

Examining the Relevance of Emotional Intelligence Within Educational Programs for the Gifted and Talented

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Abstract

This study explored the relationships between emotional intelligence, locus of control, and self-efficacy among gifted and talented students participating in a two week long summer educational program. Results revealed statistically significant correlations between these variables. Gender was found to moderate the relationships.

The study also measured the impact that the summer program's deliberate social psychological design framework had on student's emotional intelligence. Mean averages on posttest measurements of emotional intelligence were significantly higher than pretest measurements. Results of this study allude to the theoretical and practical implications for strategically integrating mechanisms that foster of development of emotional intelligence among gifted and talented students.

Keywords: Emotional Intelligence, Locus of Control, Self-efficacy, Gender

Introduction

This paper will present findings on a longitudinal assessment study conducted on a two-week summer camp for gifted/talented high school students. This assessment study has two primary objectives. The first is to determine the degree to which a program whose structure and content focused on enhancing emotional intelligence achieved this objective. The second objective consisted of examining the extent to which emotional intelligence correlates with locus of control and self-efficacy among gifted and talented students. The program utilized the zone of proximal development (ZPD) framework as its underlying philosophy for program development and implementation. More specifically, one of the primary objectives of the program is to enhance the educational fecundity of gifted and talented students by exposing them to various educational elements that they would not normally receive within their home school systems. The most critical of these is social and intrapersonal skills. Gardner, (1983) as well as others (Sternberg, 1985; Bloom, 1985; Csikszentmihalyi, Rathunde and Whalen, 1993; and

Gagné, 1999) has described these skills as important elements among multiple intelligences that a person possesses. The fostering of emotional intelligence (EQ) among gifted/talented students constitutes the camp's attempt of "deliberate psychological education" within the context of zones of proximal development (Vygotsky, 1978). The Russian Psychologist Lev Vygotsky delineated the concept "zone of proximal development" (ZPD) to describe the idea that a student's academic potential can be enhanced beyond what standardized IQ tests measure. He states that this can be accomplished through strategically planned educational structures directed towards support and assistance for specific skill competencies. Factors of general intelligence include unique patterns of cognitive capabilities—numerical, verbal, spatial, fluency have received the most attention in designing programs to support and enhance the abilities of talented and gifted students. This particular program was unique in that it has applied the ZPD framework for strategically developing a program that affects interpersonal and intrapersonal skills through the concept of emotional intelligence. A "gifted" student is one who is academically precocious, learns rapidly and easily, and shows a propensity towards understanding new and abstract concepts. A "talented" student is one who reveals an advanced ability in a particular area of the arts, academic domains, social and/or leadership skills, or vocational abilities (Feldhusen, 1999). There is an imperative need for nurturing these students' interpersonal and interpersonal competencies. Maree and Ebersohn, (2002) describes case studies of two gifted adolescent male students which indicate that emotional intelligence has a significant impact on the qualitative level of intelligence actualization and on the quantitative level of intelligence measurement and scholastic achievement. Mayer, Perkins, Caruso & Salovey (2991) in a case study involving eleven gifted students found that there is an association between high emotional intelligence and the ability to cope with social situations. Piechowski (1986) suggests that the ability to express empathy, to understand one's own feelings, and to manage feelings is an emotional giftedness as well as intelligence.

The summer institute recognizes that while students may possess special academic talents, these talents many times do not lead to success. Oftentimes, the most successful people are those who are capable of managing both intrapersonal and

interpersonal qualities referred to as emotional intelligence. There is some empirical evidence that supports this idea (Goleman, 1995). Gifted and talented students are confronted with unique daily challenges, such as pressure to succeed and the fear of not succeeding. Coping with these challenges successfully, require emotional competence.

