

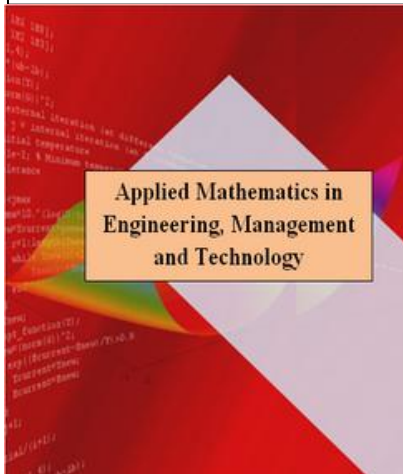
THE IMPACT OF EMOTIONAL INTELLIGENCE ON ACADEMIC ACHIEVEMENT AMONG FEMALE HIGH SCHOOL STUDENTS IN ASSAD ABAD CITY OF HAMEDAN

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Abstract

New psychologists believe that emotional intelligence has a significant impact on the success of individuals. This study aimed at investigating the relationship between emotional intelligence and academic achievement among female third grade high school students in Assad Abad city of Hamadan. In this study, the correlation method was used as the research method. All high school students in Assad Abad city constitute the study population of this study. The sample size was 163, which was selected by simple random sampling method. Using Bar-on emotional intelligence questionnaire, the data was collected. Content validity of this questionnaire was confirmed once again by experts, and its reliability was determined to be 0.085. In this study, the mean and standard deviation, were used to describe the data, and Pearson correlation analysis and stepwise regression were used to analyze the data. All these procedures have been performed by using SPSS software. The results, expressed that; there is no significant relationship between

emotional intelligence and academic achievement. Finally, the academic achievement can be predicted only on the basis of the interpersonal relationships factor.

Argument: through emotional intelligence, one cannot predict the academic achievement. Hence, these two components do not have correlational relationship with each other, and the academic achievement cannot be predicted by the increase or decrease in emotional intelligence. In this study, only the interpersonal relationships factor has a significant relationship with the academic achievement.

Key words: emotional intelligence, academic achievement, high school students

Introduction

As the country's main pillar of educational system, students have a special role in achieving the goals of the educational system. The aim of educating students is to provide them with progress in the field of education. Investigation of factors affecting academic achievement is a complex issue, because here, a multi-dimensional approach comes in which is related, in a delicate form, to the student's physical, social, cognitive and emotional growth. Many researchers have measured, evaluated and assessed the effect of mental and cognitive abilities on the academic achievement. However, over time, it becomes clear that although mental and cognitive abilities of students, are partly related to the academic achievement, and they can largely predict the academic achievement, but they are not the only key to predicting academic success. From the beginning of the 1990s, with the introduction of a new concept, called "emotional intelligence", the debate about the psychological effects of emotional and adaptive functions, and also the nature of the relation between emotion and cognition, took on a new dimension. Some experts' view suggest that IQ cannot fully explain the different fate of people, who have the same educational opportunities and conditions. Academic intelligence (IQ) alone cannot provide readiness in people for proper coping, within the ups and downs of life, and cannot necessarily ensure the welfare, social position and a sense of happiness in life. In fact, only 20% of people's success depends on IQ. The rest depends on emotional and social intelligence (Mohammadi, 1389). And while a number of psychologists reject the theory of the impact of emotional intelligence on success and academic achievement, others confirm it.

Over the years, psychologists believed that a person's IQ, shapes his talent, and according to this structure, they selected top students and top job owners. Gardner calls this era as "IQ thinking era". (Bloom, 1982, translated by Saif, 1383). He rejected these ideas, saying that, there is no integrated unit in intelligence, which guarantees success in life, rather, a wide range of various intelligences are involved. After years of research, psychologists such as Peter Salovey and John Mayer (1990), introduced emotional intelligence theory and emphasized its importance and its impact on the success. After presenting this theory, a lot of researches were done on emotional intelligence and its relation to various aspects of human life. Including; The relationship between emotional intelligence and leadership (Charbonneau & Adelheid, 2002; Zhou & George, 2003), social satisfaction (Austin et al., 2005), interpersonal relationships (Schutte et al., 2001; Lopez et al., 2003), social adaptation (the Van et al., 2004), behavior (Trinidad, 2004), and mental health (Taylor, 2000). In addition, the issue of concerning about emotional intelligence is considered as one of the main tasks of educational systems by many experts (including Golman, 1995; Salovey and Mayer 1990; Bar-on, 1997). Researchers have noticed, in recent years, a series of "non-cognitive factors" which can be effective in educational attainment and overall success. (Golman, 1995 and the Bar-on, 1997- cited in Rezaei) In explaining the importance of non-cognitive factors in success, the researchers have achieved remarkable results, and have shown that if these non-cognitive measures for predicting success, are added to cognitive intelligence, predicting success, is significantly more likely to be possible, than to use only cognitive intelligence measures. Emotional and social skills and abilities which are known as emotional intelligence, are among strong predictors of academic achievement (Parker et al., 2004; Bar-N-1999; quoted Rezaei). In this study, regarding the traditional culture prevailing in this small city, a question arises; whether emotional intelligence in this cultural environment, has the predictive power to predict students' achievement? Due to the large dimensions of emotional intelligence, this research can help us understand the effective dimensions of emotional intelligence on students' achievement.

