

The relationship between emotional intelligence and academic achievement among Iranian students in elementary schools

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Abstract

The purpose of this study was to investigate the relationship between emotional intelligence (EI) and academic achievement in among Iranian students in elementary schools. Emotional intelligence competencies were measured using the Six Seconds Emotional Intelligence Assessment for Youth (SEI-YV). The SEI-YV is a self-report instrument that provides scores on three composite measures of EI, eight EI competencies, and five barometers of health. Academic achievement scores were measured by using a standard achievement test in Mathematics, and Science. Fifty students from two elementary schools in Tehran, whose teachers were instructed to teach EI competencies were selected for this study. Results suggested two weak but significant correlations between two barometers of health and scores in English-Language Arts. Results revealed no statistically significant correlations between student scores on the SEI-YV and the achievement tests among Iranian students at elementary schools.

Keywords: emotional intelligence (EI), academic achievement, elementary school.

Introduction

Adelman and Taylor (2000) believed that if schools pay only attention on academic instruction and school management in their efforts to help students attain academic success, they are not able to achieve their goals.

In education, emotions have been considered as supplementary for learning process. Recent research (Elias, 2004), however, has started to indicate that Emotional Intelligence (EI) can be considered as a necessary component of any educational society. EI has been defined by Elias as a set of skills necessary for effective social interaction and classroom success: (a) emotional recognition and regulation, (b) self-control, (c) goal setting, (d) social responsibility, (e) empathy, (i) problem solving, (g) conflict resolution, and (h) skills needed for leadership and effective group participation.

An increased interest in research in the area of emotional intelligence has led to a quest for a strong empirical case connecting the measurement of social and emotional learning (SEL) programs that teach EI to improve school behavior and academic performance. Recent brain research has defined EI as a measurable connection in the human brain between responses to emotions and their influence on one's actions (Bradberry, & Greaves, 2005). Educational programs that focus on SEL generally instruct children with curriculum designed to help them understand and use EI abilities. Through SEL programming, children learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly, develop positive relationships, and avoid negative behaviors (Elias *et al.*, 1997).

The Collaborative for Academic, Social, and Emotional Learning (CASEL) founded by Daniel Goleman, Tim Shriver, and Eileen Rockefeller Growald in 1994, has been studying effective Social

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and Emotional Learning programs and the schools implementing SEL programming. CASEL (2006), in its implementation guide for evidence-based SEL programs, suggested that excellent SEL programs are characterized by two levels. The first level establishes safe, caring, well-managed learning environments that lead to greater student attachment to school, less risky behavior on the part of students, and better academic performance. The second level supports positive student development and greater academic success through instruction in a range of social and emotional competencies.

Statement of the problem

According to Elias and Arnold (2006), children may be more influenced by physical ailments that deplete their energy and strength, as well as emotional difficulties that impede academic achievement without emotional intelligence skills. Educators are learning that children suffer emotionally, intellectually, and physically when EI skills are not part of a school culture (Elias & Arnold, *ibid*).

The literature indicates that socially and academically effective schools are distinguished by a systematic SEL component integrated into a school's everyday life and curriculum, yet very few schools implement effective whole-of-school SEL programs in Iran. The problem is that public schools have some practices in place to prevent-problem behavior and promote safe learning environments but research suggests that these programs are ineffective because they are short-term and lack connection to each other and integration into the curriculum and life of the school (CASEL, 2003). In addition, because of limited time and resources, these programs tend to be implemented in short-term, with inadequate staff development and little availability of support for the programs (Weisz & Hawley, 2002).

Unfortunately, in Iran, no research has been done in elementary schools on prevention programs although it is necessary to investigate a more comprehensive path in the quest to promote the health and well-being of students attending elementary schools. CASEL (2003) has urged that schools adopt whole-of-school approaches to student health that teach emotional intelligence skills through school-based SEL programs. Little research is available on the relationship between EI-SEL programs and academic achievement among elementary schools in Iran.

Purpose of study

The purpose of this study was to investigate the relationship between EI-SEL programming and academic achievement among Iranian students at elementary level. Teachers were trained through professional development with the Six Seconds Emotional Intelligence Organization.

In the selected schools, every teacher teaches EI both formally and informally and they are allowed appropriate time to teach EI lessons. In addition, parents and children were also working together on the same concepts, creating a common language, approach, and a sense of community through common EI goals.

