EXPLORING THE CONNECTION BETWEEN
EMOTIONAL INTELLIGENCE AND FIRST YEAR EXPERIENCES OF
UNDERGRADUATE STUDENTS AT ONE CANADIAN UNIVERSITY

by

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Abstract

There is a general consensus that the first year of university offers significant challenges, as new students not only adjust to the academic rigor of post-secondary schooling, but also to new social and cultural milieus. Thus, emotional intelligence—the ability to identify, process and manage emotions to affect positive behaviour—must play an important role during this transitional year, but how so? This mixed methods study was designed to answer that question by thoroughly investigating the connections between emotional intelligence (EI) and the first year experiences of students at a Canadian university. To do so, the EI of first year students, as measured by the BarOn Emotional Quotient Inventory (EQ-i), was assessed at the beginning of their studies and at the end of their first year during the 2010-2011 academic year at Thompson Rivers University. Quantitative and qualitative indicators of performance, engagement, experiences, and potential associations were examined, as were changes in EI and gender effects.

The findings from this study suggest there is a complicated connection between emotional intelligence and first year experiences of students. Although students felt EI played an important role, the findings revealed no significant correlations between EI and academic achievement, and very few significant associations between EI and students’ nonacademic experiences in first year. However, there was a strong connection between first year experiences and changes in emotional intelligence, as most EI mean scores increased, many significantly, from the pre to the post assessment. Finally, the EI scores of male students differed from those of female students in some facets that appeared to influence engagement, but not academic performance.
Preface

This research was approved by the University of British Columbia Behavioural Research Ethics Board, certificate # H10-01225, and the Thompson Rivers University Ethics Committee for research and other studies involving human subjects, certificate # 09-10-40.
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Dedication

This dissertation is dedicated to my son and daughter.

Veronika & Jarrett

Live to Learn
Chapter One

Introduction

There is a general consensus that the first year of undergraduate study is crucial to student success; yet, first year offers significant challenges as new students need to adjust to the academic rigor of post-secondary schooling, and to a new social and cultural milieu (Andres, Lukac & Pidgeon, 2005; Barefoot, 2000; Feldman, 2005; Gilbert, Chapman, Dietsche, Grayson & Gardner, 1997; Pascarella & Terenzini, 1991, 2005; Upcraft, Gardner & Barefoot, 2005). Students who are unable to adapt to this new environment often withdraw during or just after their first year of studies, or perform academically poorer than expected (Tinto, 1982, 1993). With attrition rates from first to second year in undergraduate programs ranging from 10% to 54% (American College Testing, ACT, 2009; Daugherty & Lane, 1999; Finnie & Qiu, 2008; Grayson & Grayson, 2003; National Center for Education Statistics, NCES, 2008; Tinto, 1993), first year students and their experiences have been and continue to be the focus of considerable attention in the spheres of higher education.

In terms of research, a plethora of studies has been conducted in an effort to explain, predict, and improve student success and retention rates, especially for students in first year. This research generally entails identifying student and/or institutional factors that impact students’ experiences in first year, and then suggesting and/or testing possible interventions to address these factors. According to this research, students’ academic abilities, demographics, situational background as well as psycho-social attributes all appear to influence their experiences and performance in first year, as well as persistence to second year. Consequently, to support this diverse population, educational institutions need to consider both cognitive and noncognitive student factors.
As a faculty member with an interest in student success in higher education and extensive experience in psychometrics, I certainly concur with this conclusion. Over the past decade I have conducted numerous studies investigating the relationship between academic skills and success in a university environment (James, 2000, 2006a, 2006b; James & Pelton, 2005; James & Templeman, 2009). Throughout these studies, a significant number of students were not successful even though they appeared to have the academic skills to succeed in university, while others who appeared to lack these skills were successful. This suggests that other skills may play a role in student success. In an effort to identify these skills, I expanded my research agenda from focusing primarily on the academic skills of students to investigating other factors such as emotional and social skills. To assess these skills there are a variety of tools available, the most germane being tests of Emotional Intelligence (EI).

Emotional intelligence generally is understood to mean the ability to identify, appraise, discriminate, and manage emotions in oneself and others to affect positive behaviour (Bar-On, 2006; Goleman, 1995; Matthews, Zeidner & Roberts, 2007; Salovey & Mayer, 1990). It is a measure of what often is termed “common sense” or social aptitude as opposed to IQ, the cognitive measure. Since emotional intelligence is a relatively new construct, it has generated an abundance of research, most of which has focused on issues related to its conceptualization and measurement. However, there also has been a profusion of research into its applicability, concentrating primarily on EI in the occupational domain, although some of it has been conducted in higher education settings. Some of this latter research has explored the relationship between EI and program selection (Fatt, 2004; Sanchez-Ruiz, Perez-Gonzalez & Petrides, 2010) as well as coping strategies of students (Austin, Saklofske & Mastoras, 2010), group differences (Sutarso, Baggett, Sutarso & Tapia, 1996; Van Rooy, Alonso, Viswesvaran, 2005), changes in EI (Stratton, Saunders & Elam, 2008), and the influence of training on EI (Jaeger, 2003; Jdaitawi,
Noor-Azniza, & Mustafa, 2011). However, the rest of these studies have focused on the predictive validity of EI in higher education, with varying results. That is to say, some studies have reported significant correlations between EI and academic success as measured by university course grades (Austin, Evans, Goldwater & Potter, 2005; Jaeger, 2003), semester or year-end Grade Point Average (Jaeger & Eagan, 2007; Nelson & Nelson, 2003; Parker, Duffy, Wood, Bond & Hogan, 2005; Parker, Summerfeldt, Hogan & Majeski, 2004; Schutte et. al., 1998; Sparkman, 2008; Walker, 2006) and retention (Jaeger & Eagan, 2007; Parker, Hogan, Eastabrook, Oke & Wood, 2006; Sparkman, 2008). Other studies have failed to demonstrate such relationships (Newsome, Day & Catano, 2000; O’Connor & Little, 2003).

Although methods and results differ, all researchers agree that further investigation is necessary. Such research could confirm or refute the findings from previous studies, but also use a broader scope to address several emerging issues. One such issue is the definition and measurement of outcome variable(s). Most predictive validity studies thus far have limited the outcome measurement of student success to a single value—exam score, course or term grade, year-end GPA, or retention. To provide a more robust framework, it has been suggested that future research should utilize multiple measures of student outcomes. Specifically, in addition to academic markers, new studies should incorporate other nonacademic markers such the engagement of students with the institution and their peers, as well as personal assessments of their experiences.

Based on student development theory, attending university positively affects students, enhancing both their cognitive and noncognitive skills (e.g., Evans, Forney, Guido, Patton & Renn, 2010; Pascarella & Terenzini, 1991, 2005). Therefore, it would be reasonable to assume that the emotional intelligence of students should improve over the course of their first year of university. Currently, there is little EI research to support this assumption; hence, investigating
changes in the emotional intelligence of first year students is yet another topic awaiting further exploration. Examining such changes not only would expand on EI research in higher education but also may contribute to the conceptualization and measurement debate.

Group effects on emotional intelligence also merit further investigation. For instance, does the emotional intelligence of students differ by demographics or situational variables? If so, how does it differ, and do these differences equate to differences in performance and experiences? Lastly, there appears to be a lack of student voices in existing EI studies. Having students share their perspectives on EI and its connection to higher education would provide the researcher with valuable insights and aid in legitimizing any potential research findings.

**Purpose of Study**

The primary purpose of this study was to explore the connection between the emotional and social skills of students, as measured by EI, and their experiences in first year university. Five major research questions were used to investigate this potential connection: (1) What is the emotional intelligence of first year students? (2) What are the students’ perceptions about their experiences in first year in relation to emotional intelligence? (3) What type of connection, if any, exists between the emotional intelligence of students and their experiences in first year? (4) Does the emotional intelligence of first year students change as a result of their exposure to academia? (5) Does the emotional intelligence and experiences of first year students differ by gender, and if so how?

To answer these questions, I employed mixed methods, a research design that combines both quantitative and qualitative approaches that enhance “the breadth and depth of understanding and corroboration” of a research problem (Creswell & Clark, 2011, p. 4). Specifically, for this study I collected and analyzed both quantitative data from surveys and emotional intelligence tests and qualitative data from interviews. The latter were purposely
included to ensure students’ voices would be heard and contributed significantly to both my findings and to my conclusions.

**Significance of the Study**

A mixed methods study investigating the connection between emotional intelligence and first year experience of university students is important for numerous reasons. First, post-secondary institutions expend an enormous amount of people-power, time, and money on initiatives to enhance the success and persistence rates of first year students. Knowing and understanding the connection between performance and the EI of these students may help institutions with the selection, allocation, and hence efficacy of such resources and services. Second, students also invest a great deal of their time, energy, and money in the pursuit of a university degree. Increasing students’ awareness of their EI and how it impacts their experiences in higher education may assist with the transition and adjustment to first year, and may potentially lead to greater student satisfaction and success. Third, since EI is a relatively new construct, its credibility is still debated. Consequently, there is a need for studies that explore its conceptualization, measurement methodology, and application. Finally, the majority of the research investigating the association between emotional intelligence and performance in higher education has employed only a quantitative approach, thus potentially limiting the value of the findings and conclusions. By incorporating both quantitative and qualitative methods, a mixed methods design such as that used herein should provide a richer and more informative study for its participants, educators, and researchers (Bryman, 2006; Creswell & Clark, 2011; Onwuegbuzie & Johnson, 2006). Moreover, since mixed methods is a relatively new and distinct approach, this study has the potential to serve as a template for future studies (Creswell & Clark, 2011).
Overview of the Dissertation

A summary of the background for this study has been provided in this introduction. Chapter Two contains a thorough review of the literature on the first year experience pertinent to this study. Chapter Three provides an overview of the conceptualization and measurement methodology of emotional intelligence, plus a comprehensive examination of the applicability of EI in higher education especially as it relates to first year. The research design is described in Chapter Four, including a description of the research methods, setting, participants, data sources, instruments, and data collection procedures, as well as the analyses employed. My findings are reported in Chapters Five through Chapter Nine, with an integrated presentation of both the quantitative and qualitative data. In Chapter Ten, a summary discussion of the findings is presented that includes the implications and limitations of my study.
Chapter Two
Literature Review on First Year Experiences of Students

This chapter provides an overview and critique of the theory and research related to the first year experiences of university students relevant to this study. To provide some context, I begin with a brief overview of current trends in university enrolment and persistence. This is followed by a discussion of student development theories. In the next section, I present the findings from the research into student factors associated with performance and experiences during the first year of university. I conclude the chapter by outlining how the construct of EI could inform the theories and research related to the first year experiences of students.

Student Enrolment and Persistence

In Canada, approximately 1.2 million students attended universities in 2010 (Association of Universities and Colleges of Canada, AUCC, 2011). Of these, 83% were enrolled in undergraduate programs with the majority (76%) attending full-time (AUCC, 2011). At most Canadian universities, the enrolment of females continues to surpass that of males. For example, the undergraduate population attending full-time in 2010 consisted of approximately 57% females and 43% males (AUCC, 2011). In terms of first year students specifically, the gender difference may be even greater as 66% of the 15,000 students who completed the 2013 First-Year Student Survey were female (Canadian University Survey Consortium, CUSC, 2013). The age of full-time students has remained fairly stable over the last decade with the majority (86%) being under the age of 25 in 2010; however, there tends to be some age variance by program and by institution (AUCC, 2011). This age distribution also differs for part-time undergraduate students, with only 40% of them being under the age of 25 in 2010 (AUCC, 2011). As for first year students, in 2013 the majority (72%) were 18 years of age or younger (CUSC, 2013).
University participation in Canada by international students is also notable; in 2010, 8% of the full-time undergraduate cohort self-identified as international students (AUCC, 2011).

Based on persistence research, it is expected that 40% to 57% of these students will not graduate within five years of starting their initial studies (Adelman, 2006; ACT, 2009; Choy, 2002; Grayson & Grayson, 2003; Finnie & Qiu, 2008; NCES, 2008). Of nongraduates who leave their studies, permanently or temporarily, most do so in the first year (ACT, 2009; Choy, 2002; Daugherty & Lane, 1999; Grayson & Grayson, 2003; NCES, 2008; Tinto, 1993). Although first year attrition rates range from 10% to 54% depending on the size and type of educational institution, on average they are estimated to be approximately 20% at most North American institutions (ACT, 2009; Choy, 2002; Daugherty & Lane, 1999; Department of Education, Training and Workplace Relationships, DETWR, 2008; Grayson & Grayson, 2003; Hamilton & Hamilton, 2006; NCES, 2008; Tinto, 1993).

To reduce attrition rates, it is important for institutions to understand how experiences in higher education affect students. Theories of student development provide a solid foundation for studying such effects. In most cases, these theories tend to focus on either the nature and process of student development or the factors that influence development (Evans et al., 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). The cluster of theories related to the first approach includes psychosocial and cognitive-structural theories, while typological and college impact theories relate to the second approach (Evans et al., 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). In the following section, I provide an overview and critique of the foundational theories within these clusters that are pertinent to this study. It is worth noting in advance that although none of these theories specifically refer to emotional intelligence, elements of EI are inherent in all. This is primarily due to the fact that most of these theories predate the establishment of the construct of emotional intelligence.
Student Development and Change in First Year

Psychosocial Theories of Student Development

Psychosocial theories address the nature or content of development across a person’s life span (Evans et al., 2010; Pascarella & Terenzini, 1991, 2005). In general, psychosocial development is assumed to consist of a series of sequential stages during which individuals encounter developmental tasks that need to be resolved before they can move to the next stage. How well a person is able to cope with such tasks determines his/her developmental process. Although there are numerous psychosocial theories, the first to focus specifically on the development of university students was Arthur Chickering’s (1969) theory of identity development.

In this theory, Chickering (1969) proposed seven vectors of development that contributed to the formation of identity for students. Although these vectors involved direction and magnitude, Chickering noted that the progression through these vectors was not necessarily linear. He also noted that the rate at which students moved through the vectors would differ, and that since the vectors could interact with each other, students could deal with issues from various vectors at the same time (Chickering, 1969). This theory was based initially on research involving male students in their sophomore and senior years at several American colleges. In 1993, Chickering, in collaboration with Linda Reisser, revised this theory based on results from subsequent studies with more diverse student populations (Chickering & Reisser, 1993).

In the revised model (Chickering & Reisser, 1993), the first vector, developing competence, focuses on the development of students’ intellectual competency, physical and manual skills, and their interpersonal skills. Managing emotions, the second vector, involves students learning to recognize, accept, appropriately express, and control their emotions. The third vector, moving through autonomy toward interdependence, refers to the development of
emotional independence whereby students become less dependent on others for reassurance and approval, and instrumental independence whereby they become more self-sufficient as evident in their organizational skills, problem-solving abilities, and decision making. Developing mature interpersonal relationships, the fourth vector, involves forming mutually satisfying relationships in which differences are respected. Building on the previous vectors, the fifth vector, establishing identity, focuses on self-acceptance and self-esteem. Developing purpose, the sixth vector, involves increased intentionality in terms of establishing goals and committing to specific personal interests as well as interpersonal relationships. The last vector, developing integrity, involves reviewing, assessing, and personalizing values and beliefs (Chickering & Reisser, 1993).

In terms of first year students, at least traditional-aged students, the expectation would be that most of the development occurs within the first four vectors (Chickering & Reisser, 1993; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). Specifically, the challenges and opportunities in first year require and/or enable students to develop competencies related to academia, to manage their emotions, to become more independent, and to enhance their interpersonal skills.

One criticism of Chickering’s theory is that the definitions of the vectors are too general, making them difficult to operationalize (Bloland, Stamatakos & Rogers, 1994; Evans et al., 2010). Another criticism is that personal factors such as motivation are not taken into account by this theory (Evans et al., 2010). There is also concern regarding the sequential development process, which critics argue may not be applicable to different student bodies (Bloland et al., 1994; Evans et al., 2005; Foubert, Nixon, Sisson & Barnes, 2005; Pascarella & Terenzini, 1991, 2005). Specifically, even with the revisions in 1993, Chickering’s theory may not be relevant to some of the current student populations based on such factors as ethnicity, age, enrolment status,
program of study, and non-traditional educational pathways (Andres, 2004; Bloland et al., 1994; Evans et al., 2005). Moreover, the current generation of students has also been exposed to a much different social environment due to the technological advances during the last several decades, especially the proliferation of the internet. Consequently, it would seem that the question is not if social media such as “Facebook” and “Twitter” affects the psychosocial development of students, and hence the vectors in Chickering’s theory, but rather how.

**Cognitive Structural Theories of Student Development**

How students reason and make meaning of their experiences is the primary focus of the cognitive structural theories of student development (Evan et. al, 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). Theories within this dimension envision the developmental process as being sequential and progressive, whereby aspects of the thought processes gained in one stage are incorporated into the next stage. Although it is assumed most people will eventually advance through all stages, the age and rate at which they do so varies. Although there are numerous cognitive structural theories, five of the most prominent theories utilized in higher education included Lawrence Kohlberg’s (1969) *theory of moral development*, Carol Gilligan’s (1982) *theory of women’s moral development*, Marcia Baxter Magolda’s (1992) *theory of epistemological reflection*, William Perry’s (1970) *theory of intellectual and ethical development*, and Robert Kegan’s (1982, 1994) *theory of self-evolution*.

Kohlberg’s theory of moral development (1969) focuses on the cognitive processes employed by individuals when they make moral choices. According to his theory, which is based on the ideals of justice, there are six stages of moral reasoning grouped into three general levels. At the first level, *preconventional*, moral decisions about what is right or wrong are primarily based on physical consequences at the first stage and reciprocity at the second stage. At the third
stage in the next level, conventional, expectations and approval from others is thought to guide moral judgments. The fourth stage in this level involves respecting authority and maintaining social order, as both are considered necessary for the better good of society. At stage five in the final level, postconventional, moral reasoning is based on basic rights, mutual obligations, and a sense of public good. At stage six, moral reasoning is based on universal principles related to equality, justice and dignity (Kohlberg, 1969).

Gilligan (1982), who argued that Kohlberg’s theory was male orientated, proposed an alternate theory incorporating a female perspective on moral matters. Consequently, Gilligan’s (1982) theory of women’s moral development focuses on values of caring and connections with others. This theory involves three levels and two transitions. At the first level—orientation to individual survival—the focus is on self-preservation and hence meeting one’s basic needs and desires. In the first transition, individuals move from selfishness to responsibility, in which attachments and connections to others becomes a priority, and hence influence their moral decision making process. At the second level—goodness as self-sacrifice—social acceptance becomes pivotal when making moral decisions. From here, individuals go through a second transition—from goodness to truth. Moral decision making during this phase still involves the consideration of the needs of others, but now they also include their own needs in the process. At the final level—morality of nonviolence—a balance between care and responsibility of others and oneself has been established with the avoidance of hurt being the overriding moral principle in the decision making process (Gilligan, 1982).

Baxter Magolda’s (1992) epistemological reflection theory focuses on “ways of knowing.” According to her theory, university students make meaning in four ways that account for gender differences. The first, absolute knowing, is when students consider knowledge as absolute, and hence faculty or other authorities transmit knowledge to the students. At this level,
females tend to receive knowledge by listening and recording, while males tend to master knowledge by asking questions and participating in discussions. When students acknowledge that not all knowledge is certain, they have moved into the next phase, transitional knowing. At this point, students rely less on authority figures such as faculty for knowledge, and more on themselves and their peers. Although both females and males become more actively engaged in their learning process, females tend to do so by gathering information while males tend to challenge ideas. Independent thought, whereby students recognize the legitimacy of their views and that of others, is the basis of the third way of knowing, independent knowing. For females, this tends to lead to closer connections with faculty and peers, while for males it appears to lead to separation. The final way of knowing, contextual knowing, occurs when students start judging the evidence that supports knowledge claims. The ideas of others still play an important role, but their validity has to be assessed before students will incorporate them into their own personal views. At this point, Baxter Magolda (1992) does not identify any gender-related differences due to a lack of students exhibiting this way of knowing.

The theory by Perry (1970) identifies stages or positions from which university students view their world. According to Perry (1970), as students progress through these various stages, they experience intellectual and ethical development. The beginning stage, dualism, is when students perceive the world in absolute categories—right or wrong, good or bad. At this stage students learn through information provided by authority figures, namely faculty, who are assumed to possess the correct answers. At the next stage, multiplicity, students recognize the existence of alternate perspectives. At this stage students become more analytical and seek out other sources of knowledge such as their peers. When students realize that knowledge is relative and not all views are equally valid, they have progressed to the next stage, relativism. The final stage, commitment in relativism, is when students commit to their own beliefs and values, and as
such this stage relates more to ethical development than to intellectual development (Perry, 1970).

Similarly, Kegan’s (1982, 1994) theory of self-evolution is based on how people establish meaning in their world, but it focuses primarily on intellectual growth. According to Kegan’s theory, intellectual growth involves moving through five stages of development (1982) or orders of consciousness (1994), with the second and third stages being most applicable to first year university students. At the first level, *impulsive mind*, individuals become aware of their environment, but their thinking tends to be “impulsive and fluid” (Kegan, 1994, p. 29). When individuals begin to classify and categorize their world, and think more logically, they are entering the second order, *instrumental mind*. This is the level at which individuals develop a sense of themselves, and adopt a competitive and/or compromise approach to life, especially in peer group settings (Kegan, 1982, 1994). The third order, *socialized mind*, involves more abstract and cross-categorical thinking. At this level, the perception and acceptance of others is critical, thus forming mutually rewarding relationships is a priority. When people start to take responsibility for themselves and establish their own values and ideologies, they are operating within the fourth order, *self-authoring mind*. The final order, *self-transforming mind*, is seldom achieved before the age of forty, if at all. At this level, an individual understands how all people and systems are interconnected (Kegan, 1982, 1994).

It is evident that for most students, especially those just out of high school, the first year of university is challenging due to the exposure to “new ideas; new teachers and friends with different values and beliefs; new freedoms and opportunities; and new academic, personal, and social demands” (Pascarella & Terenzini, 2005, p. 61). Based on cognitive structural theories of student development, all of this is likely to impact how students think, make meaning, and process their experiences. Typical progressions include assuming greater personal responsibility,
shifting from external controls to internal controls, switching from self-centeredness to a sense of responsibility for others, and moving away from instinctual to principled action (Beard, Clegg, & Smith, 2007; Pascarella, 2005; Pascarella & Terenzini, 2005). Hence, post-secondary institutions need to be aware of the cognitive skills first year students bring to higher education and also how best to develop those skills.

As with psychosocial theories, there are several critiques of the cognitive structural theories. The most common criticism relates to the generalizability of these theories to contemporary student populations (Evan et al., 2005, Pascarella & Terenzini, 2005). Most of these theories were established decades ago and several were based on a unique student body (primarily white, male students attending elite institutions), so it is debatable if these stages or levels apply to more diverse student bodies. In terms of the former issue, it is probable that the cognitive structural development of students is being impacted by new technology, especially the omnipresence of the internet. Specifically, it is highly probable that informational sources such as “Google” and “Wikipedia” are influencing the ways in which students construct meaning. Similarly, there is a strong possibility that the anonymity of these online sites is impacting the ethical and/or moral development of students.

As for the latter issue, given that Perry’s (1970) theory was initially constructed from research involving white, traditionally-aged students attending Harvard, its applicability to other populations has been challenged. So, too, has Baxter Magolda’s (1992) theory since it was based on a study involving nearly all white students entering a prestigious American university. Baxter Magolda (1992), herself, recognized this limitation, noting that her specific ways of knowing may not be transferrable to other student bodies. However, she also stated that “the development and emergences of voice, the changing relationship with authority, and the evolving relationships with peers are three underlying story lines that form the foundation of parallels between the
The “stage” approach to development is also considered problematic because it implies individuals follow similar developmental paths that eventually lead to maximum growth (Evans et al., 2005). However, as already mentioned, this systematic approach to development does not take into account the diversity of students, nor does it adequately incorporate environmental influences. Moreover, these theories also tend to focus on a particular aspect of development instead of viewing development holistically (Evans et al., 2005).

**Typology Theories of Student Development**

Typology theories approach development from an alternate perspective, suggesting that it is influenced by individual differences related to personality, interests, and style (Cox & Strange, 2010; Pascarella & Terenzini, 1991, 2005). Such differences are thought to influence how people perceive and respond to their world (Pascarella & Terenzini, 1991, 2005). These differences or preferences are believed to develop early on and remain relatively stable over time. Within this cluster, two prominent theories employed in the higher education setting are David Kolb’s (1984) *theory of experiential learning* and Isabel Myer’s (1980) *theory of personality type*.

Kolb’s (1984) theory of experiential learning is based on his belief that learning from experience leads to human development. According to this theory, the learning process involves four stages—experiencing, reflecting, thinking, and acting—which relate to four distinct learning styles or preferences (Kolb, 1984). The experiencing stage, identified as *concrete experience*, refers to learning through “feeling.” This provides a basis for observation and reflection during which students contemplate their learning, the second stage of learning identified by Kolb as *reflective observation*. Forming ideas and integrating the learning is the next stage, known as *abstract conceptualization*. The final stage, *active experimentation*, involves acting on the new
ideas (Kolb, 1984).

According to Kolb (1984), students have preferences in terms of which of these processes they tend to use more frequently. Based on these tendencies, Kolb (1984) identified four learning styles. *Converging* refers to a preference for utilizing abstract conceptualization and active experimentation. Students who favour this approach to learning are considered to be good at problem solving and dealing with technical tasks. *Diverging*, in comparison, refers to a preference for concrete experience and reflective observation. Students with these tendencies are assumed to be more creative and people-oriented. *Assimilating* is the learning style in which abstract conceptualization and reflective observation are preferred. Students exhibiting this type of style usually are quite skilled at inductive reasoning, and prefer to focus on ideas rather than people. Students who prefer concrete experience and active experimentation, *accommodating* learners, are action-oriented, opened to change, and comfortable with people. Although these styles are considered somewhat stable, Kolb (1984) noted that they could change due to environmental influences.

Based on Carl Jung’s (1923) theory of psychological types, Myers (1980) theorized that individuals exhibit natural preferences in terms of four opposite domains of mental functioning. The first domain, *extraversion* or *introversion*, deals with how people focus their energy. Extraverts direct their energy primarily toward people and objects, while introverts focus more on the inner world of experiences and ideas. The second domain, *sensing* or *intuition*, focuses on perception. Individuals who prefer to rely upon their five senses when perceiving their world favor *sensing*, while those who attend to patterns and interrelationships considered to be beyond the reach of the conscious mind favor *intuition*. The third domain, *thinking* or *feeling*, reflects a preference for making judgments. *Thinking* applies to individuals who employ logic and objectivity when making judgments, while *feeling* applies to individuals who primarily employ
personal or social values in their judgment making process. The final dichotomy, judging or perceiving, identifies the preferred process an individual tends to use when dealing with the outer world. If a person relies on thinking or feeling, then judging is their preferred process. A person who relies on sensing or intuition prefers a perceiving process when dealing with the extraverted part of life. According to Myers (1980), preferences on these four domains yield 16 possible personality types. Accordingly, each type will exhibit preferences for certain types of experiences.

These typology models inform the practices of higher education in several ways. First, they suggest that it is important for institutions to provide students with the opportunity to explore and clarify their own styles (Cox & Strange, 2010; Pascarella & Terenzini, 1991, 2005). Second, to enhance student development and success, it is important to offer experiences that reflect the preferences of incoming and/or existing students (Cox & Strange, 2010; Pascarella & Terenzini, 1991, 2005). Finally, in order to develop a complementary range of preferences, and thereby enhance adaptability, it is also important to expose students to experiences that challenge their own preferences (Cox & Strange, 2010; Pascarella & Terenzini, 1991, 2005).

The major criticism of the typology models is that they tend to minimize what most would consider to be complex processes (Paul, 2004; Pittenger, 1993; Smith, 2001). Suggesting there are only four learning styles or sixteen personality types may not take into account the diversity and magnitude of individual differences related to experiences and cultures (Paul, 2004; Pittenger, 1993; Smith, 2001). This situation is somewhat ironic in that typology theories emphasize individual differences, but by categorizing these differences into specific types, they may actually undermine their primary purpose.
College Impact Theories and Models

Similar to typology theories, college impact theories focus on factors that influence development, specifically those associated with “the origins and processes of change” (Pascarella & Terenzini, 2005, p. 52). Although these theories tend to concentrate on environmental factors that enhance or inhibit student development and success, they also take into account the characteristics of the students as the two are considered to be interconnected (Evans et al., 2010; Pascarella & Terenzini, 1991, 2005). Theories specific to higher education that adhere to this approach include Alexander Astin’s *theory of student involvement* (1984/1999) and *Input-Environment-Outcome (I-E-O) model* (1993), Vincent Tinto’s (1993) *student departure theory*, and Ernest Pascarella’s (1985) *general model for assessing change*.

In an effort to explain how environmental factors influence student development, Astin (1984/1999) proffered a student involvement theory. In this theory, Astin (1984/1999) referred to student involvement as “the quantity and quality of the physical and psychological energy that students invest in the college” (p. 528). Although Astin acknowledged that student involvement could take many forms, the primary ones tend to be a commitment to academic work, interactions with others, and participation in extracurricular activities. Based on this, Astin (1984/1999) theorized that the greater the student’s involvement in academia, the greater his/her learning and personal development. Hence, he recommended that educational policy and practices—nonacademic as well as academic—should focus on increasing student involvement as this, in turn, would enhance student success and retention.

Subsequently, Astin (1993) presented his renowned I-E-O model for assessing student development in higher education. According to this model, the impact of higher education on student development, as measured by various *outcomes*, is predicated by two values, the *input* and the *environment*. The *input* refers to the characteristics of the student at the time of entry and
the *environment* refers to the institutional setting and educational experiences to which the student is exposed while attending university. After much research, Astin (1993) identified a total of 146 input measures and 192 environmental measures that could be used to predict either cognitive and/or noncognitive outcomes. In research studies, often a combination of Astin’s (1993) measures are utilized to assess the impact of certain factors—both student and institutional—on success and persistence in first year at a specific institution or across a variety of institutions. These factors then are usually incorporated into an outcome prediction model in order to identify, in advance, the at-risk students that would benefit from early intervention.

Tinto’s (1993) theory of student departure is very similar but focuses primarily on just one outcome: student departure. The basic premise of Tinto’s theory is that persistence is dependent on the student’s integration, both intellectual and social, into the university environment. According to Tinto (1993), the level of integration depends upon how committed students are to their studies, which in turn is affected by their characteristics and skills upon entry into higher education. It also depends upon the type of academic and social experiences students are exposed to during their studies.

Research studies that employ Tinto’s theory tend to focus on the interaction of these variables, again in an attempt to identify which, if any, combination of factors best predict student performance in first year and persistence into second year. Institutions then can use these predictors to identify students who may have greater difficulties adjusting to first year so interventions can be employed *a priori*. Moreover, such research assists institutions in identifying what type of interventions would be most beneficial in terms of enhancing student integration, performance and persistence in first year and onward.

Pascarella’s (1985) general model for assessing change was specifically designed to explain changes in the learning and cognitive development of students. This general causal
model consists of five sets of variables that according to Pascarella (1985) influence change. Similar to Astin’s model, this includes student background and precollege traits as one set, and the structural and organizational characteristics of institutions as a second set. Together these shape the third set of variables identified as the institutional environment or culture. These three sets of variables, in turn, influence the fourth set of variables, student interactions with others—the socializing agents on campus such as their peers, faculty, and administrators. Finally, these four sets of variables then together shape, either directly or indirectly, the fifth set of variables defined as the quality of student effort. Thus, in this model, student change is a culmination of all of these variables.

Although these models by Astin (1984/1999 & 1993), Tinto (1993), and Pascarella (1985) continue to serve as the theoretical foundation for a substantial amount of research in higher education, it has been argued that these models may not be valid for all types of institutions or students (Andres, 2004; Braxton, Hirschy & McClendon, 2004). Specifically, they may not apply to nontraditional students (e.g., older, part-time, noncaucasian) or to students attending open access colleges or universities and/or vocational institutions. It also has been noted that most studies based on these models tend to employ quantitative methods. In an article outlining the directions for future research on how college affects students, Pascarella (2006) states that such methods “are probably more suited to establishing the existence of potential causal relationships than they are for understanding and explaining why those causal relationships exist” (p. 515). Consequently, Pascarella (2006) suggests that there is a need for studies that employ qualitative or mixed methods in order to uncover the “influential nuances of student academic and nonacademic experiences during college” (p. 516). One other issue with many of the existing college impact studies is that they tend to investigate the various factors in isolation, which also limits their explanatory power (Andres, 2004).
In an effort to address these issues and provide a more comprehensive view of participation, development, persistence and success in higher education, some studies have employed broader theoretical perspectives such as Pierre Bourdieu’s *theory of practice* (1990). According to Bourdieu (1990), what individuals do—their *practice*—is dependent on a trio of concepts: *habitus, field and capital*. *Habitus* as defined by Bourdieu (1990) refers to a system of dispositions or tendencies that individuals develop during their exposure to various social spaces, past and present. These dispositions then determine an individual’s perception, expectations and behaviours, thus shaping one’s present and future practices (Bourdieu, 1990). As such, one’s *habitus* may be considered to be durable and transposable, but it is also considered to be constantly evolving (Bourdieu, 1990).

*Field* refers to the distinct social spaces encountered by individuals, each with their own rules and practices—what Bourdieu termed as *doxa*—that determine acceptable behaviours and actions. According to Bourdieu (1990), the *habitus* and *field* are interconnected and this relationship has a significant impact on practice. Specifically, when there is a mismatch between the two, individuals may feel out of their element, while conversely if they match, individuals may feel in their element, like “fish in water” (Bourdieu & Wacquant, 1992, p. 127). Consequently, individuals tend to gravitate towards fields that best match their dispositions and they also tend to have better success in such spaces (Bourdieu & Wacquant, 1992).

Besides *habitus*, how well an individual “fits” within a field is also somewhat dependent on his or her *capital*. *Capital*, according to Bourdieu (1990), refers to any resource that is considered to be of value within a field. Material or financial assets are what Bourdieu defines as *economic* capital; specialized skills, competencies and qualifications reflect *cultural* capital, and social networks are measures of *social* capital. Bourdieu posits that experiences by individuals within a field will vary based on their capital portfolio. That is to say, in each field some forms
of capital are more valued than others. Hence, individuals with particular forms of capital will have a definite advantage in certain fields as compared to others (Bourdieu, 1990). Moreover, while capital is a part of the process in a particular field, it is also the product of a field (Bourdieu, 1990). Thus, *habitus*, *field* and *capital* are all interrelated, as summarized by Bourdieu (1984, p. 101) in the following equation: $[(\text{habitus}) (\text{capital})] + \text{field} = \text{practice}$.

Applying these concepts to higher education, it is clear that post-secondary education itself is a *field* with well-established practices and expectations. These are exemplified by institutional policies such as those relating to grades, academic integrity, student attendance and tuition. How well an individual adapts and performs—their *practice*—in this new social space depends on the degree of congruence between their *habitus* and the rules and structures embedded within the *field* of higher education, and also their supply of *capital*. The logic of practice would indicate that those familiar with the “rules of the game” and possessing the economic, cultural, and social capital pertinent to the field of higher education would be more likely to succeed in academia. As an example of this, studies have shown that the success and persistence rates for students who attend elite institutions are generally higher than rates for students who attend publicly-funded universities (Pascarella & Terenzini, 1991, 2005; Titus, 2004; Upcraft et al., 2005). From a Bourdieuan perspective, the higher success rates at elite institutions no doubt relate to the tight matches between the unique *field* of these institutions and the *capital* and *habitus* of the students who can afford to attend such institutions.

