Interpersonal Skills and Education in the Traditional and Online Classroom Environments

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Abstract
The purpose of this descriptive, cross-sectional, quantitative study was to compare the interpersonal abilities of online students to traditional students by evaluating their Emotional Intelligence (EI) through the Situational Test of Emotional Management (STEM). The study sought to determine whether a relationship exists between the number of online courses completed and EI abilities of students. Data were collected using a situational judgment test known as the Situational Test for Emotional Management (STEM) with additional questions added for the collection of demographic data. The sample for this study included 865 students comprised of 765 undergraduate business majors and 91 undergraduate business minors. One of the most interesting findings to emerge from the data was the significant difference of EI scores surrounding the number of online courses completed. Students who completed at least one online course scored significantly higher on the STEM survey than their counterparts who had not completed any online courses. This finding implies that students might benefit from the time, training, experience, and practice of interpersonal skills in an online environment.

As the trend of online education expands, professors have questioned whether an online education provides students with the proper development of interpersonal relationships and social skills (Allen & Seaman, 2011). At a time when education is vital to economic success, there is growing evidence of a skills gap which suggests that young adults lack interpersonal skills needed for success in today’s marketplace (Bedwell, Fiore, & Salas, 2014; Everson, 2014; Harvard, 2011). Klein, DeRouin, and Salas (2006) define interpersonal skills as “goal-directed behaviors, including communication and relationship-building competencies, employed in interpersonal interaction episodes characterized by complex perceptual and cognitive processes, dynamic verbal and non-verbal interaction exchanges, diverse roles, motivations, and expectancies” (p. 81).

Over two-thirds of post-secondary professors rate the online educational environment to be either the same or superior to the traditional face-to-face setting (Allen & Seaman, 2011).
While many of the academic leaders perceive online education to be at least as good as face-to-face instruction, one dimension falls short of this attitude. Interpersonal skills are perceived to be inferior in the online atmosphere when compared with the face-to-face environment (Allen & Seaman, 2011).

With such a tremendous use of the Internet and Web 2.0 technologies for communicating not only in social settings, but also in the educational realm, one might question whether or not online education diminishes students’ interpersonal skills. However, no measure has been found that assesses these skills within the online environment (Brodie, 2012; Loader, 2007).

**Review of Literature**

According to a Harvard survey (2011), the successful college graduate must possess a ratio of 80% emotional-social intelligence (ESI) to 20% book smarts. Career-minded individuals will need to display foresight in navigating a rapidly shifting economic landscape. They will need to reassess the skills they require and quickly put together the correct resources to develop and update skill sets (Harvard, 2011; Mitchell, Skinner, & White, 2010; Sharma, 2009).

The career-minded graduate is one who can adapt, manage stress, incorporate teamwork and help others. Yet, a 2010 University of Michigan study utilizing 14,000 college students over the past thirty years, from 1979 through 2009, shows that over the past nine years, young people have demonstrated a dramatic decline in interest in other people (University of Michigan, 2010). Additionally, the report suggests that college students do not understand the value of viewing a situation from another person’s perspective. Sarah Konrath, a researcher at the University of Michigan Institute for Social Research, reported that “Many see the current group of college students, sometimes called ‘Generation Me’ as one of the most self-centered, narcissistic, competitive, confident and individualistic in recent history” (University of Michigan, 2010, ¶ 7).

Interpersonal skills are important in all types of occupations. In fact, these skills are so important that employers identify them as “the number one differentiator” for job applicants in all types of industries (Sutton, 2002). However, the developments of the Internet and Web 2.0 technologies have implications that challenge, both locally and globally, understanding of citizenship and engagement (Loader, 2007). Concerns have been raised about the importance of interacting with others to gain social competence as individuals who form “electronic friendships” with computers instead of social relationships might be hindered in developing their interpersonal skills, as the use of interpersonal skills within a virtual world is different than in face-to-face situations (Turkle, 2011). Furthermore, computers are often used in solitude, robbing individuals of time for other social activities and interfering with the development and maintenance of social relationships outside of the virtual world (Turkle, 2011).

