

The Study of Some Cognitive and Non cognitive Variables as Predictors of School Success and Failure

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Abstract: The purpose of the present study was to investigate intelligence, emotional intelligence, academic self-concept, locus of control and socio-economic status as the predictors of academic success and failure of first year high school male students. Thus, from all students, 160 students selected randomly. The instruments were as follow: Petrides and Furnham Emotional Intelligence Inventory, Academic Self-concept Inventory, Rotter's Locus of Control Inventory and a Socio-economic Status Inventory. Also Raven's Standard Progressive Matrices score were used from the students personal files. Discriminant analyses revealed that except for social skills, other variables of this study; including IQ, emotional intelligence, academic self-concept, locus of control and socio-economic status; predicted academic success and failure, significantly. Finally, results and the model presented in this study are discussed in detail.

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1. Introduction

Academic failure is one of the important concerns of families and education experts. Every year a great number of students in different countries encounter academic failure. This phenomenon in addition to the great economical damages has adverse effect on students and makes the families concerned. Therefore, this case should be analyzed carefully as one of the important social and educational problems and there are different factors on educational success and failure of students that determination of the most important factors is effective to help teachers and parent-teacher for educational planning, assessment and educational success of students. Educational success and failure are discussed a lot. The role of some factors on educational success and failure or the share of each factor is always of interesting fields for education researchers and psychologists. One of these influential factors is IQ and mental abilities (Biabangard, 2001). The investigations done in this field indicate the reality that successful students necessarily are not smart and unsuccessful students are not surly students with low IQ, but a great number of students with average or high IQ fail in their lessons and the students with lower average IQ can achieve as much educational goals (Nazari, 1998). Also, other researches (as Carlson & Johnson, 1988; Shofield & Ashman; quoting Glover & Bruning, 1990; Translation of Kharazi, 2004) show that intelligent students regarding working memory, perception and access to long-term memory and information processing scale are better than normal students.

Today IQ is not very important as before and it is said that any person progress in life with his/her own characteristics ladder and between two students with similar IQ, the one who works hard is more successful (Biabangard, 2001). Goleman (1995) believes that IQ cannot ensure success beyond the school and characteristics factors including, motivation, creativity, inclination to do hard works and EQ play important role in achieving success. Therefore, considering the limitation of prediction ability and determination of education progress variance of recognition variables, the researchers emphasized more on the necessity of considering extensive educational success predictions. Here the role of social and excitement competencies in education success is one of the modern fields of research.

Theoretical origin of these researches is the concept of EQ proposed by Salovey & Mayer (1990, quoting Shalchi, 2007). In addition to IQ, another factor in the education success or failure is EQ. In this case, psychologists believe that to educated people to have strong self-concept and be successful in education, it is necessary to take attention to both IQ and EQ (Nori Emamzadehi, 2004).

Academic self-concept is also the most important issue in success or failure of students in education. The way the student see him/herself has great influence on education performance and the positive and negative self-concept of people is formed and established by the feedback receiving from others and they are influenced by the results of

their performance. Seligman (1974, quoting Nazari, 1998) states that unsuccessful students have negative beliefs about their abilities and probably at first there had little effort, and due to the fact that the effort was vane, they couldn't achieve success. So, they concluded that they are not able to achieve success. Also, about academic self-concept Seif (2005) believes that a student who had successful experiences in the school has great interest in learning different textbooks or in general in the school itself. So, he/she can have a positive concept about himself. In addition, other researches (Byrne, 1984; Bridgman, 1975, quoting Karimzadeh, 2005) have reported positive and high correlation coefficient (0.40 to 0.60) between self-concept and academic progress. Also, academic self-concept can be influenced by internal and external evidences of people. Because, today locution of control is the important issue in academic success and failure of students. Seif (2005) also states that the way (perception and interpretation) people think about success and failure may influence their academic self-concept and changing documents of learners show them that achieving success and learning control is as much controlled by them and this is not luck that brings success for them.

Researches show that the people with internal control in comparison with the people with external control in verbal tests are very active, explorer, inclined to progress, powerful and independent, responsible, sociable, patient and strong thinkers (For example see Karbalayi Harfte, 2004). Of other important issues influencing academic success and failure is their social-economical status. Generally, environmental deprivations and the lack of mental and social incentives are important factors of student's academic success. A considerable percent of students who fail in education, are forced to go to exceptional schools and they are regarded as << culturally retarded >> people and students who belong to families with low social and economical status, are faced at the same time with economical and cultural poverty and are less successful in education (Biabangard, 2001). The main question of the current paper is that "Can IQ, EQ, academic self-concept, locus of control, social-economical status can predict academic success or failure?"