**Summary**

Student development theories provide valuable information about students and their university experiences. Specifically, in terms of first year, the psychosocial and cognitive structural theories indicate that new students enter university at various stages or levels of
development, and tend to progress through subsequent developmental stages during their studies, albeit at different rates. Typological theories suggest students vary in terms of preferences that can affect their development, and hence success, in first year and beyond. College impact theories indicate that institutions can facilitate student development, and ultimately success, by first being aware of these differences and second by offering opportunities and experiences that enhance development and performance.

In terms of awareness, a plethora of research has been conducted to identify student and/or institutional factors that impact students’ experiences and/or performances in first year. Based on student development theories, it is clear that conducting such research is complicated due to the sheer number of confounding factors, the shifting landscape in higher education, and the ever-changing student population. Nonetheless, this research has revealed some noticeable patterns linking various student and institutional factors with first year outcomes mainly related to student success and persistence. In the next section of this chapter, I provide an overview of this research, focusing on the student factors specifically since they are most pertinent to this study.

**Predicting Experiences and Performance in First Year**

**Student Academic, Demographic and Situational Factors**

In terms of student factors, prior academic achievement of students, as measured by high school grade point average (GPA), and/or scores on admissions tests such as the SAT and ACT continues to be one of the most salient predictors of persistence or academic success in first year (Adelman, 1999, 2006; Allen & Robbins, 2008; Bauer & Liang, 2003; Day, 2008; DeBerard, Spielmans & Julka, 2004; Garavalia & Gredler, 2002; Gifford, Briceño-Perriot & Minazo, 2006; Ishitani, 2003; Keup, 2006; Kuh, Creeze, Shoup, Kinzie & Gonyea, 2008; Maggio, White,
Molstad & Kher, 2005; Murtaugh, Burns & Schuster, 1999; Pascarella & Terenzini, 1991, 2005; Perrine & Spain, 2009; Stupnisky et al., 2007; Upcraft et al., 2005). Other measures of academic readiness, such as time management, organizational, study, leadership and communication skills also have been associated with first year success and persistence (e.g., Garavalia and Gredler, 2002; Robbins, Lauver, Le, Davis, Langley & Carlstrom, 2004).

Gender is another factor that has been linked to success, with females tending to perform academically better and persist at higher rates in first year than their male counterparts (DeBerard et al., 2004; Finnie & Qiu, 2008; Gifford et al., 2006; Lawrence, Ashford & Dent, 2006; Perrine & Spain, 2009; Robbins et al., 2004). So too has ethnicity, whereby performance and persistence for minorities tends to be lower than that of majority students in general (e.g., Consortium for Student Retention Data Exchange, CSRDE, 2001). However, as noted by many (e.g., Finnie & Qiu, 2008; Fischer, 2007; Upcraft et al., 2005; Zwick & Sklar, 2005), studying ethnicity is complicated due to the existence of compounding variables such as socioeconomic status and academic preparation, as well as differences within and among various ethnic minorities.

Another factor related to first year experiences is age. Specifically, studies have shown that younger students are less likely to leave after first year than older students (Finnie & Qiu, 2009; Murtaugh, Burns & Schuster, 1999). Other factors associated with age and experiences include students’ family, employment, and enrolment status. In terms of the former, in most cases, students with dependants (spouse and/or children) tend to report conflicts between their family commitments and their schooling, and therefore are more likely to withdraw after the first year than are those without dependants (Day, 2008; Long, Ferrier & Heagney, 2006). Similarly, students with family obligations (i.e. older students) are more likely to work, full or part-time, while attending university (Choy, 2002; Long et al., 2006). This, then, can impact their
enrolment status, full-time versus part-time. According to the research, students who earned fewer credits than their peers during their first year were less likely to continue with their educational studies (Adelman, 2006: Long et al., 2006).

Studies also have shown that family background plays a role in predicting first year experience. For instance, many studies have shown that first generation students—students whose parents never attended college or university—are not as successful in post-secondary education, especially first year, as compared to students whose parents had some higher education experiences (Bui, 2002; Choy, 2002; Ishitani, 2003, 2006, 2008; Martinez, Sher, Krull & Wood, 2009). Although many explanations have been proffered for this situation, one specific to first generation students is that they tend to know less about the culture of higher education and hence how to access the necessary knowledge and information as compared to their peers (Pascarella, Pierson, Woniak & Terenzini, 2004). This forces them to “quickly adapt to novel social climates and academic demands” (Martinez et al., 2009, p. 89).

Studies that employ Bourdieu’s philosophical approach appear to support this supposition. For instance, Andres (1993) revealed that senior secondary students with greater social capital, as measured by application information gathered and employed by the parents, were more successful at navigating the transition to first year university than those without it. Watson, Nind, Humphris and Borthwick (2009) reported similar findings and concluded that cultural capital in the form of language was of great value to students since it had a “bearing on understanding the ‘rules of the game,’ maximizing the potential of learning opportunities and the ability to demonstrate ‘legitimate’ forms of knowledge and understanding” (p. 679). In a study investigating the role of habitus in the decision to drop out of university, Lehmann (2007) found that non-traditional students (i.e. first generation and working-class students) viewed university as a “foreign institutional environment…in which [they did] not rightly belong” (p. 98).
Consequently, these students found it more difficult to integrate into the university as compared to other students, and hence were more likely to leave prematurely, in some cases despite academic success. As such, Lehmann (2007) concluded *habitus* as measured by social background played an “important role in how students experience university and ultimately how they form dispositions to either persist or dropout” (p. 105).

Socioeconomic status (SES) and finances are other family background factors that have correlated with experiences in first year. Typically, students from families with higher incomes tend to be more academically successful in first year and more likely to persist to second year when compared with students from lower income families (e.g., Adelman, 2006; Bui, 2002; Ishitani, 2003; Martinez et al., 2009). This is likely due to the fact that students from higher SES families do not have to rely as much on financial aid and/or employment income during their studies as compared to students from lower SES families (Bui, 2002; Choy, 2002; Hand & Payne, 2008; Martinez et al., 2009). The latter situation in which students are juggling both the demands of school and work, as well as other responsibilities, often leads to lower academic performance and in some cases early departure (Andres & Offerhaus, 2012, 2103; Choy, 2002; Mueller, 2008). Not surprisingly, studies have indicated that SES is also interconnected with other factors, such as parental education (Ishitani, 2003, 2006; King, 2005). Again, this connection relates to Bourdieu’s concepts of capital and field in that having the “right” kind of capital for a specific field can improve one’s success in that field.

**Student Dispositional and Psycho-Social Factors**

Although most of the student factors identified thus far are *external* factors, according to student development theories there are other *internal* factors relating to the dispositional or psycho-social aspect of students, such as motivation, expectations, and personality that also may
play a role in students’ first year experiences. This is especially true in terms of assessing the student’s propensity to engage in the intellectual and social aspects of first year university. Consequently, much research has been conducted to ascertain the predictive validity of these factors as measured through various student surveys and personality assessments.

Motivation has been shown to be one of the most prominent post-entry predictors of student achievement and persistence. Specifically, studies have shown that students who were highly motivated and/or exhibited a strong desire to achieve tended to be academically successful (Keup, 2006; Kuh, 2007; Solberg, Evans, and Segerstrom, 2009). Similarly, several studies have revealed that first year students who believed their experiences were primarily influenced by their own behaviours achieved statistically significant higher GPAs in first year than did students who believed the majority of their outcomes in life were determined by forces outside their control (Hand & Payne, 2008; Gifford et al., 2006; Ruthig et al., 2008; Stupnisky et al., 2007).

Students’ expectations also play an important role. If their expectations are aligned with their actual experiences in first year, students tend to perform better academically and be more satisfied with their education than those with misaligned expectations and experiences (Upcraft et al., 2005). As Kuh (2005) explained, “what students expect shapes their behavior, which in turn affects their academic performance and social adjustment to college life” (p. 88). In terms of academics, most students expect university to be more challenging than high school, but many students find the workload to be much heavier than expected and/or the subjects to be more complex than anticipated leading to poor academic performances and/or early departure (Kantanis, 2000; Schilling & Schilling, 2005). Moreover, others find the first year of university to be less challenging than expected which leads to disengagement, boredom, absenteeism, and even cheating (Upcraft et al., 2005). In the social arena, students, especially traditional-aged
students, often enter university expecting to make new friends, to have fun or party, and to participate in new activities. For many, these expectations do not unfold, leading to disappointment and disengagement, both of which interfere with performance and persistence (Kantanis, 2000; Kuh, 2005; Schilling & Schilling, 2005).

Personality has also been linked to first year experiences. Overall, most studies have revealed that student performance is positively correlated with such personality factors as adaptability, agreeableness, autonomy, conscientiousness, empathy, self-control, socialization, and stress tolerance, and negatively correlated with alexithymia, neuroticism, and psychoticism (Bauer & Liang, 2003; Chamorro-Premuzic & Furnham, 2003, 2008; Chamorro-Premuzic, Arteche, Bremner, Greven & Furnham, 2010; Farsides & Woodfield, 2003; Furnham & Chamorro-Premuzic, 2004).

The reasoning behind these associations is fairly obvious. For instance, conscientious students are more likely to complete their homework, attend classes, and be more efficient, thus increasing the likelihood of greater academic success (O’Conner & Paunonen, 2007). Similarly, if students are more adaptable and possess positive socialization skills, they are more likely to engage in variety of academic and social activities that have been shown to enhance performance in first year (e.g., Pascarella & Terenzini, 1991, 2005; Reason, Terenzini & Domingo, 2006; Upcraft et al., 2005). Students with low self-control and stress tolerance may turn to social activities that detract from success in academia such as drinking, drug usage, and/or smoking (DeBerard et al., 2004; Martinez et al., 2009; Pascarella et al., 2007; Wood, Sher, Erickson & DeBord; 1997).

Research involving personality types also has revealed significant correlations between specific types and first year experiences (e.g., Kah, Nauta, Gailbreath, Tipps, & Chartrand, 2002; Myers, Mc Caulley, Quenk & Hammer, 1998). For instance, Kahn et al. (2002) found that first
year students in their study with predominantly MBTI thinking preferences had higher GPAs than those with MBTI feeling preferences. In the discussion, Kahn et al. (2002) reasoned that in first year, traditional thinking skills are emphasized and therefore the curriculum is better suited to thinking types, likely explaining this group’s stronger academic performance.

Summary

Based on first year experience research, it is apparent that first year students differ from one another in terms of their academic abilities, demographics, situational background as well as psycho-social attributes—or in Bourdieuan terms habitus and capital—all of which influence their experiences, performances and development in first year and persistence to second year. Of these factors, the emotional and social skills of students, in particular, appear to play an important role. However, assessing these affective skills and isolating their specific impact is challenging. This is especially true given the individualistic nature of students and the ever-changing student population at universities. Therefore, ongoing research investigating the connections between these affective skills and first year experiences is necessary.

In terms of future research, employing alternate assessment tools and/or methods is highly recommended. Although current surveys and personality tests have provided valuable information about students’ affective skills, some skills may be missing from such evaluations. Hence, utilizing other assessment tools in future studies may provide insights into relationships not revealed thus far. It also would be advantageous to employ research methodologies other than quantitative methods as these do have their limitations. Most of the existing studies utilized correlation analysis to determine if relationships existed, but correlation does not equate to causation. To understand why relationships exist between student factors and first year experiences, or perhaps just as importantly why they do not exist, future studies should consider
Conclusion

The first year of university is challenging as students must adjust to the academic rigor of post-secondary schooling and to a new social and cultural milieu (Andres, Lukac & Pidgeon, 2005; Barefoot, 2000; Feldman, 2005; Gilbert, Chapman, Dietsche, Grayson & Gardner, 1997; Pascarella & Terenzini, 1991, 2005; Upcraft, Gardner & Barefoot, 2005). To assist students with this transition, Kuh et al. (2008) stated that educational institutions “must understand who its students are, what they are prepared to do academically, and what they expect of the institution and themselves” (Kuh et al., 2008, p. 555). In other words, institutions need to understand the *habitus* and *capital* of incoming students if they want to understand their *practice* (Bourdieu, 1990, 1998). This means that educational institutions not only need to collect academic, demographic, and situational data from their incoming students, they also need to assess their dispositional or psycho-social attributes as these appear to play a significant role in the integration and engagement process in first year (Allen, Robbins & Sawyer, 2010; Chamorro-Premuzic et al., 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). By doing so, institutions should be able to identify those students who are at a higher risk of nonsuccess in their first year of university (i.e. “fish out of water” students) and apply specific intervention programs as necessary. This approach has the potential to increase student success and satisfaction in the first year of university, which in turn should decrease first year attrition rates.

Gathering academic, demographic and situational data is fairly straightforward; however, assessing students’ dispositional and/or psycho-social attributes can be challenging. To address this, some studies have employed measures associated with the construct of emotional intelligence. The utilization of emotional intelligence for this purpose is sagacious for several reasons. As mentioned in the introduction, emotional intelligence is a measure of emotional and
social skills, and therefore it is well-suited to evaluate the affective skills of students. Moreover, the EI measurement tools assess an array of emotional and social skills that other surveys and tests may not. Also, since EI tools are purported to assess skills, not attitudes or preferences, they could be utilized to gauge student development or change. Being able to measure this type of student growth has the potential to inform student development theory and practice. Emotional intelligence also may inform both of these in other ways since it meshes well with the various student development theories. Specifically, it relates directly to many of the vectors, especially managing emotions, in Chickering’s (1969) theory of identify development. In terms of the cognitive structural theories, skills associated with achieving independence, forming interpersonal relationships, accepting social responsibility, and problem solving also relate directly to numerous elements of EI. As for the typology models, EI links directly with some of the individual preferences, such as Myer’s feeling domain, and indirectly with others, such as Kolb’s learning styles. Finally, the college impact theories and models, as well as Bourdieu’s theory of practice all highlight the importance of student factors, especially affective skills, and thus, the connection between EI and these theories is self-evident.

Despite these positive attributes, emotional intelligence has been under-utilized in the higher education setting. This is likely due to the fact that EI is a relatively new and somewhat controversial construct. As such, it is important for researchers and educators, alike, to fully understand the construct of EI before adopting it in a research or student service agenda. To that end, in the next chapter, I provide an overview of the conceptualization and measurement of EI, followed by a review of the existing research on EI and its connection to the first year experiences of university students.
Chapter Three
Literature Review on Emotional Intelligence

This chapter provides an overview and critique of the theory and research related to emotional intelligence. The first section explores the debate regarding the conceptualization and measurement of emotional intelligence during which prominent EI models are presented. The second section provides a comprehensive review of the current research on EI and its connection to higher education, particularly in first year, as well as recommendations for future research.

Conceptualizing Emotional Intelligence

Emotional intelligence is understood to represent a set of core competencies for identifying, processing, and managing emotions to affect positive behaviour (Bar-On, 2006; Goleman, 1995; Matthews, Zeidner & Roberts, 2007; Salovey & Mayer, 1990). The term itself was first introduced by Wayne Payne (1986) in his doctoral thesis entitled, *A study of Emotion: Developing Emotional Intelligence; Self-integration; Relating to Fear, Pain and Desire*. Based on his belief that emotions were the major force behind all behaviour, Payne (1986) argued that in the “civilized” world there has been a widespread suppression of emotions that has stifled emotional growth and emotional intelligence. This, he said, had rendered people emotionally ignorant and hence “unable to solve basic human problems” (p. 59). In his view, the way to solve this problem was to develop peoples’ emotional intelligence, something he believed could happen rapidly and dramatically at any time if people acquired “expanded faculties of awareness and comprehension” (p. 168).

Since Payne’s (1986) thesis, a variety of EI models have been proposed as well as numerous measurement tools created, all of which has generated a copious amount of research (e.g., Matthews et al., 2002, 2007; Murphy & Sideman, 2006; Stough, Saklofske & Parker,
What is evident from this body of literature is that there is substantial disagreement in terms of the conceptualization of EI, causing great skepticism about the construct itself. Another reason for such skepticism still is the perceived incompatibility of emotions and intelligence; intelligence is mainly associated with the cognitive and rational domain, as compared to emotions that have traditionally been equated with the noncognitive and, to some degree, irrational domain. As Gerald Matthews and colleagues (2007) ask, “can we ever say that a subjective feeling state—as opposed to cognitively based understanding—is intelligent?” (p. 11). From this perspective, one can appreciate how emotional intelligence could be considered an oxymoron, and perhaps nothing more than a psychological fad (Averill, 2007; Locke, 2005; Matthews et al., 2002, 2007, Zeidner, Roberts, Matthews, 2008). But is it? To answer this, it is necessary to ascertain if and how the concept of emotional intelligence fits within existing theories of intelligence.

**Theories of Intelligence**

Intelligence itself is a complex and controversial concept. Although it has been studied for over a century, there still is no standard definition of intelligence; however, in broad terms it is considered to represent some adaptive function having “real-life” consequences (Bowman, Markham & Roberts, 2002; Hunt, 2011; Matthews, Roberts & Zeidner, 2004). In more specific terms, intelligence generally is perceived to involve the ability to learn or to understand, to reason, and to apply knowledge. Questions as to the range and specific type of abilities—and how they are acquired, related, and measured—continue to generate much debate and research.

Theories of intelligence tend to be classified into two categories: general or multiple. According to theories of general intelligence, all cognitive abilities are controlled by a single intelligence. In most cases, proponents of general intelligence adhere to a hierarchical approach,
in which general intelligence is at the apex and specialized cognitive abilities are below in lower levels. In contrast, the conceptual frameworks for theories of multiple intelligences go beyond general intelligence, either arguing that there are many unique cognitive factors or expanding the scope of intelligence even further to include abilities typically associated with the noncognitive domain. In either case, these abilities are viewed as partially or wholly independent and hence distinct types of intelligence.

Earlier theorists considered intelligence to be primarily innate in nature, and therefore, somewhat stable throughout one’s life. However, this position was challenged by James Flynn (1984) who revealed that intelligence scores were steadily increasing—known as the Flynn Effect—and argued that this change was primarily due to environmental factors (Flynn, 1994, 1999). Consequently, most current theorists of intelligence recognize that intelligence is a joint product of genetic and environmental factors (Hunt, 2011; Neisser et al., 1996), and thus is developmental and malleable.

**General Intelligence**

*Intelligence is what the tests of intelligence test. (Boring, 1923, p. 37).*

Charles Spearman (1904) is considered to be the founder of the theory of general intelligence. By utilizing factor analysis—a statistical technique that analyses the correlations between sets of variables—Spearman revealed that scores on tests purported to measure mental skills such as reasoning, memory, and discrimination were correlated. That is to say, people who scored high on one test tended to score high on other tests of mental ability. Based on this observation, Spearman (1904) formulated a two-factor theory of intelligence. The first, termed as the ‘s-factor’ by Spearman, related to specific abilities as measured by performance on different mental tests. These s-factors contributed to general ability—the g-factor—that Spearman (1904)
defined as a “mental energy” that controlled all intelligent behaviour. Using this theory, Spearman (1914) argued that educational training may be related to $s$-factors, but heredity was the determinant of the $g$-factor.

Cyril Burt (1949, 1955) agreed with Spearman’s position on general intelligence, asserting that factor analysis *proved* that all cognitive processes were controlled by a general factor. Burt (1955) also agreed with Spearman about the heredity nature of intelligence stating “that at least 75 per cent of the measurable variance [in intelligence]...is attributable to differences in genetic constitution, and less than 25 per cent to environmental conditions” (p.177). Moreover, using factor analysis, he identified group factors related to both the $s$ and $g$ factors. Based on this discovery, Burt (1949) proposed a hierarchical structure of intelligence involving three layers with the $s$ factors on the lowest level, followed by the group factors in the middle, and the $g$ factor at the top.

This hierarchical approach to intelligence has and continues to be advocated by other general theorists. For instance, Philip Vernon (1960) argued that intelligence consisted of a hierarchy of factors but identified four levels of cognition. Specific factors such as vocabulary skills were still located on the bottom level. On the next two levels there were minor group factors followed by two major group factors labeled verbal-educational ability and practical-mechanical ability. All of these contributed to the highest level of intelligence, namely general intelligence. John Carroll (1993) revised Vernon’s (1960) hierarchical model so that there were only three-strata of cognitive ability, much like the model proffered by Burt (1949).

Although general intelligence continues to be challenged especially by the theorists of multiple intelligences, strong support for the existence of the $g$ factor and its heritability still exists. For instance, in the book entitled, *The Bell Curve: Intelligence and Class Structure in American Life*, Richard Herrnstein and Charles Murray (1994) argue that a general factor of
cognitive ability exists: it varies from person to person but remains relative stable over a person’s life and it is “substantially heritable, apparently no less than 40 percent and no more than 80 percent” (p. 23). Moreover, by utilizing copious amounts of data they argue differences in intelligence are independent of social, economic, and ethnic factors. Hence, they conclude that the “inequality of endowments, including intelligence, is a reality” and that society should accept this since efforts to “eradicate inequality with artificially manufactured outcomes has led to disaster” (Herrnstein & Murray, 1994, p. 551).

Arthur Jensen, another ardent supporter of general intelligence, published a multitude of articles and books promoting and defending the existence of the $g$ factor. In his latest publication, *The g Factor: the Science of Mental Ability*, Jensen (1998) states, “I have come to view $g$ as one of the most central phenomena in all of behavioural science, with broad explanatory powers…for understanding human affairs” (p. xii). In this book he presents a variety of research and data analysis that in his opinion proves $g$ exists, as do average differences in general intelligence by gender and among racial groups. He also argues that these differences are both due primarily to hereditary.

Critics of general intelligence (e.g., Bowman et al., 2002; Gardner, 1983/2004, 1999; Gould, 1981/1996; Nash, 1990; Sternberg, 1988; Stobart, 2008) outline several major flaws in this theory. To begin with there is the assumption that general intelligence exists or is real and takes the form of a unitary mental property. This reification of intelligence—converting an abstract concept into an entity—is challenged by those who view intelligence as a socially constructed concept and not an entity unto itself. As Stephen Gould (1981/1996) states, “$g$ is not an ineluctable entity; it represents one mathematical solution among many equivalent alternatives” (p. 350). Moreover, Gould (1981/1996) argues that it is “only an average of many performances...not a single, scalable thing like height” (p. 181).
Utilizing correlations among scores on different tests of mental ability to infer that general intelligences exist is also problematic as correlations do not necessarily reveal causation. So, although a strong correlation between two variables may reveal a relationship, it does not prove a cause and effect relationships exists (e.g., Cronbach, 1990). To wit, positive correlations on test batteries do not prove there is a general mental ability controlling test performance. Indeed, such correlations may be due to any number of different attributes operating in isolation or in combination.

Yet another flaw cited by critics is how advocates of general intelligence tend to co-opt the theory of biological determinism to explain individual differences. The premise of this theory is that individuals are endowed with a certain level of general intelligence that determines their scholastic ability and, to some degree, life attainment. Moreover, it is assumed that this innate and hereditary capacity changes little during one’s life. Critics argue that this approach ignores the influence of social and cultural factors on intelligence. As Flynn (1987) states, “huge g gains from one generation to another show that it [intelligence] is highly sensitive to environmental factors” (p.33).

Biological determinism is also used to support the argument that general intelligence varies by groups, an assertion that is contested on many levels. The categorization of people into groups based on physical or socio-economical traits has been challenged by many (e.g., Gould, 1981/1996; McCall, 2005) with the argument being “one size does not fit all.” Using average group scores to infer that one group is more intelligent than another is also a gross over generalization and ignores individual differences within and between groups.

Hence, the overarching argument against the g factor is that it ignores the complexity of human intelligence(s) and negates the importance of other abilities. Along with all of the other
issues associated with the g factor is what most likely precipitated the development of theories of multiple intelligences.

**Multiple Intelligences**

_The facts of every-day life, when inspected critically, indicate that a man [sic] has not some one amount of one kind of intelligence, but varying amounts of different intelligences._

_(Thorndike, 1920, p. 227)_

Edward Thorndike (1920) was the first to present a theory of multiple intelligences, arguing that there were three distinct types of intelligence: abstract, mechanical, and social. Thorndike (1920) defined abstract intelligence as the “ability to understand and manage ideas and symbols;” mechanical intelligence as the “ability to learn to understand and manage things and mechanics;” and social intelligence as the “ability to understand and manage men and women, boys and girls—to act wisely in human relations” (p. 228). He then argued that “within any of these intelligences a man [sic] displays relatively great consistency [but] between one and another of the three there is relatively great disparity” (p. 229). As with theorists of general intelligence, he, too, thought intelligence was innate, stating that “intelligence probably does not fluctuate very much more from fifteen to fifty than five to fifteen” (Thorndike, 1920, p. 232).

Louis Thurstone (1936) also believed that intelligence involved independent abilities and contested the existence of a general factor. In his view, the general factor was simply the average performance on a variety of tests and as such could vary depending on the type of tests included in the testing battery. Using factor analysis, the same statistical technique as Spearman and Burt, Thurstone (1936) identified seven primary mental abilities which he argued were independent of each other and uncorrelated. These included verbal comprehension, word fluency, numeracy, spatial visualization, associative memory, reasoning, and perceptual speed. Under his model, Thurstone (1945) reasoned that people had differing mental and physical assets, making each of
them unique. As with other theorists of his time, he asserted that an individual’s profile of abilities was determined largely by inheritance, although, he did acknowledge the possible influence of environmental factors.

Joy Guilford (1967) expanded on Thurstone’s theory of primary mental abilities when he introduced his *Structure of the Intellect*. According to Guilford (1967) intelligence consisted of a multitude of abilities which he classified into three dimensions: *operations*—what a person can do, *content*—material or situation in which the operations are performed, and *products*—how the information is stored and processed. In this model he also distinguished between *convergent thinking*, which focused on a single best answer, and *divergent thinking*, which generated multiple answers to a set problem (Guilford, 1967). In his most recent model, Guilford (1988) created a matrix involving 180 different combinations of operations, content, and products which he equated to 180 unique types of cognitive intelligences.

A somewhat different position was introduced by Raymond Cattell (1961, 1963) and John Horn (Horn & Cattell, 1966) when they theorized that the intellect consisted of two related but distinct components: *fluid* and *crystallized* intelligence. According to this theory, fluid intelligence is defined as a person’s primary reasoning ability, which is believed to decrease with age; while crystallized intelligence is defined as the factual knowledge attained over a lifetime which is thought to increase with age. In addition, it is assumed that fluid intelligence is influenced by hereditary and as such is an indicator of how intellectual development is affected by biological factors, while crystallized intelligence is influenced by experiences and hence is an indicator of education and social factors (Cattell, 1963; Horn & Cattell, 1966).

Although these theories received much attention, the one that garnered the most attention was Howard Gardner’s (1983/2004) theory of multiple intelligences. According to Gardner, numerical expressions of intelligence such as test scores are inadequate, as they do not fully or
accurately depict the various abilities of humans. As he stated, “what counts as an intelligence is a judgment call and not an algorithmic conclusion” (Gardner, 1983/2004, p. xix). Initially, Gardner (1999) defined intelligence as “the ability to solve problems or to create products that are valued within one or more cultural settings” (p. 33). Later, he refined his definition stating that intelligence is “a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture” (Gardner, 1999, p. 33-34). Hence, in Gardner’s (1999) view intelligences are “not things that can be seen or counted…they are potentials” (p. 34).

Instead of relying solely on psychometric measurements, Gardner (1983/2004, 1999) proposed eight selection criteria for determining if a specific faculty should be identified as an intelligence. These criteria focused on biological factors such as brain function and evolutionary history, and logical analysis such as the existence of a core set of operations and encoding of symbols. His criteria also involved principles of psychology, such as the evidence of a developmental process, and the existence of experts and exceptions, as well as some psychometric evidence (Gardner, 1999). Using these criteria, Gardner (1983/2004, 1999) identified eight distinct intelligences: bodily-kinesthetic, interpersonal, intrapersonal, logical-mathematical, musical, naturalistic, verbal-linguistic and visual-spatial.

According to Gardner (1983/2004), all human beings have these intelligences, “yet at any particular moment, people differ for both genetic and experiential reasons in their respective profiles of intellectual strengths and weaknesses” (p. xv). Thus, Gardner (1999) believed that although “we all receive these intelligences as part of our birthright, no two people have exactly the same intelligences in the same combinations” (p. 45). Furthermore, since intelligences refer to one’s potential, Gardner argues that what really matters is what people do with their unique combination of abilities. Bourdieu would most likely concur with this as he stated that outcomes
are dependent not only on the *capital* one has, but also on making “the best use of [one’s] capital” (Bourdieu, 1977, p. 58).

It was also in the 1980s that Robert Sternberg (1988) presented his *Triarchic Theory of Intelligence*. Sternberg defined intelligence as the “purposive adaptation to, selection of, and shaping of real-world environments relevant to one’s life and abilities” (Sternberg, 1988, p. 65). As such, he argued that there were three different factors—*analytical, creative, and practical*—that contribute to what he refers to as “successful intelligence.” According to Sternberg (1988), *analytical intelligence* is much like the *g* factor in that it relates to information processing skills such as higher and lower order mental processes involved in problem-solving and knowledge acquisition. The ability to create new products or to make new discoveries is what Sternberg (1988) identifies as *creative intelligence*, and *practical intelligence* involves applying analytical and creative skills in a real-world context. Based on this theory, Sternberg (1988) argued that individuals may excel in one aspect, but not necessarily in any of the other two. However, what he did find across cultures was that intelligent people tended to capitalize on theirs strengths and compensate for areas of weakness (Sternberg, 1988).

Although theories of multiple intelligences broaden the scope of intelligence, critics argue that they broaden it too much. Indeed, one of the main criticisms of theories of multiple intelligences is that they dilute the term intelligence by including too many different types of skills or capabilities. Moreover, many argue that all of these faculties are not truly independent, nor are they unique intelligences. As stated by Edwin Locke (2005), “it is simply arbitrary to attach the word ‘intelligence’ to assorted habits or skills....This extension of the term simply destroys the meaning of the concept” (p. 26). Locke (2005) goes further to suggest that advocates of multiple intelligences have a hidden agenda—namely egalitarianism. From his perspective, “redefining what it means to be intelligent so that everyone will, in some form, be equal in
intelligence to everyone else” is problematic since “it does not change reality…Some people actually are more intelligent...than others” (Locke, 2005, p. 26).

Another issue that critics raise is that many of the multiple intelligences are too abstract, making them impossible to assess and hence validate. As argued by Nathan Brody (2004), in reference to Gardner’s theory of multiple intelligences, “without adequate measures of the abilities that underlie Gardner’s model...it is impossible to demonstrate, or even evaluate the potential contributions of ..[his]...theory” (p. 177). Moreover, the tools that do exist have been shown to exhibit substantial correlations with general intelligence (Carroll, 1993). Thus, Brody (2004) concludes, “there is little or no evidence for the belief that it is possible to obtain measures of the abilities postulated by Gardner [and others] that are independent of g” (p. 177) and moreover, “alternatives to g lack an adequate empirical foundation” (p. 182).

One final criticism is that theories of multiple intelligences also tend to reify the concept of intelligence but in a pluralist form (Stobart, 2008). In some cases, factor analysis is once again used to verify the existence of multiple intelligences, but like the g factor, these are only inferences drawn from statistical calculations which unto themselves do not prove that intelligences exist. Other theories establish specific criteria to select new intelligences, but such criteria are subjective and so the selection of any new intelligence depends “on what is cherished and by whom” (Stobart, 2008, p. 62). Moreover, it can lead to the same labeling problems associated with general intelligence whereby a person or a group of people can be classified as smart or dumb, but in multiple ways!

Based on all of this, it is fairly safe to assume that proponents of general intelligence would not support the existence of emotional intelligence as a distinct and unique intelligence, although some might view it as a specific factor (s-factor) that contributes to general intelligence (e.g., Averill, 2007; Matthew et al., 2002, 2004; Zeidner et al., 2008). On the other hand,
proponents of multiple intelligences may be more amenable to such a construct depending on which theory of multiple intelligence they endorse and why.

**Theories of Emotional Intelligence**

Emotional intelligence theory links cognition and affect by suggesting that cognitive processes are more intelligent due to emotions and that it is possible to think about emotions intelligently (Rivers, Brackett, Salovey & Mayer, 2007). As such, the majority of EI theorists consider EI to be a distinct type of intelligence, to be developmental and for some theorists to be highly susceptible to training. Thus, it appears as though emotional intelligence does fit within the broad definition of intelligence—an adaptive function having real-life consequences—and more specifically within the conceptual framework of multiple intelligences.

Although the term *emotional intelligence* is relatively new, the concept is not. Charles Darwin (1872/1998) referred to it as emotional expression—an innate behaviour that assisted in human and animal adaptation and survival. Edward Thorndike (1920) classified these affective skills as social intelligence, as did Robert Thorndike, his son, and Saul Stein (1937) who referred to social intelligence as the “ability to understand and manage people” (p. 275). EI also relates to David Wechsler’s (1940) notion that affective, personal, and social factors—what he termed as *nonintellective* factors—contribute to the development of each person’s intelligence. Emotional intelligence could also be connected with Cattell (1963) and Horn’s (Horn & Cattell, 1966) idea of crystallized intelligence, as both are considered to be developmental and indicators of educational and social factors. Emotional intelligence also meshes with Gardner’s (1983/2004) theory of multiple intelligences, with EI relating directly with his interpersonal and intrapersonal intelligences. The concept of EI also fits within Sternberg’s (1988) Triarchic theory since
emotional skills are assumed to be involved in applying analytical and creative intelligence in practical ways in the real world.

So although there is much support for the existence of emotional intelligence, as with intelligence, the theoretical approaches to defining and operationalizing emotional intelligence do vary. Currently these approaches tend to fall into three different conceptual stances: ability, trait, or multifactored (also known as mixed).

Ability-EI conceptualizes emotional intelligence as the ability to process affective information. Peter Salovey and John Mayer (1990) were the first to introduce ability-EI based on their view that “people’s abilities to adapt and cope in life depend on the integrated functioning of their emotional and rational capacities” (Salovey, Detweiler-Bedell, B.T., Detweiler-Bedell, J. B. & Mayer, 2008, p. 535). As such, they consider emotional intelligence to be fundamental to social intelligence, but pertaining specifically to emotional phenomena. With this perspective, they describe emotional intelligence as a set of abilities that combine emotions with cognition—namely the abilities to perceive, employ, understand, and manage emotions (Salovey & Mayer, 1990). These abilities form the four key competencies (Table 1) of their ability model (Salovey & Mayer, 1990).

The focus of ability-EI is on the intelligence in emotional intelligence, treating it much like a traditional form of intelligence similar to one of Thurstone’s (1936) primary mental abilities. Hence, to assess ability-EI, in most cases respondents are required to apply their skills much as they do on mental tests assessing cognitive intelligence. Ability-EI is also considered to be a relatively stable aptitude; however, it is assumed to increase with age since “emotional knowledge—the kind of information that emotional intelligence operates on—is relatively easy to acquire and teach” (Mayer, Salovey & Caruso, 2004a, p.209).
### Table 1

Key Competencies of Prominent Emotional Intelligence Models

<table>
<thead>
<tr>
<th>Ability model</th>
<th>Competency model</th>
<th>Emotional-Social model</th>
<th>Trait model</th>
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<tbody>
<tr>
<td>1) the ability to perceive emotion accurately</td>
<td>1) knowing your emotions</td>
<td>1) the ability to recognize, understand and express emotions and feelings</td>
<td>1) Emotionality (empathy, perception, expression &amp; relationships)</td>
</tr>
<tr>
<td>2) the ability to access and generate feelings when they facilitate cognition</td>
<td>2) managing your own emotions</td>
<td>2) the ability to understand how others feel and relate to them</td>
<td>2) Self-control (emotional regulation, impulsiveness, stress management)</td>
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<tr>
<td>3) the ability to understand affect-laden information and make use of emotional knowledge</td>
<td>3) motivating yourself</td>
<td>3) the ability to manage and control emotions</td>
<td>3) Sociability (social awareness, assertiveness, emotion management)</td>
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<tr>
<td>4) the ability to manage or regulate emotions in oneself and others</td>
<td>4) recognizing and understanding other people’s emotions</td>
<td>4) the ability to manage change, adapt and solve problems of a personal and interpersonal nature</td>
<td>4) Well-being (happiness, optimism, self-esteem)</td>
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<tr>
<td>(Salovey et al., 2008, p. 535)</td>
<td>5) managing relationships and the emotions of others.</td>
<td>5) the ability to generate positive affect and be self-motivated.</td>
<td>5) Adaptability</td>
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<td></td>
<td></td>
<td>(Bar-On, 2006, p. 3)</td>
<td>6) Self-motivation</td>
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The trait approach to EI is significantly different from the ability approach as it conceptualizes EI as a distinct multidimensional domain of basic personality traits involving emotion-related dispositions and self-perceptions (Petrides, 2009; Petrides & Furnham, 2000, 2001; Petrides, Furnham & Mavroveli, 2007; Tett, Fox & Wang, 2005). Personality traits are considered to be “enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts” (American Psychiatric Association, 2000, p. 630). Since all traits are considered to be on a continuum, it is assumed that everyone possesses these traits but to differing degrees. Personality traits also are assumed to be relatively stable over time.