Research question

Research questions designed to investigate the purposes provided above were as follows:

Is there any relationship between the ability of Iranian students at elementary schools to demonstrate and use emotional intelligence competencies and academic achievement?

Review of literature

Emotional Intelligence

Emotional Intelligence (EI) has been defined as the ability to empathize, persevere, control impulses, communicate clearly, make thoughtful decisions, solve problems, and work with others in a way that earns friends and success (Stone *et al.*, 1998). These abilities allow an individual to recognize and regulate emotion, develop self-control, set goals, develop empathy, resolve conflicts, and develop skills needed for leadership and effective group participation (Elias, 2004).

Models of emotional intelligence

According to Mayer, Salovey, and Caruso (2002), there are three theories within the emotional-intelligence paradigm. Each theory has developed in the last decade as an attempt to explain the abilities, traits, and competencies associated with emotional intelligence.

The first model developed by Mayer *et al.* (1997) is called an ability model, which focuses on the constructs that increase intelligence through the understanding of emotions. EI, in this model, represents the potential for achieving mastery of specific abilities in the emotional intelligence domain.

The second model, called trait model of EI, was developed by Bar-On (2000) model. It measures EI

through five composites: Interpersonal Skills, Intrapersonal Skills, Stress Management, Adaptability, and General Mood. Bar-On (1997) theorized that emotionally intelligent people “are generally optimistic, flexible, realistic, and successful at solving problems and coping with stress, without losing control” (p. 156).

The last model, which was developed by Goleman’s model of EI (1998), is a competency model. In this model, emotional intelligence in the context of work has been shown to inspire others to problem-solve, cooperate, and work to find equitable ways to develop solutions that benefit all sides of a conflict (Goleman, Boyatzis, & McKee, 2002). According to them, workers are more likely to give such leaders bad news, allow problems to be addressed, and necessary changes to be carried out.

Academic achievement

Schools have been criticized for failing to educate children entrusted to them. Nowadays, educators are very concerned with the achievement outcomes of their educational programs. It is necessary for schools to establish plans for being safe and drug free, close the achievement gap between high- and low-performing students, close the achievement gap between disadvantaged children and their more advantaged peers, prevent at-risk students from dropping out of school, and implement prevention programs that are grounded in scientific research and provide evidence of effectiveness. However, a review of the research yields inconclusive empirical evidence in support of a single best predictor of positive academic outcomes.

Regarding the study done in this area, Parker *et al.* (2004) studied the EI-SEL factors that might predict academic success in high school. Studying 667 students attending a high school in Huntsville, Alabama (304 males, 363 females), Parker *et al.* (*ibid*) compared scores on the subscales of the Bar-On Emotional Quotient Inventory for Youth (Bar-On EQ-i:YV) in groups who had achieved different levels of academic success. Students in the academically successful group were those with a GPA in the 80th percentile for their grade. Students in the less academically successful group were those with a GPA in the 20th percentile for their grade. Parker *et al.* found a statistically significant 2-way interaction for gender and type of emotional intelligence. Further, separate Univariate F tests found that females scored statistically significantly higher than males on interpersonal ability. The only statistically significant 2-way interaction was between ac-

ademic group and type of EI. Results also indicated that the successful group scored significantly higher than the less successful on interpersonal abilities, stress management, and adaptability.

Furthermore, some studies suggest that students learn more effectively when they are encouraged to have clear, positive goals and values and when they receive support in pursuing those academic goals that will allow them to function well in society (Elias *et al.*, 1997). For example, Hoy and Hannum (1997) conducted a study that defined school health (climate) in terms of healthy interpersonal dynamics between students, teachers, and the principal. The purpose of this study was to investigate the relationship between school health and academic achievement. The Organizational Health Inventory (OHI-RM) was completed by teachers from 86 middle schools in New Jersey, representing diverse geographic areas as well as a broad range of SES. Teachers attending faculty meetings at all participating schools responded. The total score on the OHI-RM was the general measure of school health (GHI). Academic achievement was measured using New Jersey’s Eighth Grade Early Warning Test (EWT), given to all eighth-grade students in the state. The EWT measures achievement in reading, mathematics, and writing. Correlations were calculated between the GHI and each aspect of student achievement. General school health was associated positively with achievement in mathematics ($r = .61$), reading ($r = .58$), and writing ($r = .55$). Multiple regression analysis was performed using school climate independent variables listed above.