The subject of the research is analyzed also in abroad. Stein mayr, Ziegler & Trauble (2009) in a research on IQ, for grade 11 and 12 students in Germany found that the paying attention and supporting students influence IQ and indeed the educational performance and both are predictors of school educational performance.

Grayson (1999) in a research stated that IQ is the best predictor of education success, because in

this research the average IQ of 15% of unsuccessful students was under 110. Also, Alexander (1985) in a study analyzed the different opinions of smart and normal students at 12 to 17 age and indicated that smart students know their superiority due to internal motivation factors such as effort and feedback. He concluded that the reason of smart student's success is the internality of their locus of control.

Marjorie, Parker, Wiener, Watters, Wood, & Oke (2009) in a research on 192 girl and boy students from Canada showed that IQ, EQ and social support predict academic success. In addition, the research of Parker & Marjorie (2006) in Canada indicated that successful group who were more stable in education in comparison with unsuccessful group, have more interactions, interpersonal adaptation and ability to control stress. Therefore, he concluded that EQ is a good predictor for academic success ($p < 0.001$).

Suntonrapot (2009) in research on 820 nine-grade students in Tiland by multiple correlation, MANOVA repeated measures, showed that there is correlation between academic and non-academic self-concept and academic progress. This model is compatible with experimental data.

Pullmann & Allik (2008) in a national research on 4572 Estonian students found that general and education self-esteem are strong predictors of academic progress in school and academic failure cause defensive mechanisms such as pessimism toward educational abilities. Also, Wilkins (2003, cited in Kashkulinejade kuhi, 2005) found that there is correlation between self-concept and academic progress such as progress in mathematics.

Hansford & Hattie (1982, cited in Javir and Sanchez, 2005) in his research identified the relationship between academic self-concept and academic progress about 0.77 to 0.96. Uguak, Elias, Uli & Suandi (2007) in a research on 210 foreign students living in Malaysia found that locus of control has a meaningful relationship (0.52) with academic progress. Hoover (2003) also in a study on southern Carolina students indicated that locus of control predicts 49 to 53% variance of academic success. Donald & Wessler (1994, cited in Soleimani nejad, 2002) in some researches expressed that people who attribute their successes to external factors, are more stressed and this avoids success expectancy for them and this person will be doubtful of his abilities to get successful.

O'Connor (2008) in a study on the social-economics status revealed that the parents education level, cultural, social and interpersonal deprivations are related to academic failure. Also, Pain & Bidel (1998, cited in Caldas, 2000) carried out a research in Louisiana of America and indicated that social-

economical status predict variance of 45.5% and poor families with two children in comparison with poor families with only child have more negative influence on academic progress.

Regarding the current research subject, some researches' are done in our country. Naghibi (1995) in a research on third guidance school boys in Ahvaz revealed that there is positive and meaningful relationship between IQ and students academic performance in $P=0.001$ level ($r=0.159$). Alizadeh Darbandi (2006) in a pilot research on high school girl students in Mashhad showed that excitement skills education including adaptability, overcome stress meaningfully promote EQ that improve mental health and success in life and education. Also, the results of Dehshiri (2006) research on 153 girl and boy students in high school revealed that there is a meaningful correlation between EQ and academic progress. Regarding academic self-concept Karimzadeh (2005) in a research about the relationship between general and academic self-concept with the academic progress among girl students of second of high school majoring mathematics and humanity in region 6 of Tehran showed that two groups have meaningful difference in $p < 0.0001$ in terms of general and academic self-concept and the more positive the academic self-concept, the more academic progress. Tahernejad (2004) in a research on 390 students of Shahid Beheshti University revealed that there is a meaningful relationship between locus of control and academic progress. Also Shahraray and Soleimani nejad (2001) in a research on 150 students of third of high school majoring in mathematics in Tehran showed that there is negative relationship between external control source with academic progress from luck aspect and internal control source has positive relationship with academic progress.

Lavasani and Dorani (2004) in a research titled " The review of the relationship between personal and family characteristics with academic progress of psychology and educational science students of Tehran University by regression analysis concluded that education, fathers job, family income, living condition and diploma average has a meaningful relationship with academic progress of students ($p < 0.01$)

By reviewing the results of the previous researches, we can find that the major problem of these researches is that they have studied limited variables separately while to understand the prediction of academic success or failure it is necessary that in a uniform research IQ, EQ, academic self-concept, locus of control and social – economic status should be analyzed.