These same assumptions apply to trait-EI in that it is assumed that everyone possess the emotional traits associated with trait-EI but to varying degrees. Moreover, although trait-EI is thought to increase somewhat with age, it is considered to be generally stable over time and across situations (Petrides et al., 2007). Hence, unlike ability-EI, the focus of the trait-EI is on the emotion in emotional intelligence, relating specifically to a unique combination of basic personality factors as exemplified by the six key components or facets (Table 1) of the best known trait model by Petrides and Furnham (2000, 2001).

In comparison, the multifactored approach is based on the view that emotional intelligence consists of a wide array of competencies and skills that impact intelligent behaviour. Hence, multifactored models incorporate both the cognitive view of EI postulated by ability-EI and the personality approach tendered by trait-EI. However, the multifactored models tend to employ measurement methodology similar to trait-EI, namely self-assessments. Thus, some argue that the multifactored models adhere more to the trait approach than the ability approach (Petrides, 2009; Salovey et al., 2008). Two of the most prominent models to employ the multifactored conceptualization of EI are proffered by Daniel Goleman (1995) and Reuven Bar-On (1997).
Goleman (1995) is credited with the popularization of EI due to his bestselling book on the topic. In his book, he defines EI as a combination of both affective and cognitive abilities and likens it to one’s character. He also claims that EI is as powerful as IQ, and perhaps even more so in predicting successful behaviour (Goleman, 1995). Furthermore, he theorizes that anyone can cultivate their emotional intelligence since it is amenable to intervention and learning. However, in his opinion, childhood is the critical period for instilling the key skills of EI (Goleman, 1995).

Since Goleman (1998) considers EI an ability driven by personality traits, he operationalizes EI as being competency-based, consisting of 25 different competencies organized into five domains (Table 1).

Reuven Bar-On (1997) originally defined emotional intelligence as “an array of non-cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (p.14). However, after a decade of research and discussion he redefined EI as being “composed of a number of intrapersonal and interpersonal competencies, skills, and facilitators that combine to determine effective human behaviour” (Bar-On, 2006, p. 2). Based on this, he asserts that “to be emotionally and socially intelligent is to effectively understand and express oneself, to understand and relate well to others, and to successfully cope with daily demands, challenges and pressures” (2006, p. 3). To do so, in Bar-On’s view one must possess strong intrapersonal and interpersonal skills and must be adaptable, optimistic, and self-motivated (Table 1). Further, Bar-On argues these competencies, skills and facilitators are developmental, “increasing almost continuously from childhood to the end of the fourth decade” (BarOn, 2006, p.10) and malleable. So much so, that he concludes they can “be significantly increased within a matter of a few weeks as a result of training” (p. 10).

The fundamental issue with emotional intelligence is still the question of whether it actually is an intelligence. Critics such as Locke (2005) argue that EI does not refer to a type of
intelligence, but rather involves applying intelligence to a specific life domain, namely emotions. As such Locke (2005) would define EI as a skill, not an intelligence. Similarly, Zeidner, Roberts, and Matthews (2004) concluded after reviewing the status of EI that EI is not a new intelligence, mainly because it appears to overlap with “temperament, information-processing components, emotional self-confidence, and acquired cultural-bound skills and knowledge” (p. 247). Similar findings by Davies, Stankov, and Roberts (1998) have prompted them to conclude that “little remains of emotional intelligence that is unique and psychometrically sound” (p. 1013).

These conclusions speak directly to another major issue cited by critics of EI. Namely the definitions are over-inclusive, making the concept unintelligible (Locke, 2005; Matthews, Emo, Roberts & Zeidner, 2006; Matthews et al., 2002, 2004; Zeidner et al., 2004, 2008). As argued by Matthews et al. (2002) in reference to Goleman’s model, EI seems to be defined by exclusion, “that is, EI represents all those positive qualities that are not IQ” (p. 12). Consequently, Matthews et al. (2002) and other critics wonder what EI does not include. It is apparent that there is a parallel between these arguments and those applied to multiple intelligences, and since there is no end in sight for the debate over multiple intelligences, it is doubtful that any consensus over EI will be reached in the near future.

Yet another issue related to the intelligence debate is the issue of cultural sensitivity. Emotional intelligence, like general or other intelligences, is a socially-constructed concept based upon Western philosophy; therefore its applicability in nonwesternized cultures is questionable. As already noted by Stobart (2008), the criteria for proposing a new intelligence is subjective, as it depends “on what is cherished and by whom” (p. 62). The scales of EI are a reflection of what is valued by Western cultures (i.e. Assertiveness), but not necessarily what is valued by other cultures. Hence, as Ekermans (2009) states in her review of emotional intelligence across cultures, “group differences may be due to measurement bias and not to real differences in the
construct or criterion that is the target of measure” (p. 260).

With this in mind, numerous researchers (e.g., Ekermans, Saklofske, Austin & Stough, 2011; Fukuda, Saklofske, Tamaoka & Lim 2012; Hystad, Eid, Tapia, Hansen & Matthews, 2010; Li, Saklofske, Bowden, Yan & Fung, 2012; Parker, Saklofske, Shaughnessy et al., 2005) have conducted cross-cultural studies to determine if any observed group differences are due to actual underlying differences or a result of measurement bias. Thus far, the results appear to indicate EI is a robust measure over certain cultural groups; however, further research is necessary because, as stated by Ekermans et al. (2011), “it is not known to what extent these results will replicate to other more culturally diverse and multilingual societies” (p. 290).

For those societies and theorists who recognize the possible existence of the construct of emotional intelligence, the next pressing issue is determining how EI should be conceptualized. Based on the similarities in terms of the key components outlined by the different conceptual models (Table 1), this does not appear to be problematic as they all support, at least to some degree, the position that emotional intelligence involves the ability to perceive, understand, and manage emotions in such a way as to affect positive behaviour. However, there are significant differences in how these components are operationalized by each of the models. The ability model relates them to specific mental abilities; the trait models associates them solely with personality traits; and the multifactored models do both.

The lack of a consensual approach to EI has created major schisms among the various factions. For instance, supporters of trait-EI argue that any approach to EI that does not include personality is specious since emotional experiences reside in the personality domain and not in the cognitive domain (Petrides, 2009; Petrides et al., 2007). Consequently, Petrides et al. (2007) doubt ability-EI will “ever be accepted in the mainstream taxonomies of human cognitive
abilities,” but do admit it may “find its place along the ever-growing number of pseudo-intelligences on the fringes of scientific psychology” (p. 153).

Meanwhile, supporters of ability-EI (Davies et al., 1998; Mayer et al., 2004a, 2004b, 2008; Papadogiannis, Logan & Sitarenios, 2009; Salovey & Mayer, 1990; Salovey et al., 2008; Schulze, Wilhelm & Kyllonen, 2007) argue exactly the opposite; since the construct refers to intelligence it “should be restricted to constructs within the intelligence domain” (MacCann & Roberts, 2008, p.540). Indeed, they contend that the other approaches (multifactored and trait) are not measuring any new form of intelligence, nor are they measuring a new or separate trait that could be classified as emotional intelligence. Instead these approaches appear to be repackaging personality and could be construed as pseudo-scientific (Matthews et al., 2007) in that they “reflect a lack of understanding of personality theory and undermine good scientific practice” (Mayer et al., 2008, p. 513).

These fervent exchanges highlight one of the most pressing questions in EI research: Are all of these models tapping into the same construct? To answer this question most EI studies endeavor to explore the construct validity of EI by assessing the concurrent, convergent, and divergent validity of the tools that purport to measure EI.

In terms of concurrent validity, the assumption is that if these models are assessing the same construct, then their measures should be highly correlated. The results of existing validity studies appear to indicate this is not the case, as many have revealed that the correlations between the differing EI tools are insignificant or weak at best (see next section). As for convergent validity the assumption is that measurements of EI should correlate somewhat with measurements of similar constructs, while divergent validity assumes that measurements of EI should not correlate with measures of different constructs.
One of the major problems with these assertions is that proponents of the ability models take the position that EI is similar to traditional intelligence and hence should correlate with other measures of cognition but not with personality. Similarly, the trait model advocates posit that EI is directly associated with personality traits and hence will exhibit strong correlations with certain personality traits but not with cognition. Meanwhile, advocates of the multifactored models argue for a bit of both. Hence, results from studies exploring construct validity can and have been utilized to either support or refute the existence of EI depending on the model being studied, which only amplifies the confusion over EI.

Needless to say, these opposing stances have hampered attempts to establish a consensus in regard to the construct of EI. It also has led some researchers to seriously doubt that the various approaches are referring to the same construct (Locke, 2005; Matthews et al., 2004; Orchard et al., 2009; Schulte, Ree & Carretta, 2004; Zeidner et al., 2004 & 2008). Consequently, a common recommendation is that the use of the term *emotional intelligence* should be restricted to the ability approach (Brackett & Mayer, 2003; Burns, Bastian & Nettelbeck, 2007; Mayer et al., 2008; Matthews et al., 2007; Orchard et al., 2009; Schulze et al., 2007), while the trait and multifactored approaches to EI should adopt other terms such as emotional competencies (Derksen, Kramer & Katzko, 2002; Scherer, 2007) or emotional adaptiveness (Izard, 2001). However, altering the terminology does not lead to any agreement on such issues as whether there is a single EI, or rather a collection of EI, nor how best to assess EI.

One way to resolve this impasse may be to create a multi-dimensional and multi-modal approach to EI. This is what Nelis, Quoidbach, Mikolajczak and Hensenne (2009) have proposed with their tripartite model of EI involving three levels: knowledge, abilities, and traits. What people know about emotions and how to deal with them forms the basis of the knowledge level which relates to the multifactored models. Being able to apply emotion knowledge is the focus of
the abilities level and thus relates directly to the ability models. The trait level is equated with
individual dispositions and how they influence behaviour in emotional situations, and as such
would be related to the trait models. These three levels are connected as knowledge does translate
into abilities and subsequently into practice but it is a loose connection as this is not always the
case (Nelis et al., 2009).

Whatever the solution, emotional intelligence does not appear to be an oxymoron, nor
does it seem to be a psychological fad. However, emotional intelligence is a relatively young
construct, and hence requires further investigation before its credibility can be ascertained. Not
only is there a need to evaluate, revise, and challenge existing theories and models of EI, but there
is also an opportunity to expand on these and to explore new theories and models. Whether one
approach to EI will prevail, only time–infused with substantial research–will tell.

**Measuring Emotional Intelligence**

As with other psychological constructs, tests are employed to measure emotional
intelligence. Since emotional intelligence is equated to intelligence and to personality traits, these
tests tend to emulate either intelligence tests or personality questionnaires (for an overview of
such testing see Appendix A). One of the most prominent tests that adheres to the performance-
based approach of intelligence testing is the Mayer-Salovey-Caruso Emotional Intelligence tests
(MSCEIT). Another prominent EI assessment, the BarOn Emotional Quotient Inventory (BarOn
EQ-i), utilizes the self-report style of personality testing. In this section, I provide a detailed
description of each of these two tests, as well as a review of the validity evidence collected thus
far to determine which, if either, of these two methods–performance-based versus self-
report–best assesses EI.

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey &
Caruso, 2002) is based on the theoretical framework of emotional intelligence presented by Peter Salovey and John Mayer (1990) in which EI is conceptualized as a cognitive ability. Hence, to measure ability EI the MSCEIT is designed to emulate other intelligence tests in that respondents are required to apply their skills. This performance-based test consists of 141 items that require the test taker to identify emotions expressed by a face or design; to generate a mood and solve problems while in that mood; to define causes of different emotions; to understand the progression of emotions; and to determine how best to include emotions when thinking about situations that involve oneself and others (Caruso, 2005). The format of the responses include multiple choice questions in which respondents selects the best answer, and a rate-the-extent scale in which test-takers assign a rating to each option (Orchard et al., 2009). An example of the latter would be a situation in which the examinee rates the effectiveness of several strategies for managing an emotional situation.

The MSCEIT also utilizes two scoring systems, consensus and expert, both based on the assumption that emotional intelligence requires attunement to social norms. Consensus scoring involves comparing an individual’s answer to that of a large number of people. Responses that match those of the normative sample are awarded a higher point value (Papadogiannis et al., 2009). For example, if 75% of the respondents believe a person in a photo was “sad,” then the better answer would be sad, and this answer would be awarded a value of .75. Expert scoring, on the other hand, relies on “emotion experts” (n = 21) to determine which test answers are better and hence receive a higher rating. For example, if 17 out of the 21 experts chose “sad” as the answer then the better answer would be sad, and it would be equated with a weighted score of .81 (i.e. 17/21) (Papadogiannis et al., 2009). Either system may be used in the scoring of a report as both methods have yielded similar results (Mayer, Salovey, Caruso & Sitarenios, 2003; Palmer, Gignac, Manocha, Stough, 2005).
After completing the MSCEIT, four ability scores, specific task scores and an overall EI score are calculated and compared to a reference population of five thousand American adults. Based on this comparison, the respondent’s score range for overall skill level and skill level in each area is reported on a scale from high to low. High scores are equated to “expert performance” or “highly skilled,” low scores are associated with recommendations such as “develop skill” or “consider developing the skill,” and average scores are classified as “competent scores” (Caruso, 2005).

In comparison, the BarOn EQ-i designed by Reuven Bar-On (1997) is based on the multifactored approach incorporating both the cognitive view of EI postulated by ability-EI and the personality approach tendered by trait-EI. As defined by Bar-On (1997, 2006) emotional intelligence involves an array of competencies, skills and facilitators including fifteen conceptual components grouped into five theoretical clusters: intrapersonal skills, interpersonal skills, adaptability, optimism and self-motivation. Since emotional experiences are subjective in nature, Bar-On (1997, 2006) determined the best way to collect information about these competencies was through a self-report. Hence, the BarOn EQ-i is a questionnaire consisting of 133 items, with seven to nine items per each component of the model. The wording of the items is in the form of short self-statements rated on a five-point Likert scale ranging from “very seldom true of me” to “very often true of me” (Wood, Parker & Keefer, 2009). The score report includes individual scores on fifteen subscales corresponding to the conceptual components, as well as five composite scores for the clusters, and a total EQ score (Wood et al., 2009). It also includes several indexes—inconsistency, positive impression and negative impression—for assessing the validity of the responses.

Using the normative data scores from 4,000 adults in North America and the validity indexes, the EQ-i scores are converted into standard scores based on a mean of 100 and a
standard deviation of 15. This facilitates the interpretation of the scores and the comparison of individual or group scores. For instance, the flexibility component is assumed to be a measure of how well an individual can “adapt to unfamiliar or changing circumstances” (Wood et al., 2009, p. 68). Scores above 100 would indicate an individual finds such adaptations to be fairly easy, while scores below would indicate the person is more rigid and has greater difficulty adjusting to change (Wood et al., 2009).

Other forms of the BarOn EQ-i exist, such as the EQ-i:125 that excludes eight negative expression items included in the original form. A short form (EQ-i: Short) consisting of 51 items is also available but only the total and cluster scores are reported for this version. A youth version (EQ-i:YV) consisting of 60 items similar to the short form is available to be used with children and adolescents aged seven to eighteen, as is a complementary observer form. This form matches the youth version, but only consists of 38 items and is completed by a teacher or parent. Another observer form, the EQ-360, also is now available to complement the standard form and is primarily designed for organizational settings. This form allows up to six observers to rate an individual on 88 items using a similar five-point scale. The feedback report provides the same scores as the EQ-i, as well as comparisons between all rater groups and self-report scores (Wood et al., 2009).

In addition, a new version of the inventory, the EQ-i 2.0®, was released in 2011 with some major changes in its structure (Multi-Health System, MHS, 2012). It still consists of a total score and five composite scores, but three of these are new, Self-Perception, Self-Expression and Decision Making, while Interpersonal and Intrapersonal are retained. These composite scales still consist of fifteen subscales with one new addition, Emotional Expression and one deletion, Happiness. The number of items has remained the same for the different types of reports, but how they are used in the score calculations has changed significantly with items loaded on only one
subscale instead of multiple ones. Currently, only a few of the forms and reports have been converted to this new model, but eventually all of them, including the Higher Education report, will be transformed to the EQ-i 2.0®.

Considerable research has been conducted to validate the MSCEIT and EQ-i with varying results. In general, the reliability of both tests has been quite good (e.g., Bar-On, 1997, 2002; Dawda & Hart, 2000; Mayer et al., 2003; Papadogiannis et al., 2009; Parker, Saklofske, Wood, Eastabrook & Taylor, 2005). The convergent and divergent validity for each test also has been fairly strong, as has been their predictive validity in educational and occupational settings. However, their concurrent validity has been quite poor.

Since the MSCEIT is designed to measure a new type of intelligence, in terms of convergent and divergent validity, it should exhibit moderate correlations with other measures of cognitive ability, and weaker correlations with indirectly related construct such as personality and emotions. In most studies this has been the trend, with moderate correlations being revealed between scores on the MSCEIT and other mental ability tests, and much weaker correlations between scores on the MSCEIT and scores on personality tests and emotional skills tests (Brackett & Mayer, 2003; Lam & Kirby, 2002; Livingstone & Day, 2005; Mayer et al., 2004a, 2004b; Roberts et al., 2006; Schulte et al., 2004; Van Rooy & Viswesvaran, 2004; Van Rooy, Viswesvaran & Pluta, 2005; Warwick & Nettelbeck, 2004). However, one study found significant correlations with personality measurements, but not with cognitive abilities (O’Connor & Little, 2003).

As for the predictive validity of the MSCEIT, most of the research has focused on the occupational domain with mainly positive results (e.g., Kerr, Garvin, Heaton & Boyle, 2006; Leban & Zulauf, 2004; Lopes, Grewal, Kadis, Gall & Salovey, 2006; Reid, 2009). Research in educational settings, thus far is limited, and the results from studies investigating the relationship
between MSCEIT scores and academic performance have been mixed. For example, some significant correlations have been revealed between the MSCEIT total score and SAT scores, as well as with post-secondary grades (Barchard, 2003; Brackett & Mayer, 2003; Di Fabio & Palazzeschi, 2009; Rode et al., 2007). However, extremely weak correlations between MSCEIT scores and college grade point average (GPA) have also been reported (O’Connor & Little, 2003). Obviously there is a need for additional research before it can be determined if and how the MSCEIT should be utilized in the field of education.

The BarOn EQ-i is designed to be a measure of both cognitive skills and traits, and thus it is assumed it will exhibit moderate correlations with measures related to either of these. Some studies have confirmed this by producing significant correlations with measures from personality assessments such as the Big Five, 16PF, and the NEO-Five Factor Inventory (Bar-On, 1997; Dawda & Hart, 2000; Livingstone & Day, 2005; Newsome et al., 2000), and with measures of cognitive abilities (O’Connor & Little, 2003). However, the EQ-i also has exhibited weak correlations with traditional forms of intelligence and excessively strong correlations with specific personality traits in the same or other studies (Brackett & Mayer, 2003; Derksen et al., 2002; Livingstone & Day 2005; Newsome et al., 2000).

As for the predictive validity of the EQ-i, in educational settings most studies have revealed significant correlations between the EQ-i and academic performance (Austin et al., 2005; Di Fabio & Palazzeschi, 2009; Jaeger, 2003). This appears to be the trend at all levels of education. For instance, studies have found that academically successful students scored higher than unsuccessful students on several EQ-i clusters and/or on the total EQ-i in elementary school (Eastabrook, Duncan, Eldridge, 2005), high school (Parker, Creque et al., 2004) and university (Jaeger & Eagan, 2007; Parker, Summerfeldt, et al., 2004; Parker, Duffy, et al., 2005). Also, at the university level, persisting first year university students scored significantly higher than
students who withdrew on most of the EQ-i dimensions (Parker et al., 2006). However, some studies have revealed weaker correlations between scores on the BarOn EQ-i and college GPA (Newsome et al., 2000; O’Connor & Little, 2003).

Where the validity of the MSCEIT and the BarOn EQ-i fall short is in studies exploring their concurrent validity. The premise of concurrent validity is that if tests are measuring the same construct then their scores should be similar. Hence, if a person scores high on the MSCEIT, she or he should also score high on the EQ-i and vice versa. Thus far this has not been the case, as correlations between scores on the MSCEIT and the EQ-i have been very low (Bar-On, 1997; Brackett & Mayer, 2003; Livingstone and Day, 2005; Mayer et al., 2002; Van Rooy, Viswesvaran et al., 2005). One exception to this is a study conducted by O’Connor and Little (2003) in which significant correlations between the MSCEIT total score and all the EQ-i cluster scores plus the EQ-i total score were revealed.

This lack of concurrent validity also occurs when group differentiations are explored. For example, gender differences on the MSCEIT are not the same as on the EQ-i. In most studies of the MSCEIT, females tended to score higher on some if not all of its factors as compared to males (Livingstone & Day, 2005; Mayer et al., 2002; Petrides & Furnham, 2000; Schulte et al., 2004). In comparison, typically there are no significant differences by gender on the Total EQ-i scores and very small ones on the subscales (Bar-On, 1997; Dawda & Hart, 2000; Livingstone & Day, 2005).

Due to the inconsistencies, there are many critics of EI who argue that these tests are not measuring the same construct (Locke, 2005; Matthews et al., 2002, 2004, 2007; Orchard et al., 2009; Schulte et al., 2004; Zeidner et al., 2004). However, Van Rooy, Viswesvaran et al. (2005) suggest this may not be the case, and that these discrepancies may be due to the different measurement methodology—performance-based versus self-report—not necessarily the
Besides the general critiques targeted at all EI tests, there is also plenty of test-specific criticisms. In terms of the MSCEIT, the bulk of the criticism revolves around its scoring systems. The general view is that emotions should not involve maximum-performance scoring procedures since there are no correct or incorrect ways to feel (Brody, 2004; Matthews et al., 2004; Petrides, 2009; Petrides et al., 2007). Moreover, the use of experts is controversial since it begs the question: What makes a person an “emotion expert?” (Matthews et al., 2004). The twenty-one emotional experts who established the expert scoring key for the MSCEIT were selected because they were members of the International Society of Research in Emotions (Pagadogiannis et al., 2009), but does this make them emotion experts? Moreover, critics note that all experts are fallible (e.g., Brody, 2004; Matthews et al., 2004). The consensus approach is just as contentious since popular belief about an emotion may reflect “conformity and goodness of fit rather than ability” (Matthews et al., 2004, p. 186). Another complaint about the MSCEIT is that it does not test one’s ability to perform a task using emotional knowledge, but instead tests one’s knowledge of emotions (Brody, 2004; Matthews et al., 2006). As Matthews et al. (2006) explain, “knowing that anger can lead to aggression does not necessarily help deal with aggressive individuals or help an individual to manage his own anger” (p. 7).

Meanwhile, the criticisms leveled at the BarOn EQ-i are similar to criticisms of personality questionnaires in general. One of the primary issues is that of faking, whereby scores are contaminated by “self-enhancing response styles” (Matthews et al., 2006, p. 12). There is also a question about the legitimacy of expecting people to be aware of their own emotions and be able to rate their emotional capacities accurately, especially those with low emotional intelligence (Matthews et al., 2006). One other issue identified is that the BarOn EQ-i, like other personality questionnaires, tends to underestimate the effect of specific situations on people’s behaviour and
hence their responses.

All of the criticisms speak to the overarching problem critics have with any self-assessment styled test, namely they doubt questionnaires can ever provide reliable and valid assessments of any form of intelligence (Bowman et al., 2002; Matthews et al., 2007; Murphy & Sideman, 2006; Schulze et al., 2007). As stated by Matthews et al. (2007) “given the choice to assess intelligence with a question that is factually verifiable or a subjective rating, even the staunchest advocate of the latter approach is forced to concede this is a no-brainer” (p. 26).

Although the deployment of the observer reports is no doubt in response to this specific criticism, it too has been argued to be subjective, with no factual method of verifying a correct response. For instance, Van Rooy and Viswesvaran (2004) concluded scores on supervisors’ reports for EI may be influenced more so by the employee’s likability than their job competence.

Summary

The fact that the MSCEIT and the BarOn EQ-i have exhibited acceptable measures of reliability and in many cases reasonable validity suggests they both may be measuring some form of emotional intelligence, albeit from different angles. However, at this time it is impossible to determine if one test is better than the other at assessing EI. Nonetheless, based on the predictive validity studies it does appear that both may serve as useful tools to predict performance in certain settings. The question of whether one is better than the other in terms of utility is more a question of suitability than of psychometrics. In other words, it all depends on the purpose of the assessment. This is exactly what Van Rooy, Viswesvaran, and Pluta (2005) concluded, stating that various “models [of EI] may have utility and the relative value of each could depend upon the context in which it is used” (p. 457).

Nevertheless, until there is more evidence to support the deployment of these and all other
EI tests, any application of these tests should proceed with caution. In particular, given that the MSCEIT is equated with traditional intelligence, and its measurement methodology—as well as that of the EQ-i—is reminiscent of IQ testing, there is a possibility that their usage could lead to inappropriate interpretations and thus objectionable consequences. For instance, people could be labeled as emotionally bright or emotionally dull depending on their EI scores. Plus, if EI scores are generalized over particular categories such as gender or ethnicity, these generalizations could once again lead to harmful social practices.

For emotional intelligence to be established as a credible construct, more research is needed to validate the tests that purportedly measure it. In addition to conducting similar types of validity studies, EI research also needs to expand its horizon, perhaps by employing other research methodology such as mixed methods and/or incorporating comparisons with other measures of emotion, personality, and intelligence. Future research also needs to explore the predictive power of EI using alternate measures of success or performance and in other social domains. Moreover, there is a definite need to investigate alternate methods of measuring EI. Whether such research will finally reveal a bona fide test of emotional intelligence is uncertain, as such a test may never exist. However, research may identify which, if any, type of test should be utilized under specific settings, thus maximizing the accuracy of the tests and minimizing the negative effects.

**Emotional Intelligence and First Year University Experiences**

The applicability of EI in higher education has become a topic of increasing interest to a variety of educators in recent years, generating a fair amount of research especially in relation to the students’ experiences in first year. Some of these first year studies have explored gender differences, changes in EI, as well as the influence of training on EI. However, the focus of the
majority of these studies has been on the predictive validity of EI.

Typically, these predictive validity studies employed a quantitative approach, measuring the EI of incoming students using a standardized EI assessment tool and their academic performance via exam scores, course grades, grade point average (GPA) and/or retention. Significant associations are then explored using correlation analyses or by comparing the EI scores of successful students to nonsuccessful students. As already noted, most of these studies have revealed statistically significant relationships between some of the measures of the students’ EI and their academic performance (Austin et al., 2005; Jaeger & Eagan, 2007; Nelson and Nelson, 2003; Parker, Duffy, et al., 2005; Parker et al., 2006; Parker, Summerfeldt, et al., 2004; Qualter, Whiteley, Morely & Dudiak, 2009; Saklofske, Austin, Mastoras, Beaton & Osborne, 2012; Schutte et al., 1998; Walker, 2006).

For instance, the study by Parker, Summerfeldt, Hogan, and Majeski (2004) involving 372 students at a Canadian university reported several significant results when they utilized the BarOn EQ-i Short form (BarOn, 1997). In this study, the researchers were investigating the transition from high school to university so participation was limited to students who had graduated from high school within the past two years, were in their first year of university, and were attending full-time. The initial analysis revealed low correlations between first year GPA and Total EQ-i; however, higher correlations did exist between GPA and several of the composite scales of EQ-i, namely Intrapersonal abilities, Stress Management and Adaptability (Parker, Summerfeldt et. al, 2004).

Further analysis, in which the students’ academic achievements as determined by GPA were dichotomized into academic success for GPAs above 79% and nonsuccess for GPAs below 60%, revealed significant differences for the same three subfactors of EI. For this analysis, students in the successful group (n = 67) scored significantly higher than the unsuccessful
students (n = 64) on Intrapersonal ability, Stress management and Adaptability. Moreover, when discriminant analysis was employed using these dichotomized data to evaluate the predictive validity of the EQ-i Short form scores, the overall correct classification rate was 86% (Parker, Summerfeldt et. al., 2004). Consequently, Parker, Summerfeldt, et al. (2004) concluded that skills related to the EI composite scales of Intrapersonal, Adaptability and Stress Management were “important factors in the successful transition from high school to university” (p. 170).

Somewhat similar results were reported in a subsequent study by Parker, Duffy, Wood, Bond, and Hogan (2005) involving 1,426 students at several American universities. This study, which replicated that of Parker, Summerfeldt, et al. (2004), revealed higher scores on Interpersonal, Adaptability, and Stress Management composite scales, as well as on the Total EQ-i for the academically successful students (n = 590) as compared to the nonsuccessful students (n = 289). Once again the authors (Parker, Summerfeldt et. al, 2005) concluded “emotional and social competencies are important factors in the successful transition from high school to university” (p. 76).

The findings were much the same from a study conducted at another four-year, public institution in the United States involving 1, 205 students by Walker (2006). In this study, when the BarOn EQ-i scores were regressed against students’ semester GPA, the results indicated that a linear combination of all the BarOn EQ-i composite scores—Intrapersonal, Interpersonal, Stress Management, Adaptability and General Mood—and the Total EQ-i scores was significantly related to academic performance in first year.

In contrast, there are several studies in which the results and conclusions differ. One example of this is the study by O’Connor and Little (2003) that involved 90 students in an introductory psychology course who completed both the EQ-i (BarOn, 1997) and the MSCEIT
When these scores were regressed against cumulative GPA, significant but weak correlations were revealed for the Total EQ-i score, and Intrapersonal and Stress Management composite scores. Correlations between GPA and the MSCEIT total score and most of its subgroups were not significant, except for the Understanding Emotions dimension but again this was weak (O’Connor & Little, 2003). Based on these findings, O’Connor and Little (2003) concluded “EI is not a strong predictor of academic achievement” (p. 1893).

Another study by Newsome, Day and Catano (2000) found no significant correlations between BarOn EQ-i Total score or the five EQ-i composite factors, and students’ year-end GPAs. Hence, Newsome et al. (2000) concluded that there was “no support for claims of emotional intelligence’s (as assessed by EQ-i) ability to predict academic achievement” (p.1012). It is important to note that the sample of students in this study was quite diverse compared to that of other studies. Specifically, the age range for participants as greater (17 to 56 years old) and it included both full-time and part-time students who were in various stages of their degree (first to fourth year).

As for gender differences, there appear to be some common trends especially in studies that employ the BarOn EQ-i. Specifically, numerous studies have revealed slightly higher scores for first-year, female students as compared to male students on several of the EQ-i composite scores (Leedy & Smith, 2012; Parker, Duffy, et al., 2005; Parker et al., 2006; Parker, Summerfeldt, et al., 2004; Walker, 2006). For instance, in the study by Parker, Duffy, et al. (2005), female students scored significantly higher than male students on the Interpersonal and Stress Management composite scales and the Total EQ-i scores. Gender differences were also reported in the studies by Parker et al. (2006), Walker (2006), and Leedy and Smith (2012), with females scoring significantly higher than males on the BarOn EQ-i Interpersonal scale. It is worth noting that in some of these studies, male students did score higher than female students on
several of EQ-i scales, the most common one being *Adaptability*; however, these differences were not significant (Parker, Duffy, et al., 2004; Parker et al., 2006, Parker, Summerfeldt, et al., 2005).

These findings are somewhat similar to the patterns associated with the norming population of the EQ-i. Specifically, BarOn (1997, 2006) found females tended to score higher on the *Interpersonal* scales as compared to males, while males continually scored higher on the *Intrapersonal, Adaptability* and *Stress Management* scales as compared to females. Similar results have also been reported in studies employing different EI assessment tools or studies involving more diverse samples of undergraduate students (Austin et al., 2010; Fatt, 2004; Hystad et al., 2010; Stratton et al., 2008; Sutarso et al., 1996; Van Rooy, Alonso, et al., 2005).

In contrast, there are a few higher education studies that have not shown significant gender differences in EI scores. For instance, Jdaitawi, Noor-Azniza, & Mustafa (2011) reported that the level of emotional intelligence as measured by the Emotional Intelligence Appraisal (EIA) did not differ significantly for female and male students attending first year at two universities in North Jordan. Similarly, the UK study by Qualter et al. (2009) did to find any significant differences in EI levels between first year female and male students as measured by the Emotional Intelligence Scale. Similarly, Çoban, Karademir, Acak, & Devecioglu (2010) reported no significant differences on the Schutte Emotional Intelligence Scale (SEI) between female and males students who were sitting a special-ability examination. However, this result may be distorted by the broad range of participants that included some first year students, a variety of undergraduate students, and some students who had graduated but were contemplating further studies.

As for changes in EI, a study involving 97 first-year American students by Leedy and Smith (2012) included a pre and post assessment of students’ EI skills after one semester of university. Utilizing the BarOn EQ-i, Leedy and Smith (2012) did not find any significant
differences in the Total EQ-i or composite scores between the two assessments. However, when they factored in gender, they found the EI scores on the Total EQ-i, and the Interpersonal and Adaptability composite scales increased for females, but not males (Leedy & Smith, 2012). Although this was an interesting finding, it is important to note that gains shown by the female students were not significant.

Another study investigating changes in EI by Stratton et al. (2008) revealed more interesting results. In this study, the emotional intelligence of 64 medical students was assessed during the first year orientation and again in the third year clinical training using the Trait Meta-mood Scale (TMMS) and Davis’ Interpersonal Reactivity Index (IRI). A comparison of the pre and post scores revealed significant decreases in mean EI scores on several subscales: Attention to Feelings, Mood Repair, and Empathic Concern. However, there was a significant increase in scores on the Personal Distress subscale. Based on these results, Stratton et al. (2008) concluded “students’ abilities to effectively manage affective states may be subject to some minor fluctuation across the undergraduate educational curriculum” (p. 279). Whether the results from these two studies would hold true for other samples of first year students is unknown.

The influence of emotional intelligence training is another area understudied in higher education, perhaps because such training is not common as of yet in the post-secondary setting. However, this may change as a study by Nelis et al. (2009) reported a statistically significant increase in emotional identification and emotion management abilities for university students who participated in an EI training program based on pre and post testing. Moreover, these changes appeared to persist as positive changes were still statistically significant six months after the training.

Bond and Manser (2009) reported somewhat similar results in their study conducted at a Canadian college. For this study, the EI of first year students who participated in a modified
emotional intelligence course was compared to the EI of first year students who did not take the course. The results indicated there was no significant difference in the overall EI for the two groups of students, but the students who took the course did score significantly higher on psychological mindedness which is related to self-awareness (Bond & Manser, 2009).

