Others' Emotions and Utilisation of Emotions were significantly correlated with clinical practice performance. Managing Others' emotions and Utilisation of Emotions relate to empathy and innovation and perhaps these characteristics are better demonstrated in clinical practice than they would be in theoretical assignments.

Limitations of the Study

The efficacy of self reporting measurement tools continues to be an area of debate in Emotional Intelligence research. In particular, the concerns relate to the distinction between EI as a trait or EI as an ability. Since the early claims

of behavioural psychology that we can only really measure what people do, cognitive psychologists have argued the case for measuring *why* people behave as they do. A range of personality traits have been subjected to scrutiny using a multitude of measurement tools and, through extensive testing, the more rigorous of these tools have become sophisticated enough to become accepted as legitimate measures of parts of personality. Traits such as 'extroversion', 'neuroticism', 'optimism' and tendencies towards 'depression' and 'suicidal behaviour' are regularly subjected to assessment using self reporting tools with sufficient confidence in the results for experienced professionals to act. Yet the caveat still remains: what if the respondent had ticked the other box? Given that the study was concerned with group data, as opposed to individual selection, it is assumed that any error would be random across the population. The dilemma regarding the individual relates to who controls the decision about EI and selection for the programme. Should this be the faculty or the student applicant?

High levels of reliability and validity can be demonstrated by well designed self reporting tools by examining sufficient numbers of subjects. On its own, a self report can, at best, be described as a guide to how the respondent may behave, rather than as a certain predictor of behaviour. Therefore, to draw conclusions on the basis of individual self reporting tools, leaves this sense of "yes, but what if?" feeling which certainly limits the confidence one can have in their findings. This does not detract from the results of the study, which validated the tool with a similar group of participants to the study group and has proved a significant predictive relationship between emotional intelligence

and attainment and attrition in student nurses. The dilemma would be in attempting to use the AES as a selection tool for individual students, unless the process involved self selection. It is a useful tool to highlight potential attributes or concerns and it may be used to help in building the overall picture of a candidate for selection. It could help to underscore other positive attributes. The AES could also be used to alert low scoring candidates to the likelihood that they may find nursing or midwifery more difficult if their score is indeed an accurate and static representation of their emotional intelligence capabilities. Should EI prove to be trainable, staff and students will be alerted to a learning need. There is no guide to the scoring system of the AES. It does not have a 'pass' or 'fail' score. In this study, an independent *t*-test showed that the mean score for the group who progressed to year two was 130 and the mean score for the attrition group was 123. The mean difference between the groups was 7 and the 95% confidence intervals were between 3.7 and 10.2. Using the formula, d = (x1-x2)/mean SD to calculate the measure of effect, the effect size was 0.68, which, according to Cohen (1988) would be considered medium. This may provide some guidance on the acceptable margins of error in predicting persistence using EI scores.

This study may be considered as an early attempt to relate emotional intelligence to attainment and attrition in nursing. The AES has proved to be a successful tool in this specific exercise. One concern that may be raised against the AES is that it first emerged in 1998 as the SEI (Schutte's Emotional Intelligence scale). More that ten years on, one might expect that the tool would be adapted and modified. On the contrary, it continues to be

used, albeit under another name, with the same 33 items. The continued published success of the AES with regard to reliability and validity is testament to its original design and application. The slight reservation around using a tool that is more than a decade old, is more than assuaged by the recently published results that continue to support the AES as a reliable and valid measure of EI (Schutte, et al, 2007). There would be scope for looking at other tools for future research and perhaps combining trait measurements with ability measurements. The concerns raised above relate to the difficulties around self reporting measurement tools, per se, rather than the AES which, in keeping with previous studies, has proven to be a good choice of measurement tool for this study.

The AES was completed by respondents prior to commencing their training in nursing and midwifery. To some extent, it would be understandable for certain respondents to believe that this exercise may have been presented to them as a test of their suitability for the profession, as part of the selection process, even though they were informed of the purpose of the research and that the results would be anonymous. In keeping with self reports, the possibility that responses are made to provide an impression, rather than accurately present an answer, cannot be dismissed. Therefore, this has to be recognised in the final analysis. As a possible counter to this, however, one could argue that the insight required to positively self-present emotional intelligence may well be a useful attribute in nursing and midwifery. In addition, the non responders may represent a self selected group of individuals who felt sufficiently uncomfortable when reading over the questions that they declined to

participate. A candidate who did not feel happy with their responses would be less likely to complete the assessment and, consequently, to return the questionnaire. The response rate from the validation group, who were used to confirm the factorability of the AES, was over 98%, therefore, the representation of the study population would be considered to be high. This helps to counter any concerns about bias that are referred to above.