Within the academic settings, emotions help shape student engagement and learning (Linnenbrink-Garcia & Pekrun, 2011). By understanding and managing emotions, individuals are able to regulate personal intellectual growth and social relational growth (Mayer & Salovey, 1997). Emotional intelligence (EI) is a salient theme in a diverse array of circles including the scientific, education, and business realms that addresses elements of interpersonal skills. The term is defined as follows:

Emotional intelligence involves the ability to perceive accurately, appraise and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge, and the ability to regulate emotions to promote emotional and intellectual growth (Mayer & Salovey, 1997, p. 10).
Individuals with good interpersonal skills are more likely to improve their ability to determine appropriate self-behavior, cope with undesirable behavior, absorb stress, deal with ambiguity, structure social interaction, share responsibility, and interact more easily with others (Bar-On, 2005). An individual’s ability to be a team player, to collaborate with individuals from different cultures and backgrounds, to interact with diverse personalities, and to work on projects with strict deadlines is required in the marketplace. EI has been found to gauge the skills necessary to safeguard interpersonal relationships as they are related to social adaptation within the environment (Bar-On, 2005). Furthermore, EI predicts positive relations with others and is negatively associated with interpersonal problems (Ghiabi & Ali Besharat, 2011).

Improving interpersonal skills/intelligence helps enrich individuals’ relationships, helps them cope better at work and in social situations, and especially when dealing with difficult or challenging individuals. Some faculty question whether an online education provides students with the proper development of interpersonal relationships and social skills (Allen & Seaman, 2011). Individuals who have a self-perception of social incompetence demonstrate a preference for online social interaction (POSI) (Casale, Tella, & Fioravanti, 2012). POSI is defined as, “a cognitive individual difference construct characterized by beliefs that one is safer, more efficacious, more confident, and more comfortable within online interpersonal interactions and relationships then with traditional FtF social activities” (Caplan, 2003, p. 629). One research study’s results illustrated, “Self-reported emotional intelligence (both Intrapersonal and Interpersonal component) is negatively associated with the preference for online social interaction” (Casale, Tella, & Fioravanti, 2013). Online interpersonal interactions offer the perception of decreased social threats and increase the tendency to escape from face to face interactions (Amichai-Hamburger & Furnham, 2007).

While many of the academic leaders perceive online education to be at least as good as face to face instruction, one dimension falls short of this attitude. Interpersonal skills are perceived to be inferior in the online atmosphere when compared with the face to face environment (Allen & Seaman, 2011). With the understanding that colleges must better prepare tomorrow’s workforce, it is essential to explore whether or not online education diminishes students’ interpersonal skills.

**Purpose and Research Questions**

The purpose of this descriptive, cross-sectional, quantitative study was to compare the interpersonal abilities of online students to traditional students by evaluating their Emotional Intelligence (EI) through the Situational Test of Emotional Management (STEM).

There are two research questions addressed within this study:

1) Is there a significant difference in the emotional intelligence of online students and traditional students?
2) Is there a significant difference in the emotional intelligence of students based on the number of online courses completed?

**Theoretical Framework**

This research will follow the theoretical framework of the Ability Model of EI as developed by Mayer, Salovey, and Caruso (2004) that demonstrates an individual’s ability to reason with and about emotions. They identified EI as a form of pure intelligence or cognitive ability. Their theory combines elements from the fields of intelligence and emotion. Emotions serve as signals that express reliable and palpable meanings about relationships as many
emotions are universal. Intelligence incorporates the ability to carry out abstract reasoning (Mayer & Salovey, 1990; Mayer, Salovey & Caruso, 2000).

The Ability Model (Mayer, Salovey, and Caruso, 2004) is broken down into two areas of Experiential and Strategic Emotional Intelligence. Experiential EI provides information on the ability to perceive emotional information, relate it to other sensations and then use EI to facilitate thought. Strategic EI relates to the ability to understand emotional information and use it strategically for planning and self-management. These two areas are comprised of the four branches which incorporate the ability to a) perceive emotion, b) use emotion to facilitate thought, c) understand emotions, and d) manage emotion (Mayer, Salovey & Caruso).

The branches are listed in succession from perception to management and represent the degree to which the ability is intermingled within one’s personality (Mayer, 1998, 2001). The four branches of their model are

...arranged from more basic psychological processes to higher, more psychologically integrated processes. For example, the lowest branch concerns the (relatively) simple abilities of perceiving and expressing emotion; in contrast, the highest level branch concerns the conscious, reflective regulation of emotion. (Mayer & Salovey, 1997, p. 36)

The areas associated with perceiving emotion and using emotion to facilitate thought are discrete areas of information processing that are bound within the emotional system. The first step in understanding emotions is to accurately perceive them. In many situations this incorporates the use of body language, facial expressions, and intonation that are absent within the online environment. These components are clues and insights into the emotional outlook of others. Perceiving emotions relies on the ability to correctly identify the feelings of others. One must be aware of their emotions to accurately evaluate their surroundings, which is also a key component of working well with others (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). Using emotions to facilitate thought focuses on the concept that individual emotions affect thought. As such, individuals should link emotions and thinking for creative ideas, planning and interpersonal relationships (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). Reasoning with emotions through the facilitation of thought helps individuals prioritize and react effectively to others.