In a similar study, Jdaitawi et al. (2011) found that an experimental group of first year students who received EI training had higher emotional intelligence scores as compared to a control group. However, this did not relate to any differences between the groups on social or academic adjustment as theorized. The short training period was the primary reason attributed to the lack of significance between measures of EI and adjustment.

Although these studies provide some very useful insights into the connection and application of emotional intelligence in higher education setting, further research is necessary. First, future studies need to explore topics which have been the focus of little, if any, research. For instance, the connection between EI and other measures of success as well as other measures of experiences in first year has not been well documented as of yet. Moreover, research into how EI changes during university is extremely limited, despite the potential value to both students and institutions. It also seems clear that EI research and interpretation should be sensitive to gender differences. Second, when conducting such research, employing tools that provided more details about the specific EI skills would be beneficial. For example, most of the predictive validity studies conducted thus far utilized the BarOn EQ-i Short form, which does not provide scores for specific EI subscales such as Independence, Empathy or Flexibility (see Table 3 for a detailed list). Hence, utilizing the full EQ-i assessment would facilitate a more in-depth analysis of the possible connections between EI and first year experiences. Finally, including qualitative data, either by employing a qualitative or mixed methods approach, would seem prudent as such data may provide insights into the topic of EI and first year experiences of students not yet revealed by
the existing quantitative studies.

**Conclusion**

In this chapter, I provided a thorough overview of the key aspects related to emotional intelligence, followed by a comprehensive examination of the current research that explored the linkages between the EI and the first year experiences of students. Based on this review, it appears as though connections between first year experiences and emotional intelligence do exist, but they are complicated, with the specific details and depth of the relationships not well understood. This is partially due to the multitude of the confounding factors associated with the first year experience. It is also partially due to the controversy surrounding the conceptualization and measurement of EI. The mixed methods study presented herein attempts to elucidate these relationships by providing an in-depth description of the emotional intelligence of first year students, including the students’ views about first year and its relationship to EI, analyzing the potential connections between EI and academic performance as well as engagement, assessing changes in students’ EI during their first year, and investigating possible gender differences. With these new perspectives, this study provides in-depth insights into the connections between EI and first year experiences in higher education.
Chapter Four
Research Design

The Research Questions

This study explores the possible connections between the emotional and social skills of students—as measured by emotional intelligence—and their experiences in first year university. The research is directed by five major questions: (1) What is the emotional intelligence of first year students? (2) What are the students’ perceptions about their experiences in first year in relation to emotional intelligence? (3) What type of connection, if any, exists between the emotional intelligence of students and their experiences in first year? (4) Does the emotional intelligence of first year students change as a result of their exposure to academia? (5) Does the emotional intelligence and experiences of first year students differ by gender, and if so how?

The Research Design

To answer these questions, this study employed a mixed methods research design, incorporating both quantitative and qualitative approaches “in order to provide a comprehensive analysis of the research problem” (Creswell, 2009, p. 14). The concept of mixed methods originated with Campbell and Fiske (1959) when they conducted a validity study that utilized more than one quantitative method to measure a psychological trait. Others soon followed, conducting studies that utilized a variety of sources to study social phenomenon, a process labeled by Denzin (1979) as triangulation. Denzin (1979) also differentiated between different types of triangulation. Data triangulation involved utilizing a variety of different data sources, investigator triangulation involved the use of several different researchers, theory triangulation involved interpreting the results through multiple perspectives, and methodological triangulation involved the employment of multiple methods to investigate an issue.
Mixed methods studies tend to focus on method triangulation, combining quantitative and qualitative approaches in order to maximize the benefits of each approach and minimize their limitations (Bryman, 2006; Creswell, 2009; Creswell & Clark, 2011; Onwuegbuzie & Johnson, 2006; Tashakkori & Teddlie, 1998). It is important to note that these two approaches, quantitative and qualitative, are considered to be quite distinct in terms of their underlying philosophical assumptions and research strategies.

Quantitative research is mainly associated with a positivist worldview in which knowledge is thought to be based on “careful observation and measurement of the objective reality that exists ‘out there’ in the world” (Creswell, 2009, p. 7). From this perspective, it is assumed that social phenomena can be systematically investigated and quantified. The designs of such studies are usually descriptive, correlational, or experimental in nature. Descriptive studies involve collecting numerical data about specific characteristics of a certain population by studying a sample of that population. Correlational studies, which also tend to involve samples, endeavor to determine if, and to what degree, a relationship exists between two or more quantifiable characteristics. Experimental research tests if outcomes can be influenced by certain treatments. In all three cases, the data are analyzed via statistical techniques to explain the phenomena being studied.

The quality of quantitative research is assessed by the reliability and validity of the studies. Reliability refers to the consistency of the results and validity refers the degree of certainty that the findings are accurate and can be generalized to other settings. There are a variety of methods to improve reliability and validity, such as controlling for confounding variables, employing random selection procedures, ensuring sample sizes are sufficiently large, utilizing standardized tools to measure attributes, and applying the proper statistical analysis to the data collected.
In comparison, qualitative research usually is associated with a constructivist or interpretivist worldview in which it is posited that knowledge or “meanings are constructed by human beings as they engage with the world they are interpreting” (Crotty, 1998, p. 43). Within this paradigm, the intent of research is to interpret these meanings. To do so, there are a variety of strategies that can be employed such as ethnography, grounded theory, participatory action research, case studies, phenomenology, narrative inquiry, and discourse analysis. Observations, interviews, documents, and/or audio-visual material are common sources of data. Analyses of these types of data involve the identification of recurring patterns or themes from which the findings are constructed.

The quality of qualitative research is determined by the authenticity and trustworthiness of the studies. These relate to how credible and consistent the findings are given the data presented which, in turn, influences the transferability of the findings to other settings (Creswell, 2009; Lincoln & Guba, 1985; Merriam, 2009). As with quantitative research, there are a variety of methods to enhance the quality of qualitative research (Creswell, 2009; Kvale & Brinkmann, 2009; Marshall & Rossman, 2006; Merriam, 2009; Tashakkori & Teddlie, 1998). Providing a detailed description of the study so others can contextualize the research and share in the experiences is key to all such studies. So, too, is clarifying the researcher’s position in terms of her/his background and how it shapes their approach to research, especially the interpretation of the findings. Conducting member checks in which the researcher checks the preliminary analysis with the participants also is common. Prolonged engagement in data collection also is recommended because it provides the researcher with the scope needed to fully understand the phenomenon which ideally leads to saturation—the point at which no new information surfaces. Checking the meaning of outliers and conducting negative case analysis also contributes to the authenticity and trustworthiness of qualitative research, as does peer debriefing.
Given these philosophical and methodological differences, it would seem these two approaches are incompatible. However, mixed methods research demonstrates that this is not the case. As stated by Hammersley (2006) in his analysis of the qualitative-quantitative divide, “what is involved is not a simple contrast between two opposed standpoints, but a range of positions sometimes located on more than one dimension” (p. 249). Thus, he argues, “that selection among these positions ought to depend on the purposes and circumstances of the research, rather than being derived from methodological or philosophical commitments” (p. 249). Mixed methods research adheres to this position and as a result it is often associated with the pragmatic worldview in which the focus is “on applications—what works—and solutions to problems” (Creswell, 2009, p. 10). Thus, when conducting research,

pragmatists consider the research question to be more important than either the method they use or the worldview that is supposed to underlie the method. (Tashakkori & Teddlie, 1998, p. 21)

So to investigate the research problem, pragmatists believe that either method, quantitative or qualitative, is useful. Furthermore, they tend to support using “pluralistic approaches to derive knowledge about the problem” (Creswell, 2009, p. 10). With this in mind, it would seem that not only are quantitative and qualitative methods compatible, they also can be complementary. This is precisely what Andres (2012) contends in her discussion regarding combining methods within survey research. As she states,

qualitative researchers could strengthen their research projects which would, in turn, be more rigorous and hence more credible, and quantitative researchers could expand the results of their findings by enlivening them with the voices of respondents. (p. 3)

The specific strategy or design of a mixed methods study is determined by the level of interaction, priority, timing, and mixing of the quantitative and qualitative (Creswell & Clark, 2011). A convergent design occurs when qualitative and quantitative data are collected
concurrently, prioritized equally, analyzed independently, and then mixed during the interpretation stage (Creswell & Clark, 2011). An explanatory sequential design involves collecting and analyzing the quantitative data first to address the study’s research questions. Then qualitative data are collected purposefully to explain the quantitative findings (Creswell & Clark, 2011). In contrast, the exploratory sequential design involves collecting and analyzing qualitative data initially then following up with quantitative data to test or generalize the initial findings (Creswell & Clark, 2011). When a traditional quantitative study incorporates a qualitative component or vice versa, the study is adhering to an embedded design (Creswell & Clark, 2011). Transformative design involves employing a transformative theoretical framework when collecting, analyzing, mixing, and/or interpreting the quantitative and qualitative data (Creswell & Clark, 2011). Finally, a multiphase design occurs when a study involves multiple phases with concurrent and sequential collection of qualitative and quantitative data sets (Creswell & Clark, 2011).

For this study, a convergent design was employed in order “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122), namely the connection between EI and first year experiences. As already mentioned, the convergent design involves collecting and analyzing the two types of data separately and independently of each other using the appropriate procedures. The mixing then occurs when the results are merged in order to compare, contrast, and/or synthesize the results (Creswell & Clark, 2011). During this step, it is possible to transform data from one type to another and conduct further analyses; this procedure was implemented in this study with the some of the themes in the qualitative data being transformed into quantitative data to facilitate further exploration. All of this then facilitates the interpretation of the final results.
Conducting a mixed methods study that employs both these approaches does create challenges. One of the major ones is that mixed methods studies tend to require extensive data collection and analysis. The legitimization of such studies also is more complicated since each approach requires different strategies, as does the combination of the two (Onwuegbuzie & Johnson, 2006).

The Researcher

I entered this PhD program with over twenty-three years of administrative and instructional experience in the secondary and post-secondary educational systems in Alberta, Ontario, and British Columbia. My previous education includes a Bachelor of Education (Secondary) degree with a major in Mathematics and a Master of Arts degree in Mathematics Education with a focus on psychometrics. During the first half of my career, I taught primarily Mathematics and Statistics at high schools, vocational colleges, technical institutions, and university. During the second half, I became more involved with assessment activities assuming a faculty position as the Coordinator of the TRU Assessment Centre, a service department that provides and facilitates a variety of professional assessment services for TRU (Kamloops, BC) and its surrounding community.

It is in this role, as the Assessment Centre Coordinator, that I began to engage in research exploring the connection between assessment and student success. With my mathematical and psychometric background, initially my tendency was to employ primarily quantitative methods in such studies. However, I soon realized although numerical data were informative in terms of identifying a problem or quantifying issues (i.e. trends, patterns, etc.), their ability to explain results was limited, thus the need for words. So gradually I incorporated qualitative methods with my quantitative methods, adopting a mixed methods approach. This type of research is a perfect
fit with my pragmatic worldview for, as already noted, pragmatism presents a practical and applied research philosophy.

   Study what interests and is of value to you, study it in the different ways you deem applicable and use the results in ways that can bring positive consequences. (Tashakkori & Teddlie, 1998, p. 30)

   This statement clearly articulates my approach to research and to this study in particular.

In an effort to improve the experiences of first year students, I decided to investigate a topic of interest—the connections between emotional intelligence and first year experience—utilizing multiple sources of data and various methods of analysis and interpretation, the latter of which are described in this chapter.

**The Setting**

This research was conducted at Thompson Rivers University during the 2010 and 2011 academic year. This institution was originally established in 1970 as a community college (Cariboo College), then due to significant program expansion it was transformed into a university college (University College of the Cariboo, UCC) in 1995. In 2005, UCC was amalgamated with the British Columbia Open University (BCOU) to form Thompson Rivers University (TRU). Currently, TRU is the fourth largest university in British Columbia, with the main campus located in Kamloops, BC, and several other smaller campuses located throughout its region. As a comprehensive, public university, TRU offers certificates, diplomas, baccalaureate and masters degrees in various disciplines.

   Based on enrolment data there were 14,582 students enrolled in on-campus courses and programs at TRU during the 2010-11 academic year (TRU Institutional Planning and Analysis, 2011). Of these, 1274 were new students enrolled in a baccalaureate degree (TRU Institutional Planning and Analysis, personal communication, December 21, 2011).
The Participants

The target population for this study was first year students beginning an undergraduate degree on the main campus of Thompson Rivers University. To control for confounding variables the selection of students was limited, including only students who had recently graduated from high school and who were attending full-time. The criteria for being a recent graduate was based solely on age, with the maximum age limited to 21. To be classified as full-time, students had to be enrolled in a minimum of three courses per semester in the 2010-2011 academic year. The list of students who met these requirements, a total of 811, was provided by the TRU Institutional Planning and Research office soon after the course transfer/withdrawal date had passed—four weeks into the first semester. In the file from the Institutional Planning and Research office was the name of the student, their age, sex, email address, and program of study.

Because this study involved a pre and post assessment plus an interview, the time commitment for the students and the researcher, as well as the costs involved in the study were considerable; thus, I originally considered an optimum sample size to be 100 participants. According to the TRU Institutional Planning and Research office, the participation rate in standard student surveys at TRU was approximately 30%. Given the time commitment of this study, I determined that a more likely participation rate would be somewhere between 15% and 20%. Hence, to ensure I would have enough students participating without having to turn students away, I generated a target sample involving 80% (n = 649) of the TRU first year population. Since gender differences were being investigated, proportional gender representation was considered crucial. Hence, the random selection was stratified by gender to ensure the target sample consisted of approximately 40% males and 60% females to be consistent with the overall TRU first year student population (Table 2).
Table 2

Demographic Data for TRU First Year Students Enrolled Full-time in a Bachelor’s Degree Program – Fall 2010

<table>
<thead>
<tr>
<th></th>
<th>TRU FY Population</th>
<th>Target Sample (80% of FY Population)</th>
<th>Study Participants (9% of Target Sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total #</td>
<td>811</td>
<td>649</td>
<td>60</td>
</tr>
<tr>
<td>Male</td>
<td>326 (40%)</td>
<td>261 (40%)</td>
<td>19 (32%)</td>
</tr>
<tr>
<td>Female</td>
<td>485 (60%)</td>
<td>388 (60%)</td>
<td>41 (68%)</td>
</tr>
<tr>
<td>Average Age</td>
<td>18.4</td>
<td>18.4</td>
<td>18.3</td>
</tr>
<tr>
<td>Min. Age</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Max Age</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

As noted in Table 2, 60 students participated in this study. Although this was less than my intended goal, it is not inconsistent with that of other studies (e.g., O’Connor & Little, 2003; Schutte et al., 1998; Stratton et al., 2008). According to institutional data, 45% of these students were enrolled in a Bachelor of Arts program, 35% in a Bachelor of Science program, 12% in other types of degree programs such as Tourism or Business, and 8% were undeclared.

In addition to these data, other background information was gathered regarding the students’ aptitudes, preparation for post-secondary education, and personal situations using a student background information survey and a follow-up survey (Appendix B), both designed in collaboration with my thesis committee members. Based on the responses to these surveys, the majority of the students (75%) always planned on attending university with their goal being to complete a Bachelor degree or higher, although some were not sure of their educational goals (18%). The majority of the students rated parental support for their educational endeavors as very strong (64%) or strong (17%).
Only eight of the 60 (13%) participants were first generation students—mother and/or father had no post-secondary education (Figure 2). Conversely, 25 out 60 (42%) of the students indicated that at least one parent had completed an undergraduate degree, and six of those students indicated that both parents had completed undergraduate or graduate degrees (Figure 2). This is consistent with the results reported in the 2013 First-Year Student Survey in which 14% of the students were identified as first generation (CUSC, 2013).

Figure 1: Level of Education of Parents

Information gathered from the students who were interviewed (n = 42) at the end of the year indicated that in all cases at least one parent was employed, with most working in such fields as finance, education, health care or tourism, or self-employed. Some of the specific job titles included Accountant, Architect, Chef, Clerical staff, Construction Contractor, Electrician, Librarian, Nurse, Public School teacher or counselor, Rancher, Post-Secondary Program Coordinator or Professor.
Students in my sample were paying for their post-secondary education through some combination of parental contributions (60%), awards and scholarships (55%), student loans (33%), employment income (37%), and/or other sources of funding such as band funding (23%). The majority of the participants were not working during their studies (67%) and those who were (30%) only worked part-time (< 20 hours per week) except for one student who reported working more than 20 hours per week. Similar findings were reported by students who completed the 2013 First-Year Student Survey (CUSC, 2013) in that 54% of the students indicated they received scholarships, financial award, or bursaries in their first year. However, slightly more students (40%) stated that they were employed during their first year, working on average 14 hours per week (CUSC, 2013).

Of the 60 participants, 49 (82%) had one or more siblings also in post-secondary education either attending TRU or another educational institution. Moreover, all 60 participants indicated that they had at least one or more friends attending TRU and/or some other college or university. Twenty-three (37%) were local students who had graduated from a high school within the Kamloops area, while the other 37 (63%) students were from out-of-town. The majority of the students who completed the follow-up survey were Caucasian (79%) and none were married.

Based on this demographic and situational data, the participants in this study appeared to be highly motivated to attend university with most being supported by their parents, emotional, and/or financially. Almost all appeared to have role models in terms of having parents who had attended post-secondary institutions, and/or siblings and friends currently attending community college or university. All of the participants were young (≤ 21), single, and most were Caucasian.
The Assessment Tool - Emotional Quotient Inventory (EQ-i)

For the EI assessment, the online BarOn Emotional Quotient Inventory: Higher Ed (EQ-i: HEd) form was utilized (MHS, 2010). The BarOn EQ-i was specifically selected for this study because it was the only tool at the time that offered reports designed specifically for the higher education setting. In addition, the Higher Ed report, unlike the Short form, provides scores for the EI subscales enabling a more in-depth exploration into connections between first year experiences and specific EI skills (Table 3). Although there was a considerable cost involved with employing this version of the EQ-i (approximately $15 CAN per assessment), in my opinion there were substantial benefits of having the subscale scores in addition to the composite and total score. Logistically, the EQ-i was also selected because it was straightforward to administer and score.

The EQ-i self-assessment consists of 133 brief items and takes approximately 15-20 minutes to complete. The wording of the items is in the form of short self-statements rated on a five-point Likert scale ranging from “very seldom true of me” to “very often true of me” (Wood, Parker, & Keefer, 2009). Based on these items, the EI assessment renders a Total EQ-i score, five composite scores—Intrapersonal and Interpersonal Skills, Adaptability, Stress Management and General Mood—and 15 subscale scores. A detailed description of each of the composite and subscales as defined by Raven Bar-On (1997, 2006) is provided in Table 3.

Using the normative data, scores from 4,000 adults in North America and the validity indexes, the EQ-i scores are converted into standard scores based on a mean of 100 and a standard deviation of 15. Hence, most scores are between 55 and 145 (±3 standard deviations from the mean). Scores below 90 are identified as Areas for Enrichment, 90 - 120 as areas of Effective Functioning and above 120 as areas of Enhanced Functioning.
Table 3

Description of the EQ-i Scales

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Description by Bar-On (1997 &amp; 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td>the ability to recognize, understand, and express emotions and feelings</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>the ability to respect and accept oneself as basically good</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>the ability to recognize one’s feeling</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>the ability to express feelings, beliefs, and thoughts and defend one’s rights in a nondestructive manner</td>
</tr>
<tr>
<td>Independence</td>
<td>the ability to be self-directed and self-controlled in one’s thinking and actions and to be free of emotional dependency</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>the ability to realize one’s potential</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>the ability to understand how others feel and relate to them</td>
</tr>
<tr>
<td>Empathy</td>
<td>the ability to be aware of, to understand, and to appreciate the feelings of others</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>the ability to demonstrate oneself as a cooperative, contributing, and constructive member of one’s social group</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>one’s ability to establish and maintain mutually satisfying relationships that are characterized by intimacy and by giving and receiving affection</td>
</tr>
<tr>
<td>Stress Management</td>
<td>the ability to manage and control emotions</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>the ability to withstand adverse events and stressful situations without ‘falling apart’ by actively and positively coping with stress</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>the ability to resist or delay an impulse, drive, or temptation to act</td>
</tr>
<tr>
<td>Adaptability</td>
<td>the ability to change, adapt, and solve problems of a personal and interpersonal nature</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>the ability to assess the correspondence between what is experienced and what objectively exist</td>
</tr>
<tr>
<td>Flexibility</td>
<td>the ability to adjust one’s emotions, thoughts, and behaviour to changing situations and conditions</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>the ability to identify and define problems as well as generate and implement potentially effective solutions</td>
</tr>
<tr>
<td>General Mood</td>
<td>the ability to generate a positive affect and be self-motivated</td>
</tr>
<tr>
<td>Optimism</td>
<td>the ability to look at the bright side of life and to maintain a positive attitude</td>
</tr>
<tr>
<td>Happiness</td>
<td>the ability to feel satisfied with one’s life, to enjoy oneself and others, and to have fun</td>
</tr>
</tbody>
</table>
Data Collection

This study was conducted over two academic semesters, Fall of 2010 and Winter of 2011 (see Figure 1). In the fall semester, the students in the target sample were invited to participate in the study via email. The email invite provided a brief overview of the study and an invitation to attend an information session in late September/early October for students who were interested in participating (Appendix C). At the information sessions students were given a detailed overview of the study and their potential role in it. Those who agreed to participate were asked to complete the consent forms and the Student Background Information survey. After this, students were given the choice of completing the assessment of their emotional intelligence immediately after the information session or registering for an alternate testing session. The majority of the students decided to complete the assessment immediately after the information session. In most cases, students either did the assessment in a computer lab or in the university’s Assessment Centre.

After the students \( n = 60 \) had completed the pre EQ-i, the assessment was electronically scored and individual score reports were produced and printed. I then informed the students that their reports were ready and arrangements were made to meet for a debriefing session usually within one week of completing the EQ-i (Figure 1). During these sessions, I gave the students copies of their EQ-i Higher Education Student Summary Reports and provided an explanation of the findings, plus answered any questions they had. These debriefing sessions were purposefully conducted with all of the participants \( n = 60 \) in order to minimize the possibility of the participants misinterpreting their EI results. Typically, the students preferred to have a private debriefing session, although a few did it in groups, with most of these sessions lasting 15 to 20 minutes. At the end of each of these sessions I encouraged every student to contact me if they required additional information, but none did. After these pre EQ-i debriefing sessions, the
participants continued with their studies with no further contact from myself until the end of their second semester.

Figure 2: Flowchart of the Sequence of Study Events

<table>
<thead>
<tr>
<th>Fall 2010</th>
<th>Winter 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email invite sent to students in the target sample</td>
<td>Email sent to students who completed the pre EQ-i, inviting them to participate in the second phase of the study</td>
</tr>
<tr>
<td>Students interested in participating attended information sessions</td>
<td>Participants completed post EQ-i (n = 42)</td>
</tr>
<tr>
<td>Students who agreed to participate completed consent forms and student background information survey</td>
<td>Participants met with researcher for a post EQ-i debriefing session (n = 42)</td>
</tr>
<tr>
<td>Participants completed Pre EQ-i (n = 60)</td>
<td>Participants met with researcher for semi-structured interview (n = 42)</td>
</tr>
<tr>
<td>Participants met with researcher for a EQ-i debriefing session (n = 60)</td>
<td>End of Study</td>
</tr>
<tr>
<td>No further contact with participants until subsequent semester</td>
<td></td>
</tr>
</tbody>
</table>

In the winter of 2011, participants were contacted once again via email approximately four weeks before the end of the second semester and invited to complete a post EQ-i assessment and participate in a private, semi-structured interview (Figure 1). Given the time commitment required, participants were offered a $20 honorarium to participate. Of the 60 original participants, 42 completed the second phase of the study.

The majority of the testing for the second part of this study was completed in the Assessment Centre at a time convenient for the participant. After each participant completed the post EQ-i, the higher education report was generated and shared with the student. This post EQ-i debriefing session was then followed by the interview. Almost all of the interviews were
conducted in my office immediately after the student completed the post assessment. The average length of the interviews was 30 minutes, ranging from 15-80 minutes long. Each interview began with a briefing in which I reviewed the purpose of the study and interview and asked if the participant had any questions prior to starting the interview. A similar debriefing session was conducted after the interview concluded in which I thanked the student for participating in my study and again asked if they had any final questions or concerns.

The focus of the interviews was to gather information about the students’ experiences in first year at TRU and their perceptions of emotional and social intelligence as applied to their first year experiences. To ensure consistency while providing some flexibility to explore emerging views on these topics, the interviews were semi-structured (Kvale & Brinkman, 2009; Merriam, 2009) following a basic script (Appendix D). Besides asking the scripted questions, I utilized follow-up and probing questions to explore and extend some of the answers provided by the participants. Also, I employed silence or pauses to allow the students to reflect on the questions and/or their answers. To enhance the interview quality, I frequently verified my interpretation of their answers. In most cases, I did this by rephrasing or summarizing their answers, and then ask the student to confirm that my interpretation was correct (Kvale & Brinkman, 2009).

To ensure greater accuracy, each of the interviews was recorded using a digital recorder. The digital files were downloaded to a computer and transcribed using Express Scribe software (NCH, 2011). According to qualitative researchers, transcription is an interpretive process that contributes to the qualitative analysis (e.g., Hammersley, 2010; Kvale & Brinkman, 2009; Lapadat & Lindsay, 1999; Marshall & Rossman, 2006; Olson, 2011; Tilley, 2003). Specifically, Olson (2011) notes that, “although the transcription of one’s own interviews is time consuming, it also increases the researcher’s reflexivity and the trustworthiness of the transcript” (p. 69). Similarly, Lapadat and Lindsay (1999) stated in their review of transcription in research and
practice, “transcription facilitates the close attention and the interpretive thinking that is needed to make sense of the data” (p. 82). With this in mind, I transcribed each of the interviews.

During the transcription process, I produced a verbatim account of each interview, focusing on the substance of the interview. This involved listening and transcribing a rough draft of the conversations, followed by listening to all the interviews once again, while correcting for errors including omissions in the first draft. The third time around I re-read all the transcripts while listening to clips of the interviews, and made changes as necessary. In total, the final transcripts included 478 pages of text saved in forty-two MS Word files. Each of these files was converted to rich text format and loaded into ATLAS.ti for analysis (ATLAS.ti Scientific Software Development GmbH, 2011).

Once all the post assessments were completed, a detailed EQ-i score report was generated that included all the individual scores on fifteen subscales, as well as five composite scores and a Total EQ-i score. It also included several indexes – inconsistency, positive impression, and negative impression – for assessing the validity of the responses. Students’ year-end Grade Point Averages (GPA) were also collected at the end of the second term from the TRU Institutional Research and Planning office.

**Data Analysis**

Because this study involved both quantitative and qualitative methods, the data produced included continuous data (EQ-i scores and GPA), ordinal data (levels of engagement), and nominal data (gender and dichotomized performance outcome) for both sufficiently large samples and smaller subsamples. Thus, parametric and nonparametric statistical methods were utilized to describe and compare the data and to investigate associations. For all of the statistical analyses, an alpha value of 0.05 was used. The software packages employed to conduct the analyses included
Qualitative Data

Analyzing the interview data was an ongoing process. During the interview phase, I utilized a journal to reflect on each interview, noting words or phrases that caught my attention, jotting down questions that arose from the conversation, and recording new insights in terms of EI and first year experiences, as well as reflections on the research process. Once all the interviews were completed, I reviewed all my entries in the journal in an effort to assist me with the next phase, namely the coding process that was facilitated by the ATLAS.ti software.

In this study, various coding methods were utilized, the primary one being descriptive coding (also known as topic coding). This type of coding typically involves using a word or short phrase to summarize the topic for passages of qualitative data (Saldaña, 2009). As a part of this coding activity, I utilized the ATLAS.ti text frequency function and Wordle (Feinberg, 2011) to create a word cloud of terms the students commonly used to describe their experiences in first year. A word cloud highlights more frequently used words in text by making them more prominent in the representation and by doing so it offers a “fast and visually rich way to enable researchers (and others) to have some basic understanding of the data at hand” (McNaught & Lam, 2010, p. 630). The terms in the word cloud then guided the descriptive coding process. The primary goal of this coding strategy was to capture students’ perspectives on the emotional aspects of first year. As such, the codes selected included descriptors of the students’ first year...
experiences that appeared to trigger various emotions, and descriptors of the students’ emotional skills that seemed to affect these experiences (Appendix E).

Besides descriptive coding, magnitude coding (Saldaña, 2009) was also utilized to provide a measure of the intensity of responses to six questions. For the first question, I asked the students to describe their experiences in first year. Student responses appeared to fit into two categories that were thereafter used to classify the comments. When students indicated that first year was primarily a good experience their answer was categorized as positive. If their experiences were a mix of good and bad experiences then their answer was categorized as mixed. Similarly, the responses to the question about whether they considered their first year a success fit two categories, success and mixed. The former indicated that the student felt his/her first year was overall successful, while the latter indicated the student felt first year was both success and nonsuccess.

To provide some measure of the student engagement in first year, I asked each student several questions about their involvement with faculty and other students, as well as his/her participation in extracurricular activity and utilization of support services. Based on the responses, accounts of engagement reported by students were categorized into three levels: high, medium and low.

For faculty interaction, a magnitude of high indicated that students reported being very comfortable with their instructors. As such, they engaged in regularly communication with most of their instructors, both inside and outside the classroom, and appeared to know faculty members well and vice versa. Students who interacted with only a few instructors on a regular basis, or who communicated with most of their instructors semi-regularly were considered to have a moderate interaction with faculty, and hence rated as medium. Students who had limited
interactions with faculty, never meeting with them during office hours or seldom contributing to the classroom discussion were rated as low.

In terms of student connection, students who actively interacted with other university students, in class and outside of class, were assigned a high rating. The medium rating was assigned to those students who interacted moderately with other students and low was given to those who kept their interactions with other students to a minimum.

Students who were heavily involved in extracurricular activities such as belonging and participating in numerous university clubs, regularly attending university sponsored events, and/or members of varsity teams were classified as high for extracurricular activity. The level of participation in extracurricular activities within the medium designation included students who belonged to just one club and/or occasionally participated in university sponsored events. Students who had not joined any club or hardly attended any social function were classified as low in terms of the level of participation in extracurricular events.

For utilization of support services those with the high designation were students who frequently used such services as the Math, Writing and/or University Preparation Centres, Supplemental Instruction, Peer Support, Advising, and Counselling. Students who used two or more of these services several times a month were given a rating of medium and participants who never or seldom used any of these services were rated as low in terms of their support service utilization.

In Vivo coding, which identifies verbatim a word or phrase stated by the participant, was also employed in the coding process (Saldaña, 2009). Since this type of coding features participants’ voices, it allowed me to identify “participant-inspired rather than researcher-generated” codes (Saldaña, 2009, p. 75). It is also provided a way in which to have the participants speak to my findings and discussions. As with most oral speech, there were
repetitions, pauses, and disfluencies such as “um’s” and “ah’s” (Kvale & Brinkman, 2009). Although these were recorded in the transcriptions, in most cases they were not included in the quotes presented in this dissertation. The reason for this conversion to a more readable form was to facilitate comprehension (Kvale & Brinkman, 2009). Moreover, some names and specific details were altered to adhere to the rules of confidentiality.

**Quantitative Data**

To measure academic performance, each student’s cumulative Grade Point Average (GPA) was collected. At TRU the academic letter grade scale spans from “A+” to “F” with corresponding grade points ranging from “4.33” to “0.00”. Cumulative GPA is a calculation of the average of students’ grades for all semesters and courses completed at TRU. For this study, the cumulative GPA included only the two semesters of first year from September 2010 to April 2011.

For additional analysis, the cumulative GPA was converted to a dichotomous variable of success or nonsuccess. At TRU students with a GPA of 1.5 or higher are considered to be in good academic standing. Those with a GPA below 1.5 are placed on Academic Probation, which serves as a warning to students that their academic performance must improve or they may be required to withdraw for at least one semester. Thus, for this study a GPA of 1.5 was established as the threshold of success: students with a GPA ≥ 1.5 were classified as successful and those with a GPA < 1.5 were classified as nonsuccessful.

Since EQ-i scores are designed to fit a normal curve, it would be reasonable to assume that the EQ-i scores for the sufficiently larger samples (n ≥ 30) in this study were normally distributed. To ensure this was the case, I graphed all the distributions for the larger sample sizes to determine if any deviated from a normal distribution. Although this graphing exercise did not
reveal any issues with kurtosis, some of the distributions did appear to be slightly skewed. These patterns were then evaluated by calculating the Kurtosis coefficient, the Skewness value and the Standard Error of Skewness for all the pre and post EQ-i score distributions. Based on these statistics of normality, either parametric or nonparametric statistics were employed for the larger samples. However, for the smaller samples sizes (n < 20), the distributions of scores were not assumed to fit any specific pattern and nonparametric statistics were employed. Nonparametric statistics also were employed for calculations involving only ordinal or nominal data.

For the pre EQ-i and post EQ-i scores, descriptive statistics such as the mean, standard deviation, and range were tabulated, and then depicted via bar graphs. Interscale correlations also were calculated between the various EQ-i subscale scores, and then utilized to provide a more detailed description of the students’ emotional and social skills.

To investigate if there was an association between pre EQ-i scores and academic performance, several analyses were conducted. The first involved correlating the pre EQ-i scores with year-end GPA. The second involved comparing the pre EQ-i mean scores for successful students with that of nonsuccessful students and determining if any differences were significant. This was done using the Mann-Whitney U test since the test scores for the nonsuccessful students was assumed to be distribution-free due to the small sample size.

Numerous analyses also were conducted to explore the relationship between pre EQ-i scores and students’ perceptions of their experiences. As mentioned, magnitude coding was utilized to convert the qualitative interview data into types of experience and levels of engagement. By doing this, the qualitative data were transformed into quantitative data so that the relationships between the pre EQ-i scores and these nonacademic experiences could be assessed using nonparametric statistics. The Mann-Whitney U test was utilized to determine if there was a significant difference among the distribution of the pre EQ-i scores and students’ two ratings of
their success (*success or mixed*) and of their overall experience in first year (*positive or mixed*). The Kruskal-Wallis test was employed to assess the association between pre EQ-i scores and participant’s three levels of involvement with faculty and other students, participation in extracurricular activities, and utilization of support services. To complete this cycle of analysis, associations between the measures of student engagement and academic success (i.e. GPA) were also explored using the Kruskal-Wallis test.

Since the Mann-Whitney U test and Kruskal-Wallis tests do not identify how the pre EQ-i scores or GPA differ by category (Sheskin, 2011), when significant relationships were revealed, boxplots were generated to identify possible patterns in the distribution of the data that would assist with the interpretation of the results. Boxplots are ideal for this type of exploratory data analysis because they do not make any assumptions about the distribution of the data. Hence they present the median and interquartile range as metrics of central tendency and variability (Sheskin, 2011).

To assess changes in EQ-i scores, pre and post EQ-i scores were compared using a paired t-test. Similar calculations were completed to assess changes in EQ-i by gender. For females, a paired t-test was employed as the subsample was significantly large. However, for males the Wilcoxon Signed Ranks test was used to test the differences due to a small sample size. Gender differences in pre and post EQ-i scores also were explored using the Mann-Whitney U test.

