

Pre-service Teachers' Emotional Social Intelligence: Differences by Gender and Major

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Abstract

The current study examines pre-service teachers' emotional social intelligence with regard to their gender and major. Data was gathered from a faculty of education students majoring in preschool education, secondary school mathematics education and secondary school biology education (N=230). To collect data, Emotional Quotient Inventory (the EQ-i) was used. A two-way ANOVA was conducted to examine the effect of gender and major on total EQ-i scores. A significant main effect was found for major, indicating that the scores of preschool pre-service teachers were lower than the scores of both mathematics pre-service teachers and biology pre-service teachers. To explore the effects of gender and major with respect to subscales of EQ-i, a two-way MANOVA was performed. Results of this analysis yielded significant main effects for gender and major. Findings will be discussed in the light of previous research.

Key Words: Emotional-Social Intelligence, Gender, Major

1. INTRODUCTION

Emotional intelligence (EI) is defined as “interrelated emotional and social skills and behaviors influencing how effectively individuals understand themselves and others and cope with the problems in their environments (Bar-On, 2010; Di Fabio, Palazzeschi & Bar-On, 2012) or “the ability to perceive and express emotions, to understand and use them, and to manage emotions so as to foster personal growth” (Salovey, Bedwell, Detweiler, & Mayer, 2000, p. 506). Since the conceptualization of EI in the 1990s (e.g., Salovey & Mayer, 1990; Mayer & Salovey, 1997; Goleman, 1995, 1998) it has received a considerable research attention. Emotional intelligence measures have been translated to different languages and various studies have linked it to psychological or physical well-being, leadership, job satisfaction and performance (Bar-On, 2006). The concept of Emotional intelligence caught the attention of educational researchers as well, and emotional and social competencies of teachers and students have become important topic of interest as a result of the strong call to increase teaching efficacy and to foster students' emotional, social and academic functioning (Palomera, Fernandez-Berrocal & Brackett, 2008). Although variety of approaches attempt to conceptualize EI, three main models explaining emotional intelligence is exist (Bar-On, 2006, Emmerling 2008). These three emotional models are as follow: The ability model (Salovey & Mayer, 1990; Mayer & Salovey, 1997); the Goleman Model of Emotional Intelligence (Goleman 1995, 1998); and the Bar-On Model of Emotional Social Intelligence (Bar-On, 2002, 2006, 2010).

1.1. The ability model of emotional intelligence: The ability model of emotional intelligence was introduced by Mayer and Salovey (1997) who consider emotional intelligence as a cognitive ability distinct from but closely related to general intelligence. In this model, emotional intelligence was initially defined as “the ability to monitor one’s own or others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions (Salovey & Mayer, 1990, p. 189). The model was later revised in 1997 and emotional intelligence is conceptualized as having four interrelated emotional capacities or branches: (i) perceiving emotions (ability to recognize one’s own and others emotions); (ii) using emotions (ability to generate emotions and use them to facilitate thought); (iii) understanding emotions (ability understand complex emotions and relationships among them); and (iv) managing emotions (ability to manage emotions of oneself and others) (Mayer and Salovey, 1997; Salovey & Grewal, 2005). These emotional skills develop from more basic level to more complex and, as individuals grow, they become better in processing and applying emotional data in various contexts such as family and work (Rivers et al., 2012). To measure emotional intelligence and its components as defined by the model, the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey & Caruso, 2002) is used.

1.2. The Goleman model of emotional intelligence: Goleman (1995) in his influential book entitled *Emotional Intelligence* defines emotional intelligence as encompassing the following abilities: knowing one’s emotions; managing emotions; motivating oneself; recognizing emotions in others; and handling relationships. These abilities, according to Goleman, are complementary to cognitive capacities as measured by IQ tests and they are better predictors of success in life. In his later career, Goleman further elaborated the definition and stated that “emotional intelligence is observed when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness, and social skills at appropriate times and ways in sufficient frequency to be effective in the situation (Boyatzis, Goleman & Rhee, 2000, p.3). Within the current conceptualization, the four clusters of EI were measured by Emotional Competence Inventory (ECI): (i) Self-awareness (recognition of inner states and resources); (ii) self-management (management of internal states and resources); (iii) social awareness (awareness of others’ feelings and management of relationships); and (iv) social skills (use of social skills effectively) (Byrne et al., 2007).