Emotional intelligence has emerged as a salient concept for describing a person's ability to manage intrapersonal as well as interpersonal processes. (Mayer & Salovey, 1995). Although emotional intelligence has entered into the lexicon of formal education, very little is known concerning its importance within the context of educational processes for the gifted and talented. Our study represents an exploratory analysis of how this seemingly important construct can be systematically introduced into educational processes that deliberately attempt to incorporate its basic tenets within the design of educational programs for gifted and talented students. Overall, the purposes of the study reported in this paper are as follow:

1. To examine the impact that strategically designed activities of a summer camp has on the enhancement of emotional intelligence of gifted and talented students.
2. To explore the nature of the relationship between student emotional intelligence and locus of control.
3. To explore the nature of the relationship between student emotional intelligence and specific dimensions of student self efficacy.
4. To analyze the correlation differences among emotional intelligence, locus of control, and student self efficacy during the start of the program and its culmination.
5. To examine the extent to which gender influence (moderate) the relationship between emotional intelligence, locus of control, self-efficacy, and the student's evaluation of the program.

Locus of control and self-efficacy has been delineated within the literature as salient factors affecting student academic performance. Empirical information on how theses factors relate to emotional intelligence may serve as a heuristic guideline to educators for designing more effective educational programs for the gifted and talented.

This paper will proceed by first defining emotional intelligence and describing its relevance within the framework of Vygotsky's zone of proximal development. Secondly, the paper will discuss how the summer camp's educational structure utilized a deliberate social psychological educational strategy to promote the instruction of emotional intelligence. This situative-sociohistoric approach (Lave and Wenger, 1990), is a pragmatic educational delivery system that is an extension of ZPD. Thirdly, we will discuss our expectations concerning the relationships between emotional intelligence, locus of control, and self-efficacy among gifted and talented students.

Conceptual Framework of Study

Emotional Intelligence: A Different Way of Being Smart

Emotional intelligence pertains to emotional and social competencies of students that "involve the ability to monitor one's own and other feelings and emotions to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990 p.189).

Goleman (1995; Goleman *et al.* 2001) suggests that EQ is more critical than IQ in determining the success of students. A student's mood or emotions, and the way that they are managed are postulated to have an influence on their creative and intellectual competencies and on their ability to form and maintain healthy interpersonal relations. Contrary to traditional beliefs regarding emotions, they do not suppress the ability to engage in effective cognitive processing; rather they serve as a filter that places a person in touch with critical emotive dimensions. Being in touch with these emotions in turn could enhance the individual's ability to better analyze and understand problems (technical) more comprehensively, thus positively impacting their intellectual abilities.

Bloom (1985) has described talented adolescents as having the capacity to continuously focus on specific tasks. Such concentration alludes to the ability to manage and control one's emotions.

The idea of developing student's emotional intelligence to support and foster both cognitive and social competencies is related to Vygotsky's (1978) zone of proximal development scheme. Within this theoretical framework, Vygotsky proposes that a child's cognitive potential and growth is not limited by fixed parameters. Rather there is a zone for which further cognitive development can occur. This zone of potential development is affected by outside influences such as strategic educational programs that systematically integrate both cognitive and emotional skills within their structure. Indeed Vygotsky has argued that social relations (which constitute a primary dimension of emotional intelligence) are the primary function for cognitive development (Moll, 1991). As Mayer et al (2001) state:

Emotional intelligence arises from a productive union of the cognitive and emotion systems. The cognitive system carries out abstract reasoning about emotions, while the emotion system enhances cognitive capacity

More specifically, individuals high in emotional intelligence have the ability to perceive, understand, and manage emotions, on the one hand, and to allow emotions to facilitate their thought, on the other. (p. 132)

The inability to relate well with others is seen as an obstacle that could short circuit a student's intellectual prowess. For example, let's take a student who possesses the intellectual capacity towards science and mathematics and who pursues a career in bioengineering. Much of the success within this student's career will be determined by hers/his ability to effectively negotiate social relationships, since much of the work within this field takes place within a team framework. Kelly and Moon (1998) describe these skills as personal talents. They define personal talents as "attributes that are primarily intrapersonal and enable one to take constructive action with respect to both people and tasks" (p 743).

In short, EQ and IQ are not opposing competencies. Rather, EQ serves as a base that fecundates the other intelligence factors.

Four facets of emotional intelligence have been identified in the literature. They are: self-awareness, empathy, managing relationships, and emotion management.