The study subjects were all from the same cohort of students and, while this group broadly shared the same characteristics as typical nursing students with regard to entrance qualifications, age and gender, there was very little representation of black and minority ethnic (BME) students. Recent policy changes have affected the funding of non EU students at University who now require to be resident in the EU for a minimum of three years in order to qualify for their fees to be paid and to receive a bursary. The bursary is a big factor in nurse recruitment, due to the full time practice work demanded of the students, which restricts the opportunities for supplementary part time work to help with finance. Prior to this policy, there would have been a larger number of BME students in the cohort. Therefore, generalising the results to other cohorts of students should be treated with caution.

The measurement tools that were used, Assessing Emotions Scale (AES) and the Fitness to Practice (FTP) clinical assessment tool were critical to the study. The psychometric properties of the AES have been well researched and it meets all of the necessary criteria for a research enquiry measure. However, the outcome measure, FTP, was not created with the intention of

carrying out research. It was simply produced by academics and practitioners at the beginning of a new curriculum to provide judgments on the clinical practice performance of students. It met the necessary criteria of practice and academia at the time but the psychometric properties were not closely examined prior to its use in practice. It was considered as an appropriate outcome measure for the study on the basis that it was the existing tool that was used by experienced clinical staff to judge practice performance. It provided for responses in a likert format and the results of the FTP scores followed a normal curve. A factor analysis found that a one factor solution was the best fit for the tool. It was chosen, therefore, as a preferable option to that of creating a completely new tool for this cohort. Remaining with the existing tool enabled the mentors to be blind to the study. Purists would argue that the weighting between assessors' responses on the FTP had not been tested and therefore the data generated would not be considered to be of equal weighting. This is a potential limitation of the tool which might impact, to an extent, on the use of multiple regression and should be recognised in the final analysis. The reliability and the factorability of the scale, however, enabled it to be considered both acceptable and appropriate for the purpose of the research.

Recommendations

The study demonstrated that emotional intelligence does have a part to play in the performance and success of student nurses and midwives. There is clearly a predictive relationship between EI and student nurse attrition and strategies to measure EI should be considered for recruitment and selection

procedures. With regard to recruitment, it would seem legitimate to allow potential recruits such as secondary school children; individuals considering a career change; untrained healthcare workers and individuals seeking careers advice, to complete the AES.

With regard to selection of candidates, it would be wrong to promote the AES as a selection tool which required the candidate to 'pass'. Rejecting a candidate on the basis of a self report measure would be potentially unfair for the individual and it would leave the institution vulnerable to accusations of subjective bias. There is no evidence that low scorers on the AES would go on to make bad nurses. All that has been demonstrated by the study is that there is a predictive relationship between the AES and success and attainment on the programme. This is very important for the institution but, within the study, there were students performing exceptionally well on the programme who scored lower than average marks on their AES. Their EI score, important as it appears to be, is simply one variable in the student's performance.

It is recommended, therefore, that the AES can be used as a self selection tool, where the candidate is free to decide on their next step on the basis of their score, but it can also provide important information in creating an holistic picture of the person. The candidate who meets all other criteria but falls down on their EI score should not be rejected on that basis but they can be advised of the need to address this as part of their learning experience. Candidates who fall down on all other criteria but excel in their EI score, would

not necessarily be expected to succeed. Perhaps the best application of the AES would be to use it to help with decisions for borderline candidates who present with ambiguous qualities and attributes. References and interviews are still used in most schools of nursing to make decisions on candidates. Where the reference raises a concern or where there is uncertainty during the interview process, the AES score may help the selection panel, in discussion with the student, make a considered opinion.

There are a number of areas that may be addressed, through further study, that are beyond the scope of this particular paper. Follow up AES scores for the subjects may help to clarify whether EI, or any of its components, is enhanced during a nursing programme. The study group could be asked to redo the AES just prior to completion of their programme. Their overall scores as well as their subscale scores would be compared to previous scores. The results would indicate whether EI has changed and, if so, whether this was restricted to specific factors within the EI construct.