Area three, understanding emotions, reflects the capacity to analyze emotions, appreciate their probable trends over time, and understand their outcomes. Emotional understanding is insight to the self and others and requires emotional knowledge. It is this knowledge that assists folks in understanding others better (Mayer & Salovey, 1997; Mayer, Salovey & Caruso, 2004). The emotions we perceive can carry a wide variety of meanings, if someone is expressing frustration, the observer must interpret the cause of their irritation and what it might mean. Insights into the self and others require emotional knowledge that helps one understand people better.

Finally, managing emotions is the ability to manage emotions in context of individual goals, self-knowledge, and social awareness. Regulating emotions, responding appropriately, and responding to the emotions of others are all key ingredients of emotional management. To be emotionally intelligent, individuals must be aware of their emotions and then use them to solve problems for more positive outcomes (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). The ability to manage emotions is a key component of EI. Regulating emotions, replying appropriately and responding to the emotions of others are all important aspects of emotional management and effective interpersonal skills. This study addresses the ability-based
conceptualization of emotional management and focuses specifically on the fourth branch of managing emotions as it relates to interpersonal skills activities.

Methodology

Setting
This study was conducted at a College of Business (CoB) within a regional university in the southeast that provides educational opportunities for students within four colleges – arts and sciences, business, education and human environmental sciences, and nursing and allied health. The campus is located in the southeastern United States in a four-city metropolitan area with approximately 140,000 people. During the fall 2013 term, the university enrolled 6931 students, 5993 of whom were pursuing an undergraduate degree. The students at this university represented 43 countries in addition to the United States. Approximately 57% of the students were female with a male population of 43%. Seventy-seven percent of the student body were residents of the state in which the college is located, 18% of the student body were non-residents while 5% of the population consisted of international students.

From reports published on the study site, the average age of new freshmen is 18.3, while the average age of all freshmen is 19.1. The average undergraduate age is 22.6. This result implies the overall student population within the undergraduate community falls into the traditional age bracket of 19-24 years of age. Campus-wide, 30% of the undergraduate student population at the time of the study were enrolled in at least one course online, with an additional 7% of the undergraduate student population completing all courses online during the fall 2013 term. The campus wide numbers closely match national percentages as reported by the Sloan Consortium Reports created by Allen and Seaman (2014) in online learning. They show online enrollment as a percent of total enrollment to be 33.5%.

For this study, online courses refer to classes in which interaction may be synchronous (facilitated in real time) or asynchronous (self-paced) through web-based technologies. Students are not required to appear in a classroom at scheduled times for lectures or other teaching centered activities. However, students may be required to sit for proctored exams through web-based technologies or on-campus proctors.

Traditional or face-to-face courses require students to appear in classrooms at scheduled times for lectures or other teaching centered activities. These courses may or may not include enhanced teaching and learning components via web-based technologies. Any technological enhancements are at the discretion of the individual professor.

Participants
This study used a convenience sample from the CoB. There were approximately 856 undergraduate students enrolled within the CoB. Forty-nine percent of the undergraduate business students were taking at least one course online during the study. Another 7% of the undergraduate business students were completing all courses online during the same period. Due to the small number of faculty within the CoB (n = 39), it was unlikely to have different professors teach the online and face-to-face classes, meaning that a course offered in both formats would be taught by only one professor, possibly eliminating the concern or limitation of instructional differences among the traditional and online formats.

Instrumentation
The 20-item Situational Test of Emotional Management (STEM) was used to measure the level of ability EI as an indicator of interpersonal skills (α = .83) and item response theory (IRT)
reliability index ($\alpha = .87$). It was developed according to the Situational Judgment Tests (SJT) paradigm by MacCann and Roberts (2008). Validity evidence for this test is available through positive correlations with intelligence tests, divergent validity with respect to personality and for the Multi-factor Emotional Intelligence Scale (MEIS). Austin (2010) examined the associations of the STEM test with the Multi-factor Emotional Intelligence Scale (MEIS) test emotion perception tasks, and trait EI. His study found intelligence test items were not significantly correlated with psychometric intelligence, suggesting that is could be regarded as a new intelligence measure. Further studies identified divergent validity with respect to personality and for the Multi demonstrated that EI is within the intelligence domain rather than the personality domain (Austin, 2010; Libbrecht & Lievens, 2012; MacCann & Roberts, 2008).