Self Awareness - refers to the cognitive ability to accurately appraise one's own emotions, feelings, and behaviors. It also pertains to expressing one's feelings. In short, this dimension references an individual's ability to self reflect and understand their emotions. Reflection facilitates the use of emotional information for making judgements and decisions (George, 2000). The understanding of feelings will impact the accuracy of communicating emotions which in turn should enhance communication with others in terms of facilitating the understanding of others needs, goals and objectives. This concept allows the individual to make conscious choices regarding major and minor life decisions (Richburg and Fletcher, 2002).

Empathy - refers to appraising the emotions of others. In social psychological terms (Mead, 1934) it consists of "taking the role of the other" and experiencing as well as understanding a persons emotions from their perspective as well as your own. This interpersonal skill is critical to the student's ability for establishing effective interpersonal relationship with others. The ability to empathize with others would enable students to form collaborative relationships, which could support collaboration within problem solving. Gardner (1983) posits that the core capacity of personal intelligence as it relates to others involves "the ability to notice and make distinctions among other individuals" as it relates to mood, temperaments, and motivations (p. 239). He conceptualizes interpersonal intelligence as the capacity of the student to discriminate and detect moods of other individuals.

Managing Relationships - is the ability to perceive and understand the emotions and behaviors of others and to modify one's own emotional response to such an understanding (Lennox & Wolfe, 1984). It is the recursive interpretation of self and other's emotions. An individual who is intelligent on this dimension would be able to effectively handle conflict and to affect the behavior of others in positive ways.

Emotion Management - refers to the ability to regulate emotions and behaviors according to their situational appropriateness. This requires cognitive reflection on the potential ways in which an emotional behavior will affect and be affected within a specific situation. Students often encounter situations that engender emotions that may

lead to explosive communication episodes. The ability to manage these emotions appropriately would lead to more positive personal and social outcomes.

Deliberate Social-Psychological Education Pertaining to Emotional Intelligence

The structure of the summer institute program has been strategically designed to influence these four dimensions of emotional intelligence. This has been done in the following ways:

1. **Enhancing Self-Awareness:** Students were given various exercises that asked them to introspectively examine (a) Who they are as an individual, (b) what is the personal reason underlying their career choice, (c) what they like best and least about themselves, (d) their perceptions about how others perceived them, and (e) how they feel about their failures and successes.

2. **Developing Social Relationship Skills:** Students were purposely recruited from various geographical and ethnic backgrounds in order to create diversity within the program. Geographically, students came from small (rural), medium, and large population areas. Differences according to geography, ethnicity, and gender meant that students had different social frame of references. Student groups (residential and activity groups) were purposely constructed to reflect diversity in student backgrounds.

The objective was to create opportunities where students would be continuously exposed to people who were "different" than themselves. This in turn would generate situations where social skills could be developed and enhanced informally and during planned social activities. These purposely developed diverse groups, would also facilitate the enhancement of the two emotional intelligence skills described below.

3. **Developing Empathy Skills:** A significant number of activities were used where students were asked to "take the role of the other" in order to affect the students ability to understand the other's point of view as well as their emotional state.

4. **Skills for Emotion Management:** The large differences in life orientations that existed within the groups as a result of the groups diversity, created numerous occasions for social conflict. Students were specifically instructed on how to resolve these conflicts through conflict management training. The idea of emotion management was the focal point of this training.

Locus of control (LOC). LOC refers to the expectancies about the causations of actions and outcomes (Rotter, 1966). Two individual types are delineated based upon these expectations: internals and externals. An internal LOC implies that a person believes that she/he is in control over experienced outcomes. An external orientation is one where the individual views outcomes as being caused by external forces. Several studies have shown the influence that LOC has on gifted student achievement (Reis & Park, 2001; Eccle, 1987; Handley & Morse, 1984; Pajares & Miller, 1994; Reis & Park 2001). However, few if any empirical investigations have been conducted to codify the relationship between emotional intelligence and locus of control, particularly as it pertains to gifted and talented students. We expect that higher levels of emotional intelligence will be associated with an internal locus of control. Such a finding would lend support to the significance of incorporating the concept of emotional intelligence within programs designed to educate academically talented students. We further expect that the saliency of emotional intelligence within this context would be implied through the data revealing stronger correlations between EQ and LOC among the post measurements.