Considering the role that related literature expresses for the current research variables, the general goal of this research is that by IQ, EQ, academic self-concept, locus of control and social-economic status as prediction variables, the success or failure of first of high school are predicted.

2. Methodology

Statistical population of this research is including all successful boy students (passed) and unsuccessful students (failed) of first high school. After making a list of the names of all passed and failed students, 225 successful students (passed) and the same number of unsuccessful students (failed) was selected as simple random and questionnaires were given to them. After putting aside incomplete questioners and the people who did not fill the questionnaire, the data of 160 successful students (passed), and 160 unsuccessful students (failed), were analyzed. It is worth to mention that successful students (passed) were randomly selected from the same school that unsuccessful students (failed) were studying.

Research instruments

1) Ravens intelligence test

Raven's Progressive Matrices were built in England by Raven in 1954 and it aimed to measure general intelligence. This test required finding reasonable relations in abstract matters and it was recognized as the best criterion for general intelligence factor from England psychologists. (Anastasi, 1976, cited in Sepahvandi, 2006). This test is consisting of 60 matrices in which some part is eliminated and the subject should find the deleted section among 6 or 8 different choices. The test cases are divided into 6 groups and each group is including 12 cases in which difficulty level is increasing gradually. In the first cases, only true recognition is important but in difficult cases of scale, the design change and other reasonable relations are discussed (Sepahvandi, 2006). Raven's Progressive Matrices is analyzed from reliability and validity in different forms. From re-test reliability aspect, correlation coefficients range is from 0.85 to 0.96 and from split-half reliability the range is 0.88 to 0.97 (Shekarkan and Haghghi, 1994, cited in Sepahvandi, 2006). The power of progressive matrices in the prediction of academic success is reported as between 0.35 to 0.65 (Baraheni, 1985, cited in Falahati, 1999). Sepahvandi (2006) calculated the reliability of this test by split half method as 0.89. From validity aspects, matrices are correlated with the student's scores. For the latter correlation the range is reported from 0.30 to 0.80 (Sepahvandi, 2006)

2) EQ questionnaire of petrides and furnham

In this research EQ scale of petrides and furnham (2000, cited in Ali Akbar Dehkordi, 2007) is used to measure EQ

This scale is made with the change of shot scale (1998, cited in Ali Akbar Dehkordi, 2007) and by using factors analysis method on the analysis of this scale. Petrides and furnham 2000, cited in Ali Akbar Dehkordi, 2007) believed that by modifying this scale, they could identify people who need guidance and counseling. In addition, this questionnaire comprises 30 items, measuring the characteristics of EQ in four components including optimism, emotion perception (self and others), emotion management and social skills. In half of the questions in petrides and furnham test, scoring method is reversed (Guesstlow & Guesstlow, 2003, cited in AliAkbar Dehkordi, 2007).

Petrides and furnham (2000, cited in Ali Akbar Dehkordi, 1997) reported reliability of EQ scale and sub scales with Cronbach's α 0.76 to 0.86. In addition, AliAkbar Dehkordi (2007) reported the reliability coefficient of all the scale by Cronbach's α as 0.77 and for sub scales as 0.70, 0.76, 0.77 and 0.75. In the current research the reliability of the test by Cronbach's α and split-half coefficients for all the questionnaire is obtained respectively as 0.67 and 0.65 and for sub scales it was obtained respectively 0.39, 0.62, 0.34 to 0.55. Petrides and furnham (2000, cited in Ali Akbar Dehkordi, 1997) reported its high internal sensitivity to determine the validity of this scale. Also, AliAkbar Dehkordi (1997) reported the validity of petrides and furnham EQ by correlating it with shot EQ test (1998, cited in by Shahbazi, 2005) for all employed women and men in Ahvaz as 0.40 for all the validity coefficient scale and micro scales respectively 0.39, 33, 0.37 and 0.35. All of these values were meaningful at $p < 0.001$. In the current research petrides and furnham EQ questionnaire was calculated by correlating its scores with Shot (1998) EQ scores that for all the questionnaire correlation ratio of 0.40 and for micro scales, correlation ratio of 0.14 to 0.52 was obtained that are meaningful at $p < 0.05$.

3) Delavar academic self-concept scale

This scale is provided by Ali Delavar (1994, cited in Ebrahimi Ghavam, 1998), with 40 items. Ebrahimi Ghavam (1998) used this scale in a research titled as "The effective factors on academic failure of Allame Tabatabai University students". He stated its reliability by Cronbach's α 0.78. In the current research its reliability coefficient was calculated by Cronbach's α coefficients and split-half as respectively 0.84 and 0.69.