1.3. The Bar-On Model of Emotional Social Intelligence: Bar-On (2006) utilizes the term emotional social intelligence rather than emotional intelligence or social intelligence, based on theoretical considerations and recent anatomical findings. Bar-On (2010) defines emotional-social intelligence as “an array of interrelated emotional and social competencies and skills that determine how effectively individuals understand and express themselves, understand others and relate with them, and cope with daily demands, challenges and pressures” (p. 56). According to Bar-On (2006) being emotionally and socially intelligent encompasses effective management of personal, interpersonal and environmental situations with a realistic and flexible manner. In other words, unlike the Mayer-Salovey model of EI in which more focus is placed on cognitive abilities, the Bar-On model of EI is centered on identifying personal traits or qualities that help individuals’ coping with social and emotional demands of life (Cherniss, 2010). The Bar-On Model of EI is operationalized by a self-report instrument called Emotional Quotient Inventory (the EQ-i) developed by Bar-On (2002). The EQ-i consists of 5 main subscales, each with its own sub-dimensions: (i) Intrapersonal EQ assesses the recognizing, acceptance and expression of one’s own emotions and understanding and acceptance of personal strengths and weaknesses. Intrapersonal EQ dimension includes the following sub-dimensions: self-regard, emotional self-awareness, assertiveness, independence and self-actualization. (ii) Interpersonal EQ assesses the understanding of others’ emotions and needs and ability to establish and

maintain healthy relationships. This dimension includes empathy, social responsibility and interpersonal relationship sub-dimensions. (iii) Stress management EQ assesses the ability to cope with stressful situations effectively with the sub-dimensions of stress tolerance and impulse control. (iv) Adaptability EQ assesses the ability to adapt daily demands of life in a flexible and effective manner. This dimension encompasses the reality-testing, flexibility and problem-solving sub-dimensions. (v) General mood EQ assesses the ability to generate positive feelings regarding self, others and life in general. This dimension includes the sub-dimensions of optimism and happiness (Bar-On, 2002).

1.4. Emotional Intelligence in Educational Settings

In the field of education, most EI research focus on integrating emotional social competencies into regular education programs for all age levels, developing and evaluating intervention or improvement programs, and examining the construct in relation to different variables such as academic performance, cognitive skills, teacher efficacy and teacher satisfaction.

Social and emotional learning (SEL) programs are designed to improve quality of social interactions in school settings to better social, emotional and academic outcomes in students through school-wide and classroom activities (Mashburn et al., 2013). Many programs aiming to enhance emotional and social skills have been developed (Bond & Manser, 2009). For instance, Promoting Alternative Thinking Strategies (PATHS) is a school based prevention program designed for reducing aggression and other behavioral problems through enhancing social emotional competencies in preschool and elementary school students (Greenberg, 2006). Another program developed for fostering emotional intelligence skills is called RULER. RULER approach is applicable from kindergarten through high school and includes teachers, school leaders and staff along as well as students. In this approach five emotional skills are targeted to develop: Recognition of emotions, understanding antecedents and outcomes of emotions, labeling emotions, expressing emotions appropriately, and regulation of emotions in a conscious, controlled and goal oriented way (Rivers et al., 2013). Additionally, some studies conducted to develop emotional intelligence in college students. For example, an empirical study by Dacre Pool and Qualter (2012) investigated the impact of a teaching program on improving levels of emotional intelligence and emotional self-efficacy in college students from various disciplines. They designed an 11-week intervention program in accordance with the Mayer Salovey Four Branch Model of EI which addresses perception of emotion, using emotion, understanding emotion, and managing emotion. The program included a variety of activities such as lectures, role playing and off-campus visits. The results indicated a significant improvement in understanding emotions and managing emotions. In a more recent study by Saklofske, Nordstokke and Vesely, (2014) a five week emotional intelligence training program administered to pre-service teachers shown to be effective in developing emotional intelligence and other related psychological well being factors.