Bandura (1986) defines self-efficacy as "people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances" (p 391). In other words, self-efficacy is "a belief that one has 'what it takes' to successfully perform a behavior in a situation-specific context" (Young & Kline, 1995, (p. 11). Previous studies have revealed self-efficacy to be related to a large number of individual outcomes including academic performance (Boufard-Bouchard, 1989; Young & Kline, 1995). A study by Jourden and Bandura (1991) revealed that self-efficacy enhances student academic performance because it influences the setting of personal goals, self-reflection, and the utilization of analytical strategies.

The summer institute operates on the premise that the academic talents of students are not enough to guarantee success. Smart students will not experience success if they do not feel that they have specific skills. Thus, a major focus of the summer institute is to enhance various kinds of self-efficacies within this population of students. More specifically, these efficacies include (a) the effectiveness in social relationships, (b) communicating with people who are different than you, (c) the ability to learn science and information technology, and (d) the ability to pursue academic processes

The program not only wanted to understand how its educational design was affecting the student's self-efficacy, but also determine how this variable interrelates with emotional intelligence, and the student's evaluation of the value of the program. A critical question pertains to whether or not emotional intelligence affects the student's perception of self-efficacy. Furthermore, self-efficacy may influence a student's perception on whether or not the program was beneficial. This point relates to program evaluation methodology.

Many program evaluation techniques attempt to ascertain the client's perception of the structure and content of programs and use this information as an indicator of program effectiveness and/or success. Our approach is to determine whether or not these perceptions are affected by student's self-efficacy.

Gender. This study investigated the extent to which gender moderates the relationships between emotional intelligence, student self-efficacy, locus of control, and students evaluation of the program. Several studies have examined the moderator influence of gender on emotional intelligence and various outcome variables (Stottlemyer, 2002; Petrides & Furnham, 2000; Tapia & Marsh, 2001).

Culture differences related to gender may influence the manner in which the focal variables correlate with one another. If gender does indeed moderate these relationships, this would give the program developers a more systematic understanding of how to structure its activities.

Program Evaluation and Its Operational Logic

An underlying premise of deliberate social psychological education is that expected educational outcomes of a program have a higher probability of success when such programs are strategically designed according to specific conceptual objectives.

The program that is evaluated within this study had only a two-week lifespan. However, in comparison to programs that are less strategically designed, we would nevertheless expect a positive impact. Subsequently, the impact of this program was evaluated by taking measurements of the focal variables during the onset and conclusion of the program.

A more thorough understanding of the program's impact could be gathered by examining the strength of the relationships among the focal variables, before and after the program. Emotional intelligence, self-efficacy, and locus of control are social psychological factors that the program was trying to enhance within the students. Operationally, it is reasonable to assume that a positive program impact would be indicated if these factors reveal a higher correlation after students have been programmatically exposed to these concepts than during the initiation of the program.

If students EQ have been increased as a result of the program, we would expect a positive correlation between EQ and the student's evaluation of the program.

Research Hypotheses

Hypothesis 1: Students will show a statistically significant increase in their emotional intelligence between the pretest and posttest.

Hypothesis 2: Students will show a statistically significant increase in their internal locus of control between the pretest and posttest.

Hypothesis 3: There will be a stronger positive correlation between emotional intelligence and locus of control within the posttest measurement than the pretest measurement.

Hypothesis 4: There will be a stronger correlation between emotional intelligence and the self-efficacy dimensions within the post measurement than the pretest.

Hypothesis 5: There will be a stronger correlation between locus of control and the self-efficacy dimensions within the post measurements than the pretest.

Hypothesis 6: A positive correlation will be revealed between EQ and each of the student's evaluation of the program factors.

Hypothesis 7: A positive correlation will be revealed between LOC and each of the student's evaluation of the program factors.

Hypothesis 8: Gender will moderate the relationships between EQ the post-test self-efficacy dimensions and each of the student evaluation of the program factors.