Regarding the research done in Iran, Khalili Azar (2007) studied the relation between EI of 60 gifted and 60 normal students and its relation with educational achievement. Emotional intelligence and the students’ GPA of last school year were measured. Based on the results, no significant difference was found between emotional intelligence of normal and non-gifted students. Also, the relationship between emotional intelligence and academic achievement was not significant.

In another study, Besharat, Shalchi, and Shamsipor (2006) studied the relation between EI and achievement. 360 pre-university students (180 girls and 180 boys) in the fields of humanities, experimental sciences, and mathematics participated in the study. The subjects were asked to answer a questionnaire on emotional intelligence. Academic achievement of students based on their high school average was calculated. Statistical methods including fre-

quency, percentage, mean, standard deviation, variance analysis, correlation coefficients, and regression analysis were done for data analysis. Results showed a positive correlation between emotional intelligence and academic achievement of students.

Methodology

Participants

The study sample was comprised of 50 female students at two private elementary schools in Tehran. For this study, the ethnic-racial makeup of the two schools was very similar. The students in these schools are screened before entering school due to the different criteria regarded by the policy makers of these schools.

Research design

This study was a mixed-methods research design. The researcher used a correlational design to investigate the possibility of a relationship between emotional intelligence and academic achievement. Emotional intelligence was measured by three composite scores on the SEI-YV, subscales for each of eight emotional intelligence factors, and scores on the five barometers of health measured by the SEI-YV. Academic achievement was measured by scores on Mathematics and Science, developed by professional teachers at elementary level. Achievement tests are given quarterly at both schools. Students at both schools took achievement exams in two academic subjects. Therefore, as the main purpose of this study was to investigate the possibility of a relationship between EI and Academic Achievement, the scores on these measures in Science and Mathematics served as the variables for the data analysis.

Data-collection methods

In order to collect data for this study, all participants were first administered the SEI-YV, an emotional intelligence assessment inventory designed for elementary-school children. The average time to complete the assessment was 20 minutes. Completed assessments were scored by the Six Seconds Emotional Intelligence Organization. After coding the response forms, the principals gave the SEI-YV response forms to the researcher for further analysis.

Then, student achievement was measured by using the standardized achievement test given to all selected students. The test measures students' achievement in mathematics and science using multiple-choice items.

Instrumentation

The Six Seconds Emotional Intelligence Assessment for Youth, Version 2.0 (SEI-YV) was used to collect EI data. It was scored by the Six Seconds Emotional Intelligence Organization. The SEI-YV was designed in 2006 to assess emotional intelligence abilities in children ages 7 through 18. The SEI-YV 2.0, with 145 items, was validated and refined on a sample of 2,697 youth from ages 7 to 18 from English-speaking countries around the world. Version 2.0 of this tool is a self-report measure, validated with about 1,000 students from schools in the San Francisco Bay Area, Texas, and several countries. Version 2.0 consists of 74 items designed to assess factors that define emotional intelligence, plus an additional 25 items assessing five different barometers of life that can be used as external criteria against which the student's EQ can be measured. Each of the items was based on a Likert-type scale from 1 to 5 (1 indicates almost never; 5 indicates almost always).

There are 11 items designed to measure emotional literacy and seven items designed to identify and recognize emotional patterns; these items comprise the "Know Yourself" composite score of the Six Seconds model of emotional intelligence. There are eight items measuring the application of consequential thinking, nine items designed to measure emotional navigation, nine items designed to measure engagement of intrinsic motivation, and eight items designed to measure optimism; these items comprise the "choose Yourself" composite score of the Six Seconds model. There are nine items designed to measure empathy, and seven items designed to measure action on noble goals; these items comprise the "Give Yourself" composite score of the Six Seconds model. In addition, student achievement was measured through the standardized tests in mathematics and science

Regarding the reliability of the questionnaire, the internal consistency of the SEI-YV, was calculated using Cronbach's coefficient alpha. Cronbach's coefficient alpha for each of the factors on the SEI-YV were as follows: EEL = .66; RCP = .69; EOP = .72; ACT = .69; NVE = .70; EIM = .75; ICE = .78; PNG = .75.

As far as validity of this questionnaire was concerned, the researcher asked two university professors holding PhD to say their comments on the selected test and questionnaire. Their comments were taken into account during performing the tests.