According to stated issues, the objectives of this study are as follows:

The main research question is; the relationship between emotional intelligence and academic achievement in female third grade high school students.

Secondary objectives of the study:

1. There is a significant relationship between academic achievement and self-actualization.
2. There is a significant relationship between Emotional self-awareness and academic achievement.
3. There is a significant relationship between interpersonal relationships and academic achievement.
4. There is a significant relationship between the control of impulsivity and academic achievement.
5. There is a significant relationship between empathy and academic achievement.

Method

Present study, from the goal point of view is an applied one, and it is a correlational research from the methodology perspective.

Population of this study consisted of all female third grade high school students in Assad Abad city of Hamadan, in the 93-94(2014-2015) academic year, who had enrolled in eight schools.

A Krejcie & Morgan table was used to calculate the sample size. The significant sample size of 163 was obtained, through performing the necessary calculations. A simple random sampling method was used for the random selection of the sample. For this purpose, according to the proportion of students in each high school to the total population, multiplied by the sample, number of samples in different high schools was calculated as follows; Shahid Soleimani high school 46, Sobh-e-Danesh high school 15, Pooyesh high school 6, Khadija high school 16, Roshd high school 5, Payam high school 7, Ebtekar high school 11, and Zeinab high school 57 people. The students of each high school were selected randomly out of the total number of students in each school. Due to the possibility of not returning or not responding to the questionnaire by the participants, 200 questionnaires were distributed among the students of eight schools, out of which a total of 180 questionnaires were analyzable.

In this study, the Bar-On emotional intelligence questionnaire was used to measure emotional intelligence. We used this questionnaire, because it covers the use of emotional intelligence variables affecting academic achievement, well. The exam answers also, has been set based on a Likert scale of five degrees (strongly agree, agree, somewhat, disagree or completely disagree). The test measures include:

Emotional self-awareness, self-expression, self-actualization, independence, empathy, social responsibility, interpersonal relations, realism, flexibility, problem solving, stress tolerance, impulse control, optimism and joy.

The questionnaire contains 90 questions, which is the first trans-cultural questionnaire, assessing emotional intelligence. In Iran, the test was conducted in three stages, and after some changes in the original questionnaire, deleting or changing some questions, and resetting the questions of each scale, the questionnaire of 117 questions was reduced to 90 items. And the necessary measures were carried out regarding the quality of its psychometrics. (R. Samooyand her colleagues in SinaBehavioral Sciences Research Institute, 1384). Two basic types of reliability studies were made on (EQ-i); internal consistency and test-retest reliability (Bar & Parker, 2000). In the test-retest reliability study which was conducted in three phases, using Cronbach's Alpha the test reliability was 0.093. The implementation of a same or parallel form, showed the analysis of the results of the relationship between the information from interviews and tests by SPSS software at a significant level of 0.001. And the reliability of the test using Even-odd method, is significant at $p < 0.001$, so, this method was used in this research, too. Using Even-odd method, the reliability of the questionnaire was 0.099 in Bar-On, and 0.085 in the present study.

Several validity studies were done on the (EQ-i); face validity, content factor, convergent and divergent construct, criteria pledge, diagnostic and predictive validity which were approved by the experts and professors. To measure the students' progress, grade point average (GPA) of each of the students was taken into consideration. The data were analyzed, with the help of SPSS software, and using descriptive statistics methods (standard deviation, mean, coefficient of dispersion, minimum and maximum statistics), and inferential statistics methods (Pearson correlation coefficient test, and stepwise regression).

Results

Table 1: description of the grade point average (GPA) of girls

row	choices	n	percent	Percentage of Frequency of condensation
1	12-14	37	22.6	22.6
2	15-17	59	35.8	58.4
3	* 18-20	65	40.1	98.5
4	No answer	2	1.5	100
	Total	163	100	

(Diagram=3)

Average of 37 students (22.6%) was between 12 to 14; average of 59 students (35.8%) was between 15 to 17, and average of 65 (40.1%) of the students was between 18 to 20, respectively. Hence, the lowest frequency, is related to the average range of 12 to 14, and the highest frequency, is in the average range of 18 to 20. In addition, 2 (1.5%) of female students, did not mention their average.