Emotional competencies are recently acknowledged as an important part of teaching and learning processes and many research conducted to investigate the connection between EI and academic success. In general, emotional intelligence is shown as related to academic success (e.g. Barchard 2003; Fernandez, Salamonson & Griffiths, 2012; Parker et al., 2004). A review of educational literature reveals an increase of studies examining the emotional intelligence in relation to some other variables such as cognitive tasks, efficacy beliefs, and organizational attitudes. Emotional intelligence was found to be significantly correlated with social problem solving skills in pre-service teachers (Erozkan, 2013) and metacognitive skills in high school students (Sharei, Kazemi, & Jafari, 2012).

Penrose, Perry and Ball (2007) examined the relationship between teacher self-efficacy and emotional intelligence in 211 Australian in-service teachers. Their result indicated a positive moderate

relationship between the variables. In another study examining the connection between teaching efficacy and emotional intelligence, a significant positive relationship was found in a sample of Turkish pre-service teachers (Kocoglu,2011).

Anari (2011) investigated high school English teachers' emotional intelligence with regard to job satisfaction and organizational commitment. His findings indicated that teacher job satisfaction and organizational commitment was positively correlated with emotional intelligence. Similarly, emotional intelligence was found to be related to job satisfaction in 1281 Chinese primary and secondary school teachers (Yin at al., 2013).

To summarize, inadequate emotional and social competencies are regarded as the potential reasons for the poor educational outcomes in students and some intervention programs have been developed to overcome these problems. Moreover, emotional intelligence of teachers found to be associated with their performance and well-being. In the light of these findings, the importance of further exploration of emotional intelligence in educational settings becomes apparent. Although some research has been conducted to investigate emotional intelligence in pre-service teachers, it seems that comparing emotional competencies of students from different educational majors may contribute to a better understanding of similarities and differences among teacher candidates.

This study had the following objectives: 1) to test if the overall EQ-i scores are differed by gender and major; 2) to examine if the scores of the EQ-i subscales (intrapersonal, interpersonal, adaptability, stress and general mood) are differed by gender and major.

2. METHOD

2.1. Participants

The sample population for this study was comprised of 230 Turkish pre-service teachers from a college of education. Of the participants, 113 (49%) were in preschool education, 37 (16%) were in secondary school biology education and 80 (35%) were in secondary school mathematics education. There were 171 (74%) female and 59 (26%) male students.

2.2. Measurement

To collect data, Turkish version of the Bar-On Emotional Quotient Inventory (Bar-On EQ-i) has been used. The original EQ-i, developed by Bar-On (1997) consists of 133 items and 5 dimensions. The Turkish version of the EQ-i includes 87 items and as in the original EQ-i, yields a total EQ-i score and five composite scores for the five interrelated dimensions: Intrapersonal, Interpersonal, Stress Management, Adaptability and General Mood Scale. The responses are made on a 5-point scale (1=not true of me, 5=true of me) (Acar, 2001). Acar reports that Cronbach's alpha was .92 for the total EQ-i, and it was ranged from .65 to .83 for the sub-scales. The Cronbach's alpha for the current study was .90 for the whole scale and it was ranged from .60 to .92 for the sub-scales.

2.3. Procedure and Data Analysis

Participation in this study was voluntary and data were collected during regular class hours from the students in attendance. Participants were asked to fill out the Bar-On Emotional Quotient Inventory. The completion of the instrument took approximately 30 minutes. The SPSS software (version 18.0) was used to perform statistical procedures. In addition to descriptive statistics, an univariate analysis of variance (ANOVA) was conducted to test the effects of major and gender on the overall EQ-i scores and a multivariate analysis of variance (MANOVA) was conducted to find out the effects of gender and major on the scores of EQ-i subscales.