Research Methods

This study was conducted among 98 academically talented high school students who attended a two-week summer program at a large university that was designed to facilitate and support their academic achievement. The pretest was given to 61 students. Fifty-seven of these students completed the posttest. It was these fifty-seven who completed both the pretest and posttest that were included in our study. The demographic structure of the participants is as follows:

Median Age: 16.0

Gender: 24 Males 33 Females

Ethnicity: White: 43 Black: 8 Hispanic: 2 Asian: 2

Measurements

Emotional Intelligence

This variable was measured by using a scale developed by Tapia & Burry-Stock (1998). Their scale consisted of 41 items measuring the following factors: empathy, reflection on feelings, handling relationships, and self-control. We used modified scale of this instrument consisting of 24 items: six items for each factor. The scale utilized a Likert format consisting of five anchor points and five scale points. Participants were asked to evaluate themselves on each of the 24 items with response possibilities ranging from “strongly agree” to “strongly disagree”. Scores on the pretest ranged from 49 – 86 with an alpha reliability of .76. Scores on the posttest ranged from 49 – 95 with an alpha reliability of .82. Alpha reliabilities for each of the sub-dimensions of this emotional intelligence scale are:

	<u>Pretest</u>	<u>Posttest</u>
Empathy	.74	.72
Self Awareness	.58	.69
Managing Relationships	.65	.79
Emotion Management	.61	.62

Locus of Control

Rotter’s Locus of Control scale (19--) was used in this study. This scale consists of 23 question pairs that utilize a forced-choice response format. Statements related to an internal orientation are paired with external statements. A score of 0 is given to an internal response and a score of 1 is attached to an external response. Thus higher scores reflect an external orientation and lower scores indicate an internal locus of control. Scores within this study ranged from 6 – 20 with a mean of 14.75 and a standard deviation of 2.76 for the pretest, and a range of 5 -24 with a mean of 14.00 and a standard deviation of 3.84. The alpha reliabilities for the pre and posttests are .64 and .68 respectively.

Self-Efficacy

Self efficacy was defined according to four dimensions: Effectiveness in social relationships, communicating with people who are different than yourself, the ability to learn science and information technology, and the ability to pursue academic processes. A total of twelve items was used to measure these dimensions. Students were asked to describe how well they could do things pertaining to these dimensions. Each item consisted of seven response possibilities with four anchors ranging from “not well at all” to “very well”.

1. Effectiveness in social relationships consisted of the following two items:

- a. How well do you communicate in a group of people?
- b. How well do you socialize with other people?

Alpha Reliability: .78/Pretest .88/Postest

2. Communicating with people who are different than yourself was measured with the following three items:

- a. How well can you communicate with people of other ethnic groups?
- b. How well can you get along with people who are "different" than yourself?
- c. How well do you communicate with people who have different values than yourself?

Alpha: .82/Pretest .85/Postest

3. The ability to learn science and information technology was measured by these two items:

- a. How well can you learn science?
- b. How well can you learn computers?

Alpha Reliability: .55/Pretest .58/Postest

4. The ability to pursue academic processes was measured by the following:

- a. How well can you participate in classroom discussion?
- b. How well can you use the library to get information for class assignments?

Alpha Reliability: .34/Pretest .65/Posttest

Nine items were utilized within the posttest to measure the student's evaluation of the benefits of the program. These benefits parallel the dimensions incorporated within the self-efficacy measurements. Students were asked to respond to the following items in regards to "After completing the Summer Institute..."

1. I can better communicate with people of other ethnic groups?
2. I can better understand other people's point of view.
3. I can socialize better with other people.
4. I can understand science better.
5. I have more self-confidence.
6. I have a much better understanding of my goals in life.
7. I have a better understanding of the career that I want to pursue.
8. I learned new and valuable things about other ethnic groups.
9. I am more knowledgeable about the arts.

Each item utilized a five-point response format with five anchors ranging from Strongly disagree to Strongly Agree.

Results

Hypothesis 1: "Students will show a statistically significant increase in their emotional intelligence between the pretest and posttest."

The higher mean averages on emotional intelligence during the posttest in comparison to the pretest scores shown in Table 1, indicate that the deliberate psychological program did indeed have a positive impact on the students. These differences are statistically significant at the .001 level thus supporting hypotheses one.