According to the experts in this field, the test is suitable from content validity (Ebrahimi Ghavam, 1998). In the current research to determine Delavar

academic self-concept, criterion validity method is used (correlating the total score of questionnaire with 5 questions made for academic self-concept). Here the given coefficients was 0.49 and it was meaningful at $p < 0.001$.

4) Rutter locus of control

This scale was provided by Rutter (1966) and comprise 29 items and each item is consisting of two sentences. Scoring method of this scale is as zero and one. So, for reversed questions to section "b", each question is score 1 and for section "a" zero is given to each question and in the other questions score 1 is given to questions "a" and zero is given to questions "b".

In the main sample, high score is considered as external direction. In this research scoring method is the main sample method and subjects who get 9 or more, have external control source and people who get less score, have internal control source.

Hirsh & Skib (1967, cited in by Allame, 2002) reported the reliability coefficients of Rutter scale by test-retest method in different samples in time duration of 2 months as 0.48 to 0.84. Saburi Moghadam (1993 cited in Yahyazadeh, 2005) by split-half method, obtain the reliability of this scale about 0.81. Validity of Rutter locus of control scale is reported by correlating it with Nowicki & Strickland test by Nowicki & Strickland (1973, cited in by Allame, 2002) on a sample of 76 students as 0.61. In addition, Movafagh (19965, cited in by Yahyazadeh, 2005) showed the validity of this scale by using concurrent criterion validity; it means that Nowicki & Strickland internal and external control source scale is 0.39 as a criterion.

To analyze Social-economical status of students, researcher-built questionnaire was used. This questionnaire is composed of 10 items about the personal, family and economical status of students and each question has 3 choices.

3. Results

Table 1 shows the average and standard deviance of successful or unsuccessful students in research prediction variables.

Table 1- Average and standard deviation scores of successful or unsuccessful students in research prediction variables

Predictive variables	Successful students		Unsuccessful students	
	Average	Deviation	Average	Deviation
Intelligence	44.35	8.47	33.39	10.55
Emotional intelligence	139.45	16.69	132.97	17.86
Optimism	36.79	6.64	34.46	7.32
Own and other senses understanding	45.69	7.4	43.91	8.1
Evaluation and control of emotions	30.81	6.90	28.97	7.09
Social skills	26.15	5.65	25.63	5.62
Academic self-concept	116.12	11.76	104.61	11.81
Locus of control	8.24	3.25	10.28	2.67
Socioeconomic status	17.08	4.49	14.75	2.84

The content of table 1 shows that average and standard deviation scores of successful group in intelligence variable is respectively 44.35 and 8.47 and in unsuccessful group is respectively 33.39 and 10.55. The average and standard deviation scores of successful group in pessimism variable as the component of EQ are respectively 36.79 and 6.64 and in unsuccessful group are 34.46 and 7.32.

The average and standard deviation scores of successful group emotion perception (self and others) variable as the component of EQ are respectively 45.69 and 7.4 and in unsuccessful group are 43.91 and 8.1.

The average and standard deviation scores of successful group in emotions control variable as the component of EQ are respectively 30.81 and 6.90 and in unsuccessful group are 28.97 and 7.09.

The average and standard deviation scores of successful group in social skills variable as the component of EQ are respectively 26.15 and 5.65 and in unsuccessful group are 25.63 and 5.62.

The average and standard deviation scores of successful group in academic self-concept variable as the component of EQ are respectively 116.12 and 11.76 and in unsuccessful group are 104.61 and 11.81.

The average and standard deviation scores of successful group in social-economic status variable as the component of EQ are respectively 17.08 and 4.49 and in unsuccessful group are 14.75 and 2.84.

Research hypothesis indicates that linear combination of IQ, EQ, academic self-concept, locus of control, social-economic status predict the academic success and failure of boy students of first of high school in Ramhormoz. The results of table 2

directly and results of table 3 and 4 indirectly is related to research hypothesis.