The normal distribution of female students' Emotional intelligence

Table 2. The mean and standard deviation of emotional intelligence questionnaire, by phrases, for the entire sample, in the studied high schools

The number of the statement	Mean	standard deviation	C.V
Statement 1	4.27	1.062	0.248

Statement 2	2.82	1.311	0.464
Statement 3	3.95	1.069	0.270
Statement 4	3.40	1.097	0.322
Statement 5	4.02	1.060	0.263
Statement 6	3.69	0.958	0.259
Statement 7	3.40	1.035	0.304
Statement 8	3.47	1.215	0.350
Statement 9	3.55	1.012	0.285
Statement 10	3.93	1.005	0.255
Statement 11	3.18	1.310	0.411
Statement 12	3.29	1.243	0.377
Statement 13	4.16	1.055	0.253
Statement 14	3.70	1.089	0.294
Statement 15	3.32	1.112	0.334
Statement 16	3.42	1.038	0.303
Statement 17	2.42	1.299	0.536
Statement 18	2.99	1.238	0.414
Statement 19	3.22	1.106	0.343
Statement 20	2.98	1.218	0.408
Statement 21	3.40	1.261	0.370
Statement 22	3.71	1.149	0.309
Statement 23	3.82	0.951	0.248
Statement 24	3.92	0.971	0.247
Statement 25	4.10	1.091	0.266
Statement 26	3.55	1.182	0.332
Statement 27	3.43	1.203	0.350
Statement 28	3.95	1.156	0.292
Statement 29	4.01	1.170	0.291

The rest of Table 2. The mean and standard deviation of emotional intelligence questionnaire, by phrases, for the entire sample, in the studied high schools

The number of the statement	Mean	standard deviation	C.V
Statement 30	3.73	1.140	0.305
Statement 31	3.58	1.157	0.323
Statement 32	3.67	1.235	0.336
Statement 33	2.50	1.350	0.540
Statement 34	3.02	1.234	0.408
Statement 35	2.79	1.095	0.392
Statement 36	2.90	1.361	0.469

Statement 37	3.30	1.287	0.390
Statement 38	3.80	1.148	0.302
Statement 39	3.68	1.168	0.317
Statement 40	3.18	1.274	0.400
Statement 41	3.30	1.304	0.395
Statement 42	3.55	1.156	0.325
Statement 43	3.59	1.184	0.329
Statement 44	3.80	1.070	0.281
Statement 45	3.44	1.305	0.379
Statement 46	3.88	1.117	0.287
Statement 47	3.87	1.151	0.297
Statement 48	3.27	1.177	0.359
Statement 49	3.42	1.170	0.342
Statement 50	2.95	1.360	0.461
Statement 51	3.71	1.173	0.316
Statement 52	3.80	1.081	0.284
Statement 53	3.95	1.014	0.256
Statement 54	3.85	1.044	0.271
Statement 55	3.73	1.096	0.293
Statement 56	3.40	1.291	0.379
Statement 57	3.35	1.168	0.348

The rest of Table 2. The mean and standard deviation of emotional intelligence questionnaire, by phrases, for the entire sample, in the studied high schools

The number of the statement	Mean	standard deviation	C.V
Statement 58	3.31	1.215	0.367
Statement 59	3.55	1.029	0.289
Statement 60	3.56	1.203	0.337
Statement 61	3.48	1.058	0.304
Statement 62	3.80	1.166	0.306
Statement 63	3.33	1.140	0.342
Statement 64	3.59	1.072	0.298
Statement 65	3.72	1.224	0.329
Statement 66	3.60	1.159	0.321
Statement 67	3.09	1.295	0.419
Statement 68	3.65	1.156	0.316
Statement 69	3.69	1.077	0.291
Statement 70	3.77	1.079	0.286
Statement 71	3.51	1.244	0.354
Statement 72	3.52	1.184	0.336
Statement 73	3.74	1.142	0.305
Statement 74	3.90	1.160	0.297
Statement 75	3.41	1.217	0.356
Statement 76	3.56	1.142	0.320
Statement 77	3.08	1.307	0.424
Statement 78	3.21	1.240	0.386
Statement 79	3.28	1.213	0.369
Statement 80	3.12	1.183	0.379
Statement 81	3.24	1.223	0.377
Statement 82	3.25	1.275	0.392
Statement 83	3.86	1.003	0.259