Hypothesis 2: "Students will show a statistically significant increase in their internal locus of control between the pretest and posttest."

This hypothesis is not supported. No statistically significant difference is revealed between the measurements.

Hypothesis 3: “There will be a stronger positive correlation between emotional intelligence and locus of control within the posttest measurement than the pretest measurement.”

As revealed in Table 1, the correlation between EQ and LOC internalism is basically the same for both the pretest and posttest measurements, which does not confirm our hypotheses that the correlation will be strongest for the posttest. However, the correlation between these two factors for both measurements is relatively strong and statistically significant. This finding in and of itself is very important because it suggests that among gifted and talented students, higher levels of emotional intelligence are associated with higher levels of students feeling in control of their lives. This present study shows that the two concepts support each other within special educational programs for the gifted and talented. Table III shows the correlations between the sub-dimensions of EQ and LOC (posttest) as well as with the other factors examined within the study. Each of the EQ sub-dimensions is significantly correlated with LOC internalism. However, the highest correlation is revealed between LOC and the self-awareness EQ dimension. This finding lends credibility to the construct validity of our EQ measurement because the concept of LOC internalism is more conceptually aligned with the self-awareness dimension than the other three EQ factors. In other words, a person who believes that they are in control of their lives (internalism) is also likely to be one who understands their life (self awareness)

Hypothesis 4: “There will be a stronger correlation between emotional intelligence and the self-efficacy dimensions within the post measurement than the pretest.”

The hypothesis that EQ will correlate more strongly with the self-efficacy dimensions during the posttest in comparison to the pretest is supported for three of the four self-efficacy dimensions. The one self-efficacy factor that does not show an increase in correlation strength is academic pursuit. Neither of the correlations reveals statistical

significance as well. The support of these hypotheses for the other three self-efficacy factors describes the effectiveness of this particular summer institute's strategic planning. The relatively strong correlations indicate the saliency of EQ within programs that utilize a deliberate social psychological framework.

Hypothesis 5: “There will be a stronger correlation between locus of control and the self efficacy dimensions within the post measurements than the pretest.”

Table I reveals that only one of the correlations between LOC and self-efficacy is statistically significant. This finding negates the hypotheses that the correlation between LOC and the self-efficacy factors will be the strongest within the posttest.

Hypotheses 6: “A positive correlation will be revealed between EQ and each of the student’s evaluation of the program factors”

Table IV reveals that support for the hypotheses that EQ will positively correlate with the student evaluation factors is given for four of the eight evaluation factors explored within this study. Within this study, EQ is found to be correlated with student's perceptions that the summer institute was helpful in regards to 1) being able to communicate better with others of different ethnic groups, 2) socializing with others, 3) creating more self confidence, and 4) learning new and valuable things about other ethnic groups.

Hypothesis 7: “A positive correlation will be revealed between LOC and each of the student’s evaluation of the program factors.”

Two out of the nine student evaluation factors are shown to be correlated with internalism of LOC in Table IV. The hypotheses are supported only for these two factors: 1) understands goals better, and 2) learning new and valuable things about other ethnic groups.

Hypothesis 8: “Gender will moderate the relationships between EQ the post-test self-efficacy dimensions and each of the student evaluation of the program factors.”

The final hypothesis within this report predicts that gender will moderate the relationships between the post scores of EQ and LOC with the self-efficacy post scores and the student’s evaluation of the program. A moderator variable is one that alters the relationship between independent and dependent factors. The data revealed in Table V indicates that gender does indeed influence the correlations within this study. To begin with, the table reveals that the greatest amount of variance explained by EQ in the self-efficacy and evaluation factors is among the male student population. Strong correlations are shown between EQ, efficacy in communication with other ethnic groups, and social relations among both males and females. However, the correlation coefficients are stronger among males. This finding is basically indicating that emotional intelligence is a better predictor of these outcome factors among males than females. Theoretically, this may be suggesting that males require higher levels of emotional intelligence than females in order for them to perceive themselves as competent in forming effective communications with people in general, and with others who are ethnically different than themselves.