An additional question addressing the number of courses completed online was added to the STEM survey. The STEM provided a best answer approach as determined by subject matter experts for each question.

Results and Discussion

The participants for this study included 856 students comprised of 765 undergraduate business majors and 91 undergraduate business minors. A total of 393 survey responses from business majors, business minors and non-business students were received. Upon subtracting the incomplete surveys ($n = 39$); and those with graduate classifications ($n = 7$) from the total it was determined that 347 of the 865 targeted participants were reached resulting in a response rate of 41%.

Demographic Data

From the 347 completed responses, 43.5% were male ($n = 151$) while the remaining 56.5% ($n = 196$) were female. These results correspond directly to the university’s population which reported that approximately 57% of the students were female with a male population of 43%. Regarding age, 82.1% ($n = 285$) of the participants fell in the traditional college age range of 19-24, while 17.9% ($n = 62$) indicated an age range of the non-traditional student which is 25 or older. This finding also reflects the total student population as the average enrollee’s age is 22.6.

Self-reported survey data also showed that approximately 14% ($n = 49$) of the respondents characterize themselves as online students while 86% ($n = 298$) regard themselves as traditional students. Forty-nine percent of the undergraduate business students were taking at least one course online during the study. Another 7% of the undergraduate business students were completing all courses online during the same period. The 14% of self-identified online students is double the actual online student percentage of 7% as reported by the university as well as the CoB. Fourteen percent of respondents indicated that they had taken no online courses; 57% indicated they had taken between 1 and 4 online courses and 29% indicated they had taken five or more online courses.

Reliability and Validity

Cronbach’s Alpha was used to determine internal consistency and reliability for survey questions 1 through 20. To ensure maximum reliability and establish further relationships among the data, item-to-total correlations were also identified. Alpha coefficients range in value from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous and/or
multi-point formatted questionnaires or scales. Higher scores indicate more reliable results. The original 20-item STEM instrument reported $\alpha = .83$. Nunnaly (1978) has indicated .7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature. Upon calculating the initial test of reliability, Cronbach’s Alpha was .686. To ensure a score above .7, questions 9 ($\alpha = .693$); 1 ($\alpha = .699$); and 11 ($\alpha = .704$) would need to be eliminated. Since the original 20-item STEM test reported a strong Cronbach’s Alpha ($\alpha = .83$), the PI’s did not eliminate the three questions to maintain the integrity of the initial survey.

**Research Question 1**

Research Question 1 asked, “Is there a significant difference in the emotional intelligence of online and traditional students?” The null hypothesis was analyzed using a t-test at the .05 level of significance and no significant differences were found: $t(345) = 6.530, p = .862$.

**Research Question 2**

Research Question 2 asked, “Is there a significant difference in the emotional intelligence scores of students based on the number of online courses completed?” The null hypothesis was analyzed using a one way ANOVA at the .05 level of significance. The options for number of online courses completed were: a) zero, b) 1 - 4, or c) five or more. Results indicated $F(2, 344) = 5.465, p = .005$. The standard deviations and means associated with the number of online courses completed are located in Table 1.

<table>
<thead>
<tr>
<th>Group Statistics for the Number of Online Courses Completed</th>
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<tr>
<td>$N$</td>
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<tr>
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</tr>
<tr>
<td>0</td>
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<tr>
<td>1-4</td>
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<td>5 or More</td>
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<td>Total</td>
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The analysis revealed that at least one pair of group means significantly differ. To highlight these differences, a follow up Tukey Post Hoc test was conducted. The test revealed significant differences in the EI scores among three groups: a) students completing zero courses online, b) students completing 1-4 courses online, and c) students completing five or more courses online. The group taking no online classes had a significantly lower EI score when compared to students taking 1 - 4 classes and students completing five or more online courses. ANOVA results associated with the number of online courses completed are shown in Table 2.

One reason for the significant difference in EI scores among students completing no online courses when compared to those taking 1 - 4 or 5 or more online courses might be that online education provides students with additional opportunities not present in the traditional environment. Online courses may offer more chances for the proper development of
interpersonal relationships and social skills utilizing developments of the Internet and Web 2.0 technologies to enhance their understanding of citizenship and engagement (Loader, 2007).