Statement 84	3.14	1.207	0.384
Statement 85	3.59	1.049	0.292
Statement 86	3.53	1.219	0.345

The rest of Table 2. The mean and standard deviation of emotional intelligence questionnaire, by phrases, for the entire sample, in the studied high schools

The number of the statement	Mean	standard deviation	C.V
Statement 87	3.45	1.300	0.376
Statement 88	3.68	1.108	0.301
Statement 89	3.78	1.277	0.337
Statement 90	3.21	1.370	0.426

Standard deviation and coefficient of dispersion of any of the items in emotional intelligence questionnaire have been offered. According to the table above, the first statement with an average of 4.27, is the highest average, and the seventeenth statement with an average of 2.42, is the lowest average. And given that the total average, which is obtained from the sum of the averages divided by the number of the statements, is equal to 3.28, it can be concluded that the seventeenth statement is less absorbent, and by contrast, the first statement has had a large amount of absorption, and thus has attracted many people.

Also, in order to make accurate judgments about homogeneity or distribution of each of the statements, the coefficient of dispersion of each statement, was calculated, and is shown under the C.V. label in the table. The formula used for calculating the dispersion coefficient, is $CV = S / M$. where S is SD of the scores, M is the mean, and CV is the coefficient of dispersion. Due to the distribution coefficient of statements, we can say that the twenty-fourth statement, with a coefficient of dispersion of 0.247, has the lowest dispersion, and the thirty-third statement, with a coefficient of dispersion 0.540, has the highest dispersion, and this indicates that most of the sample group, possessed the desired features in the twenty-fourth statement, and vice versa, most of the sample group, did not possess the desired features in the thirty-third statement.

Table 3. Emotional Intelligence female students

Row	Variable name	The lowest	The highest	Mean	Standard deviation
1	emotional intelligence	20	415	275.34	42.34

(Expected average = 270)

The mean and standard deviation of EI of female students, was calculated to be 275.34 and 42.34, which is above the expected average. And also, the minimum and maximum EI were 20 and 415, respectively.

Regarding the relationship between emotional intelligence and subsets of emotional intelligence – i.e. self-actualization, self-awareness and emotional empathy, impulse control, with the academic achievement, the obtained rate of significance of Pearson correlation coefficient test, was more than 5% ($\alpha > 0.05$), which means that while H1 is rejected, the null hypothesis (H0) is not rejected. Therefore, we say that there is significant relationship between them, in other words, they are correlated with each other. But the significantly strong negative correlation in the relationship between interpersonal relationships with achievement, less than 05/0 is obtained, which means a rejection of the null hypothesis is assumed and confirmed. Therefore, we say that there is a significant relationship between them, in other words they are correlated with each other. Test results are presented in the following tables.

Table 4 - The relationship between emotional intelligence and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	emotional intelligence	Pearson	0.090	0.170	0.05
2	academic achievement				

Table 5 - The relationship between self-actualization and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	self-actualization	Pearson	0.044	0.691	0.05
2	academic achievement				

Table 6 - The relationship between emotional self-awareness and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	emotional self-awareness	Pearson	0.030	0.743	0.05
2	academic achievement				

Table 7. The relationship between interpersonal relationships and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	interpersonal relationships	Pearson	0.180	0.030	0.05
2	academic achievement				

Table 8. The relationship between impulse control and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	impulse control	Pearson	0.013	0.695	0.05

2	academic achievement				
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Table 9. The relationship between empathy and academic achievement

Row	Variable name	Correlation coefficient	r	Significance	α
1	empathy	Pearson	-0.048	0.803	0.05
2	academic achievement				

The implementation of stepwise multiple regression, in explaining and predicting the dependent variable of academic achievement, by the components of emotional intelligence:

The results of stepwise regression showed that only the interpersonal relationships variable was able to explain the dependent variable of the academic achievement of female high school students in the city.

Summary of results of stepwise regression in predicting academic achievement:

Coefficients of variation (R^2); as the table shows, the determined coefficient was 0.029. This means that, the regression model is able to explain 0.029 of the dependent variable of the academic achievement.

Table 10: Coefficient of Determination of Regression Model

Model	R	R^2	RAdjusted	Error SD
*1	0.171	0.029	0.023	1.253

* Predictor variables: interpersonal relations:

ANOVA (F analysis):

Given that the statistics of F, is significant, the variable entered in the regression model, was able to explain and predict changes in the dependent variable of the academic achievement:

Table 11 (F test results applied to the regression model of high school students in the city)

Sources of changes	Sum of squares	Degree of freedom	Mean square	F	Significance
Inter group	7.567	1	7.567	4.817	0.030
Within the group	251.377	160	1.571		
Total	258.944	161			

Reviewing the regression model, and offering a formula for predicting the variability in female high school students' achievement in the city:

As it is clear from Table 6, based on the factor (beta), for any unit change in the interpersonal relationships variable, there will be 0.171 unit change in female high school students' achievement.