3. RESULTS

3.1. Descriptive Statistics

Means and standard deviations of overall EQ-i and its sub-dimensions are presented in Table 1.

Table 1
Descriptive Statistics for Overall EQ-i and Subscales

| Variables | Preschool | | | Biology | | | Mathematics | | | Female | | | | | |
|----------------------|-----------|-----------|-----|---------|-----------|-----|-------------|-----------|-----|--------|-----------|-----|----|------|-----|
| | N | \bar{X} | Sd | N | \bar{X} | Sd | N | \bar{X} | Sd | N | \bar{X} | Sd | | | |
| <i>Intrapersonal</i> | 93 | 3.35 | .47 | 34 | 3.73 | .44 | 72 | 3.68 | .45 | 151 | 3.55 | .49 | 48 | 3.50 | .48 |
| <i>Interpersonal</i> | 99 | 3.74 | .46 | 34 | 4.06 | .46 | 76 | 4.08 | .42 | 157 | 3.96 | .46 | 52 | 3.80 | .50 |
| <i>Adaptability</i> | 108 | 3.36 | .40 | 33 | 3.60 | .45 | 77 | 3.55 | .54 | 164 | 3.48 | .48 | 54 | 3.40 | .43 |
| <i>Stress Mngmt</i> | 97 | 2.99 | .52 | 35 | 3.04 | .52 | 78 | 3.06 | .51 | 158 | 3.00 | .52 | 52 | 3.08 | .51 |
| <i>Generalmood</i> | 106 | 3.53 | .47 | 35 | 3.93 | .50 | 77 | 3.90 | .49 | 166 | 3.76 | .49 | 52 | 3.60 | .54 |
| <i>Overall EQ-I</i> | 74 | 3.42 | .34 | 26 | 3.68 | .33 | 69 | 3.68 | .34 | 128 | 3.58 | .35 | 41 | 3.53 | .40 |

As seen in the table, biology pre-service teachers ($M=3.68$, $n=26$, $Sd=.33$) and mathematics pre-service teachers ($M=3.68$, $n=69$, $Sd=.34$) scored higher than preschool pre-service teachers ($M=3.42$, $n=74$, $Sd=.34$) with respect to overall EQ-i scores. For the means of subscales' scores, the same result was observed and preschool pre-service teachers scored lower in comparison to biology and mathematics pre-service teachers. Means for the overall EQ-i scores were similar for female ($M= 3.58$, $n=128$, $Sd= .35$) and male students ($M=3.53$, $n=41$, $Sd= .40$). However, except for the stress management dimension, female students had higher means for the subscales.

3.2. Gender and major differences in overall EQ-I scores

As a second step in data analysis, a two-way ANOVA was conducted to test the effects of major and gender on the change in overall EQ-i scores. A significant main effect of major was found, $F(2,165) = 13.01$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the preschool group ($M=3.42$, $Sd=.34$) was significantly different from the both biology ($M=3.68$, $Sd=.33$) and math group ($M=3.68$, $Sd=.34$). The strength of this relationship, as indexed by η^2 , was .14. The main effect of gender on overall EQ-i was non-significant, $F(1,165)=1.50$, $p=.22$.