Table I. Comparison Between Pretest and Posttest Scores on Emotional Intelligence, Locus of Control, and Self-Efficacy

	Mean	N	Sd.	Paired Comparisons			
				Std Error Mean	df	t	Sig
Emotional Intelligence Pretest	83.54	57	7.98	1.01	56	-2.77	.007
Emotional Intelligence Posttest	86.35	57	9.09				
Locus of Control Pretest	14.75	57	2.77	.41	56	-.382	.704
Locus of Control Posttest	14.91	57	3.84				
Communicating with other Ethnic Groups - Pretest	15.86	57	2.67	.23	56	-2.74	.008
	17.79	57	2.70				

Communicating with other
Ethnic Groups - Pretest

Social Relationships Pretest	11.35	57	2.29	.27	56	-2.07	.043
Social Relationships Posttest	11.91	57	2.18				
Learning Science Pretest	10.54	57	2.09	.25	56	-1.71	.093
Learning Science Posttest	10.96	57	2.23				
Academic Pursuits Pretest	11.79	57	1.85	.11	56	-1.42	.162
Academic Pursuits Posttest	11.95	57	1.88				

Table II. Correlations Between Pretest and Posttest Scores on EQ, LOC, and Self-Efficacy Factors

N=57

	1	2	3	4	5	6	7	8	9	10	11	12
1. EQ Pretest	—											
2. EQ Posttest	.607**	—										
3. LOC Pretest	.368**	.208	—									
4. LOC Posttest	.264*	.362	.264*	—								
5. Pretest -Efficacy in Communicating With Other Ethnic Groups	.439**	.335**	.071	.012	—							
6. Posttest - Efficacy in Communicating With Other Ethnic Groups	.306*	.504**	.129	.069	.543**	—						
7. Pretest - Efficacy in Social Relations	.454**	.555**	.245*	.196	.510**	.362**	—					
8. Posttest - Efficacy in Social Relations	.355**	.550**	.078	.099	.428**	.784**	.578**	—				
9. Pretest -Efficacy Lear Science & Techn.	.210	.231*	.136	.172	.161	.276*	.119	.185	—			
10. Posttest -Efficacy Lear. Science & Tech.y	.028	.131	.198	.143	.023	.194	.107	.041	.629**	—		
11. Pretest -Efficacy Academic Pursuits	.389**	.502**	.182	.196	.279*	.370**	.457**	.482**	.459**	.374**	—	
12. Posttest -Efficacy Academic Pursuits	.414**	.525**	.135	.169	.307*	.439**	.352**	.485**	.373**	.373**	.899**	—

* p ≤ .05
** p ≤ .01

Table III. Correlations Between Post Scores of Emotional Intelligence, Locus of Control And Students Evaluation of Program Factors

N=57

	Emotional Intelligence Posttest	Locus Of Control Posttest
Communicate Better	.315**	.106
Better Understand Others	.123	.016
Socialize Better	.298*	.005
Understand Science Better	.072	.121
More Self Confidence	.364**	.090
Understand Goals Better	.059	.281*
Understand Career Goals Better	.053	.107
Understand People of Other Cultures Better	.236*	.212*
Better Knowledge of the Arts	.135	.152

* $p \leq .05$

** $p \leq .01$

Table IV. Correlations Between EQ, LOC and Student's Evaluation of Summer Institute.

N=57

	Emotional Intelligence Posttest	Locus of Control Posttest
Better Communicate Other Ethnic Groups	.315**	.106
Better Understand Others	.123	.016
Socialize Better With Others	.298*	.005
Understand Science Better	.072	.121
More Self Confidence	.364*	.090
Better Understand Life Goals	.059	.281*
Better Understand Career Goals	.053	.107
Learned Valuable things About Other Ethnic Groups	.236*	.212*
Better Knowledge of The Arts	.135	.152

* $p \leq .05$

** $p \leq .01$

Table V. Correlations Between EQ, LOC and Student's Evaluation of Summer Institute By Gender.