Table 2
ANOVA Table by Number of Online Classes Completed

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<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>120.021</td>
<td>2</td>
<td>60.010</td>
<td>5.465</td>
<td>.005</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3777.484</td>
<td>344</td>
<td>10.981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3897.504</td>
<td>346</td>
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</table>

Additional considerations for the significantly higher EI scores on the basis of completing online classes might be that students within the traditional classroom may not be offered frequent opportunities to participate in direct involvement with others. Professors within the traditional environment often serve as the “Sage on Stage.” These instructors often rely heavily on a teacher centered, lecture-based format, thereby potentially eliminating the opportunity to practice interpersonal skills among students.

Another explanation might be related to student engagement opportunities. Students within the online environment often interact with one another and the professor through asynchronous discussion boards in which interpersonal skills are stimulated by dialog, regarding others' opinions and preferences. Contrary to the information found in scholarly works, one might consider the use of computers in solitude allows students have the opportunity to provide thought-based, provocative responses which might serve to not only enhance interpersonal skills practice, but also boost the development and maintenance of social relationships as students are offered time for revisions and opportunities to consider other’s feelings before responding to the topic at hand (Turkle, 2011). In other words, students have time and opportunity for revision before communicating, sharing and using information to solve complex problems; and adapting and innovating in response to new demands and constantly changing circumstances with the feelings of others in mind; unlike the experiences found in a traditional course which require students to move through the critical thinking process and develop responses immediately.

Implications of the Study

This study is only a first step in providing insights into the differences among the EI levels of students within the online and traditional environment. The ultimate goal through research endeavors should be to seek the most advantageous teaching and learning opportunities from both environments to provide new insights for pedagogical practices that improve student preparedness with regard to EI and interpersonal skill sets upon graduation, thereby meeting the needs of the marketplace.

While evidence that people can improve on emotional intelligence competencies comes from a wide range of sources, one of the most recognized examples of the relationship between age and experience as interpersonal skills can be developed and improved upon through time and
training (Boyaatzi, Cowan, & Kolb, 2005; Ferris, Whitt, & Hochwarter, 2001; Geher, 2004; Loader, 2007). Improving interpersonal skills helps individuals enrich relationships, cope better at work and in social situations, and especially when dealing with difficult or challenging individuals.

Professors must seek out methods of incorporating the assignments and activities that promote practice of EI and interpersonal skill sets, in both online and traditional environments. While additional research is necessary to fully understand how to incorporate interpersonal skills practice at the undergraduate level, this portion of the paper will discuss implications of the study and potential areas for improvements.

To improve upon students’ EI and interpersonal skills, professors might consider encouraging traditional students to take some online courses as part of the college experience. Online courses likely provide authentic practice in developing communications and interpersonal skill sets utilizing current marketplace tools. Students might benefit from trying different methods of learning to gain authentic practice and improve upon interpersonal skills.

Whether in the traditional or online environment professors might also consider offering frequent opportunities to participate in direct involvement with others rather than rely on a teacher centered lecture-based format. Classroom discussions and group work provide engagement opportunities for additional interpersonal skills practice among students. These collaborative assignments offer interpersonal skills practice for authentic marketplace activities such as: a) comprehending what others say, b) voicing your thoughts effectively, c) giving and receiving constructive criticism for others, d) being influential to others, e) initiating proper conflict resolution, f) working with others, and g) changing pace when unproductiveness occurs (James & James, 2004). However, for professors this requires that the assessments and activities offered are pedagogically sound collaborative experiences.

Professors within the traditional classroom might consider the addition of online asynchronous discussion boards to stimulate this type of thought-based communications practice since students within the online environment often interact with one another and the professor through asynchronous discussion boards in which interpersonal skills are stimulated by dialog, regarding others' opinions and preferences. Additionally, online professors might consider utilizing technology based tools that allow for synchronous discussions to ensure online students have the opportunity to practice immediate response interpersonal skills practice as both scenarios (synchronous and asynchronous communications) are likely to arise in the marketplace.

**Conclusion**

This study indicated that a relationship exists between the number of online courses completed and EI scores. Students who completed at least one online course scored higher on the STEM survey than their counterparts who had not completed any online courses. This finding implies that students might benefit from the time, training, experience, and practice of interpersonal skills in an online environment. Specific considerations might include pedagogical practices associated with interpersonal skills and education could be improved upon to help individuals cultivate relationships, cope better at work and in social situations based on the results of this study by combining learning opportunities to include the interpersonal skills teaching practices in both environments.
References


University of Michigan. (2010, May). *Research study: Empathy: College students don’t have as much as they used to.* Retrieved from http://ns.umich.edu/new/releases/7724