**Legitimation**

In this study, numerous strategies were employed to validate and verify the collection, analysis, and interpretation of the quantitative and qualitative data. On the quantitative side, I controlled for some of the confounding variables by setting limits on the target population and randomly selecting the sampling population. I utilized a standardized assessment tool, the EQ-i,
to measure the emotional and social skills of the participants for both the pre and post assessment. I also employed the appropriate statistical methods, parametric or nonparametric, based on the distribution and type of data. As for the qualitative approach, I digitally recorded the interviews, transcribed them myself, and triple-checked each transcription to minimize errors and to confirm they reflected the conversations as precisely as possible. I adhered to the principle of prolonged engagement in data collection and analysis by conducting a substantial number of interviews. Also, I provided detailed descriptions throughout this dissertation to present the most realistic account of the research as possible. In addition, I investigated outliers and presented discrepant information that countered the emerging themes. Moreover, I explained my role as the researcher in an effort to clarify any bias I might bring to this study. Through the mixed methods approach, the triangulation of these different data sources was employed to build a coherent account of the research issues and to legitimize the analysis and interpretation of all data.
Chapter Five

The Emotional Intelligence of First Year Students

As outlined in the previous chapter, the emotional and social skills of the first year students participating in this study were measured using the BarOn Emotional Quotient Inventory (EQ-i): Higher Education version. This assessment was administered at the beginning of the first semester (pre EQ-i) and again at the end of the second semester (post EQ-i). In this chapter, the descriptive statistics of the EQ-i scores for both these assessments are provided and where appropriate interview data are used to illuminate the findings.

Validity of the Emotional Quotient Inventory

The EQ-i provides three measures of validity: the inconsistency index, a positive impression scale, and a negative impression scale. The inconsistency index is a measure of the consistency of responses on similar items. If the respondent scores over 12 on this index it indicates the scores are not uniform, and therefore the results may not be valid. For both the pre and post EQ-i this was not an issue as none of the respondents scored over the threshold value of 12. The impression scales are indictors of unusually high scores (positive) or unusually low scores (negative). In both cases the threshold value is 130. For the pre EQ-i, one participant scored over 130 on the positive impression scale, and for the post EQ-i, two participants scored over this threshold value. This may indicate that these participants were attempting to create an overly positive impression of themselves or that they tend to seek social conformity and approval. It also could mean that they were very positive people. In comparison, for the pre EQ-i and post EQ-I, seven and five participants, respectively, scored over 130 on the negative impression scale. These scores could mean that these participants were attempting to create an overly negative impression, or that they tend to be critical of their abilities. In all of these cases a built-in
correction factor was automatically employed to adjust the scores downward for the high positive impression scale scores and upwards for the high negative impression scale scores.

In terms of the face validity of the EQ-i, based on the responses to interview questions all of the students who completed the post assessment believed the Emotional Quotient Inventory (EQ-i) was a valid measure of their emotional social skills.

S18: I thought it was very thorough and the results were really interesting because they’re very accurate, which is kind of weird….to see yourself reflected in this stuff but it works.

However, one student was puzzled by one or more of the subscale scores.

S28: I just remember being amazed at how…some of the stuff was…really accurate…[but] some of it…I totally don’t see.

Another student indicated that she thought the results might be influenced by how they were “feeling at that moment.” However, a different student said the opposite.

S31: This tool is fairly good… in general.. not just what you’re feeling right now. I don’t feel as if my current situation…marred the results at all.

The Emotional Intelligence of Students at the Beginning of First Year

Based on the results from pre EQ-i assessment, the mean scores for the Total EQ-i, 4 out of 5 of the composite scales, and 14 out of the 15 subscale scores were within the Effective Functioning (90 - 120) range (Table 4). Only the mean score on the composite scale of Adaptability fell into the Area of Enrichment (<90) and this is likely due to the fact this composite scale includes the subscale score of Reality Testing that had the lowest mean score (Table 4). However, on all of the scales there were individual scores below the Effective Functioning (< 90) range (Table 4). Similarly, on all but five scales, including the Total EQ-i and four subscale scores, there were individual scores above the Effective Functioning range, classified as Enhanced Functioning ( > 120) (Table 4).
Table 4
Descriptive Statistics of the Pre EQ-i Scores

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Mean (n = 60)</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Score</td>
<td>94.10</td>
<td>12.814</td>
<td>115</td>
<td>63</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>94.63</td>
<td>15.159</td>
<td>123</td>
<td>58</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>101.35</td>
<td>12.256</td>
<td>126</td>
<td>71</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>95.48</td>
<td>16.150</td>
<td>125</td>
<td>54</td>
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<tr>
<td>Assertiveness</td>
<td>96.77</td>
<td>15.441</td>
<td>130</td>
<td>59</td>
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<tr>
<td>Independence</td>
<td>90.52</td>
<td>17.071</td>
<td>126</td>
<td>52</td>
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<tr>
<td>Self-Actualization</td>
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<td>15.084</td>
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<tr>
<td>Interpersonal</td>
<td>101.33</td>
<td>13.267</td>
<td>123</td>
<td>72</td>
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<tr>
<td>Empathy</td>
<td>102.35</td>
<td>12.986</td>
<td>123</td>
<td>70</td>
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<tr>
<td>Social Responsibility</td>
<td>100.93</td>
<td>11.267</td>
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<td>76</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
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<td>15.940</td>
<td>125</td>
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</tr>
<tr>
<td>Stress Management</td>
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<tr>
<td>Impulse Control</td>
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<td>15.306</td>
<td>128</td>
<td>35</td>
</tr>
<tr>
<td>Adaptability</td>
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<td>120</td>
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</tr>
<tr>
<td>Reality Testing</td>
<td>87.95</td>
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<td>117</td>
<td>50</td>
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<tr>
<td>Flexibility</td>
<td>94.60</td>
<td>14.928</td>
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<td>54</td>
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<tr>
<td>Problem Solving</td>
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<td>14.277</td>
<td>124</td>
<td>63</td>
</tr>
<tr>
<td>General Mood</td>
<td>100.10</td>
<td>12.120</td>
<td>122</td>
<td>69</td>
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<tr>
<td>Optimism</td>
<td>95.23</td>
<td>11.915</td>
<td>119</td>
<td>61</td>
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<tr>
<td>Happiness</td>
<td>104.37</td>
<td>13.123</td>
<td>123</td>
<td>70</td>
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</tbody>
</table>
The distribution for each of the pre EQ-i scale scores was normal except for the *Self-Actualization*, *Impulse Control*, and *Happiness* subscales which appeared to be somewhat negatively skewed. However, the level of skewness for these three subscales was not considered to be serious enough to require nonparametric analysis since their skewness values were within an acceptable Standard Error range. The kurtosis values for all of the distributions also were within the normal range.

The pre *Total EQ-i* mean score was in the Effective Functioning range, but was below the standard mean score for the general population. This seems to indicate that overall the emotional and social skills of these first year students were slightly lower than that of the general population which is not too surprising given their age and experience. For the composite EQ-i scales, the highest mean score was on the *Interpersonal* scale indicating that the participants in this study appeared to possess effective *Interpersonal* skills upon entering first year. That is to say, on average they considered themselves to be empathetic, socially responsible, and capable of engaging in various interpersonal relationships.

*General Mood* had the next highest pre EQ-i composite scale mean score indicating the majority of the participants had a positive outlook on life upon entry into first year. The pre EQ-i mean score on the *Stress Management* composite scale was slightly below average, but still within in the Effective Functioning range. Hence, most of the participants at the beginning of first year believed that they could manage stress and regulate their impulses. The same could be said for the *Intrapersonal* composite scale, as the pre EQ-i mean score was slightly below average but also within the Effective Functioning range. This mean score suggests that most of the students considered themselves to be self-aware and capable of self-expression. The lowest pre EQ-i mean score for the composite scales was on *Adaptability*. With this score below the average and just
outside the Effective Functioning range, it would seem that on the whole, participants were not that receptive to change and/or that they struggled with objectively viewing their reality.

In terms of the subscales of the composite EQ-i scales, the highest pre EQ-i mean score was on the Happiness subscale, suggesting that upon entering first year, most of the participants in this study were content with their current situation. The next highest score was on the Empathy subscale, indicating that the participants believed they had the ability to understand and appreciate the feelings of others. The mean score on the Self-Regard subscale was the third highest indicating that the majority of the students felt good about themselves, accepting and respecting who they were. Their Interpersonal Relationship subscale mean score signifies that participants felt they could relate well to others and were capable of establishing mutually satisfying relationships. Based on the mean score on the Social Responsibility subscale, participants also felt they could cooperate well with others.

Nine of the subscale scores were below average but still within the Effective Functioning range (Table 4). This included Impulse Control signifying that on the whole the students felt they could effectively control their emotions and actions. They also thought they could effectively express their emotions and themselves, based on the Assertiveness mean score. According to the Emotional Self-Awareness subscale mean score, they also believed that they were aware of and understood their emotions. Moreover, the mean score on the Stress Tolerance subscale indicated that these first year students also felt they could manage their emotions effectively even under stressful situations.

Given the mean score on the Self-Actualization subscale, on the whole, participants felt they were striving to achieve or achieving their potential. This, in turn, may be why the participants on the whole tended to have a positive outlook on life as indicated by the mean score on the Optimism subscale. On average, participants also felt they could adapt fairly well to new
situations based on the mean score for the *Flexibility* subscale. However, their perceived ability to solve interpersonal issues was somewhat lower given the mean score for the *Problem Solving* subscale.

The second lowest pre EQ-i mean score was on the *Independence* subscale which was straddling the Effective Functioning and Area for Enrichment ranges. This seems to indicate many of the participants did not feel self-reliant and were still somewhat emotional dependent on others. The lowest subscale score was on *Reality Testing*, a score which denoted that this was one area that needed enrichment. Based on this score, participants appeared to have some difficulty differentiating between reality and fantasy, which in turn may have prevented them from accurately evaluating situations which resulted in the establishment of some unrealistic expectations.

In most cases, there were strong positive and statistically significant correlations between the pre EQ-i subscale scores (Table 5). The strongest such relationship was between *Empathy* and *Social Responsibility* ($r = .769$) which suggests that students who understood and appreciated how others felt tended to also be helpful and socially conscious. The next strongest correlation was between *Happiness* and *Interpersonal Relationships* ($r = .738$) followed by *Happiness* and *Self-Actualization* ($r = .728$). This indicates that the students who were the happiest felt they had or could establish good relationships with others, or that they were reaching their potential. Moreover, those who did not feel like they were realizing their potential or had difficulty with forming relationships with others were not as satisfied with their current situation. *Happiness* also correlated strongly with *Self-Regard* ($r = .716$), suggesting that students who felt good about themselves were more satisfied with their lives than those who did not, and vice versa. It is not too surprising that a strong and significant correlation also existed between *Self-Actualization*...
### Table 5

Correlations between Pre EQ-i Subscale Scores

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<td>.547**</td>
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<td>.440**</td>
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<td>Problem Solving</td>
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<td>.313*</td>
<td>.095</td>
<td>.163</td>
<td>.368**</td>
<td>.313*</td>
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<tr>
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<td>.418**</td>
<td>.487**</td>
<td>.415**</td>
<td>.593**</td>
<td>.418**</td>
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<tr>
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<td>.533**</td>
<td>.500**</td>
<td>.361**</td>
<td>.728**</td>
<td>.533**</td>
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</table>

n = 60

*p < .05, **p < .01 (2-tailed)
and *Self-Regard* \( (r = .686) \) as it would seem logical that a student who was pursuing his or her goals would feel better about themselves and vice versa.

Another strong correlation was revealed between *Assertiveness* and *Independence* \( (r = .688) \). This seems to be another logical relationship as it indicates that students with greater self-reliance were better at effectively communicating their feelings and beliefs. Similarly, students who had a better understanding of their emotions appeared more likely to form positive relationships with others as indicated by the strong association between *Interpersonal Relationships* and *Emotional Self-Awareness* \( (r = .680) \). Moreover, students who felt they understood others’ feelings also tended to be better at forming stronger ties with others as evident by the strong correlation between *Empathy* and *Interpersonal Relationships* \( (r = .609) \).

*Stress Tolerance* also correlated strongly with two other subscales, *Optimism* \( (r = .662) \) and *Flexibility* \( (r = .634) \). Thus, students who felt they could cope well with stressful situations also tended to have a positive attitude and were more open to change, and vice versa.

Although the majority of the correlations were positive, there were a few negative correlations most of which were connected to *Impulse Control* (Table 5). Specifically, the correlations between *Impulse Control* and all the other subscales were negative except for *Empathy, Social Responsibility, Reality Testing, Flexibility,* and *Problem Solving*. For the positive correlations, only *Impulse Control,* and *Reality Testing* exhibited a significant correlation. Meanwhile, for the negative correlations, all of these were weak and only one was statistically significant, *Impulse Control* and *Assertiveness*. This seems to indicate that students who felt they could control their actions did not think they were very good at expressing their emotions or beliefs and vice versa. The only other subscale to exhibit negative correlations was
Social Responsibility linked to Self-Regard, Flexibility and Optimism, none of which were significant.

The Emotional Intelligence of Students at the End of First Year

For the post assessment, all of the EQ-i mean scores were within the Effective Functioning range except for Independence (Table 6). As with the pre EQ-i scores, for all of the scales there were individual scores in the Area for Enrichment range (< 90) (Table 6). Similarly, on all but five scales there were individual scores in the Enhanced Functioning range (> 120) (Table 6). The distributions for each of the pre EQ-i scale scores were normal except for the Impulse Control, General Mood and Happiness scales which appeared to be somewhat negatively skewed. However, the level of skewness for these three subscales was not considered to be serious enough to require nonparametric analysis since their skewness values were within an acceptable Standard Error range. As per the pre EQ-i scores, the kurtosis values for all of the post EQ-i distributions were also within the acceptable range.

The post Total EQ-i mean score remained within the Effective Functioning range but was still slightly below the standard mean score for the general population (100). In terms of the composite EQ-i mean scales scores, the highest for the post assessment was still on the Interpersonal scale followed by General Mood. The post EQ-i mean score was slightly below average for the Stress Management composite scale and the Intrapersonal composite scale. As per the pre EQ-i mean scores, the lowest post EQ-i mean score for the composite scales was on Adaptability, but this score did increase enough to have it within the Effective Functioning range.
Table 6

Descriptive Statistics of the Post EQ-i Scores

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Mean (n = 42)</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
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<tr>
<td>Total Score</td>
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<td>12.399</td>
<td>123</td>
<td>65</td>
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<tr>
<td>Independence</td>
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<td>Happiness</td>
<td>104.40</td>
<td>13.167</td>
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In terms of the subscales of the composite EQ-i scales, the highest pre EQ-i mean score was on the *Empathy* subscale, closely followed by *Happiness*. *Social Responsibility* was the next highest followed by *Self-Regard* and *Interpersonal Relationships*. The subscales mean scores that were below average, but still within the Effective Functioning range for the post assessment included *Impulse Control*, *Emotional Self-Awareness*, *Optimism*, *Assertiveness*, *Self-Actualization*, *Stress Tolerance*, *Problem Solving*, *Flexibility*, and *Reality Testing*. The only post EQ-i subscale mean score below the Effective Functioning range was *Independence*.

As with the pre assessment, there were some strong positive and statistically significant correlations between the various post EQ-i subscale scores (Table 7). Once again, the strongest such relationship was between *Empathy* and *Social Responsibility* ($r = .774$). The next strongest correlation was between *Happiness* and *Optimism* ($r = .642$). *Happiness* also correlated strongly with *Interpersonal Relationships* ($r = .617$), *Self-Regard* ($r = .601$) and *Self-Actualization* ($r = .584$). The same was true for the *Optimism* subscale scores, with strong correlations with between it and *Interpersonal Relationships* ($r = .602$), *Self-Regard* ($r = .616$) and *Self-Actualization* ($r = .584$). This seems to indicate students who felt good about themselves, who thought they had or could establish good relationships with others, and who felt they were reaching their potential were the happiest and most optimistic, and vice versa. Significant but more moderate correlations on the post EQ-i also existed between *Stress Tolerance* and *Happiness* and *Optimism*.

Negative correlations also existed between some of the post EQ-i subscales, with most connecting once again with *Impulse Control* (Table 7). However, for the post EQ-i, *Impulse Control* correlated negatively with only seven of the subscales as compared to ten for the pre EQ-i, and none of these correlations were significant. There were a few other post EQ-i
Table 7

Correlations between Post EQ-i Subscale Scores

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<td>.642**</td>
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n = 42
*p < .05. **p < .01. (2-tailed)
subscales that exhibited negative correlations not connected to Impulse Control, but none of them were significant. Overall, the strength and significant of these correlations decreased and this is likely due to the smaller sample size (n = 42 for post EQ-i, n = 60 for the pre EQ-i).

**Summary**

Overall, based on the pre EQ-i assessment, the first year students in this study seemed to be generally happy attending university and felt both positive about themselves and their current situation. They appeared to be empathetic, capable of forming positive relationships with others, and willing to be cooperative and helpful. They also seemed able to understand and control their emotions and to communicate them, as well as their beliefs, in a positive manner. Moreover, they considered themselves to be flexible and optimistic. However, they seemed to realize that they were not strong in terms of solving emotional problems, had some difficulties with distinguishing fact from fiction, and were not yet self-reliant, still depending on others for advice especially when dealing with emotional issues. Similar patterns appeared in the post EQ-i assessment, as most students appeared to operate effectively in terms of their emotional and social skills with one exception being Independence.

Although these findings provide a general profile of students’ EI, it is important to note that none of the students in this study had identical EI profiles for either the pre or post assessment. This is something to keep in mind throughout the next chapter, where I explore students’ perceptions of their first year of university in relation to EI.
Chapter Six

The First Year Experiences of Students at TRU

Although much is known about the first year experiences of students, as outlined in Chapter Two of this thesis, this can vary by student population and institution type. Thus, before analyzing the dynamics between emotional intelligence and first year experience, it is useful to provide a detailed description of the students’ experiences in first year and their possible associations to emotional intelligence from the students’ perspectives, specifically focusing on how and why emotions play such an integral part in it.

Utilizing Wordle (Feinberg, 2011; McNaught & Lam, 2010) to illustrate a word count from the interviews demonstrates just how emotionally charged first year is as the terms most frequently voiced by the students to describe their experiences in first year were directly or indirectly related to emotions (Figure 3).

Figure 3: Wordle of Emotions
Part of the reason emotions play such a substantial role during first year appears to be due to preconceptions about first year. For instance, four students in my study were excited about entering university as they carried the perception that first year was all about partying.

S25: Through TV and high school you can kind of pick up that there’s gonna be parties on residence and that kind of stuff. And it’s a blast and no one [is] studying.

Another 12 students were terrified as they expected a harsh learning environment in which weaker students were weeded out and professors were not approachable.

S23: First year they just try and knock you off and try and scare you away so the people that don’t want to be there go home.

S18: The professor walking around with his robe on…very stern, elderly man lecturing…in a monotone British voice about…all these really abstract concepts.

However, 23 students interviewed stated that they did not know what to expect in first year and as a result of that unknown they were nervous and scared about entering university.

S31: I was definitely kind of nervous and I knew I would be facing a lot of new things. It was a little bit nerve wrecking at times because …who doesn’t get nervous going into something new that you don’t know what to expect.

S18: I’m not sure what I was expecting. Sort of had [this]… idea of...this big scary place.

This is likely why several students also questioned their ability to succeed in this new environment.

S18: I remember being really anxious about first year, thinking “oh I don’t know what I’m doing. I’m not gonna make any friends. All my professors are gonna hate me. I’m gonna fail everything.”

S30: People just see university as…this huge obstacle. …I’m gonna be one of those kids... that just goes nuts and has a nervous breakdown in their first year.
Although these perceptions played a role in the students’ emotional states, so too did the reality of first year. For example, 12 students commented that at the beginning of the year they were intimidated by the size of the university.

S31: Walking into a class, and I mean…this class is bigger than my grad class was, it was just so…intimidating the first couple days.

S18: I think at my high school there was maybe 500 people, 500 to 700 people and all of a sudden there are thousands of people running around and you’re like a little fish in a big pond.

Most of the students (81%) also noticed a change in the learning environment from high school to university, stating that at university the expectations were higher, hence requiring greater effort on their part.

S10: Being someone who never had to study, didn’t even have to try really to get straight As in high school to coming here and everything’s stepped up and I’ve actually have to try and…go home and….study and read the stuff instead of just going to the lectures and listening.

S11: A lot more work than high school. …I would find in high school I didn’t really have to do homework or anything. I would just do really well but here I actually have to try really hard.

S30: I never really studied in high school and I got As. That’s the difference I guess. You can’t just not study and get As anymore.

Six students who found the workload too heavy decided to reduce their course load in the first and/or second semester typically by one course, but sometimes more. Not all students were comfortable with this as they were under the impression that they had to, or at the very least should, take five courses per semester since that appeared to be the norm.

S15: I thought…everybody does…five courses. That’s what they tell you. On the TRU website they just expect that you are taking five courses…I never knew a lot of people don’t do that.

Based on institutional data, five courses per semester is no longer the average course load for first year students in a baccalaureate program at TRU, with four courses per semester having
become more the norm (TRU Institutional Planning and Analysis, personal communication, December 21, 2011).

Assessment methods were another difference noted between the learning environment of high school and university. According to the students, in high school they were over-assessed, doing “busy work,” while in some courses at university they were under-assessed.

S17: In high school your teacher was always giving you assignments and stuff, and tests are worth…1% or something. (In university) midterms...are worth…40%. I actually don’t enjoy only having two tests or three tests...[be]cause then you just forget about it all the time. Like (subject A) is good because you have a chapter test every couple of weeks, you’re always studying. And then you have something like (subject B), you only have two tests.

Adjusting to this and the different teaching methods was an issue specifically noted by 12 students.

S38: Everyone tests differently. You have to learn how they test or else you’re basically screwed.

S1: I find it annoying how…the teachers say they want it in APA but they all have different standards of APA.

Along with shifts in the learning environment, expectations, and effort, 20 students acknowledged that there was also a shift in responsibility.

S18: I definitely noticed that you have to take a lot more responsibility for your own learning. That’s probably the biggest change academically… obviously the professors don’t have time or the inclination to chase you down and say, “hey student number whichever you need to learn this because you didn’t pass your last quiz.” You know...they care but they don’t care that much about one student. So obviously they want you to do well, but there’s definitely a shift in responsibility.

S19: More responsibility…. no one’s telling you that you have to go to class, you have to study for this exam and do this project. You have to do it by yourself.

S32: It’s up to you and it makes you really push yourself and really realize if you don’t push yourself, you’re not gonna get a good mark.
However, tied to the higher expectations and increased responsibility was a greater level of freedom and independence.

S31: In university… if you don’t want to come to class, don’t come to class. If you want to leave early, leave early. If you want to come late, come late.

Although the majority of the students (57%) relished this liberation, “I am not responsible for anyone else or have anyone else responsible for me,” three students did not.

S33: It’s just so weird to be in this situation of completely not knowing and having to…depend entirely on yourself. Nobody cares if you show up to class or not, which is so weird for me. …nobody takes attendance and more importantly it doesn’t matter because it’s your own responsibility. And not that I don’t think it should be your own responsibility but it’s so weird.

Overall, the students in my study appreciated the adult environment associated with first year. In fact, 14 participants stated specifically that they preferred the university setting because “they talk to you as an adult and they treat you as an adult and they teach you as an adult” and “everyone seems so much more mature and actually wants to learn.” Seven of these students actually indicated that they “hated” high school because of the lack of independence and freedom.

S19: High school is brutal…. [University], it’s not as juvenile… It’s like you’re adults here. You have responsibilities, you’re adults. In high school you’re basically treated like children and you act like children.

Still the transition from high school to university was problematic, and as several students noted one of the reasons for this might be that the change was so sudden.

S33: You go from being a child to being an adult… in the matter of two months. …you go away for the summer, you’re working, you’re on vacation and then, oh, by the way, you’re an adult.

S25: I would have liked a little more transition between high school to university [be]cause it hits you right away. All you have is two months of summer and boom, you’re in university.
As per the last comment, students noted that the transition period between high school and university was insufficient.

S26: I was not ready for it at all. High school, just nothing really prepares you for reality.

S33: It’s just…that huge jump between what you’ve been doing for the last 13 years of your life and now drop it on its head and do something else, but you’re still being educated.

Besides adjusting to a significant change in their academic environment, students also experienced a change in their social environment, especially for those who moved away from home for the first time.

S4: I think it was kind of hard because I moved away from home to come here and I think that was a big thing…[be]cause I didn’t know a lot of people so I had to meet people and I had to…try to be open and friendly, but I’m kind of …shy a little bit.

S31: My world just got turned on its head. …I had never moved. I’d always gone to the same school with the same people and I always knew everybody’s name….and now I’m moving towns, moving schools, moving houses all at once….it was just such a huge change.

However, there were many positive comments about not being supervised by parents, such as, “it is kind of nice to not have them there to watch over you, I can just kind of watch over myself.” Similarly, there were numerous comments about having the freedom to make their own decisions.

S17: I think just the whole growing up thing too. Like your parents aren’t right beside you all the time telling you okay you have to do this. My parents totally changed for me going out of high school. …you’re grown up, you can make your own decisions.

On the whole, most students (74%) thoroughly enjoyed engaging in this new social milieu.

S34: Meeting new people and making new friends. That’s what I was looking forward to the most at university and it’s by far been the best thing.
They especially appreciated meeting “people from all around the world” which provided them with an opportunity to learn about “different cultures and different...ways people think.” For some this was an “eye-opening” experience as in “opening my mind about my opinions on races and genders...and about...other people’s cultures.”

With the diversity and size of the student body, 12 students specifically commented on how much they enjoyed connecting with “like minded” people who they could “talk to and relate to” and who listened to them.

S20: Going through school you’d kind of became friends with whoever you were friends with the longest and not exactly people you really had a lot in common with. But I feel like here I have friends that I’m really alike. We all kind of have the...same interests and all that kind of thing.

Although most of the time students found a kinship with other students, there were situations in which this was not the case.

S31: I don’t drink and I don’t really swear or anything like that. And that’s just…personal choices, but...coming here I’m just like “would you just stop using the F word”.... everybody is so opinionated too.

Nine students also commented on how the new social setting provided them with the opportunity for a “fresh start,” and a chance for “just discovering who you are...without high school labels.” Hence, they viewed university as an escape from the drama and exclusion experienced in high school.

S35: Well high school, it’s a dog eat dog world. It’s very cliquey, there’s a whole bunch of bullies....if you’re not on top people make sure you know you’re not on top.... in university...people actually get to know you before judging you.

Six of these students referred to the fact that first year offered them a source of anonymity which they enjoyed.
S40: It’s that good balance between not knowing anyone which is what I would call the worst, and knowing everyone, which I would say is what high school is, where you are so worried about doing anything wrong cause everyone knows you.

S18: What I found a lot was there’s no real pressure to worry about your appearance or anything like that because no one knows who you are. You can totally remake yourself here.

However, seven other students did not enjoy the anonymity, feeling somewhat lost in their new social environment especially those transferring from a small high school where schooling was like a “family experience” and where they had “lot of friends you could go to for help.” Plus some students found university also had its cliques.

S38: But you come here and everybody has their friends that they went to high school with and they’re all… like bees and they follow each other….they’re all talking to everybody and there is just me walking down the hallways by myself.

Another negative aspect relating to the social realm of first year identified by three students was the detachment from high school friends due to distance and different pathways. As one student noted, “you always had your close group of friends and now everyone’s kind of just dispersed” and another commented, “it’s so hard to keep up cause we’re just doing different things.”

Together, all of this made for a major transition for first year students that required not only academic skills, but emotional and social skills to navigate.

S22: Big as in all of it. The campus is big and the classes are big and the workload is big and everything is big.

On the whole, the participants in this study agreed with this assertion. Specifically most students (86%) felt that emotional and social skills were very important in terms of adjusting to and succeeding in first year.

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S2: Ya, for sure [be]cause a lot of it [first year] is the social aspect as well as the...intellectual.

S29: I would argue that they are...equally as important as...studying and...being academically inclined.

After completing both debriefing interviews and reviewing their pre and post EQ-i reports, the students appeared to have a solid understand of how these skills related to the construct of emotional intelligence and this was exemplified by their ability to define it. For instance, one student indicated it was “all about...being aware of other people around you and being in touch with how you feel” and another described it as “how (well) in tune you are with social standards as well as yourself and your emotions.” Another insightful description provided by one of the participants was “if you can tell [other people] have…emotional intelligence you’re probably emotionally intelligent as well.”

In terms of impacting university experiences, students noted that some EI skills may be more important than others in first year. The most important were interpersonal skills, which is not surprising given that first year definitely requires one to interact with others.

S14: I definitely think it is important to be social and meet new people and get those kind of interaction skills because I mean you’re gonna be doing it all your life you may as well be good at it. And it will only help in…being able to communicate not only with students, but with your instructors too, because if you sit in the corner and you’re just quiet all class you’re not gonna...get as much out....of university...as you would if you were actually engaged in the material and the class and the discussion.

S21: Definitely all the new relationships you make in university, that definitely would affect your overall experience and your GPA, everything really.

To form new relationships students specifically identified the importance of empathy.

S7: I think if you are like willing to listen to other people and you can kind of understand…what they’re going through more. You’re paying attention to what they are feeling, that kind of helps them feel more comfortable with you.
The ability to understand and express themselves, intrapersonal skills, was also considered to be “a big one” with students acknowledging that “the more you know about yourself the easier it (first year) is” and that “you need confidence to succeed.” They specifically noted the importance of being able to recognize and understand feelings and emotions.

S18: If you don’t acknowledge how you feel or you’re not aware of how you feel, and you’re feeling poorly then there is nothing you can really do to make it better. You have to recognize that there is maybe something wrong and then…you can say okay what can I change. What can I do to make this situation better.

S35: If you aren’t able to feel anything or understand how you feel about things then how are you going to grow as a person and increase your knowledge base and be able to apply your new knowledge base successfully.

Connected directly to this is the need to be independent, something all students recognized as being critical to their survival and success.

S15: Living on your own, trying to support yourself while still juggling…all these courses… you don’t really have a choice…you have to.

S22: You’re forced to be independent…you can fall back on people but a lot of it you have to do by yourself.

Being able to cope with stress was also considered to be very important, as there are many stressors in first year, both academic and social.

S23: I mean all the things you have to deal with, all the stress and the control you have to have in order to get through it all.

S21: If you can’t handle stress at all then you’ll probably have some issues with all your homework because you need to be able to tolerate it.

S16: Stress can be difficult to deal with. I recommend doing sport or going to the gym or something. That is something that is really helpful.

Another vital skill was being able to adjust to all the changes and demands associated with first year.
S39: Adaptability could be really important for university if you are moving away because you have to deal with a lot of changes both …in your home life, in your school…everything would be different. And I guess your willingness to be open to it or embrace it would be really important, because if you weren’t you’d probably have a really bad first year.

S1: If you are not willing to adjust and you’re not…flexible…it is gonna be hard for you to deal with first year.

The students’ general state of mind was also considered to be crucial in several ways.

S16: General mood will affect your performance I guess in school or whatever. If you stay…happy and have an open mind or whatever, [you] take more in.

S11: I definitely feel that the way you looked at things helps in the outcome of it. If you look at something in a positive way then you will be more successful than if you’re…crabby and you’re just aren’t happy. You’re just looking at it negatively, then you probably won’t do so well. So I think that aspect is really important.

S24: If you’re not happy then you’re not gonna be motivated. And if you’re not motivate then you’re not gonna like just not do well.

With this in mind, most of the students (79%) commented on the benefits of completing the EQ-i assessment as they felt it enhanced their awareness of their emotional and social skills.

S21: Just looking at the questions makes you kind of evaluate yourself and…of think about things that you don’t always think about.

S14: I think it’s really important to…know who you are, know your limits, know your setbacks.

Fourteen of these students believed this increased awareness had a positive impact on their behaviour in first year.

S22: When you’re aware of something then I find that you tend to work on it even without thinking about it.

S19: As I was doing stuff I kind of thought back to them (EQ-i report) and went oh this is…what I normally do, maybe I should try something different.
Students also noted that developing these skills is definitely a worthy cause as they are important not only in first year, but in life in general.

S41: They definitely will make a huge difference in, I think, every aspect of your life....relationships, self-satisfaction, job success. All those things, I think, tie into emotional intelligence.

Given that first year is, as one student termed it, an “emotional rollercoaster ride,” the students themselves acknowledged that not only did they need academic skills, but also emotional and social skills in order to survive and ideally enjoy the ride. The next chapter focuses on this supposition by exploring if and how emotional intelligence and first year experiences are related.
Chapter Seven

The Connections between First Year Experiences and Emotional Intelligence

First Year Experiences

As demonstrated in the previous chapter, the experiences of first year students are as varied as they are numerous. To measure these experiences, both academic and personal, I used a variety of data including year-end grade point average (GPA), and students’ ratings of their overall experience in first year and level of success, interactions with faculty members and with other students, utilization of academic and student support services, and involvement in extracurricular activities.

In terms of academic performance, 80% of participants successfully completed first year (GPA ≥ 1.5), a percentage consistent across the various research groups except the interviewed group of students (Table 8). One reason for the lack of participation by the nonsuccessful students in the second part of the study (i.e. Interviewed Group) may be that they stopped attending by the time the interviews were being held. This appears to be the case for at least six of these students as their institutional records indicated that they did not enroll in any courses in the second semester.

One question posed to all the interviewed students was if they thought their first year of university was successful. The majority of the students (n = 36) indicated that it was successful, while the others (n = 6) indicated it was a mix; that is, successful in only some ways. In the case of the two students who were not academically successful, one indicated that his first year was a mix in terms of success: it was successful socially, but not academically. The other student considered first year a success, even though she was not academically successful because she felt she had learnt some valuable life lessons. This is an interesting finding in that it identifies that
students’ perceptions of success at university may not always be defined by their academic performance.

Table 8

Academic Performance of First Year Students

<table>
<thead>
<tr>
<th></th>
<th>TRU FY Population</th>
<th>Target Sample</th>
<th>Study Participants</th>
<th>Interviewed Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total #</strong></td>
<td>811</td>
<td>649</td>
<td>60</td>
<td>42</td>
</tr>
<tr>
<td>Success*</td>
<td>636 (78%)</td>
<td>510 (79%)</td>
<td>48 (80%)</td>
<td>40 (95%)</td>
</tr>
<tr>
<td>NonSuccess**</td>
<td>175 (22%)</td>
<td>139 (21%)</td>
<td>12 (20%)</td>
<td>2 (5%)</td>
</tr>
</tbody>
</table>

**Standing**

<table>
<thead>
<tr>
<th>Standing</th>
<th>TRU FY Population</th>
<th>Target Sample</th>
<th>Study Participants</th>
<th>Interviewed Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st class (A- to A+)</td>
<td>79 (10%)</td>
<td>69 (11%)</td>
<td>9 (15%)</td>
<td>8 (19%)</td>
</tr>
<tr>
<td>2nd class (B- to B+)</td>
<td>270 (33%)</td>
<td>208 (32%)</td>
<td>21 (35%)</td>
<td>18 (43%)</td>
</tr>
<tr>
<td>Satisfactory (C- to C+)</td>
<td>287 (35%)</td>
<td>233 (36%)</td>
<td>18 (30%)</td>
<td>14 (33%)</td>
</tr>
<tr>
<td>Unsatisfactory (D, F)</td>
<td>156 (19%)</td>
<td>124 (19%)</td>
<td>12 (20%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Withdrew(W)</td>
<td>19 (2%)</td>
<td>15 (2%)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Year-end GPA ≥ 1.5
**Year-end GPA < 1.5

When asked why they were successful, students identified internal and external factors as their primary sources of success. In terms of internal factors, seven students indicated that their success was due to the fact that they valued education.

S33: I’ve always put a lot of importance on my education...so...if it’s important to you, you’ll continue to be successful.
S10: I just kept telling myself that...[I] need to pay attention [be]cause they’re gonna test you on this and if you don’t do good on this test you’re not gonna do good on the midterm. If you don’t do good on the midterm, you’re not gonna do good on the final and your GPA is gonna suffer and you’re not gonna go anywhere in the world.