From the findings of this study, there would appear to be justification in adopting EI as part of the recruitment and selection process. The limitations identified above do not detract from the clear evidence that, when compared with other antecedents, emotional intelligence is the strongest predictor of attainment and attrition in nursing. Prior academic attainment is a predictor of academic performance but this is merely one aspect of a programme such as nursing which has a strong practical base. Age appears to predict success in practice and persistence on the programme but with lower reliability

coefficients than EI. Age is potentially a contentious issue. Older candidates do better than younger candidates yet it would be illegal to discriminate on the basis of age. It may be desirable to target older individuals, through advertising campaigns, but it is not possible to reject younger candidates purely on their age. Indeed, the entrance age now for nursing and midwifery has recently dropped from seventeen to sixteen despite the long held knowledge about poorer success rates in younger nursing students. The findings from this study would suggest that reducing the entrance age may be a retrograde step in the context of attrition and performance in practice.

Interestingly, there have been calls by the Nursing and Midwifery Council to try and attract more males into nursing. It was not possible to draw any conclusions regarding gender differences in this study due to the small sample of males. However, the rationale for attracting males into the profession may relate to the belief that there is an untapped recruitment pool rather than any notion that the profession needs males.

The last decade has witnessed increasing calls for emotional intelligence to be incorporated into nurse education from recruitment, through to the curricula and on to the selection of managers (Bellack, 2001; Cadman and Brewer, 2001). The chief barrier to this has been the absence of consensus on the best method of measuring EI for this purpose. There are sufficient examples of performance enhancement in health care, relating to emotional intelligence (Augusto Landa et al, 2008; Amendolair, 2003; Lewis et al, 2004) to justify incorporating the construct in nurse education. Unfortunately, the

development and inclusion of EI in health care has been somewhat ad hoc and it would undoubtedly be preferable to approach this a systematically rather than add to the 'scattergun' approach that appears to be applied at present.

The business community can cite financial gains by introducing measures of EI (Ciarrochi, et al, 2001) for employee selection and for promotion. The marketing of EI measurement tools is also big business with a great deal resting on the premise that EI is a personality characteristic which is both measurable and desirable. It would be very easy to become immersed in the tide of popular support which appears to be pushing EI into every conceivable facet of life. For this reason, it is important to recognise the work that still has to be done on the construct of EI. It is one thing to claim that EI can predict success on a nursing programme. It would be a step too far to conclude that emotional intelligence is essential to become a good nurse. It is very tempting, however, to make that association and, intuitively, one could be easily persuaded.

In their extensive literature review of emotional intelligence in health care, Birks and Watt (2007) found that the majority of papers, citing EI as a crucial factor in quality health care, were found to be editorials and personal opinion. This fits with the perception that there is an increasing clamour to find a solution before identifying the actual problem. That EI is viewed as an important issue, in the business world, is not disputed. Furthermore, it would seem naïve to argue that any form of intelligence, especially one that enables

better emotional control, expression of emotions, understanding of emotions and utility of emotions, would not be useful in the health care professions. It would not be doing justice to the excellent EI research that exists by making further unsubstantiated claims regarding its merits.

Birks and Watt (2007) posed four questions about emotional intelligence that they suggest should be addressed in health care:

- How might EI in health professionals impact on patient care?
- How would EI in health professionals impact on job satisfaction and performance?
- Would EI training for health professionals impact on personal and patient-centred outcomes?
- Should measurements of EI be part of the recruitment and selection process for health care professionals and students?

Their final question has, in part, been answered by this study. Based on the results, it would be acceptable to conclude that EI should indeed become part of the recruitment and selection process of nursing students. The four questions tend to mix up trait EI: looking at the impact of trait emotional intelligence on patient care; job satisfaction; performance and fit with the profession, with ability EI: asking whether EI training would enhance patient care. It could be argued that the only outcome that really matters in any healthcare profession is the impact on patient care. It is difficult to see beyond this as the key goal in any healthcare innovation. Everything else, such as job satisfaction, stress reduction and suitability for the profession, are only of value if they relate ultimately to patient care, which of course they do, but the

end outcome still remains patient care. This study found a positive relationship between EI and clinical practice performance but it did not link this to actual patient outcomes.