Data-analysis methods

First, a correlational analysis was obtained between the SEI-YV composite, factor, and barometer scores and the degree of academic achievement as

measured to investigate whether a relationship exists between emotional intelligence and academic achievement among elementary-school children. The quantitative data from the SEI- YV was based on a Likert-type scale that yields standardized scores in three composite, eight factor, and five barometer scores comprising EI. Pearson product-moment correlation coefficients were used for correlating SEI-YV and achievement scores.

Results and discussion

In order to answer the research question, the results were analyzed as follows:

Is there any relationship between the students' ability to use emotional intelligence and academic achievement?

Pearson Product-Moment correlation coefficients were computed for an investigation of the relationship between EI and academic achievement. Table 1 contains the results.

Table 1. Pearson Product-Moment correlations between EI and achievement tests in Iran.

SEI-YV Competencies	Achievement tests	
	Math	Science
Good health	.04	-.4
Relationship quality	.31	.07
Life satisfaction	.12	.2
Personal achievement	.14	-.03
Self-efficacy	.17	.02
Total EI	-.02	.06
Know yourself	-.08	.03
Choose yourself	.06	.08
Give yourself	.01	.13
Enhance emotional literacy	-.06	.08
Recognize patterns	-.04	-.07
Apply consequential thinking	.04	-.03
Navigate emotion	-.04	.08
Engage intrinsic motivation	.09	.03
Exercise optimism	.11	.18
Increase empathy	-.03	.16
Pursue noble goals	.01	.07

As it is clear from table 1, no statistically significant relationships were indicated between academic achievement in Mathematics or Science and any

of the three Composite, eight Factor, and five Barometer measures of EI on the SEI-YV.

Conclusions

Results from the research question revealed no statistically significant correlations between student scores on the SEI- YV and the achievement tests. This result could be attributed to the homogeneity of the samples selected for this study. The students in both schools had the same characteristics from socioeconomic factors point of view. A majority of students in this study scored in the average to above-average range on all eight EI competencies measured by the SEI-YV. These results also may also be because of the quality and similarity of syllabus present in both elementary schools.

By looking at the table 1, we can see that "Self-Efficacy" including Increase Empathy (ICE) and Pursue Noble Goals (PNG), emerged as a lower score, perhaps because elementary students have not matured sufficiently to acquire the highest-level competencies and integrate them with previously acquired competencies. Studies done by Mayer, Salovey, Caruso, and Sitarenios (2003) have suggested that EI develops with age and experience while, in this study, student perceptions of their own self-efficacy did not concur with the SEI- YV results.

The current study also found differences in learning EI ability due to experience. Students who had already experienced EI training at lower level like kindergarten were placed in the high-EI groups in comparison to those students who had not. A study by Parker *et al.* (2004) found that students at secondary level scored lower on total EI ability, using the Bar-On EQ-i:YV as the measure of "EI", than students who had been applying EI competencies longer. These studies suggested that exposure to EI competencies and the opportunity to apply those competencies improved EI abilities.

Implications for educational practice

According to Hirschstein *et al.* (2007), EI-SEL programming can help schools become more effective at guiding children toward becoming literate, responsible, nonviolent, drug-free, and caring adults. If Iranian schools become interested in teaching EI competencies at the elementary-school level, allowing students to learn to know themselves and others, make responsible decisions, care for others, and understand how to act, students will

integrate these principles into their everyday lives. Schools will become more caring places, children will take risks and make mistakes in order to learn, and academic achievement will improve in later grades (DiPerna & Elliott, 2000; Wentzel, 1998).

EI-SEL activities must be linked with other school activities. All students in a school benefit from being taught and given opportunities to practice age-appropriate conflict resolution (Lantieri, 2003). Students need support and coping strategies for life's difficulties so that stress is not able to shut down cognitive capabilities and reduce learning capabilities (Ledoux, 1994).

Schools should practice community service to build empathy. Seligman (1995) has posited that the development of empathy is the first step to the successful management of emotions and development of pro social behavior. Research evidence has indicated a direct and moderately strong correlation between students' pro social behavior and their academic achievement measured by grades, standardized test performance, or both (DiPerna & Elliott, 2000).

Finally, schools should involve parents in developing EI-SEL competencies as Pipher (2006) believes. Studies show that parent involvement increases the likelihood that students will practice EI-SEL competencies and apply them in multiple settings (Weissberg & Utne O'Brien, 2004). Parent support is necessary for the success of any elementary-school program, but it is essential to ensure that EI-SEL competencies are experienced by the entire school community (Henderson & Mapp, 2002).

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