Conversely, those students who did not have a purpose said they found it difficult to be motivated.

S8: I don’t really know what I am doing so...I would just say I’m...unmotivated and I need to find that motivation somewhere.

S30: I didn’t take it that seriously... just laid around, being lazy.

Finding a balance between school and life was another reason cited by students for their success.

S41: I keep a schedule of what I need to do. When things are due...[I tell myself] I’ve got to get this done, let’s do it.

Externally, 20 students indicated that certain institutional programs and services (e.g., Orientation, Supplemental Learning, Help Centres, and Academic Advising) assisted them with their transition to and success at TRU. For example, some students commented that participating in orientation activities helped them connect with other people, some of whom eventually became their friends, that “it was a nice way to get introduced to the university,” and that seeing the faculty do silly stunts “kind of took the edge off.”

Having a support system was also considered to be a major contributor to their success according to the majority of the students (71%) interviewed.

S21: I think...the main element was just support from my parents, my friends, the people I met, faculty. Support made my first year really excellent overall.

Support in terms of encouragement was mentioned by seven students.
S23: Having the family back home proud of you whenever you would tell them your grades and tell them what you’re doing...Friends same thing...they look at you and they go “wow you’re doing this well, great.” That kind of helped me through.

Support from their new friends at university was particularly important to 15 students in terms of their learning and their level of engagement.

S2: The support of my friends that I have made here. We all kind of did first year together so that was kind of cool.

S7: The fact that I knew a lot of people in my classes after a while....I got comfortable with them. That made...you kind of want to come to school as opposed to just staying at home and sleeping or something.

S31: I think it is part of the reason why I’m so comfortable here is that I’ve got so many friends.

In terms of family support, eight of the students who were living at home said that was helpful because it made for a “partial transition.”

S18: I consider myself fortunate, I get to live at home.... I don’t have to pay rent or buy groceries or anything like that so it’s not a complete change for me. It’s kind of a semi-transition.

However, one student living at home stated that doing so may have hindered their transition into first year.

S30: I live at home so I really didn’t do anything. I wasn’t really involved in the school which I probably should have been.

Another interview question somewhat related to success asked the students how would they describe their first year experiences. Two-thirds of the students (n = 27) felt their first year was primarily a positive experience. Comments made by these students included things like, “it was action packed,” “oh man, spiced up my life,” and “I feel like I’ve started something good and it’s only gonna get better from there.” None of the students stated that first year was
primarily a negative experience, but the other third indicated it was a mix of both positive and negative experiences (n = 15). Some of the comments by these students were “It’s... hard and fun all at the same time” and “Had its ups and downs.” This latter group included both of the nonsuccessful students.

As noted in Chapter Two, engagement is considered to be a major factor in terms of first year experience. Hence, during the interview I asked numerous questions about involvement of participants with faculty and other students, if they utilized any of the support services offered in first year, and whether they participated in any extracurricular activities throughout the year. As shown in Table 9, the level of engagement for this particular group of students varied, indicating that some students were highly engaged in their first year at TRU, while others were not.

Table 9

<table>
<thead>
<tr>
<th>First Year Experiences</th>
<th>Interviewed Students (n = 42)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (%)</td>
</tr>
<tr>
<td>Level of Faculty Interaction</td>
<td>33</td>
</tr>
<tr>
<td>Level of Student Interaction</td>
<td>28</td>
</tr>
<tr>
<td>Utilization of Support Services</td>
<td>33</td>
</tr>
<tr>
<td>Level of Participation in Extracurricular activities</td>
<td>33</td>
</tr>
</tbody>
</table>

Connections between EI and Academic Performance

Although previous studies (e.g., Jaeger & Eagan, 2007; Parker, Duffy, et al., 2005; Parker, Summerfeldt, et al., 2004; Saklofske et al., 2012) have reported significant correlations between academic success as measured by GPA and some EQ-i subscale scores, this study did
not. Specifically, there were no statistically significant correlations between participants’ pre EQ-i scores and their academic performance as measured by year-end GPA (Table 10).

Table 10

Pearson Correlations of pre EQ-i scores and Year-end GPA

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>r</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Score</strong></td>
<td>-.053</td>
<td>.685</td>
</tr>
<tr>
<td><strong>IntraPersonal</strong></td>
<td>-.068</td>
<td>.607</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>-.057</td>
<td>.663</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>-.006</td>
<td>.963</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>-.147</td>
<td>.262</td>
</tr>
<tr>
<td>Independence</td>
<td>-.115</td>
<td>.381</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>.017</td>
<td>.898</td>
</tr>
<tr>
<td><strong>InterPersonal</strong></td>
<td>-.120</td>
<td>.363</td>
</tr>
<tr>
<td>Empathy</td>
<td>-.107</td>
<td>.418</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>-.169</td>
<td>.198</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>-.113</td>
<td>.391</td>
</tr>
<tr>
<td><strong>Stress Management</strong></td>
<td>-.107</td>
<td>.414</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>-.194</td>
<td>.137</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>.057</td>
<td>.663</td>
</tr>
<tr>
<td><strong>Adaptability</strong></td>
<td>.034</td>
<td>.798</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>-.058</td>
<td>.662</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.083</td>
<td>.530</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>.043</td>
<td>.744</td>
</tr>
<tr>
<td><strong>General Mood</strong></td>
<td>-.042</td>
<td>.751</td>
</tr>
<tr>
<td>Optimism</td>
<td>-.054</td>
<td>.681</td>
</tr>
<tr>
<td>Happiness</td>
<td>-.019</td>
<td>.887</td>
</tr>
</tbody>
</table>

*p*2-tailed, n = 60

Similarly, when GPA was dichotomized into success (GPA ≥ 1.5) and nonsuccess (GPA < 1.5), no significant differences were found between the pre EQ-i scores for the two groups.
(Table 11). However, it is worth noting that in general, the academically unsuccessful students tended to score higher on most of the pre EQ-i scales except for Empathy, Impulse Control, Adaptability, Flexibility, Problem Solving, and Happiness (Table 11).

The lack of statistically significant differences between any of the pre EQ-i scores and academic performance may be due in part to the small sample size. However, this outcome also could be due to certain anomalies in the data. Specifically, three of the students with the highest overall pre EQ-i scores had the lowest year-end GPAs. Given that their GPAs were zero or near zero, there is a good chance these students stopped attending at some point in their studies. If this is the case, there could be a multitude of reasons why they left, none of which may be related to emotional or social intelligence. However, since they did not participate in the second part of the study, their pathways must be treated as is, with all three being classified as nonsuccesses.

Individual differences also may provide an explanation for these unexpected results. For instance, the student with the highest year-end GPA was also the student who had pre EQ-i scores all below average (< 100) except on the Optimism subscale. This student was one of the participants in this study who had taken a couple years off before entering university, so his confidence level was low, but yet he appeared ready for a change and approached university as an opportunity for “a life advancement.” From the interview it was apparent that this student was committed to his education, focusing all of his energy into his studies, and this is likely why this student was very successful.

Another example relates to the subscale of Self-Actualization which I thought would correlate positively with academic success. This is based on the idea that Self-Actualization is connected to having a goal or striving towards one which has been equated with greater success.
Table 11

Difference between Pre EQ-i Scores for Successful and Nonsuccessful Students

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Group Means</th>
<th>Mann-Whitney U test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Success (n = 48)</td>
<td>NonSuccess (n = 12)</td>
</tr>
<tr>
<td>Total Score</td>
<td>93.83</td>
<td>95.17</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>93.73</td>
<td>98.25</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>100.96</td>
<td>102.92</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>95.13</td>
<td>96.92</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>95.29</td>
<td>102.67</td>
</tr>
<tr>
<td>Independence</td>
<td>89.31</td>
<td>95.33</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>95.42</td>
<td>98.50</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>101.23</td>
<td>101.75</td>
</tr>
<tr>
<td>Empathy</td>
<td>102.38</td>
<td>102.25</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>100.15</td>
<td>104.08</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>101.17</td>
<td>101.83</td>
</tr>
<tr>
<td>Stress Management</td>
<td>95.81</td>
<td>97.17</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>93.85</td>
<td>97.83</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>98.13</td>
<td>95.67</td>
</tr>
<tr>
<td>Adaptability</td>
<td>89.69</td>
<td>88.92</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>87.21</td>
<td>90.92</td>
</tr>
<tr>
<td>Flexibility</td>
<td>95.25</td>
<td>92.00</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>92.65</td>
<td>89.75</td>
</tr>
<tr>
<td>General Mood</td>
<td>99.81</td>
<td>101.25</td>
</tr>
<tr>
<td>Optimism</td>
<td>94.27</td>
<td>99.08</td>
</tr>
<tr>
<td>Happiness</td>
<td>104.75</td>
<td>102.83</td>
</tr>
</tbody>
</table>

*2-tailed
and vice versa (e.g., Keup, 2006; Kuh, 2007). In this study, this was partially true in that most of the students with the highest Self-Actualization scores entered first year basically knowing exactly what they wanted to do such as becoming a nurse, journalist or jazz musician. Overall, these students did quite well, but there were some who only achieved a C average, one of whom admitted specifically to getting carried away with the social scene. Meanwhile, some students with lower scores on the Self-Actualization subscale did not know what they wanted to do nor what they might be good at. However, this did not lead to academic failure because they envisioned first year as a year of discovery that would eventually provide them with some direction. In fact, one student with a low pre EQ-i Self-Actualization score and no specific educational goal in mind achieved a first-class standing. This student’s approach to first year was that she had plenty of time to figure out what she wanted to do, and it was okay if it took an extra year or two to find her vocation.

S18: I know generally the first couple of years there’s lots of wiggle room...and… I’m not in a really big rush to get out of here....at this point I’m not too concerned about making it out in four years.

Connected to this could be the idea that higher scores on the Self-Regard subscale should relate directly to greater success, as confidence appears to be a key ingredient for success. In many cases this was the situation, but one participant with very high scores on the pre EQ-i Self-Regard scale was not successful and another just passed. In both cases, these students scored quite low on the Reality Testing subscale. This could mean that these students were overly confident and that actually hindered their success.

Similarly, it would seem reasonable to assume high scores on Stress Management would also lead to higher levels of success. Again, although this was the case for some students, there were other students who scored very high on this composite scale, but who were not
academically successful. This could be due to the fact they overestimated how well they could manage stress, but it also could relate to other factors. For instance, one of the unsuccessful students who scored above average on Stress Management scored below average on Problem Solving and Self-Actualization. Thus, it is possible the latter two scores may have negated the positive impact of the high Stress Management score.

**Connections between EI and Non Academic Experiences**

Although there were no significant relationships between pre EQ-i scores and academic performance, some significant associations were revealed between pre EQ-i scale scores and students’ perceptions of their experiences. For instance, a Mann-Whitney U Test revealed a significant difference between the pre EQ-i scores on the Interpersonal Relationship subscale and students’ rating of their success ($U (41) = 52.00, Z= -2.014, p = .044$). As mentioned in Chapter Four, the Mann-Whitney U Test does not identify where differences occur, but based on a boxplot (Appendix F: Figure F1), the mean score on the Interpersonal Relationship subscale for the students who considered their first year to be successful was lower than the mean score for those who described their success as mixed. This is a perplexing outcome as the students clearly viewed success as more than just having good grades: they also equated it to the quality of the interactions they had with others. Given that many students (69%) indicated that the best part about first year was meeting new people and making new friends, it would follow that students who felt they were capable of forming positive relationships would probably do so, and hence feel that they had a more successful year. However, this does not appear to be the case.

Another analysis revealed that the distribution of scores on the pre EQ-i Self-Actualization subscale was significantly different across the two categories (positive or mixed) of first year experience ($U (41) = 111.50, Z = -2.391, p = .017$). Again, the Mann-Whitney U
Test does not identify where the differences occur, but a boxplot (Appendix F: Figure F2) of the data indicates the pre EQ-i Self-Actualization scores were lower for students who rated their first year experience as mixed, while those with higher Self-Actualization scores rated their experiences as positive. This implies that students who felt they were achieving their potential when entering university tended to have a more positive experience in first year than those who did not.

Conversely, students with lower scores on the pre EQ-i Self-Actualization subscale did not seem to have a purpose in mind, something that appeared to negatively impact some of the students’ experiences in first year. As one student stated, “I’m just not sure what I want to do so…it is kind of weird to be going to school not knowing what you are doing.” This could explain why these students had mixed feelings about first year. For this specific student, she indicated that parts of first year, such as meeting new people, were enjoyable; yet, because she was uncertain as to what she would do with her education, it was causing her much consternation, so much so she was considering taking off a semester. Given this, it would be fairly safe to assume that this lack of purpose is directly connected to motivation, in that the “drive to achieve” would be seriously compromised if the student was not sure of what she was striving to achieve.

Several other significant associations were revealed between pre EQ-i scores and measures of student engagement. One of these occurred between Reality Testing and faculty interaction, in which there was a significant difference in the distribution of these pre EQ-i scores across the three categories (low, medium, and high) of faculty interaction (H(2) = 6.217, p = .045). Although the Kruskal-Wallis test does not identify how these scores differ across the three categories, a boxplot (Appendix F: Figure F3) of the data illustrated a pattern whereby
scores on the pre EQ-i Reality Testing subscale for the lowest level of faculty interaction were less than that for the medium and higher levels of interaction. This suggests that students who were more grounded in reality and had a better idea of their own abilities tended to interact more so with faculty than those who did not. One explanation for this could be that the students with higher Reality Testing scores understood it was important to their success to interact with faculty. For instance, one student who scored very high on Reality Testing stated that he did get to know most of his instructions even on a first name basis, and the reason for doing so was to “know what they want on their assignments and kind of play the game of academics.”

Scores on the pre EQ-i Reality Testing subscale also varied significantly across the categories of level of involvement in extracurricular activities (H(2) = 7.403, p = .025). A boxplot (Appendix F: Figure F4) of these scores reveals that the highest scores on Reality Testing were associated with the students who moderately participated in extracurricular activities. This suggests that students who were more practical and able to set realistic goals tended to participate moderately in extracurricular activity. One explanation for this finding may relate to students realizing the importance of balance. Those students with higher Reality Testing scores may have been more in tune with their limits, and hence only moderately participated in extracurricular activities to keep a balance between their studies and their social activities.

Participation in extracurricular activities also differed significantly on the pre EQ-i Impulse Control subscale (H(2) = 7.457, p = .024). Based on a boxplot (Appendix F: Figure F5) of these scores, the pattern appears to be that students with the higher Impulse Control scores tended to moderately participate in extracurricular activities. Again, I believe this relates to balance. That is to say, students who felt they could effectively control their emotions and
actions did joined clubs, attended social events and volunteered, but in moderation. By doing so, these students seemed to have found an ideal balance between their studies and social life.

Based on the two previous associations, it is not too surprising that the distribution of the pre EQ-i *Total Scores* also differed significantly across the categories of participation in extracurricular activities (H(2) = 6.385, p = .041). In this case, based on the boxplot (Appendix F: Figure F6) of the data, the pre EQ-i *Total Scores* tended to be higher for students who participated moderately in extracurricular activities as compared to students with low and high levels of participation. Again, this finding seems to indicate that students with stronger emotional and social skills knew they needed to balance their studies with their social activities, and they did just that. In fact, one of the most common recommendations made by participants for future first year students was to find that balance.

S36: Just saying no and knowing your limits on what you can and can’t do…your boundaries.

S4: Probably the best advice I could give is just making sure you can strike a balance point in everything that you do. ...know what your priorities are and then you’ll be satisfied.

These associations reveal some interesting patterns, but it is the lack of relationships between pre EQ-i scores and engagement that I find striking, particularly the lack of significant associations between pre EQ-i scores and student interaction. This was completely unexpected, as it would seem that participants with higher pre EQ-i scores—especially on the *Interpersonal* scale—would be more likely to engage with other students, and those with lower scores might avoid such interactions (BarOn, 2006, 2007). For many students this was the case, but for some it was not. For instance, several students who scored very high on the *Interpersonal* composite scale did not socialize with their peers on campus as they were local students living at home, and therefore spent most of their social time with existing friends and family. Several other
students with high *Interpersonal* scores noted that their education was the priority, so they did not socialize as much as they normally would do. In comparison, another student with low *Interpersonal* scores admitted to being “uncomfortable meeting new people…and…being sociable.” However, this student forced herself to interact with other students by joining several clubs and participating in various social activities arranged by the institution and residence. One reason for this unexpected behaviour may relate to the fact that this same student scored quite high on the *Flexibility* subscale, indicating she was willing to adapt to this new situation.

The utilization of support services was another measure of engagement in which there were no significant associations with the pre EQ-i scores. This, too, seems somewhat surprising as I would think that scores on *Assertiveness, Stress Tolerance* and *Problem Solving*, for instance, would relate to the usage of support services such as help centers, tutoring, peer support, and Supplemental Learning. However, during the interviews two students indicated that they did not use these services because they were not aware of them, while another eight students stated they did not require such services. This seems to indicate that these services are not perceived to be that useful by almost a quarter of the students in this study.

**Connections between Academic Performance and Non Academic Experiences**

Although the direct links between EQ-i scores and engagement in first year are limited, there are some indirect links, as further analyses revealed significant associations between engagement and academic performance. For instance, there was a significant relationship between level of faculty interaction and year-end GPA (H(2) = 6.397, p = .041). The boxplot (Appendix F: Figure F7) of the data revealed that students with little or no faculty interaction also tended to have lower GPAs, whereas students who moderately or regularly interacted with
faculty tended to have higher year-end GPA. Similarly, a significant association between level of student interaction and year-end GPA was also revealed ($H(2) = 6.074, p = .048$). The pattern illustrated by the boxplot (Appendix F: Figure F8) was that students’ GPAs increased with levels of student interaction.

Neither of these findings is surprising based on the comments made by students during the interviews. For example, as previously noted, students acknowledged the benefits of interacting with faculty in terms of “playing the game” of academia in order to enhance their academic success. Students who interacted more so with faculty also made comments about how the faculty member’s enthusiasm and interest in the course material was infectious, and this too may be another reason for their stronger academic performance.

The strong relationship between student interaction and GPA signifies that students who felt connected to other students tended to be more successful in first year. One reason for this maybe that by interacting with other each other students realize they are not alone.

F18: The more I talk to people, the more I find out that no one really knows what they’re doing so it’s kind of comforting to know that you’re not alone.

F3: I found that having someone going through the same stuff as you makes it is a lot easier.

These interactions also allowed students to create a “web of support” which helped them survive first year. Consequently, participants recommended highly that future students do the same.

F18: Make sure you talk to people and ... build something you can fall back on if you need help. I mean there is nothing worse than being all stressed out and having no one to confide in.

Taking this one step further, one student recommended being “best friends with the smartest kid in the class.”
Based on the results in this chapter, emotional intelligence did not seem to be a good predictor of academic performance in first year for this group of students. Its predictive power in terms of engagement also appeared to be limited. However, when viewed on an individual basis the EI assessments did provide useful insights into the performance and behaviour of these first year students. This brings us to the next question: Do experiences in first year affect the emotional intelligence of students? Based on student development theory, one would assume students’ EI skills should improve over the course of first year, given the transformative nature of attending university for the first time. This assumption is explored in the next chapter.
Chapter Eight
Changes in Emotional Intelligence

This chapter focuses on the changes in EI over the course of first year. For the quantitative analysis, to ensure an accurate comparison between the pre and post EQ-i assessments, only the paired scores from the students who completed both assessments were used to analyze differences. Based on this analysis, all of the mean scores from the pre EQ-i assessment to the post EQ-i assessment increased except Flexibility (Table 12). These changes in EQ-i scores were significant for the Total EQ-i, for three of the composite scales, and for six of the EQ-i subscales (Table 12).

Of all the scores, Emotional Self-Awareness showed the greatest increase over the assessment period, followed by Optimism, Reality Testing, and Assertiveness. The EQ-i scales that exhibited very little change were Impulse Control and Happiness. Although the mean scores on Flexibility decreased, the change in scores was minimal and not significant (Table 12).

Students on the whole were not surprised by the changes in their EQ-i scores, as they acknowledged that their emotional and social skills would likely develop over first year.

S19: I don’t think [EI skills] are fully developed in first year, maybe not even in second year. …it’s a growing process. So you have to kind of really learn about how you react to things and others, and you have to kind of grow with it.

Comments such as “I have learned to accept who I am,” “I’ve just learned to be more in tune with myself though my first year,” “I am more in touch with like my emotions and my…goals,” “I’m able to express my own ways of thinking now,” and “I’m more confident” speak to the changes in Intrapersonal skills. Participants especially acknowledge changes in their dependency.
Table 12

Difference between Pre EQ-i and Post EQ-i Mean Scores

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Group Means</th>
<th>Paired t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post EQ-i</td>
<td>Pre EQ-i</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td>96.12</td>
<td>92.26</td>
</tr>
<tr>
<td><strong>Intrapersonal</strong></td>
<td>95.90</td>
<td>91.26</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>101.60</td>
<td>99.76</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>98.57</td>
<td>93.10</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>97.93</td>
<td>92.60</td>
</tr>
<tr>
<td>Independence</td>
<td>89.81</td>
<td>87.10</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>96.12</td>
<td>94.29</td>
</tr>
<tr>
<td><strong>Interpersonal</strong></td>
<td>102.21</td>
<td>101.10</td>
</tr>
<tr>
<td>Empathy</td>
<td>104.64</td>
<td>102.88</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>102.07</td>
<td>101.19</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>101.05</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Stress Management</strong></td>
<td>97.50</td>
<td>96.00</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>95.86</td>
<td>92.81</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>99.31</td>
<td>99.12</td>
</tr>
<tr>
<td><strong>Adaptability</strong></td>
<td>91.95</td>
<td>88.50</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>91.26</td>
<td>85.93</td>
</tr>
<tr>
<td>Flexibility</td>
<td>94.31</td>
<td>95.52</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>94.81</td>
<td>90.83</td>
</tr>
<tr>
<td><strong>General Mood</strong></td>
<td>101.69</td>
<td>98.83</td>
</tr>
<tr>
<td>Optimism</td>
<td>98.55</td>
<td>93.17</td>
</tr>
<tr>
<td>Happiness</td>
<td>104.40</td>
<td>104.10</td>
</tr>
</tbody>
</table>

*one-tailed
S15: When I first moved, I was calling my mom every other minute… how do I do this, what should I do now...Now I just figure things out on my own.

S31: I’ve had to…make so many more decisions by myself and be more accountable for myself instead of…having that safety net.

S33: I think that first year definitely helped me feel like I could function on my own.

As these Intrapersonal skills grew so did the Interpersonal skills.

S22: I’ve come out of my shell a bit more…I’m less shy now than I was to begin with.

S20 I started to kind of put myself out there a little bit more. Even in classes…I would ask more questions and go up and talk to my professors more and talk to other people more.

S26: I just meet a lot more people and it’s helped me to become more social and …more open to others.

Similarly, the participants noted improvements in managing stress making comments such as “I don’t freak out as much when… I’m in like a time crunch” and “by the time second semester rolled around I’d learned how to…tolerate my own stressors.” Being more adaptable was another change that was acknowledged by the participants.

This included adjusting study habits to the new learning environment with comments such as “In second semester I definitely studied ahead more than first semester” and “when assignments are sprung on me I can adjust to it better than before.” All of this, plus students finding their niche in first year, likely contributed to students being more optimistic and happier.

S15: I was very pessimistic coming into university.... I just expect the worst of everything and now I’m realizing it’s gonna get better.

S16: Well I changed programs so I’m...happier with that. I think I know the right path I’m going.

Although the majority of the mean scores for each of the scales increased, on an individual basis this was not the case. Specifically, for most students, EQ-i scores increased on
some of the subscales, but stayed much the same or even decreased on other scores (Table 12). One probable explanation for the latter situation is that first year may have been a reality check for the participants. For instance, students may have entered first year believing they were very capable of managing stress based on their experiences in high school. However, with the new and constant demands of first year, these students may have realized their limitations with managing stress. Similarly, they may have entered university believing they were very good at establishing and maintaining productive relationships, based on the fact that they had close friends in high school. However, making connections at university may have proven to be much more difficult because in most cases the students are not in the same classes all day and the time to socialize is limited. This also applies to their academic skills.

S10: Coming from high school, being a straight A student, [I thought] I’m the smartest kid around...then, by the end of it, [I] realized I’m not the smartest kid around. I’m...average, mediocre. He’s the smartest kid around and she’s the smartest kid around.

As one student stated, “I’m not in Kansas anymore.”

The decrease in individual scores on different scales may also be related to the individual experiences of the students. For instance, one student who was very excited about leaving home and attending university had very high scores on the Happiness subscale initially. But during first year she suffered through serious bouts of homesickness. With comments such as “I miss my mommy,” it is not too surprising that first year was not as much fun as this student expected, and consequently she had much lower scores on the Happiness scale by the end of first year.

Similarly, another very energetic student entered first year with high scores on the Stress Tolerance subscale, but left with much lower scores. This student found the “stress of everything” incredibly draining, making comments about how he was totally “stressed out” and just wanted to get first year over as he could not endure any further stress. Another student,
whose scores on *Interpersonal Relationships* decreased over the course of first year, commented that the heavy workload prevented her from socializing, and this in turn resulted in her feeling detached for previous friends and to some degree from her peers in first year.

From both the quantitative and qualitative findings, it is clear that attending first year affected the participants’ emotional intelligence. In general, these skills appeared to improve, but this varied by student and by the type of skill. One question that arises from these results is whether or not these differences carry over to subgroups of students. In the next chapter, the answer to this question will be explored in terms of gender effect.
Chapter Nine
Gender Effect

There were significant differences in EQ-i by gender in terms of the both the pre and post assessment. Although these differences did not seem to affect academic performance, they may have had an influence on engagement.

**Pre EQ-i Scores and Gender**

Overall mean pre EQ-i scores were higher for males (n = 19) than females (n = 41) with the exceptions being the *Interpersonal* composite scale, and the *Empathy, Social Responsibility, Impulse Control* and *Happiness* subscales (Table 13). The score differences between females and males were statistically significant for *Social Responsibility* indicating the female students considered themselves to be more cooperative and willing to contribute to social groups than male students (Table 13). The score differences were also significant for *Stress Tolerance* signaling, in this case, that male students felt they were better able to withstand adverse events and stressful situations than female students (Table 13). For males, the highest mean pre EQ-i score was on the *Self Regard* subscale, while for females it was on the *Happiness* subscale. *Reality Testing* was the subscale with the lowest pre EQ-i mean score for both males and females.
### Table 13

**Difference between Pre EQ-i Mean Scores by Gender**

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Pre EQ-i Group Means</th>
<th>Mann-Whitney U Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male ( n = 19 )</td>
<td>Females ( n = 41 )</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td>96.58</td>
<td>92.95</td>
</tr>
<tr>
<td><strong>Intrapersonal</strong></td>
<td>97.79</td>
<td>93.17</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>103.63</td>
<td>100.29</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>96.11</td>
<td>95.20</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>99.32</td>
<td>95.59</td>
</tr>
<tr>
<td>Independence</td>
<td>94.79</td>
<td>88.54</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>99.42</td>
<td>94.46</td>
</tr>
<tr>
<td><strong>Interpersonal</strong></td>
<td>100.32</td>
<td>101.80</td>
</tr>
<tr>
<td>Empathy</td>
<td>98.47</td>
<td>104.15</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>96.84</td>
<td>102.83</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>102.37</td>
<td>100.80</td>
</tr>
<tr>
<td><strong>Stress Management</strong></td>
<td>99.79</td>
<td>94.37</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>101.74</td>
<td>91.37</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>97.00</td>
<td>97.93</td>
</tr>
<tr>
<td><strong>Adaptability</strong></td>
<td>92.47</td>
<td>88.17</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>89.74</td>
<td>87.12</td>
</tr>
<tr>
<td>Flexibility</td>
<td>98.79</td>
<td>92.66</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>93.58</td>
<td>91.37</td>
</tr>
<tr>
<td><strong>General Mood</strong></td>
<td>101.37</td>
<td>99.51</td>
</tr>
<tr>
<td>Optimism</td>
<td>99.79</td>
<td>93.12</td>
</tr>
<tr>
<td>Happiness</td>
<td>102.74</td>
<td>105.12</td>
</tr>
</tbody>
</table>

*2-tailed
First Year Experiences by Gender

The academic performance by females and males in this study who completed the pre EQ-i was almost identical in terms of success rates and standing (Table 14).

Table 14

Academic Performance by Gender

<table>
<thead>
<tr>
<th></th>
<th>Study Group</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total #</strong></td>
<td>60</td>
<td>41</td>
<td>19</td>
</tr>
<tr>
<td>Success*</td>
<td>48 (80%)</td>
<td>33 (80%)</td>
<td>15 (79%)</td>
</tr>
<tr>
<td>NonSuccess**</td>
<td>12 (20%)</td>
<td>9 (20%)</td>
<td>4 (21%)</td>
</tr>
</tbody>
</table>

**Standing**

<table>
<thead>
<tr>
<th></th>
<th>Study Group</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st class (A- to A+)</td>
<td>9 (15%)</td>
<td>6 (15%)</td>
<td>3 (16%)</td>
</tr>
<tr>
<td>2nd class (B- to B+)</td>
<td>21 (35%)</td>
<td>15 (37%)</td>
<td>6 (32%)</td>
</tr>
<tr>
<td>Satisfactory (C- to C+)</td>
<td>18 (30%)</td>
<td>12 (29%)</td>
<td>6 (32%)</td>
</tr>
<tr>
<td>Unsatisfactory (D, F)</td>
<td>12 (20%)</td>
<td>8 (19%)</td>
<td>4 (20%)</td>
</tr>
</tbody>
</table>

*Year-end GPA ≥ 1.5

**Year-end GPA < 1.5

In comparison, the level of involvement by females and males in this study who completed the post EQ-i differed somewhat in all four of the categories of engagement (Table 15). Proportionately, males reported higher levels of interaction with faculty and greater levels of participation in extracurricular activities as compared to females. Males also reported higher levels of interaction with other students than did females, but when the medium and high levels were combined, then females appeared to socialize more so with their peers. Similarly, percentage wise, more females fully utilized the support service as compared to males. However,
the percentage of females and males who utilized the support services moderately or greater was exactly the same (~67%).

Table 15
Student Engagement in First Year by Gender

<table>
<thead>
<tr>
<th>First Year Experiences</th>
<th>Interviewed Students</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female (n = 30)</td>
<td>Male (n = 12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low (%)</td>
<td>Medium (%)</td>
<td>High (%)</td>
<td>Low (%)</td>
<td>Medium (%)</td>
<td>High (%)</td>
</tr>
<tr>
<td>Level of Faculty Interaction</td>
<td>43.3</td>
<td>43.3</td>
<td>13.3</td>
<td>8.3</td>
<td>41.7</td>
<td>50.0</td>
</tr>
<tr>
<td>Level of Student Interaction</td>
<td>26.7</td>
<td>40.0</td>
<td>33.3</td>
<td>33.3</td>
<td>25.0</td>
<td>42.7</td>
</tr>
<tr>
<td>Utilization of Academic Services</td>
<td>33.3</td>
<td>46.7</td>
<td>20.0</td>
<td>33.3</td>
<td>58.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Level of Participation in Extracurricular activities</td>
<td>33.3</td>
<td>33.3</td>
<td>33.3</td>
<td>16.7</td>
<td>33.3</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Pre EQ-i scores do provide several possible explanations for these differences in engagement. For instance, with a higher level of confidence when entering first year, males may have been more comfortable interacting with faculty. This confidence also may be the reason they were more likely to participate in various activities outside the classroom. Higher levels of Stress Tolerance also may be pertinent, as male students may have known in advance that participating in such activities, especially physical activities, was a good way to reduce stress levels. This supposition is based on the fact that male participants more so than female participants recommended stress relievers such as “doing sports or going to the gym or something” or “go for a 10 minute run” before an exam.

With higher scores on Empathy and Social Responsibility it is not too surprising that the area in which female students reported the greatest interactions was with other students. The
primary reason given for doing so was to create a “web of support” that appeared to be more important to the females as compared to the males. This situation is certainly reflected by advice typically given to future first year students. For instance, socializing was recommended by 40% of the female participants, but only by 25% of male participants. Although these findings are interesting, and perhaps intuitive, again, it is important to interpret them with caution due to the small sample size particularly for male students.

Changes in Emotional Intelligence by Gender

Post EQ-i Scores and Gender

By the end of first year, there were a few changes in the EQ-i scores by gender. Overall, mean post EQ-i scores still were higher for males (n = 12) than females (n = 30) with the exceptions being the Interpersonal composite scale, and the Emotional Self Awareness, Empathy, Social Responsibility and Reality Testing subscales (Table 16). The post EQ-i score differences between males and females were statistically significant for the composite scale of Stress Management and the subscales of Stress Tolerance and Flexibility (Table 16).

For males, the highest mean post EQ-i score switched from Self-Regard to Happiness, while for females it switched from Happiness to Empathy. The lowest mean score for males remained with the Reality Testing subscale. However, for females Independence became the lowest subscale score instead of Reality Testing.
Table 16

Difference between Post EQ-i Mean Scores by Gender

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Post EQ-i Group Means</th>
<th>Mann-Whitney U Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (n = 12)</td>
<td>Females (n = 30)</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td>99.17</td>
<td>94.90</td>
</tr>
<tr>
<td><strong>Intrapersonal</strong></td>
<td>99.08</td>
<td>94.63</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>106.17</td>
<td>99.77</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>98.00</td>
<td>98.80</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>101.83</td>
<td>96.37</td>
</tr>
<tr>
<td>Independence</td>
<td>90.08</td>
<td>89.70</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>100.33</td>
<td>94.43</td>
</tr>
<tr>
<td><strong>Interpersonal</strong></td>
<td>99.83</td>
<td>103.17</td>
</tr>
<tr>
<td>Empathy</td>
<td>100.58</td>
<td>106.27</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>96.08</td>
<td>104.47</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>101.42</td>
<td>100.90</td>
</tr>
<tr>
<td><strong>Stress Management</strong></td>
<td>104.50</td>
<td>94.70</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>107.50</td>
<td>91.20</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>99.50</td>
<td>99.23</td>
</tr>
<tr>
<td><strong>Adaptability</strong></td>
<td>94.58</td>
<td>90.90</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>90.00</td>
<td>91.77</td>
</tr>
<tr>
<td>Flexibility</td>
<td>102.75</td>
<td>90.93</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>94.83</td>
<td>94.80</td>
</tr>
<tr>
<td><strong>General Mood</strong></td>
<td>105.33</td>
<td>100.23</td>
</tr>
<tr>
<td>Optimism</td>
<td>101.17</td>
<td>97.50</td>
</tr>
<tr>
<td>Happiness</td>
<td>108.33</td>
<td>102.83</td>
</tr>
</tbody>
</table>

*2-tailed
Changes in EQ-i Mean Scores for the Female Subgroup

All of the mean scores increased between the pre EQ-i and the post EQ-i assessment for females, except on the Impulse Control, Flexibility and the Happiness subscales (Table 17). The increases were significant for the Total EQ-i scale, for two of the EQ-i composite scales and for six of the subscales. None of the decreases in mean subscale scores were significant (Table 17).

The greatest increase for females was on the Reality Testing subscale. This suggests that over the course of first year, female students became better at evaluating situations. This, in turn, may explain why their scores on Optimism increased significantly, as did scores on Emotional Self-Awareness. By being more aware of their emotions and understanding them better, female students may have found it easier to acknowledge their current situation and appreciate their accomplishments. By doing this, it is likely that their outlook on life improved also, a suggestion that is supported by comments made by female students.

S31: New things, new awareness, learning about myself more. Like I’ve never been in this situation before but good job, pat on the back for me for dealing with it well.