To some extent, involving EI in recruitment and selection procedures would appear to be premature without first being confident that EI does have a positive impact on patient care outcomes. Yet, empirical evidence to date has not demonstrated this. For this reason, it must be reinforced that this study is limited to the outcomes of the first year of nurse training. Successful completion of nurse training implies that the student has demonstrated suitability for the profession but there are no guarantees. The research has been done on the assumption that a successful student nurse would be an asset to the nursing profession but it recognises that the study is limited to the performance and success of the student in year one of their programme. This may be important to the nursing profession in that attrition is costly and wasteful and that clinical practice performance, as judged by experienced mentors, has been demonstrated to correlate with emotional intelligence. Recruiting students who are more likely to complete their training is a desirable outcome from the study but the fact remains that, success as a first year student, does not guarantee a positive outcome on patient care and, accordingly, there is a great deal of research required before any links could be made between this study and patient care provided by qualified nurses.

The success in demonstrating a predictive relationship between emotional intelligence and key outcomes such as academic and clinical performance, as

well as attrition, should not be understated. At the time of writing this paper, this has not been demonstrated anywhere else in the literature and it may have major implications for nurse education. Practitioners have always questioned the tentative links between academia and nursing practice. The so called 'theory practice gap' is a constant source of tension in most professions whose base is predominantly in practice. To be successful in a degree programme, one must have the necessary academic skills to manage the assignments but, to be successful in practice and to apply theory, requires more than this.

The motivation for embarking on this study came from a deep desire to identify the intangible qualities that mentors claimed were lacking in many of their students. Even some students who successfully completed their studies appeared to 'slip through the net' due to the difficulty in applying criterion referenced assessments to aspects of personality. The concern was that these personality traits were sufficiently troublesome for mentors to be alarmed yet they remained intangible for the purposes of assessment. Accordingly, the unsatisfactory outcomes for mentors varied from: ignoring the problem; 'passing' the student but quietly commenting on their lack of suitability for nursing; 'failing' the student on some other spurious judgment of another quality, often leading to a sense of victimisation and the development of a 'personality clash' from which there can be only one winner. Each of these outcomes is problematic for the student, the mentor and the profession. If this intangible quality could be identified, it might be possible to select

candidates who were more suitable. It might also be possible to address some of the issues around attrition.

Through efforts to identify this intangible quality, the emotional intelligence construct emerged as a possible contender. Here was something that appeared to include all of the qualities that mentors felt were lacking in their problem students. Furthermore, EI, it was claimed, could be measured and it was the subject of exciting and innovative research, which made bold claims regarding the predictive validity of EI in occupational success. The results of this study would seem to support the contention that emotional intelligence is indeed an attribute that can enhance student nurse practice. Whether it is the attribute that mentors felt was missing from their problem students, remains to be seen but the significant predictive relationship that has been demonstrated between emotional intelligence and mentors' reports of clinical practice, would suggest that EI is a quality that is associated with mentors' perceptions of quality in the practice placement.

Following analysis of the research results, it is proposed that EI should be considered as an important trait that is related to attainment and attrition in nurse education. The AES provides a measure of EI that predicts both academic and clinical performance in first year student nurses. This important discovery could help potential students of nursing and midwifery to make a more informed choice about their career. EI also predicts attrition rates in year one of the undergraduate programme and this could have potential cost benefits as well as the immeasurable benefits to the profession by

encouraging and selecting the best students. It is recommended that the AES, or a measure of EI which has been similarly validated, should be used as a self selection tool for recruiting and selecting student nurses.

Personal Reflection

Reflecting on the process and the results of the study, I am struck by the clarity of the relationship between EI and programme outcomes, yet I have this lingering feeling that the last few years have been spent studying and confirming a relationship that 'common sense' could have identified and confirmed within a few short minutes. Already, I have received feedback from colleagues which could easily be interpreted as "well, what did you really expect?" Consolation can be taken from the fact that I began the research before settling on EI as the construct that I wanted to explore. In its earliest iteration, the study sought to identify and explore the mechanism that was responsible for forming a positive or a negative bond between student nurses and their mentors. The intention was to attempt to explain why some students could apparently succeed in achieving their outcomes in the clinical practice placement, yet still fail to satisfy the mentor on aspects of their 'character'. In essence, they could achieve a 'pass' but they would not be welcomed back. Equally, there are students who struggle to achieve their outcomes, yet they are welcomed back with open arms.

This 'character trait' was particularly intriguing from the perspective of patients' perceptions of nurses. Coming from a mental health background, I believed that nurses who were personally engaging, for whatever reason,

would seem to be preferred to nurses whose ‘character’ was less appealing. If I could identify and quantify this intangible ‘character trait’, it might help in the selection of student nurses. If the selection process was more rigorous, students would be better suited to the profession; performance in practice would be improved and student nurse attrition would reduce. While exploring and interpreting characteristics such as: sociability, personal attractiveness, empathy, warmth and other interpersonal attributes, I kept coming back to emotional intelligence. EI seemed to sum up all of the qualities that the other attributes had in smaller amounts.