3.3. Gender and major differences in subscale scores

Finally, a factorial MANOVA was conducted to explore if a significant variation exists in the sub-dimension scores of the EQ-i by gender and major. Results of this analysis indicate that there was no significant main effect for the interaction between gender and major. However, significant differences were found for the main effect of gender [Wilks' $\Lambda = .918$, $F(5,159) = 2.840$, $p < .01$, $\eta^2 = .082$] on interpersonal dimension [$F(1,163) = 7.88$, $p < .01$, $\eta^2 = .046$] and general mood dimension [$F(1,163) = 6.55$, $p < .01$, $\eta^2 = .039$]. These results indicate that gender accounted for approximately 4-5 % of the variance in interpersonal and general mood dimension. Based on the Cohen's guidelines, these were small effect sizes (Cohen, 1988). Additional significant results were found for the main effect of the major [Wilks' $\Lambda = .844$, $F(10,318) = 2.805$, $p < .01$, $\eta^2 = .081$] on 4 of the 5 subscales including: intrapersonal [$F(2,163) = 8.81$, $p < .01$, $\eta^2 = .098$] interpersonal [$F(2,163) = 12.35$, $p < .01$, $\eta^2 = .132$] adaptability [$F(2,163) = 3.96$, $p < .01$, $\eta^2 = .046$] and general mood [$F(2,163) = 6.22$, $p < .01$, $\eta^2 = .071$]. These results indicates that major accounted for approximately 5% to 13% of variance in intrapersonal, interpersonal, adaptability and general mood dimensions of the EQ-i. Adaptability dimension had a small size effect, as the other dimensions had medium size effects by Cohen's criterion.

4. DISCUSSION

As in Bar-On's (2006) normative sample findings, the result of the current study indicate that there was no gender difference for the overall EQ-i scores. In terms of sub-dimensions, findings of this study revealed that female students had significantly higher scores on interpersonal and general mood dimensions than their male counterparts. This result is quite consistent with the findings of the normative sample indicating small but statistically significant differences between genders in which females scored better in interpersonal skills and were more aware of their emotions whereas males were better at managing emotions and had better self-regard. Bar-On reports that similar gender differences were shown in other populations. In a study with Italian high school teachers, female teachers scored higher on interpersonal dimension whereas male teachers had higher scores on intrapersonal dimension (Fabio & Palazzeschi, 2008). In Corcoran and Tormey's (2012) study including 352 Irish pre-service teachers, results indicated that the mean scores for females for each of the EI dimensions were statistically significantly higher than those of males; (Corcoran & Tormey, 2012).

With respect to major, the preschool education group scored lower than both math education and biology education groups in terms of overall EQ-I scores. Students majoring in mathematics education and biology education had significantly higher scores on the dimensions of intrapersonal, interpersonal, adaptability and general mood. In contrast, no difference was found in stress management scores among these groups. Evidently, it is not quite practical to assume that teachers in a specific subject area should have higher levels of emotional intelligence than the others do. However, having higher levels of emotional competence might be especially critical for preschool teachers considering the fact that preschool teachers are in interaction with younger children who are more open to be influenced by teachers' individual characteristics and more likely to learn through modeling. As stated by Denham, Basset and Zinsler (2012) along with parents, teachers are the most important socializers of emotions during early childhood period and teachers' own emotional competencies influence the emotional development of their students. Current studies point out that social emotional abilities seem to be important part of teaching and learning processes. Therefore, regardless of the subject area, a focus on social emotional dimensions should become an integrated part of teacher education. In addition, given the fact that teaching can be a stressful and emotionally demanding job, addressing the stress management and other components of emotional intelligence in teacher training programs may contribute to the future psychological well-being and performance of teacher candidates.

There are some limitations inherent in this study. An important limitation of the present study is the gender distribution of the sample which resulted from the fact that education majors are mostly chosen by female students in Turkey. In addition, the sample of the present study was limited to students from one college and to three majors. Other studies may expand the sample to include a larger sample size with a more balanced gender distribution and a range of majors.

In general, it looks like more research is needed for further clarification of the concept of emotional intelligence and for resolving measurement issues in order to apply the findings of the research to the field of education more effectively. Furthermore, the issue of how emotional social skills might be included in pre-service teacher training requires the development of applicable, efficient and sustainable methods. Finally, longitudinal studies are necessary to follow up pre-service teachers' emotional-social progress throughout their education.

5. REFERENCES

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