Growth in these areas may have led to significant growth in several other areas such as Assertiveness and Problem Solving; the next two subscales with the greatest mean increases from pre to post testing for females. In terms of Assertiveness, five female students stated that they had become much more comfortable with expressing themselves.

S34: I’m able to express my own ways of thinking now. Before I kind of… held them back and …heard other people’s opinion, and then said my opinion. Whereas now, I say my opinion and I’m straight forward and to the point with it.

Similarly, seven female students provided specific examples as to how their Problem Solving skills improved over the course of first year.
Table 17

Difference between Pre EQ-i and Post EQ-i Mean Scores for Female Participants

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Group Means</th>
<th>Paired t-test for Equality of Means (n = 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post EQ-i</td>
<td>Pre EQ-i</td>
</tr>
<tr>
<td>Total Score</td>
<td>94.90</td>
<td>90.50</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>94.63</td>
<td>89.17</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>99.77</td>
<td>98.10</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>98.80</td>
<td>92.43</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>96.37</td>
<td>91.10</td>
</tr>
<tr>
<td>Independence</td>
<td>89.70</td>
<td>84.80</td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>94.43</td>
<td>91.90</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>103.17</td>
<td>101.20</td>
</tr>
<tr>
<td>Empathy</td>
<td>106.27</td>
<td>104.33</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>104.47</td>
<td>103.73</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>100.90</td>
<td>98.53</td>
</tr>
<tr>
<td>Stress Management</td>
<td>94.70</td>
<td>94.23</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>91.20</td>
<td>89.53</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>99.23</td>
<td>99.33</td>
</tr>
<tr>
<td>Adaptability</td>
<td>90.90</td>
<td>86.43</td>
</tr>
<tr>
<td>Reality Testing</td>
<td>91.77</td>
<td>84.80</td>
</tr>
<tr>
<td>Flexibility</td>
<td>90.93</td>
<td>92.67</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>94.80</td>
<td>89.60</td>
</tr>
<tr>
<td>General Mood</td>
<td>100.23</td>
<td>97.37</td>
</tr>
<tr>
<td>Optimism</td>
<td>97.50</td>
<td>90.73</td>
</tr>
<tr>
<td>Happiness</td>
<td>102.83</td>
<td>103.67</td>
</tr>
</tbody>
</table>

*one-tailed*
S21: If you have two essays coming up and you’re not sure which one you should focus more on, you have to weigh out all the pros and cons and try and figure out where you should put a lot of your energy into. Or if you’re with a group of friends and a problem arises because this has happened, so many different personalities, you [have to think] about that. So I just think overall this year has enhanced my problem solving abilities.

As for the significant increase on the Independence subscale, 18 female students commented on this change, in most cases stating that over the course of the year, they had become more self-sufficient and more inclined to take responsibility for their own actions.

S31: I’ve had to…make so many more decisions by myself and be more accountable for myself instead of…having that safety net.

All of these significant differences contributed to the significant increase in Total EQ-i scores. This increase is indicative of significant growth for female students, a finding supported by their comments.

S31: I grew more as a person….I feel more confident in my ability to be a contributing member of society now than when I first came out of high school….I’m more of an adult now…I’m kind of proud of myself and how I’ve grown.

S35: I…wasn’t expecting to grow this much as a person…I’m really glad I did. First year was definitely amazing. I feel like I’m middle aged in my experiences.

Changes in EQ-i Mean Scores for the Male Subgroup

All mean scores increased for males between the pre EQ-i and the post EQ-i assessment except on the Independence, Interpersonal, and Interpersonal Relationship scales (Table 18). Based on the Wilcoxon Signed Ranks test, the only significant differences were on the Assertiveness and the Stress Tolerance subscales (Table 18).

For male students, the greatest change in mean scores was on the Stress Tolerance subscale. With the initial score above average and the post score even higher, it does seem that male students had a high level of stress tolerance that actually improved under the new and often stressful situations associated with first year. Based on the comments by seven male
Table 18

Difference between Pre EQ-i and Post EQ-i Mean Scores for Males

<table>
<thead>
<tr>
<th>EQ-i Scale</th>
<th>Group Means</th>
<th>Wilcoxon Signed Ranks Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Post EQ-i</td>
<td>Pre EQ-i</td>
</tr>
<tr>
<td>Total Score</td>
<td></td>
<td>99.17</td>
<td>96.67</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td></td>
<td>99.08</td>
<td>96.50</td>
</tr>
<tr>
<td></td>
<td>Self-Regard</td>
<td>106.17</td>
<td>103.92</td>
</tr>
<tr>
<td></td>
<td>Emotional Self-Awareness</td>
<td>98.00</td>
<td>94.75</td>
</tr>
<tr>
<td></td>
<td>Assertiveness</td>
<td>101.83</td>
<td>96.33</td>
</tr>
<tr>
<td></td>
<td>Independence</td>
<td>90.08</td>
<td>92.83</td>
</tr>
<tr>
<td></td>
<td>Self-Actualization</td>
<td>100.33</td>
<td>100.25</td>
</tr>
<tr>
<td>Interpersonal</td>
<td></td>
<td>99.83</td>
<td>100.83</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>100.58</td>
<td>99.25</td>
</tr>
<tr>
<td></td>
<td>Social Responsibility</td>
<td>96.08</td>
<td>94.83</td>
</tr>
<tr>
<td></td>
<td>Interpersonal Relationships</td>
<td>101.42</td>
<td>103.67</td>
</tr>
<tr>
<td>Stress Management</td>
<td></td>
<td>104.50</td>
<td>100.42</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td></td>
<td>107.50</td>
<td>101.00</td>
</tr>
<tr>
<td>Impulse Control</td>
<td></td>
<td>99.50</td>
<td>98.58</td>
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<tr>
<td>Adaptability</td>
<td></td>
<td>94.58</td>
<td>93.67</td>
</tr>
<tr>
<td></td>
<td>Reality Testing</td>
<td>90.00</td>
<td>88.75</td>
</tr>
<tr>
<td></td>
<td>Flexibility</td>
<td>102.75</td>
<td>102.67</td>
</tr>
<tr>
<td></td>
<td>Problem Solving</td>
<td>94.83</td>
<td>93.92</td>
</tr>
<tr>
<td>General Mood</td>
<td></td>
<td>105.33</td>
<td>102.50</td>
</tr>
<tr>
<td></td>
<td>Optimism</td>
<td>101.17</td>
<td>99.25</td>
</tr>
<tr>
<td></td>
<td>Happiness</td>
<td>108.33</td>
<td>105.17</td>
</tr>
</tbody>
</table>

*one-tailed
students, this seems to be related to their ability to find a balance in first year.

S40: I found that good balance point where I’m happy, I can do everything I want, my weekends are fairly free but at the same time I still have enough stress that I can’t just leave it and ignore it.

S41: You can’t take care of anybody else until you can take care of yourself.

However, it could also be related to their general state of mind as male students seemed to be optimistic and overall quite happy with their lives, both of which they thought helped them succeed in first year.

S8: It’s all about mindset and your perspective on life. I really think that if you want to enjoy life you will no matter what. If you don’t want to enjoy life, then you won’t.

S29: Stay happy, stay active… I think that’s one of the biggest things I can say, just stay happy and stay positive about everything.....if you’re just like in a bad attitude or things aren’t going so good then you can really turn it around just by being happy.... it really reflects on your grades if you’re feeling down or anything… it takes a hit on your marks, definitely.

One reason males may have been so optimistic and content is that half of them felt that they were achieving their goals and being challenged. This, in turn, may explain the significant increase in scores on the Assertiveness subscale. As one very successful and satisfied male student stated, “I’m here for a reason and that’s...to excel.” Similarly, another student indicated that he felt better about himself because he was doing something productive. Yet another student commented that striving to achieve his personal goals made him happy and this, in turn, also positively impacted his academic performance. Related to this is a sense of accomplishment that several male students commented on during the interviews.

S40: It’s also nice that it offers a challenge…I [can] step up to. Whereas in high school I always kind of felt like this isn’t really that hard, it’s just time consuming. Whereas here it feels like if I don’t put in the time, put in the effort, I’m not gonna get the same amount out.
S23: The fact that you have to work hard to earn your marks. To get the grade, it’s no longer like high school where you just…show up…. It’s like you’ve got to put in the time and…how much time you put in…you get that mark back. And you decide if you’re gonna put in your all and that’s your mark or not….I’m more proud of my marks now…it’s just like you feel like you’ve earned your marks better which is more rewarding.

All of this appears to connect to self-confidence, which seems to be a major contributor to the increases in the EQ-i scores of male students, and also their overall success.

S10: I feel a lot more like sure of myself... just more confident that I will be able to continue doing this.

S40: In university I’ve sort built up my confidence in what I’m saying. ...I started to realize that I’m getting all these questions right [in class] and these aren’t just like simple questions, these are university questions so obviously something’s right. So I started to get more confidence in myself. Not necessarily that I’m more assertive, but I’m more confident. And because I’m more confident I can say what I’m saying with confidence.

Based on the qualitative and quantitative findings in this chapter, the EI of the first year students in this study seem to differ by gender. Upon entering first year, the male students appeared to be more confident, optimistic, flexible, and stress tolerant than their female counterparts. In comparison, female students appeared to be more socially responsible and empathic, as well as happier than males. Although these differences did not seem to influence academic performance, they may be related to differences in levels of engagement. By the end of first year, the EI skills of both males and females, on the whole, improved. However, the initial differences remained much the same, with males scoring higher on most of the Intrapersonal, Stress Management, Adaptability and General Mood scales, and females continuing to score higher on the Interpersonal scales.
Chapter Ten
Discussion

Many student and institutional factors have been shown to influence students’ performances and experiences in first year (e.g., Astin, 1993; Barefoot, 2000; Pascarella & Terenzini, 1991, 2005; Tinto, 1993; Upcraft et al., 2005). Consequently, post-secondary institutions continue to design and employ a variety of interventions and initiatives in an effort to improve the transition and the experiences of these students. Selecting best practices hinges on these institutions fully understanding their first year students and their experiences.

This mixed methods study endeavoured to do both by exploring the potential connections between the first year experiences of students and their emotional intelligence at one Canadian university. As such, five research objectives were undertaken: (1) to assess the emotional intelligence of first year students, (2) to explore the students’ perceptions of their first year experiences in relation to emotional intelligence, (3) to investigate any connections between the emotional intelligence of students and their experiences in first year, (4) to determine if the emotional intelligence of students changed over the course of first year, and (5) to explore any gender differences. In this final chapter, a summary of the major findings is presented, along with the limitations and implications of the research, and recommendations for future research. Since this was an exploratory study, it is important to acknowledge that these findings are tentative and need to be verified by subsequent research.
Summary of the Findings

The Emotional Intelligence of First Year Students

My data indicate that on average the first year students in this study entered TRU with effective emotional and social skills. Overall, their strongest EI skills appeared to be in the interpersonal realm, indicating that they considered themselves to be socially aware and capable of relating well with others. They also reported being self-aware, able to express themselves, and capable of managing and regulating their emotions. However, self-assessments of their levels of independence appear to be lower than that of the general population which is logical given their ages and life experiences. Most of the students in this study also had difficulty differentiating between what is possible and what is not. Hence, some of these students may have entered first year with unrealistic expectations, expecting too much from their university experience and/or expecting too much of themselves. This assertion is supported by the interview comments. For instance, some students indicated that they thought first year would involve extensive partying and fun, but instead they discovered “it’s work, work, work.” Others discovered they were no longer capable of “doing it all” as exemplified by comments such as this one, “when I came to university I thought I could still do everything...but no. It’s something totally different.”

In most cases there was a positive interrelationship among skills. Hence, students who were strong in one aspect, say Empathy, tended to also be strong in other aspects such as Social Responsibility. However, this was not universal as some of the skills appeared to be inversely correlated to others. For example, students who exhibited high levels of self-control tended to be less assertive. This divergent finding is an anomaly that warrants subsequent investigation as emotional and social skills are assumed to develop in tandem.
Overall, these findings do concur with what would be expected in terms of the developmental level of “traditional” first year students entering university. Typically, students tend to enter first year with lower levels of independence, and tend to rely on authority figures for direction and knowledge acquisition (e.g., Baxter Magolda, 1992; Chickering & Reisser, 1993; Kegan, 1982, 1994; Perry, 1970). Similarly, although they may possess adequate communication and social skills upon entry, these skills need to be enhanced in order to navigate various social situations in first year such as speaking up in a class and interacting with strangers (Chickering & Reisser, 1993). Hence, to purposely improve these skills, both students and the institutions they attend need to be aware of such skills and their implications.

**The Connection between Emotional Intelligence and First Year Experiences**

Contrary to other studies that employed the BarOn Emotional Quotient inventory (e.g., Jaeger & Eagan, 2007; Parker, Duffy, et al., 2005; Parker, Summerfeldt, et al., 2004; Saklofske et al., 2012), there were no significant correlations between the pre EQ-i scales scores and student success as measured by year-end GPA. Similarly, there were not any significant differences in EI scores between successful and nonsuccessful students. This could be due to the fact that two different versions of the EQ-i were utilized, the Short version (51 items) in the previous studies as compared to the full version (133 items) in this study. Differences in sample sizes also may have contributed to these incongruent results (Sheskin, 2011).

In comparison, there appears to be a link between some EI skills and students’ perceptions of their success and overall experiences in first year. For instance, there was a significant association between how students rated their success in first year (success or mixed) and scores on the *Interpersonal Relationship* subscale. Similarly, there was a significant relationship between the pre EQ-i *Self-Actualization* subscale scores and the students’ ratings of
their first year experiences (positive or mixed). Hence, as concluded by others (Astin, 1984/1999; Kuh et al., 2008; Noel, 1985; Tinto, 1993; Upcraft et al., 2005), social interactions and achievement of goals appear to be connected to some degree with students’ levels of satisfaction and sense of success.

A few EI skills also appear to be connected to engagement. For instance, there was a statistically significant association between *Reality Testing* scores and faculty interaction, although it is not entirely clear how the two were related. Balance and moderation appear to be key factors in the three other significant associations. This assumption is based on the fact that participating moderately in extracurricular activities was linked to higher scores on *Impulse Control*, *Reality Testing* and EQ-i *Total score*. All of this seems to indicate that the students with higher EQ-i scores on these subscales realized the importance of participating in extracurricular activity, but did so in moderation so as not to interfere with their studies.

Although these four associations are informative, it is surprising that there were no other significant relationships between emotional intelligence and engagement. Given there were 80 other possible associations, this is definitely an unanticipated outcome, especially the absence of any significant associations between the EQ-i scores and student interaction. As already noted, this may be due to anomalies in this data set and/or the smaller sample size. However, given that none of the students in this study had identical pre or post EI profiles, nor did they appear to experience first year in exactly the same way, I am more inclined to believe that the lack of associations has to do with the individualistic nature of the students.

**Changes in Emotional Intelligences**

Based on the overall findings of this study, it seems that the first year experiences of students at TRU may enhance their emotional intelligence. Specifically, in this study there
was a significant increase in the students’ mean scores on the Total EQ-i from the pre to the post assessment. At the sublevels there were significant increases on the Intrapersonal, Adaptability, and General Mood composite scales, and on the Emotional Self-Awareness, Assertiveness, Stress Tolerance, Reality Testing, Problem Solving, and Optimism subscales. In general, these changes appear to have led to significant personal growth with many students saying such things as “I’ve matured into a bit of a more responsible person,” “I’ve grown up a lot” and “I feel more confident in my ability to be a contributing member of society now than when I first came out of high school.” Based on the student development theory, these findings are not too surprising as participating in higher education is assumed to develop the psychosocial and cognitive skills of students that are directly and indirectly to the construct of emotional intelligence (e.g., Evan et al., 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005). The question is, would this development have occurred even if they had not attended first year?

**Gender Differences**

The findings of this study suggest that the emotional intelligence of first year students may differ by gender. Based on pre EQ-i scores at the beginning of first year, male students in this study appeared to be able to tolerate stress much better than females, while female students appeared to be more socially conscious than males. However, based on their Reality Testing subscale scores, both appeared to have problems with objectively viewing situations, and hence setting realistic goals. At the end of the first year, male students continued to exhibit higher levels of stress tolerance as compared to female students, and they also appeared to be more flexible. Once again, based upon student development theories, these gender differences and similarities are not unexpected. For instance, the fact that females appeared to be more socially
conscious to others reaffirms Gilligan’s (1982) view about how women tend to focus more so than males on the values of caring and connections with others. Similarly, it is not too surprising that both male and female students struggled with reality, as development theories indicate that attending the first year of university tends to challenge many student assumptions about themselves and about the world around them. (Baxter Magolda, 1992; Chickering & Reisser, 1993; Gilligan, 1982; Kegan, 1982, 1994; Perry, 1970).

Given the variations revealed in this study, one might expect differences by gender in the academic performance and/or overall experiences in first year. In terms of the former, this was not the case as success rates and grade achievement in this study were almost identical for female and male students. However, based on my interview data, there were some slight differences in engagement by gender. Specifically, males seemed to interact with faculty and participate in extracurricular activities more so than females, whereas female students seemed to utilize academic services and interact with other students more so than male students. These data substantiate the quantitative findings. Specifically, since participating in extracurricular activities was cited as a form of stress management by male students, their higher participation rate in such activities may be one reason they scored significantly higher on the EQ-i Stress Tolerance subscale as compared to female students. The fact that females tended to interact with their peers more so than males likely explains their higher scores on the Social Responsibility subscale, as it is an indicator of one’s propensity to engage with others.

In terms of changes in emotional intelligence, there were significant differences for both female and male students by the end of first year. Females appeared to become more emotionally self-aware, assertive and independent. Their problem solving skills and ability to objectively view reality also improved significantly, as did their level of optimism. Males
appeared to become more assertive over the course of first year, and their ability to tolerate stress also improved. These changes were substantiated by the interview data. For example, a common theme expressed by female students was that they had become more self-sufficient and comfortable with expressing themselves, while male students were more likely to comment that they had become more confident and better able to balance all of their responsibilities. It is worth noting that the mean scores for female students increased significantly on six of the 15 EQ-i subscales as compared to two for the male students. Although the lack of significance for the males may be due to the smaller sample size, there is a possibility these results are an indication that the first year of university has a more profound effect on the EI of females. Given the implications of this possible scenario, changes in EI by gender is a topic that warrants further investigation.

Summary

The findings from this study suggest a complicated connection may exist between emotional intelligence and the first year experience. The impact of emotional intelligence on first year experiences appears to be multifarious with some EI skills connecting directly or indirectly with engagement and academic performance, and others not. Some of these connections are perplexing, such as the differences in EI between successful and nonsuccessful students, and the lack of association between EI and student engagement. However, the impact of the first year experience on emotional intelligence seems to be less complicated as overall the emotional and social skills of students appear to improve during the course of first year. Finally, the findings also seem to indicate that emotional intelligence may differ by gender, and such differences may, in turn, influence engagement but not necessarily academic performance.
Limitations of the Study

The measurement dispute with the EQ-i in particular, but with any self-reporting assessment tool in general, is one of the limitations of this study. Essentially, it is impossible to determine with certainty that the EQ-i test accurately assessed the emotional intelligence of participants. As with other self-descriptions, there may have been a tendency by the students to exaggerate their good qualities or respond in a socially desirable manner. However, given that this assessment did not have any implications for students other than to receive a report on their EI skills, I do believe that they answered the questions as truthfully as possible. Moreover, the EQ-i did exhibit face validity in that the students themselves authenticated the reports by stating that overall each report appeared to be an accurate portrayal of their skills.

It also is possible that completing the pre EQ-i and participating in the debriefing session at the beginning of their studies may have positively influenced the development of students’ EI skills. That is to say, the participants may have been more motivated to improve these skills since they were more aware them. However, the qualitative data appear to suggest that the primary reason for the changes were due to a variety of first year experiences not related to this study.

Although the sample size was sufficient for the qualitative analysis, it was relatively small for the quantitative analysis. This limited the extent to which some of the quantitative data could be analyzed. In addition, this sample of students was fairly homogenous preventing the exploration of the connections between EI and first year experiences by other group factors such as social class and ethnicity.

Another limitation of this study relates to the lack of representation by nonsuccessful students in the interview group. Of the forty-two students interviewed only two were
nonsuccessful. Although their comments contributed to the findings, it would have been beneficial to have collected data from more students who did not succeed academically. Ensuring such students are included in future studies is challenging as participation is voluntary. However, one obvious solution is to increase the study sample size since this should lead to increased participation by the nonsuccessful students. Another possible solution might be to conduct the interviews earlier in the second semester.

Finally, although much of this study is transferable, generalizations of the findings are limited. Specifically, although the sample demographics and situational and academic characteristics were representative of the TRU population of first year students as defined in this study, they may not correspond to the profiles of nontraditional, first-year students attending TRU, or students attending first year at other universities. Moreover, the attributes of students will change through time, as will the policies, procedures, practices, people, and programming of higher educational institutions. Consequently, the first year experiences at TRU and other higher education institutions are bound to change. Thus, conducting ongoing and subsequent research is greatly needed.

**Implications of the Research**

This in-depth study of the connection between first year experience and emotional intelligence of TRU students has both theoretical and practical implications for students, educators, and researchers alike. In this section, I will relate these implications to the first year phenomenon and the construct of emotional intelligence.

**First Year Experience**

As per previous findings (e.g., Pascarella & Terenzini, 1991, 2005; Skipper, 2005; Upcraft et al., 2005), the students in this study indicated that first year poses significant
challenges, requiring them to adjust academically, emotionally, and socially. The transition into first year is especially difficult, and one reason for this as cited by participants in this study relates to first year being “the unknown.” No doubt, this relates to higher education being a new field, one in which students have yet to inhabit. Fortunately, many students in this study seemed to have a “feel for the game” of higher education, a practical sense of what was required of them in first year (Bourdieu, 1990, 1998). For example, most of the students knew it was important to connect with others, to actively participate in their learning, and to follow classroom and institutional procedures.

One comment made by a student about why he purposefully interacted with faculty clearly demonstrates just how well one student understood the dynamics involved in this new setting. Employing the same sports analogy often utilized by Bourdieu, this student indicated that to increase his probability of success, he “play[ed] the game of academics” by spending time with each of his instructors to learn “what they want[ed] on their assignments,” or as Bourdieu (1990, 1998) would say the “rules of the game.” This strategy appears to have paid off as this student achieved a first class standing.

Besides their habitus being somewhat in sync with the field of higher education, participants in this study also seemed to have some, if not quite a few, sources of capital pertinent to higher education. This is reflected by the level of parental education, the level of parental support (emotional and financial), and the level of involvement by siblings and/or friends in higher education. This finding supports the notion that even at a university such as TRU, which is designed to enhance access for all students, a social class effect appears to be still in place.
Together, all of this helped these students to feel more like “fish in water” versus “fish out of the water.” However, many participants still felt overwhelmed by first year, or as one student described it, “a little fish in a big pond.” Again, this is not too surprising as development theories indicate that students enter first year at various levels of psychosocial and cognitive structural development and they also develop at different rates while in first year and beyond (e.g., Baxter Magolda, 1992; Chickering & Reisser, 1993; Gilligan, 1982/1993; Kegan, 1982, 1994; Kohlberg, 1969; Perry, 1970). This is where institutional initiatives can be beneficial, as their aim is to provide students with a better “feel” for first year. Students appeared to concur with this as most of the feedback about orientation programs and other similar services at TRU was positive.

Another reason first year is so challenging relates to the workload. As noted in Chapter Five, quite a few students found the workload to be too heavy and hence during first year reduced their course load from the traditional five courses per semester to four. Some students viewed this as a failing, causing them to feel as though they were no longer “playing by the rules of the game.” This certainly is not the case, as the average course load in the first year of a baccalaureate programs at TRU, and probably many other institutions, now appears to be four courses per semester (TRU Institutional Planning and Analysis, personal communication, December 21, 2011). Thus, it seems the “rules” have changed, at least at TRU, so it is vital that this information be shared with students, parents and educational personnel. Specifically, high school counselors and university academic and program advisors need to be aware of this and inform students that not only is it acceptable, but it is normal for first year students at TRU to enroll in four courses per semester.
An emerging new average course load at TRU suggests students in baccalaureate degrees are likely to take at least a year or two longer than the traditional norm of four or five years—depending on the program—to complete their degrees. This pattern has been verified by other research (e.g., Andres & Adamuti-Trache, 2008; Andres & Offerhaus, 2012, 2013; Ishitani, 2006; Wintre, Bowers, Gordner & Lange, 2006), yet, in general, there appears to be a lack of awareness by students and others in regard to this new norm. Hence, this information needs to be shared with incoming students, parents, educational personnel and even the general public, so students do not feel pressured to meet an antiquated timeline to complete their studies. This change also demonstrates the necessity of engaging in longitudinal studies whenever assessing university participation and completion rates.

Another challenging issue identified by TRU students during the interviews related to the assessment practices in certain courses. From comments made by numerous students, it seems some TRU courses still rely on only two or three assessments (e.g., a midterm and a final exam) to grade students’ learning. Most assessment professionals (e.g., Bryan & Clegg, 2006; Joughin, 2010; Suskie, 2009) would argue that this is unsuitable and insufficient in any undergraduate course, especially so in first year. Multiple measures and methods should be employed and spread over the term to keep the students on track with their learning and studying. This is an important issue that is currently being addressed by TRU through a comprehensive review of course and program objectives.

These findings confirm that institutional factors can and do play an important role in student satisfaction and success. The same can be said about student factors, although some of the results from this study contradict findings from previous studies. For instance, according to the bulk of the existing research, gender is a significant predictor of academic success and
persistence, in most cases favoring females (DeBerard et al., 2004; Finnie & Qiu, 2008; Gifford et al., 2006; Lawrence et al., 2006; Perrine & Spain, 2009; Robbins et al., 2004). The results from this study do not support this claim as the academic performance of female and male participants was almost identical.

This study also did not demonstrate a link between measures of the emotional and social skills of first year students and academic success, a relationship suggested by previous research (e.g., Jaeger & Eagan, 2007; Parker, Duffy, et al., 2005; Parker et al., 2006; Parker, Summerfeldt, et al., 2004; Walker, 2006). The lack of significant correlations between the EQ-i scores and engagement also contradict the results from other studies investigating personality factors and engagement (e.g., Bauer & Liang, 2003; Reason et al., 2006; Pascarella & Terenzini, 1991, 2005).

This study did offer support for the supposition that student engagement relates to academic success (Astin, 1984/1999; Keup, 2006; Kuh et al., 2008; Reason et al., 2006; Pascarella & Terenzini, 1991, 2005; Woosley & Miller, 2009; Upcraft et al., 2005). In this study, this relationship was demonstrated by higher levels of interaction with faculty and with other students equating to higher GPAs.

Based on my overall findings, it is reasonable to conclude that a variety of student and institutional factors impact the first year experiences of TRU students; however, it would seem that affective skills like emotional intelligence are susceptible to individual idiosyncrasies more so than the other demographic and situational variables. Therefore, as other educators have stressed (e.g., Andres, 2004; Andres & Offerhaus, 2013: Cox & Strange, 2010; Pascarella & Terenzini, 1991, 2005; Skipper, 2005; Upcraft et al., 2005), it is critical to consider the individuality of the students when designing, conducting, and especially interpreting the results.
from studies such as this one and exploring, implementing, and assessing new initiatives, programs and/or services for first year and all other students.

**Emotional Intelligence**

The findings from this study contribute to the discussion regarding the conceptualization, measurement, and applicability of emotional intelligence; on the whole, they support all three facets, albeit with some reservations.

As outlined in Chapter Three, emotional intelligence, in general, is theorized to be a distinct intelligence, developing with increasing age up to a point, and to be malleable according to some theorists. The significant changes in the EQ-i scores over the course of first year support the latter two premises, namely that EI is developmental and pliable.

As for the measurement of emotional intelligence, there are concerns about the ability of any assessment test to be able to accurately measure the complex nature of emotional and social skills. However, the results from this study suggest that the Emotional Quotient inventory (EQ-i) provides a reasonable assessment of these skills. First and foremost, the EQ-i did exhibit face validity as all participants felt that on the whole the scores reflected their emotional and social skills. This is an important finding, for as Hunt (2011) states, “tests must be perceived as fair in addition to having statistical validity” (p. 62).

The reliability of the EQ-i as measured by the consistency of scores across different groups also was established. Specifically, the gender differences reported in this study match that of norming studies involving the EQ-i. BarOn (1997, 2006) showed that females tend to score higher on the *Interpersonal* scales as compared to males, while males continually score higher on *Intrapersonal, Adaptability and Stress Management* scales as compared to females. This is nearly identical to the results of my study, where females scored higher on the
Interpersonal scales and males scored higher on all the Intrapersonal and Stress Management subscales and most of the Adaptability subscales. Of course, this does prompt the question whether these differences truly exist between males and females or are these differences being reified by the EQ-i.

However, there was one irregularity relating to the EQ-i’s lack of internal consistency in that some of the subscale scores exhibited negative correlations with other subscales. For the pre assessment of Impulse Control and Assertiveness this negative correlation was significant, indicating that when Assertiveness scores increased, Impulse Control scores decreased. This finding contradicts the results from the norming population (Bar-On, 1997) and from subsequent studies (e.g., Dawda & Hart, 2000; Livingstone & Day, 2005; Parker, Duffy, et al., 2005; Parker, Summerfeldt, et al., 2004; Perlini & Halverson, 2006), as none have reported negative interscale correlations. Based on this, these findings are most likely an anomaly, but as already mention may warrant further investigation.

In terms of the applicability of emotional intelligence, as outlined in Chapter Five, many students in this study commented that completing the EQ-i was a worthwhile exercise because it enhanced awareness of their own emotional and social skills. For some students this knowledge inspired them to experiment with some of the strategies recommended in their EI reports. This introspective activity, in my opinion, is one of the most valuable applications of EI in a higher education setting. As the students themselves noted, developing these skills is definitely a worthy cause as they are important not only in first year, but in life in general. In fact, one student indicated that these skills were so important that “they should have a class on [EI] for first year.” I completely concur and as such would recommend the topic of emotional intelligence be incorporated into first year seminars or even offered as a separate course.
Some higher education institutions are aware of these benefits and already are capitalizing on them. For instance, the Continuing Studies offices at the University of British Columbia (UBC) and McMaster University offer a variety of EI workshops for students, staff, and other clients as a part of their life and career development programs. At York University, the Schulich School of Business offers an EI training program specifically designed to enhance leadership and management skills for students and business professionals. The Rotman School of Management at the University of Toronto also offers similar EI courses as a part of its professional development program, and Yale university currently is planning to incorporate EI assessment and training into its’ MBA program.

Even without specialized training, it is apparent that, at least at TRU, first year of university leads to significant changes in EI, and measuring this change is yet another valuable application of EI in a post-secondary setting. By conducting a pre and post EI assessment of new students, colleges and universities would be able to gauge the impact of higher education on these affective skills. A post assessment could be done after one year, after each subsequent year, and/or at the end of the student’s program. Any combination would provide some informative data on the affective impact of participating in and/or completing a higher education credential. Pascarella and Terenzini (2005) endorse an annual assessment, suggesting that monitoring student change on an annual basis over a period of years would be beneficial as it could help identify not only what but also when institutional efforts and resources should be invested. Evaluating changes in EI also proffers an alternate method for assessing the impact of various interventions targeted at first year students such as Orientation and Learning Communities. Information from this also may assist with the selection of such interventions based on the students’ EI inventories.
Prior to engaging in this research, I was still somewhat skeptical about the concept of emotional intelligence, but after conducting this study and reflecting on the findings, this is no longer the case. Based on the broad definition that intelligence is an adaptive function having real-life consequences, I believe these emotional and social skills are a form of intelligence as they appear to develop through experience and reflection, and they do play an integral role in people’s lives. However, I also recognize that EI, like general and all other intelligences, is a socially constructed concept that must be handled with care.

My primary concern is with the connotations of emotional intelligence. Specifically, the character labels associated with intelligence still exist, such that any form of intelligence including emotional intelligence is susceptible to stereotypical classifications (Gould, 1996; Stobart, 2008). For example, prior to a pre assessment debriefing session a participant entered my office and jokingly asked, “so am I emotionally stupid or what?” This was a very troubling comment, but explicable especially since the name of the assessment tool itself, the Emotional Quotient Inventory (EQ-i), is a play on the common measurement associated with general intelligence, the Intelligence Quotient (IQ).

Intelligence is a construct with significant baggage that cannot be ignored when exploring existing or, in the case of EI, relatively new types of intelligence. Hence, caution is advised. This is true in terms of the conceptualization and measurement, but even more so in terms of the application of emotional intelligence. Consequently, I would be extremely careful with deploying EI measurements in any high-stakes decision making processes, as I believe the power of emotional intelligence is not so much in predicting behaviour, but rather in reflecting on, understanding and affecting change in behaviour.
Implications for Future Research

Throughout this dissertation I have highlighted the need for future research. Given some of the unanticipated results in this study, a replication of it at TRU and/or other post-secondary institutions would be worthwhile. In doing so, I would recommend several improvements. First, if possible, increasing the sample size to several hundred students, then randomly selecting participants for the interview portion of the study would allow for direct comparisons with other studies. Second, by employing a survey of student engagement to supplement the interview, a more consistent assessment of their involvement in first year could be produced. Finally, if feasible, including all first year students in the study—no matter their age, enrolment status, course load or program of study—may enhance the transferability of the findings. Although doing this would increase the number of confounding variables, it may be possible to control for these with a larger sample size.

In terms of the measurement of EI, this study demonstrates the value of utilizing a full assessment of EI skills whenever possible, as the subscales on the higher education version of the EQ-i did provide a more comprehensive portrayal of the EI skills of the students, which then allowed for a more in-depth exploration into the connections between EI and first year experiences. Also, it would be beneficial to conduct comparative studies that employed two or more EI assessment tools when assessing the skills of first year students (or other students). One of those tools could include the newer version of the Emotional Quotient Inventory, the EQ-i 2.0®, as it needs to be validated by independent researchers in various settings. Conducting a study with the EQ-360 would also provide a much more detailed description of the participants’ skills and may help to address the ongoing criticism of self-assessments. Given the time commitment and cost of such a study, this would be best achieved through a case study.
with this, a study evaluating the EQ-i of parents may be of interest, since parental factors are often ignored when investigating student performance.

Studies exploring changes in EI also have the potential to inform developmental theories and educational practices in higher education. As already noted, a comparison study of secondary school graduates would help determine if the changes in EI revealed in this study are primarily due to attending university or simply the result of maturation. Comparing changes in EI by gender may also provide valuable information that could inform a variety of higher education initiatives and perhaps even curriculum. Conducting pre and post assessments of students who participate in certain programs may also prove to be useful. For example, several studies have already shown that investigating the EI of students who join leadership programs may help with developing their leadership skills and/or demonstrating the benefits of participating in such programs (Altuntas & Akyil, 2011; Kobe, Reiter-Palmon & Rickers, 2001).

Exploring the connection between EI and student learning styles and career interests may be advantageous also, especially in terms of assisting with academic advising and career counseling. The same could be said for exploring the EI of students in different program areas such as Arts, Education, Science, and Business.

Whatever the direction of future EI research, I would strongly recommend incorporating a mixed methods approach. Future studies could utilize the convergent design employed in this study or any of the other mixed methods approaches such as the explanatory sequential, exploratory sequential, embedded or multiphase designs (Creswell & Clark, 2011). Regardless of the design adopted, by utilizing the strengths of quantitative and qualitative methods, such studies are well equipped to investigate the multidimensional issues associated with higher
education. This certainly was demonstrated in this study as the deployment of mixed methods allowed for a triangulation of data sources that contributed to the construction, validation, and substantiation of the findings. As mentioned in the literature review, Pascarella (2006) made the same recommendation when outlining the directions for future research on how college affects students. Specifically, to identify causal linkages between higher education interventions and outcomes, and to understand or explain the processes underlying such linkages, Pascarella (2006) stated,

Future research on college impact would benefit substantially from mixed-methods studies in which quantitative and qualitative approaches are purposefully employed in coordinated and mutually informing ways. (p.516)

Finally, given the individual nature of emotional intelligence and first year experiences, this type of research needs to be conducted by each institution with their own student population before employing EI for localized usage. As such, this truly is the tip of the iceberg for researching the applicability of emotional intelligence in higher education. Ideally, these recommendations and this study provide a template for such future projects.