	Emotional Intelligence		Locus of Control	
	Posttest		Posttest	
	(n=24) Male	(n=53) Female	(n=24) Male	(n=53) Female
Efficacy in Communicating With Other Ethnic Groups	.576**	.465**	.241	.030
Efficacy in Social Relations	.616**	.524**	.374*	.058
Efficacy in Learning Science and Technology	.116	.054	.109	.178
Efficacy in Academic Pursuits	.623**	.495**	.398**	.057
Better Communicate Other Ethnic Groups	.521**	.158	.171	.063
Socialize Better With Others	.501**	.172	.160	.076
Understand Science Better	.063	.027	.187	.058
More Self Confidence	.475**	.294*	.328*	.037
Better Understand Life Goals	.017	.100	.240	.318*
Better Understand Career Goals	.313*	-.144	.132	-.236
Learned Valuable things About Other Ethnic Groups	.620**	.008	.389*	.126
Better Knowledge of The Arts	.424*	.060	.112	.288*

* p ≤ .05

** p ≤ .01

Discussion

This exploratory study of social psychological correlates within programs for gifted and talented students has revealed some very important findings that support the idea of designing deliberate psychological educational programs. To begin with, the increase in emotional intelligence between the pretest and posttest period is both significant and exceptional given the short time frame. This has not occurred by accident, but rather through strategic planning that incorporated specific social psychological

objectives. The structure and processes of this program was purposely designed to have an impact on these social psychological outcomes. Significant differences were found in the degree of LOC internalism between the pretest and posttest. However, this is not a surprising finding since the design of the summer institute is focused much more on enhancing social and emotional skills rather than self esteem or confidence

Secondly, the correlation findings of this study verify the importance of incorporating the concept of emotional intelligence within the design of programs for the gifted and talented. Furthermore, EQ was shown to be a better predictor than LOC for self-efficacy and students evaluation of the program. This is revealed in spite of the finding that EQ and LOC are statistically correlated. These findings seem to imply that EQ operated independently of personality factors such as LOC within this particular program. This in turn alludes to the robustness of the EQ construct.

EQ references the ability of a student to effectively engage in intrapersonal and interpersonal processes. Although gifted in intellectual areas, this group of students has been cited as being at risk in terms of their social and emotional development (Witkin, 1974; Delisle, 1984; Manaster & Powell, 1983). The lack of these skills has been stated to be associated with emotional pathologies among the gifted and talented such as depression, isolation, and suicide (Delisle, 1984; Whitmore, 1980). Such pathological outcomes of course can severely undermine a student's intellectual ability. It is this undermining of intellectual intelligence that many claim will circumvent the life success of this group of students (Goleman, 1995).

The finding that there is a much stronger correlation between EQ and other variables for males and females strongly suggest the need and importance of analyzing and understanding how the structure of educational programs for the gifted and talented may influence males and females differently. We strongly recommend that this type of analyses and planning be done simultaneously with the design of the program. Secondly, there appears to be a need to strategically include gender, as a program evaluation factor in order to obtain feedback on the nature of its influence within educational programs for the gifted and talented.

The results of this study imply that gifted and talented students should not be defined entirely by achievement but also by their ability to learn and master social and emotional skills. “If we know that intelligence is multiple, then it just makes sense to target many dimensions” (Fogarty, 1998, p. 655).

Shortcomings of Research

This present study was able to explore and document some very important relationships among socio-emotional factors within a program targeted for gifted and talented students. However, as in any exploratory investigation, some very critical lessons were learned. Foremost of these is the measurement of emotional intelligence. A large number of instruments now exist purporting to measure this construct. Although our study revealed relatively high reliability scores for the measurement used, the construct was nevertheless measured through the student's self-evaluation. This process is likely to have a certain amount of invalidity due to the student's overestimated perception of self and even through underestimation. Perhaps a more valid, although more complex method of measurement would be to measure a student's EQ by obtaining the evaluation of other students and staff of a particular student. There is some evidence that EQ measurement by others is more valid than self-ratings (Casey & Mayer, 2000).

Secondly, future investigations on this topic should incorporate more measurements of social psychological characteristics of students (for example, introversion - extroversion, authoritarianism, etc). This would allow for a more comprehensive analysis of factors correlated with EQ within these types of programs. Such information would be valuable in designing deliberate social-psychological education programs.

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