I had mixed feelings about studying EI. The business world had embraced it, claiming that individuals who were emotionally intelligent could: sell more; manage better; achieve promotion more easily and earn higher salaries. This did not seem to equate with the qualities I was hoping to identify in nurses such as: person centredness; orientation towards others and team working skills. However, a review of EI models and their respective components and a brief qualitative pre study, confirmed to me that this was a construct which could serve nursing well. My other concern was that, far from the planned interpretive, analytical study that I was looking forward to, I was now in a position where I had to design a quantitative piece of research that could validate a measure of EI and apply it to a cohort of nurses. I also knew that I would finally have to learn, in some depth, about dreaded statistics. The learning curve was very steep.

What would I consider to be a successful outcome to this study? There is a certain satisfaction in completing such a complex and demanding piece of work. This satisfaction is all the stronger, having found significant relationships between EI and the programme outcomes that were explored. I would like to think that the lessons I have learned from the exercise would be carried into my profession and that publications will ensue. Ideally, the findings will help to inform recruitment and selection processes in nursing, midwifery and, hopefully other practice based professions.

Appendix 1: Information Sheet and Consent for participants

Dear Candidate,

Information about a research study

Emotional Intelligence and Attrition

The School of Nursing and Midwifery in the University of Dundee is currently reviewing its recruitment and selection procedures. In line with this, I am studying the possibility of a relationship between personal characteristics of student nurses and success on the course. In particular, I will be looking at academic attainment, practice assessments, attendance and retention. I would like to find out if aspects of the way you see yourself as described in the attached questionnaire are related to any of these outcomes.

Purpose of the study: To establish whether there is a relationship between personal characteristics and student attainment in a nursing programme

Assurance of confidentiality

I want to assure you that your responses to the attached questionnaire will not be considered in deciding your eligibility for entry to the course, and your answers will not be shared with the people deciding on your application. That is why you are invited to return your response in a separate envelop. I do need your name on the questionnaire to enable me to match your responses to the questions in the survey with the outcomes referred to above. However, your name would be replaced with an identification number once you enrol on the course. If you are happy to participate, I would ask that you read the information below and sign the consent section at bottom of the page.

Information will be held in compliance with the data protection act until the final analysis and will then be destroyed no later than December 2011. Once your name is replaced with an ID number, it will not appear as part of the study and participants will not be able to be identified in the results. The consent forms will be retained until the study is completed and then will also be destroyed.

Right to withdraw: You are under no obligation to participate in this study and you will be entitled to withdraw at any stage without prejudice. In particular this will not affect the consideration of your application to enrol. You can withdraw by emailing me, phoning me or writing to me using the contact details below. You have the right to complain formally to the Teaching Dean if you are unhappy with the research process: Jane Harris, Teaching Dean, School of Nursing and Midwifery, 11 Airlie Place, Dundee, DD1 4HJ

Implications for the participant: The questionnaire will not be available to any personnel within the school other than the researcher. No decisions which might impact on your progress on the course will be taken by any school staff or clinical staff on the basis of the questionnaire results. The score will not be recorded in

student files and will only be used to compare with other course outcomes for the purpose of drawing general conclusions about the study.

Benefits of Participation: There are no direct benefits of participation. However by answering the questions and thinking about the implications, you may identify issues for consideration in the practice of nursing. I will however provide you with a brief summary of what I learn from this study, which could be of interest. If you would like this information sent to you I will access your address from the student records and send you a copy. I expect to be in a position to do this by the end of 2009.

Access to your student records
In making your application you will provide many details about yourself. It will save a lot of time for you and for me if I can have your permission to access your application form and also to obtain details of your results if you undertake the course. I need your permission in order to do this and hence I include this in the statement of consent as attached.

I am grateful for your consideration.

Bob Rankin

If you agree to participate in the study, please detach and sign this section and **return it with the completed questionnaire** in the **FREEPOST** envelope provided.

CONSENT:
I have read the information sheet about the 'Emotional Intelligence and Attrition' research and I understand that I am under no obligation to participate in this research. I consent to participate in the study under the conditions outlined. I agree also to Bob Rankin accessing the information in my application for enrolment in the nursing programme at the University of Dundee, and also to accessing my results from the student record system for the purposes of this research. I understand that the attached questionnaire will be used to obtain a score which will be mapped to my academic and clinical performance on the course. I am aware of my right to withdraw from the study at any time and I expect my details to remain confidential and to be used only for the purpose of this particular study.