Table 12. Implementation of multiple regression, in determining the effect of the independent variable of interpersonal relationships, on the dependent variable of female third grade high school students' achievement in this city:

model	Notstandardized coefficients		standardized coefficients	t	Significance
	B	Error SD	β		
(a) Fixed value	15.985	0.481		33.219	0.000

interpersonal relationships	0.048	0.022	0.171	2.195	0.030
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Regarding the coefficient B, which is used to predict the dependent variable changes, we can present the following formula:

$$Y = a + bx$$

$$Y = 15.985 + 0.048x$$

Discussion and Conclusion

This study was conducted for evaluating the status of Emotional Intelligence among female high school students in Assad Abad city of Hamadan, and determining its relationship with academic achievement of the students. The analysis of research data, resulted in a statistically 99% significance, and it can be generalized to the population. Investigating the status of Emotional Intelligence among high school students in the city showed that, in general, there is not a significant relationship between emotional intelligence and academic achievement of the students, and there only was a significant relationship between the component of interpersonal relationships and academic achievement. Also, the researcher in her study, came to the conclusions that, due to space limitations and lack of educational and recreational facilities among school students in the city, including; Lack of play grounds in schools, and the lack of proper educational environment, such as; teachers' lack of awareness of the impact of emotional intelligence training on educational attainment, as well as the lack of reinforcement in educational attainment of students who have high emotional intelligence, and in fact, inflexibility of teaching methods, and assignment-based structure of education, in the city where this study was conducted, and in general, the traditional culture of the city, has led to the fact that the desire to learn emotional intelligence, does not show significant correlation with academic achievement, and the students of this grade cannot raise their emotional intelligence easily, and do not understand its importance in their life.

Although different views have been expressed on proposed measures to increase emotional intelligence among the students, and whether one can teach emotional intelligence to students or not, all experts agree on the fact that the individual's emotional intelligence, is deeply influenced by the nature of his/her nurturing period at home, and his/her interactions with parents in childhood. Many experts, despite of the impact of childhood experiences on emotional intelligence, are optimistic to raise and teach it to people (Golman, 1995). The situation is similar, in the case of the components or subsets of emotional intelligence, which were a part of the objectives of the present study. Regarding the relationship between the interpersonal relationships of emotional intelligence, which, in this study, was under investigation, and was the predictor factor of academic achievement, it can be said that:

Interpersonal relationship, is a process in which a person, through verbal and nonverbal messages, convey his/her feelings and information to another person or other people. This ability, leads to strengthening warm and close relations with others, resolving conflicts and oppositions, asking for help from other students, and also enjoying having close friends, and as a result leads to academic achievement.

Finally, we provide the definitions of those emotional intelligence components, which, in this study, had no effect on academic achievement:

Self-awareness:

" Self-awareness ", the ability of knowing oneself, and understanding one self's strengths and weaknesses, which leads to the selection of appropriate learning strategies, and monitoring them. Being aware of one's abilities, propensities and personal interests can contribute to the self-awareness. (Van Roy, 2005).

Self-regulation:

Self-regulation, is the creation of a state within a person, which makes him inclined to perform his duties without external factors having him under control. The goal of self-regulation, is to develop a healthy personality, who is mentally mature, and resists against a variety of problems, and chooses his way based on his own idea, and in addition to the work environment, he is self-regulated in his personal life, too. (Karbassi, 1385).

Self-actualization:

Self-actualization, is the ability to use all your positive points, and as a result to be happy, and it is one of the main theoretical constructs of humanistic psychology. In humanistic psychology, we encounter with a different methods and expressions. There, people debate on the positive aspects of human. And scientific approach in its specific meaning, is considered as an obstacle to the study of all human aspects. After 5 years from its initial formulation by Rogers (1951) and Maslow (1954), Self-actualization construct is still an effective structure in many respects, with important applications in psychology, and is considered to have a high value of exploration.(Aging, 1388).

Empathy:

the willingness of a person to respond to the emotional state of other people, who have the same emotional state as his, is called empathy. This means that the person can understand other people's problems, while he himself is not in the same circumstances, and value and respect their views and feelings. Empathy has some effects in a person's life, such as saving people from loneliness.

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