Conclusion

As revealed by this study, connections between experiences in the first year of university at TRU and students’ emotional intelligence do exist. However, general patterns of association for these students appear to be limited as the linkages tend to vary considerably, especially on an individual basis. Nevertheless, there is one prominent connection between the two: experiences in first year appear to lead to significant changes in emotional intelligence. This is reflected in students’ own commentaries about how they have matured during first year at TRU, becoming more responsible, and feeling more confident about themselves and their abilities. Thus, the first year of university, and hence higher education, seems to play an important role in
terms of enhancing students’ emotional and social skills. This type of contribution to personal
growth is invaluable. One student summed it up perfectly by stating that first year was “another
step in my evolution.” This comment I believe would resonate with all of the participants in this
study, and probably with the majority of first year students around the globe. By investigating
the connection between the emotional intelligence of students and their experiences in first year,
this study hopefully provides some insights into this evolutionary process.
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Appendices

Appendix A: Measuring Intelligence and Personality

This appendix provides a preface to psychometrics and a review of intelligence and personality testing, all of which informs the measurement methodology for EI.

Psychometrics

*Whatever exists at all exists in some amount.* (Thorndike, 1918, p. 16)

Psychometrics is the science of measuring psychological attributes (Allen & Yen, 1979; Furr & Bacharach, 2008). It is grounded in the philosophy of positivism which assumes that “there is an objective reality driven by immutable laws” (Scott, 2005, p. 637). Based on this assumption, Edward Thorndike (1918) postulated that if something exists, it must exist in some amount. Ergo, if psychological attributes such as thoughts, emotions, personality characteristics, intelligence, and learning styles exist, they should exist in some amount and as such they should be quantifiable. Measurement in reference to psychometrics is defined as “the assignment of numerals to objects or events according to some rule” (Stevens, 1946, p. 677). To measure psychological attributes a variety of instruments are employed, the most common being tests.

A psychological test is defined as “a systematic procedure for observing behaviour and describing it with the aid of numerical scales or fixed categories” (Cronbach, 1990, p. 32). This systematic procedure usually involves administering a series of test items designed to obtain specific information about respondents. The amount and kinds of information gathered varies with the type of items employed. Some items such as essays require the respondent to construct an answer, while multiple choice, true/false, and matching questions require the respondent to select an answer. There are also performative items in which the respondent is required to complete a specific task such as arrange blocks in a certain order. Some tests consist
of items being presented verbally, but most rely on written instructions. Testing platforms can also vary with the most common being paper-based, but these are slowly being replaced by computer-based and online tests.

Whatever the format and content, all of these tests produce some type of data to represent the amount of an attribute possessed by a person, the most common being categorical and continuous data. Tests that produce categorical data usually sort and compare individual attributes by distinct groups. The distribution of these data depends on the number of categories. For instance, if there are just two categories then the distribution is usually bi-modal. Tests that produce continuous data assume test scores are normally distributed with the majority of the scores centered on an average in the middle, and fewer scores tapering off to the extremes for some specific population known as the reference population. Such distributions are shaped much like a bell, and hence are sometimes referred to as bell curves. According to the empirical rule, it is assumed that 68% of the data (i.e. test scores) will fall within one standard deviation of the mean, 95% within two standard deviations and 99.7% within three standard deviations (Allen & Yen, 1979; Furr & Bacharach, 2008).

By plotting the test scores on a normal curve, it is then possible to interpret individual performances by comparing them to that of others in the reference population. Tests that employ this type of interpretation of the scores are known as norm-referenced tests. In comparison, criterion-referenced tests compare test scores to a predetermined cutscore to determine whether they exceeded a certain performance criteria or not. As such, criterion referenced tests, in theory, do not compare an individual’s test score with that of others. However, in most cases cutscores are based on some statistical interpretation of the distribution of scores in the reference population. Moreover, it is possible for test scores to be interpreted
both ways. For instance, test scores from the Graduate Records Examination (GRE) are norm-referenced with examinee scores compared to those of others who have written the exam. Since the purpose of this exam is to assess one’s ability to succeed in graduate school, some educational institutes also utilize a criterion referenced approach to interpreting GRE scores by setting a minimum score as a requirement for entrance into graduate school.

The quality of psychological tests is assessed in terms of reliability and validity. Reliability refers to the consistency of the test scores. For tests to be considered reliable a person’s score on the test should not change significantly, assuming no interventions, from one testing session to another (test-retest reliability); or between different forms (parallel form reliability); and all the items included in the test should be inter-related (internal consistency). Validity is commonly referred to as the degree in which a test measures what it was designed to measure. In more precise terms, test validity “is the degree to which all the accumulated evidence supports the intended interpretation of tests scores for the proposed purpose” (APA, AERA & NCME, 2005, p. 11). The primary sources of validity evidence include comparisons to other measures of the same construct (concurrent validity), or similar constructs (convergent validity); comparisons to measures of different constructs (divergent or discriminant validity); or associations with outcome variables (predictive or consequential validity).

Psychological testing is employed in diverse settings, and hence utilized for a variety of purposes. For instance, in clinical settings psychological testing is used to identify mental disabilities and personality disorders. In professional or occupational settings it is used for hiring, promoting and certifying employees, as well as identifying potential leaders. In educational settings it is commonly used to assess learning, identify learning disabilities and styles, and to admit and place students. These tests are also used in other social settings for self-
Such testing is considered to be high-stakes testing if major decisions–employment, certification, admission to post-secondary–hinge on individual performance. Meanwhile, if testing is primarily used for personal reflection and/or improvement it is considered to be low-stakes testing. Either way, psychological testing is a value-laden activity that has become pervasive with people being tested continually from the cradle to the grave. As Patricia Broadfoot (1979) stated, “assessment, far more than religion, has become the opiate of the people” (p. 132). To satisfy this demand, it is estimated that over twenty-five thousand psychological tests are currently in the public domain (Buros Institute of Mental Measurement, 2007; Educational Testing Services, 2010). Of these, two distinct types of tests–intelligence and personality–relate directly to the concept of emotional intelligence.

**Measuring Intelligence**

*Intelligence is too important to be left to the intelligence testers. (Gardner, 1999, p. 3)*

Measuring intelligence is a distinct area of study within the field of psychometrics and is based on numerous assumptions. The first assumption is that intelligence exists, but the field is divided in terms of whether there is a single, general intelligence or multiple intelligences. The second assumption is that intelligence or intelligences can be measured and in most cases, especially in terms of general intelligence, that these measures of intelligence are normally distributed. Another assumption is that properly designed intelligence tests are objective. For this reason, one requirement of intelligence tests is that they be designed and validated by “neutral” experts. Moreover, to ensure impartiality and fairness it is vital that these tests be administered and scored in a consistent manner, which in turn enhances their validity and reliability. Finally, due to the standardization of testing procedures and scoring, it is assumed
that intelligence test scores are generalizable and replicable.

As a result of these canons, during the last century intelligence testing has evolved into an exact science with well-established standards for testing procedures, and test construction and evaluation (APA, AERA & NCME, 2005). The founder of this science is considered to be Francis Galton (1869/2000) who is credited with establishing the basic premise that general intelligence is quantifiable and also that intelligence scores conform to a normal distribution. At the time of his research, intelligence was assumed to be attributable to a person’s level of sensation; so the keener the senses, the more intelligent a person was. Consequently, to examine intelligence he designed and employed tools to measure sensory acuity and motor skills.

Eventually other tests measuring memory, language comprehension and vocabulary, abstract and mathematical reasoning, speed and discrimination were developed. Although the specific items included in these test varied, they typical required the respondent to educe an analogy; complete a sequence of numbers or diagrams; categorize objects; unscramble and/or compare words; recognize errors or embedded objects in pictures; and/or perform a task such as assembling pieces into a whole object. The idea behind such testing was and, to some degree, still is that by completing a variety of stunts assumed to require intelligence it should be possible to judge “the quality of the entire mind” (Terman, 1918, p. 163). Hence, such tests indicate “whether the mind in question is one rich in content and rare intellectual power or whether it is mediocre or perhaps even defective” (Terman, 1918, p. 163).

The Binet-Simon scale is considered to be the first comprehensive test of intelligence. This test was designed by two French psychologists, Alfred Binet and Theodore Simon (1905/1916), to measure the differences in intellectual capabilities of children. To do so, this test consisted of a battery of tasks such as copying patterns, following commands, and naming
objects, and arranged these tasks in ascending order of difficulty based on age. During a testing
session, a child would complete an assortment of these short tasks and after doing so be
assigned a mental age based on the last task they successfully completed. To assess their general
intellectual level, this mental age was subtracted from the child’s chronological age to
determine if they were of normal ability or not. Because Binet and Simon (1908/1973) were
concerned with how the test scores might be interpreted and utilized, they argued that their scale
did not measure intelligence per say, but did measure the age-related intellectual capabilities of
children for the sole purpose of being able to identify children who needed special educational
programs. Nonetheless, because their scale involved average levels of performance or
norms—despite their concerns—the Binet-Simon scale test was equated with general intelligence
and became the model for future tests.

In 1918, a Stanford psychologist, Lewis Terman, revised the English version of the
Binet-Simon scale and renamed it the Stanford-Binet Intelligence scale. The revisions to this
test included updated and new test items to sample a greater variety of mental functions, as well
as new age norms and an expanded age limit (Terman, 1918). In addition, Terman adopted a
new scoring system based on the concept of the Intelligence Quotient (IQ) developed by
Wilhelm Stern (1912).

Stern (1912) proposed that there was a relationship between an individual’s mental age
and their chronological age, and that it could be expressed as follows: IQ equals mental age
times 100 divided by chronological age. For example, an 8 year old who passes a 10-year-old’s
test would have an IQ of 125 (10 x 100 ÷ 8). This traditional age IQ was eventually replaced by
the current deviation IQ in which test scores are standardized to a normal distribution. Under
this model, raw intelligence test scores are converted to standardized scores in which the
average test score is calculated to be 100 and each deviation is equal to plus or minus 15 points. As mentioned earlier, in a normal distribution 68% of test scores are within one standard deviation of the mean. Hence, approximately 68% of people with average intelligence will have scores on intelligence tests ranging from 85 to 115. Those with above average intelligence, approximately 16%, will have scores greater than 115; those with below average intelligence, the other 16%, will have scores below 85.

Over the years, the Stanford-Binet scale test has been revised numerous times, the latest version appearing in 2003 (Becker, 2003). Another test battery of general intelligence with a long history and still in use today is the Wechsler Intelligence tests created by David Wechsler (1939) to assess nonverbal and verbal abilities. The original test, the Wechsler-Bellevue test, published in 1939, eventually morphed into the Wechsler Intelligence Scale for Children (WISC) in 1949 and the Wechsler Adult Intelligence Scale (WAIS) in 1955. Although both of these have been revised numerous times over the past century, their format has remained much the same. Items employed by the current versions of the Wechsler tests include general information questions about topics such as geographic locations; questions about similarities between objects and words; comprehension, vocabulary and arithmetic questions; digit span questions in which the examinee repeats a series of numbers verbally stated by the examiner; picture completion and arrangement questions; and block design questions (Cohen, Swerdlik & Smith, 1992: Wechsler, 1981). Précis scores generated by these tests include a score for verbal intelligence and performance intelligence as well as an overall IQ score.

Another well know general intelligence test is the Woodcock-Johnson Psycho-Educational Battery (Woodcock, 1977) designed to measure cognitive abilities as well as academic achievement. The most recent version of this test (WJ-III: Woodcock, Mather &
McGrew, 2001) includes items that purportedly measure long and short term memory, auditory and visual pattern recognition, processing speed, fluid reasoning, comprehension as well as specific knowledge in such areas as reading, mathematics, written language, science, social studies and humanities. Separate scores are reported for verbal ability, thinking ability and cognitive efficiency as is an overall IQ score.

Tests to measure multiple intelligences have also been created such as the Kaufman Adolescent and Adult Intelligence Test (KAIT: Kaufman & Kaufman, 1993) developed to assess fluid intelligence and crystallized intelligence (Cattell, 1963). Typical items to measure fluid intelligence (i.e. abstract reasoning abilities) involve decoding and using picture words, and/or solving logic problems. Examples of items employed to assess crystallized intelligence (i.e. accumulated knowledge and skills) include comprehending oral stores, and identifying words with double meanings. For this test, separate scores are calculated for fluid intelligence and crystallized intelligence, but so is an overall score which often leads to this score being equated with general intelligence.

Another test of multiple intelligence is the Sternberg Triarchic Abilities Test (STAT) developed by Robert Sternberg (1993) to measure analytical, creative and practical intelligences. For this test, examinees may be asked to infer the meaning of a new word from the context of a paragraph in which it is embedded, to identify the missing piece or number in a matrix, to provide a caption for a cartoon, to use a map to plan a route, and/or to write an essay in which they identify a problem in their life and present several practical solutions for solving it. Scores are not reported by type of intelligence, but rather by type of response (Sternberg et al., 2001). Consequently, there is a score based on the examinee’s performance on multiple-choice problems and another for their performance on open-ended or performance-based
problems. The fact that these two scores can be pooled to calculate an overall score again facilitates an association with general intelligence.

Although intelligence testing has been in existence for over a century, it certainly has not been without its critics. Most of the criticisms of intelligence testing are directly related to the assumptions on which this particular field of psychometrics is based. First and foremost, critics contest the assumption that intelligence can be measured and that tests—specifically IQ tests—accurately do just that (e.g., Gould, 1981/1996; Flynn, 1987; Nash, 1990; Stobart, 2008). Given the complexity of human cognition, there are some who doubt human intelligence, whatever that may be, can ever be properly measured. This is the position taken by Gordon Stobart (2008) who argues intelligence cannot be measure directly because “a particular activity [i.e. testing] cannot be the simple expression of one [or more] intelligences” (p. 66). Stephen Gould (1981/1996) is of the same opinion stating that, “much of the elaborate statistical work performed by testers during the past fifty years provides no independent confirmation for the proposition that tests measure intelligence” (p. 207). After revealing that IQ scores were steadily rising, James Flynn (1987) came to a similar conclusion, namely that IQ tests do not measure intelligence. So, at best, what intelligence tests may measure is particular abilities in a certain setting under specific conditions.

Another issue with intelligence testing relates to the interpretation of test scores and how these have profoundly influenced how intelligence is understood (Stobart, 2008). For instance, it is argued that intelligence tests aid and abet in the reification of intelligence through reverse logic: since intelligence can be measured via tests it must exist. From this perspective, Edward Boring’s famous pronouncement that “intelligence is what the tests of intelligence test” (1923, p. 37) is an apposite truism. Moreover, as mentioned earlier, given that most intelligence tests
report a single score this reaffirms the idea of a single, general intelligence. Equating tests scores to a normal distribution leads to the assumption that intelligence itself must be normally distributed. Critics (e.g., Gould, 1981/1996; Stobart, 2008) argue otherwise asserting that intelligence tests are designed to produce a normal distribution which does not mean that intelligence itself is normally distributed.

The quantification of intelligence and norming of test scores also facilitates comparisons of the amount of intelligence possessed by individuals, a practice which has and continues to be harmful to many especially since it ignores other confounding variables such as culture, personality and situation. This becomes even more problematic when variances in scores are generalized across populations. For instance, differences in standardized mean test scores by categories such as gender or ethnicity have been and sometimes still are used to infer that one group is naturally superior to another (e.g., Herrnstein & Murray, 1994; Jensen, 1998).

The claim that intelligence testing is objective is also criticized if for no other reason than it involves humans (examiners and examinees) who are subjective (Scott, 2005; Williams, 1998). For instance, instructors or assessment professionals—the examiners—make subjective decisions when they decide what questions to include in a test, how the questions are phrased and ordered, and how the test should be administered and scored. Similarly, there is subjectivity involved in the reaction of the examinees to the format and content of the test, and the testing environment. As Michael Burawoy (1998) stated about interviews, “One can standardize the questions but not the respondent’s interpretation of the question” (p. 14). The same could be said about questions on standardized tests. For example, a question such as “Who won the war of 1812?” would illicit entirely different responses from a Caucasian male candidate than from an African-American female candidate, or an Indigenous candidate. Yet, on a standardized test
here is only one “correct” answer. So do these tests assess absolute knowledge or the dominant view of a subjective reality?

Subsequently, although many presume intelligence testing is an exact science there are others who argue it is not a correct science. The latter recommend that scores from intelligence tests be interpreted with caution, and some even recommend a complete halt to intelligence testing (e.g., Gould, 1981/1996; Stobart, 2008). Due to these criticisms, traditional intelligence testing has been on the decline with tests such as the Stanford-Binet scale and the Wechsler tests primarily used on an individual basis to identify learning difficulties. However, academic and aptitude testing has flourished, and in Stobart’s (2008) opinion this is just “a socially respectable way of re-branding intelligence testing” (p. 9). Moreover, the current attention being paid to theories of multiple intelligences and the introduction of other forms of intelligence such as emotional intelligence has created a whole new generation of intelligence tests. Consequently, intelligence testing has experienced a resurgence: whether it will retain its traditional methods of assessing and measuring intelligence, or adopt alternate ones is yet to be seen.

Measuring Personality

A trait may be viewed either in the light of personality which contains it, or in the light of its distribution in the population at large. (Allport, 1931, p. 372)

Personality, defined in psychological terms, is “a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations and behaviours in various situation” (Ryckman, 2004, p. 4). One method for studying personality is to examine personality traits which are considered to be dispositions or characteristics that direct adaptive and expressive behavior (Ryckman, 2004). In general, these
traits are assumed to be relatively stable over time and to differ among individuals.

To measure personality traits, tests in the form of questionnaires are often employed. In most cases, the respondent completes a self-assessment by rating themselves on a large number of items, usually questions or statements about feelings or behaviour, designed to assess their personality. However, alternate forms known as observer reports are also utilized mainly to verify the self-reports. These usually include the same or similar items written in the third person but are completed by a peer, spouse, or expert who has observed the person in various situations. In either case, there is no right or wrong answer, just a range of responses which are designed to reflect the prominence and consistency of a trait or traits. The number of items on each test varies depending on how many traits are being evaluated but typically ranges from 40 to 250 items.

The type of items and specifically the type of responses do vary somewhat, but the most common type of responses are ipsative and dimensional. Ipsative responses offer the respondent only two choices, both of equal value, and hence are scored using a typological approach which results in a bi-modal distribution of test scores. For instance, from the statement “I am the life of the party,” an ipsative response would require the respondent to choose either yes/no, true/false or agree/disagree. One of the problems with ipsative responses is that they may force an inaccurate response since the answer may be yes/true/agree in certain situation and no/false/disagree in others. This is one of the reasons why other personality tests employ a dimensional approach for measuring personality traits, especially since most envision these traits as being on a continuum. This dimensional approach involves a rating scale such as the Likert scale (Likert, 1932) which measures the extent of agreement or disagreement to specific statements. For instance, the possible responses to the statement “I am the life of the party” on a
Likert item would be strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree.

Although such responses are not actually continuous they can be treated as ordinal data, and thus the scores can be interpreted in terms of a normal distribution with statements about central tendency and dispersion. Scores on each item are usually tallied by trait, and each trait score is interpreted as an indicator of a “unified force within the person” (Cronbach, 1990, p. 498) that controls a person’s typical behaviour over many situations. Hence, an individual’s personality as measured by traits is determined by comparing an individual’s trait scores to that of a specific population. For instance, if a person’s average score on items measuring a trait such as dominance is high compared to the norm of the reference population, this is interpreted to suggest that the person is more dominant by nature and tends to act in a dominant or aggressive manner in most situations. A low score is assumed to indicate the person’s dominant trait is weaker, and hence the individual would be more submissive or even docile in most situations. Meanwhile, an average score is usually interpreted to mean that the person is somewhere between dominant and docile.

Gordon Allport (1927, 1931) was among the first theorists to study the concepts of trait and personality. He defined a personality trait as a “general and habitual mode of adjustment which exerts a directive effect upon [a] specific response” (Allport, 1927, p. 290). He believed that traits were observable, relatively permanent and universal in nature. Along with H.S. Odbert he endeavored to identify personality traits by analyzing common words used to describe traits. They (Allport & Odbert, 1936) eventually finalized a list that included 4504 terms that they thought to “symbolize most clearly ‘real’ traits of personality” (p. 27).

Raymond Cattell (1945, 1947) also believed in the existence of personality traits, and
theorized that they could be arranged into a hierarchy. To do so, he utilized various statistical
techniques such as factor analysis to analyze the personality terms listed in numerous studies
including the one by Allport and Odbert (1936). Eventually, he identified sixteen personality
factors, or as he termed them, *mental interior* factors (Cattell, 1950). These sixteen personality
factors were identified as *warmth, reasoning, emotional stability, dominance, liveliness, rule-
consciousness, social boldness, sensitivity, vigilance, abstractedness, privateness, apprehensiveness, openness to change, self-reliance, perfectionism* and *tension*. Upon further
analysis, he revealed that these personality factors could be grouped into five global traits;
*extraversion, anxiety, tough-mindedness, independence* and *self-control*. To measure these
traits, Cattell (1950) designed the 16 Personality Factors (16PF) Questionnaire which is still in
use today. In the most recent edition of the 16PF, there are 185 three-choice items with ten to
fifteen items for each of the sixteen primary factor scales (Russell & Karol, 1994). Most of
these items involve simple questions about daily behaviour, interests and opinions. Each of the
sixteen factors and the five global factors are reported on a scale of low, average or high.

Other personality tests have been created in much the same way with the only real
difference being the type and number of common personality traits. For instance, Hans Eysenck
believed there were only three major traits—*extraversion, neuroticism* and *psychoticism*. To
measure these he and his wife, Sybil Eysenck, designed two tests, the Eysenck Personality
Inventory and the Eysenck Personality Questionnaire (Eysenck & Eysneck, 1975) utilizing
ipsative responses.

Meanwhile, five-factor models of personality structures were advanced by numerous
researchers, one of the more prominent being John Digman (1990). The best known model,
nicknamed the “Big Five” by Lewis Goldberg (1993), includes the dimensions of *openness to
experience, conscientiousness, extraversion, agreeableness and neuroticism. To measure the 
Big Five, Goldberg (1999) created the International Personality Item Pool which includes 100 
items involving dimensional responses, whereby respondents are asked to indicate on a 5-point 
Likert scale whether each statement is a “very inaccurate” to “very accurate” description of 
themselves (Goldberg, 1999). Responses are then assessed to determine where each respondent 
lies as compared to the norm in terms of the five major traits.

The NEO Personality Inventory designed by Paul Costa and Robert McCrae (1985) was 
also designed to measure the Big Five. The most recent version of this test, the NEO PI-R 
(Costa & McCrae, 1992), is offered in a self-report and observer rating format, both consisting 
of 240 items. For these items, the respondent (or observer) is asked to provide a description of 
the person’s behaviour using a five point Likert scale, ranging from “strongly disagree” to 
“strongly agree.” Each of these responses is analyzed by domains to determine the trait profile 
for the respondent.

Personality tests such as the 16PF and NEO PR-R have become very popular for several 
reasons, but primarily because they are efficient (i.e. relatively simple to design and easy to 
administer and score), inexpensive, and in most cases considered to be noninvasive. For these 
reasons, plus the increased access due to online assessments, there has been an exponential 
growth in personality testing. Although most of these tests are used for personal introspection, 
some are used to make high-stakes decisions such as personnel selection or promotion. Due to 
both the proliferation of published and unpublished tests and their questionable usage, 
personality tests have come under considerable criticisms as of late.

As with intelligence testing, some critics (e.g., Block, 1995; Paul, 2004) contest the 
underlying assumptions that personality can be measured and that personality tests are capable
of doing so. As claimed by Annie Paul (2004), “personality tests cannot begin to capture the complex human beings we are” (p. 221). In terms of traits, some challenge the idea that three or five or even sixteen traits can fully describe all the dimensions of personality, and furthermore, they question the selection of these global traits (Block, 1995, Meehl, 1992). Specifically, Paul Meehl (1992) challenged the practice of employing factor analysis to discover traits by commenting that “No statistical procedure should be treated as a mechanical truth generator” (p. 152).

The interpretation of personality test scores is also considered to be problematic because of how it influences the way people think of themselves and others (Paul, 2004). One of the most common outcomes of personality testing is the assignment of character labels, some of which can be demeaning or harmful especially when they are generalized across a specific population. For instance, some personality tests have shown women to score lower than men on items measuring dominance (e.g., Eagly & Steffan, 1986; Feingold, 1994). Such results have been interpreted to mean that all women are timid and less aggressive than men, and all men are dominant and more aggressive than women, reinforcing stereotypes that can and have been very destructive. Moreover, personality test scores do facilitate the ranking of people according to a preferred trait which has led to unfair practices in the workplace, in educational settings and in other sectors of society. As Paul (2004) states, personality “tests are powerful; the categories in which they place us are powerful” (p. 222).

In terms of the actual design of the tests, issues with reliability and validity abound (e.g., Cronbach, 1990; Furr & Bacharach, 2008; Paul, 2004). For instance, critics argue that responses can vary significantly, depending on the wording of the items in terms of ambiguity, comprehensibility and length; and also depending on a respondent’s mood, attitude or mind-set
while completing the test. Moreover, it is argued that how people rate themselves on personality items does not necessarily correspond to who they actually are or how they truly behave. So although someone may believe they are “the life of the party,” in reality they may not behave as such at a party, nor would others perceive them that way. This relates to one of the most common issues with all types of self-assessments, the faking of responses whereby respondents intentionally manipulated their answers to make themselves look better (e.g., Cronbach, 1990; Furr & Bacharach, 2008). Although faking may not occur or matter so much in low-stakes testing, it definitely is an issue with high-stakes testing.

Nonetheless, with careful interpretation, well-designed personality tests, especially ones involving the measurement of traits, may provide useful information about individual preferences and dispositions. Some (e.g., Bar-On, 1997; Petrides & Furnham, 2001; Petrides, 2009) believe such information may inform other areas involving the study of human attributes, such as emotional intelligence.
Appendix B: Student Background Information

Name: ___________________________ Student Number: ______________

1. When did you decide to attend university?
   □ Always planned to □ In Junior High (grade 9/10) □ In Senior high (grade 11/12)

2. Now that you are attending university, what are your educational plans: (check only one)
   □ earn a certificate or diploma
   □ earn a bachelor’s degree
   □ earn a professional degree (law, medicine, teaching, etc.)
   □ earn a graduate degree (Masters or Doctorate)
   □ undecided

3. What is the highest level of education completed by your parents or legal guardian. (check one for each)
   
<table>
<thead>
<tr>
<th>Mother</th>
<th>Father</th>
<th>Guardian</th>
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<tr>
<td>□</td>
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<td></td>
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<td>Elementary School</td>
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<td>□</td>
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<td></td>
<td></td>
<td>Some High School (grade 9 to grade 12, but not high school graduation)</td>
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<tr>
<td>□</td>
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<tr>
<td></td>
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<td>Grade 12 graduation</td>
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<td></td>
<td></td>
<td>Apprenticeship, trade or vocational school</td>
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<td>□</td>
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<td></td>
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<td>Community College</td>
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<td>Some university</td>
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<td>Bachelor’s or Professional degree</td>
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<td>Master’s or Doctorate degree</td>
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<td></td>
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<td>Not Applicable</td>
</tr>
</tbody>
</table>

4. Did your parents or legal guardian encourage you to attend university?
   □ Yes □ To Some Degree □ Neither encouraged nor discouraged □ No

5. For each of the following, please check only one:
   
   a) Have any of your siblings attended or are they attending TRU? □ Yes □ No □ Not Applicable
   b) Have any of your siblings attended or are they attending a college or university elsewhere? □ Yes □ No □ Not Applicable
   c) Are any of your friends attending TRU? □ Most □ Some □ None □ Unknown
   d) Are any of your friends attending college or university elsewhere? □ Most □ Some □ None □ Unknown

6. How are you paying for your first year of post-secondary education? Check all that apply.
   □ Parental contributions
   □ Awards/Scholarships/Bursaries
   □ Government loans
   □ Employment income
   □ Other (please specify) _____________________________

7. If you are you working while attending first year, are you working
Part-time: < 20 hours per week OR Full-time: ≥ 20 hours per week

Thank you for your time. Your assistance with this project is greatly appreciated.

Participant Follow-Up Information

To clarify and supplement the information you provided at the beginning of this study, I would like to gather some additional background information. You are under no obligation to complete this form as completion is optional. By completing this form you do provide evidence of consent.

Name: ____________________________

1) How would you describe yourself? (check one)

☐ White ☐ Latin American ☐ South Asian (e.g., East Indian, Sri Lankan)
☐ Aboriginal ☐ Arab ☐ West Asian (e.g., Iranian, Afghan)
☐ Chinese ☐ Japanese ☐ Southeast Asian (e.g., Vietnamese, Cambodian)
☐ Black ☐ Korean ☐ Other (please specify)

2) What is your current marital status? (check one)

☐ Single ☐ Divorced ☐ Widowed
☐ Married ☐ Separated ☐ Living in a marriage-like relationship with a partner

3) Where have you lived for the majority of your first year?

☐ In student residence ☐ In an apartment/condo ☐ At home
☐ Other: ____________________________

4) If you are not living in Residence, who currently lives in your household? (check all that apply)

☐ I am living alone ☐ One or more children ☐ In-laws
☐ My female spouse/partner ☐ One or both parents ☐ Roommate or friends
☐ My male spouse/partner ☐ Brother or sister ☐ Other relatives

5) What is your birth order?
1st born of ___ children 4th born of ___ children Other (specify) ______
2nd born of ___ children 5th born of ___ children
3rd born of ___ children 6th born of ___ children

6) What is your father’s job or occupation (e.g., high school English teacher, pharmacist, sales clerk, assembly line worker, homemaker)?

___________________________________________________________________________

More specifically, for what kind of business or industry does he work (e.g., retail shoe store, sawmill, provincial government agency)?

___________________________________________________________________________

7) What is your mother’s job or occupation (e.g., high school English teacher, pharmacist, sales clerk, assembly line worker, homemaker)?

___________________________________________________________________________

More specifically, for what kind of business or industry does she work (e.g., retail shoe store, sawmill, provincial government agency)?

___________________________________________________________________________

Thank you for your time. Your assistance with this project is greatly appreciated.
Appendix C: Email Script- Invitation to Participant

Dear Student,

Cindy James, a graduate student at the University of British Columbia and a faculty member at Thompson Rivers University, will be conducting a study entitled, “First Year University and Emotional Intelligence: What is the Connection?” The purpose of this study is to ascertain how the emotional and social skills of students relate to their experiences and performances in first year university, and determine whether these skills change over the course of their first year of university.

As a first year university student at TRU you are invited to participate in this study which will be conducted over the next two semesters. Participating in this study would involve approximately 1.5 hours of your time in the first semester and 1 hour in the second semester. It also would involve completing an assessment of your emotional and social skills using the BarOn Emotional Quotient Inventory (EQ-i) which is similar to other personality assessments such as the Myers-Briggs Type Indicator or Strong Interest Inventory.

If you are interested in participating in this study and would like more information, please register for one of the information sessions listed below by responding to this email.

Information Sessions on Tuesday morning, September 28th at 10:30 or 11:30 in OM 1340 (computer lab in the Old Main Building)
Information Sessions on Tuesday afternoon, September 28th at 2:30, 3:30 or 4:30 in Om 1335 (computer lab in the Old Main Building)
Information Session on Wednesday, September 29th at 9:30, 10:30 or 11:30 in OM 1330 (computer lab in the Old Main Building)
Information Session on Thursday, September 30th at 10:30, 11:30, 12:30 or 1:30 in OM 1330 (computer lab in the Old Main Building)
Information Session on Friday, October 1st at 12:30, 1:30, 2:30 or 3:30 in OM 1340 (computer lab in the Old Main Building)

During the session, you will be given a detailed overview of the research project, a copy of the consent form and information about subsequent EI testing sessions - some of which will take place immediately after each information session.

Participation will be limited, so be sure to attend a session as soon as possible. If you have any questions, please reply to this email.

Thank you for your time. Your assistance with this project is greatly appreciated.
Appendix D: Interview Script

1) How would you describe your experiences in first year?
2) What did you enjoy the most about first year?
3) What did you enjoy the least?
4) How well did you get to know your instructors?
5) What academic/student services did you utilize during the year?
6) How did you study?
7) How did you spend your time outside of class?
8) Have your educational goals changed since attending first year? If so how and why?
9) Would you consider your first year to be successful? Why or why not?
10) Do you plan to continue your studies in the fall? If not, please explain
11) What advice would you give to future first year students based on your experiences this year?
12) As for Emotional Intelligence, what did you think about the assessment inventory (Emotional Quotient-inventory, EQ-i)?
13) Were the reports useful?
14) Would you agree with the conclusions made in each report?
15) Why do you think your scores changed on the following scales? (This would vary by student)
16) Do you have any other comments you would like to share with me?

Thank you for your time. Your assistance with this project is greatly appreciated. Good luck.
Appendix E: Master List of Descriptive Codes

First Year Experience Descriptors ................................................................. FYED
Anonymity ................................................................................................. FYED-An
Adulthood ................................................................................................. FYED-Ad
Challenges ............................................................................................... FYED-Cg
Changes .................................................................................................... FYED-Change
Choices ..................................................................................................... FYED-Choice
Discovery .................................................................................................. FYED-Dis
Diversity ................................................................................................... FYED-Div
Freedom ................................................................................................... FYED-Free
Responsibility .......................................................................................... FYED-Resp
Transition .................................................................................................. FYED-Tran
Stress ......................................................................................................... FYED-Stress

Emotional Skills and First Year Experiences ............................................. ESFYE
Intrapersonal Skills .................................................................................. ESFYE-IntraS
  Adaptability ......................................................................................... ESFYE-IntraS-A
  Balance .............................................................................................. ESFYE-IntraS-B
  Flexibility .......................................................................................... ESFYE-IntraS-F
  General Mood .................................................................................... ESFYE-IntraS-GM
  Independence ...................................................................................... ESFYE-IntraS-I
  Maturity .............................................................................................. ESFYE-IntraS-Ma
  Motivation .......................................................................................... ESFYE-IntraS-Mo
  Self-Awareness ................................................................................... ESFYE-IntraS-SA
  Stress Control .................................................................................... ESFYE-IntraS-SC

Interpersonal Skills .................................................................................. ESFYE-InterS
  Empathy ............................................................................................. ESFYE-InterS-E
  Relationships ...................................................................................... ESFYE-InterS-R
    Family ............................................................................................. ESFYE-InterS-R-Fa
    Friends ............................................................................................ ESFYE-InterS-R-Fr
    Faculty & Staff ............................................................................... ESFYE-InterS-R-FS
Appendix F: Boxplots of Pre EQ-i Scores and Non Academic Experiences

Figure F1: Pre EQ-i Interpersonal Relationships and Students’ Perceptions of First Year Success

Figure F2: Pre EQ-i Self Actualization and Students’ Perceptions of First Year Experiences

Figure F3: Pre EQ-i Reality Testing and Level of Faculty Interaction

Figure F4: Pre EQ-i Reality Testing and Level of Extracurricular Activity
Figure F5: Pre EQ-i Impulse Control and Level of Extracurricular Activity

Figure F6: Pre EQ-i Total and Level of Extracurricular Activity

Figure F7: Year-end GPA and Level of Faculty Interaction

Figure F8: Year-end GPA and Level of Student Interaction