Name: (please print) …….

Signature……. Date……..

Researcher: Bob Rankin,
Professional Head, Mental Health, School of Nursing and Midwifery, University of Dundee, Fife Campus, Forth Avenue, Kirkcaldy, KY2 5YS r.f.rankin@dundee.ac.uk
Telephone 01382 345919

Appendix 2: Assessing Emotions Scale (Schutte et al 2007)

Assessing Emotions Scale (AES

Matriculation Number:	

Directions for the questionnaire: Each of the following statements relates to emotional reactions. After reading the statement, decide whether you agree or disagree with the statement and circle the appropriate number. There are no right or wrong answers. Please go with your first response.

1 = strongly disagree
2 = somewhat disagree
3 = neither agree or disagree
4 = somewhat agree
5 = strongly agree

1	I know when to speak about my personal problems to others	1	2	3	4	5
2	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them	1	2	3	4	5
3	I expect that I will do well in most things that I try	1	2	3	4	5
4	Other people find it easy to confide in me	1	2	3	4	5
5	I find it hard to understand the non-verbal messages of other people	1	2	3	4	5
6	Some of the major events in my life have led me to evaluate what is important and not important	1	2	3	4	5
7	When my mood changes, I see new possibilities	1	2	3	4	5
8	Emotions are one of the things that make my life worth living	1	2	3	4	5
9	I am aware of my emotions as I experience them	1	2	3	4	5
10	I expect good things to happen	1	2	3	4	5
11	I like to share my emotions with others	1	2	3	4	5
12	When I experience a positive emotion, I know how to make it last	1	2	3	4	5
13	I arrange events others enjoy	1	2	3	4	5

14	I seek out activities that make me happy	1	2	3	4	5
15	I am aware of the non-verbal messages I send to others	1	2	3	4	5
16	I present myself in a way that makes a good impression on others	1	2	3	4	5
17	When I am in a positive mood, solving problems is easy for me	1	2	3	4	5
18	By looking at their facial expressions, I recognise the emotions people are experiencing	1	2	3	4	5
19	I know why my emotions change	1	2	3	4	5
20	When I am in a positive mood, I am able to come up with new ideas	1	2	3	4	5
21	I have control over my emotions	1	2	3	4	5
22	I easily recognise my emotions as I experience them	1	2	3	4	5
23	I motivate myself by imagining a good outcome to tasks I take on	1	2	3	4	5
24	I compliment others when they have done something well	1	2	3	4	5
25	I am aware of the non-verbal messages other people send	1	2	3	4	5
26	When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself	1	2	3	4	5
27	When I feel a change in emotions, I tend to come up with new ideas	1	2	3	4	5
28	When I am faced with a challenge, I give up because I believe I will fail	1	2	3	4	5
29	I know what other people are feeling just by looking at them	1	2	3	4	5
30	I help other people feel better when they are down	1	2	3	4	5
31	I use good moods to help myself keep trying in the face of obstacles	1	2	3	4	5
32	I can tell how people are feeling by listening to the tone of their voice	1	2	3	4	5
33	It is difficult for me to understand why people feel the way they do	1	2	3	4	5

Appendix 3: Fitness to Practice Assessment Tool

No.	Outcome	4 never requires support and guidance	3 occasionally requires support and guidance	2 frequently requires support and guidance	1 always requires support and guidance
1	Cares for patients in a non discriminatory fashion				
2	Demonstrates respect for client/patient confidentiality				
3	Displays honesty and integrity				
4	Recognises professional practice limitations				
5	Seeks appropriate support and guidance				
6	Identifies personal development needs				
7	Is punctual				
8	Cares for patients as individuals				
9	Conforms to uniform policy				
10	Conducts themselves in a professional manner				
11	Practices within NMC codes/guidelines				
12	Adheres to School and practice placement policies				
13	Respects the privacy and dignity of clients/patients				
14	Is aware of legislation relevant to clinical practice				
15	Accepts accountability for their own actions				
16	Accepts and acts on constructive feedback				
17	Is flexible and adaptable to change				

18	Accepts appropriate responsibility				
19	Obtains consent from clients/patients prior to delivery of treatment or care				
20	Assists as an active (effective) member of the multi-disciplinary team				
21	Seeks feedback from patient/client/relatives on performance				
	Total:				

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