Table 2- The summary of Canonical discriminant function results by Enter method (5 predictive variables) and stepwise method (5 predictive variables)

Important information related to discriminant function	Co-occurrence discriminant discussion	Stage to stage discriminant discussion
Function quantity	1	1
Specific value	0.669	0.669
Variance (%)	100	100
Compression (%)	100	100
canonical correlation	0.633	0.633
Etta square	0.400	0.400
wilks lambda	0.599	0.599
K Square	161.582	161.582
Freedom level	5	5
discriminant function significance	0.001	0.001
Data central for successful group	0.815	0.815
Data central for unsuccessful group	-0.815	-0.815
Group membership prediction	79%	79%
Kappa coefficient	0.588	0.588
Significance of kappa coefficient	0.001	0.001

As it is shown in table 2 (both in discriminate analysis by Enter method in which 5 variables entered into analysis and in stepwise discriminate analysis in which after entering all the variables, each 5 variables remain in the analysis and due to this the results of analysis by both methods are the same), considering the amount of small Lambda and the amount of large Chi- square and meaningful level $P < 0.001$, the obtained discriminant function has suitable discrimination power to determine the dependent variable (group in successful and unsuccessful levels). Therefore, the hypothesis is true. To understand the first column (important information about discriminant function) of table 2, explanations of number 1 to 10 are shown in the followings. Besides, the results of 5 variables analyzed with stepwise method are shown in table 3 and 4.

Table 3- The summary of stepwise discriminate analysis results with wilks lambda of 5 predictor variables

Step	Imported	Variables quantity	wilks lambda	1 st Freedom level	2 nd Freedom level	3 rd Freedom level	Fixed F			
							Statistics	1 st Freedom level	2 nd Freedom level	Significance
1	Intelligence	1	0.752	1	1	318	105.002	1	318	0.001
2	Academic self-concept	2	0.634	2	1	318	91.318	2	317	0.001
3	Socioeconomic status	3	0.621	3	1	318	64.388	3	316	0.001
4	Emotional intelligence	4	0.611	4	1	318	50.131	4	315	0.001
5	Locus of control	5	0.599	5	1	318	42.005	5	314	0.001

Table 4- The standard coefficients table, non-standard, structural coefficients and classification coefficients of discriminant function by Enter and stepwise method

Predictor		Function									
Code	Variable	Enter method				Stepwise method					
		Standard coefficient of discriminant function	Non-Standard coefficient of discriminant function	Structural coefficient	Classification coefficient of discriminant function		Standard coefficient of discriminant function	Non-Standard coefficient of discriminant function	Structural coefficient	Classification coefficient of discriminant function	
					Successful group	Unsuccessful group				Successful group	Unsuccessful group
X	Intelligence	0.672	0.670	0.701	0.497	0.383	0.672	0.670	0.701	0.497	0.383
X	Emotional intelligence	-0.255	-0.105	0.230	0.246	0.270	-0.255	-0.105	0.230	0.246	0.270
X	Academic self-concept	0.643	0.095	0.899	0.793	0.704	0.643	0.095	0.899	0.793	0.704
X	Locus of control	-0.230	-0.077	-0.419	2.216	2.342	-0.230	-0.077	-0.419	2.216	2.342
X	Socioeconomic Status	0.278	0.074	0.380	0.602	0.481	0.278	0.074	0.380	0.602	0.481
-	Constant member	-	-7.195	-	-89.204	-77.473	-	-7.195	-	-89.204	-77.473

*The highest absolute correlation between each variable and discriminant function

1. The number of functions: Number 1 indicates the only discriminant obtained by two levels of criterion variable.

2. Eigen value: By considering table 2, eigen value is just discriminant function 0.669(Enter method) and 0.669 (stepwise method). Generally, the more the amount of eigen value in a function, the more discriminant is the function (Khojastemehr, 2005)

3. Variance percent: It is clear that as there is a discriminant function, the variance is 100%. In some cases with many discriminant functions, the more valuable function is the one with more variance percent.

4. Canonical correlation and its square (Eta squared): According to the information in table 2, this value in discriminant function by Enter method is 0.633 and by stepwise analysis is 0.633. Eta squared for discriminant analysis by Enter method is 0.40 and by stepwise method is 0.40. Therefore, 40% of diffraction is 5 predictor variables by Enter method and 40% diffraction of 5 predictor variables by stepwise method for the only discriminant function is determined by the difference between two successful and unsuccessful groups.

5. Wilks lambda: As it is shown in table 2, this amount for discriminant function by Enter method is 0.599 and for discriminant function by stepwise method is 0.599 that both values are meaningful at $p < 0.001$, so the research hypothesis is proved.

6. Chi-square: As it is shown in table 2, this amount for discriminant function by Enter method is 161.582 and for discriminant function by stepwise method is 161.582. According to the value in meaningful row of discriminant function, Chi-square is meaningful at $p < 0.001$. Therefore, the research hypothesis is proved. So, we can say that the given discriminant function as meaningfully is having high discrimination amount for two levels of criterion variables. Considering the above explanation in number 5 and 6 the hypothesis for Enter method is $p < 0.001$ and $X^2(5, N=320)=161.582$ and χ^2

=0.599(Wilks lambda) and for stepwise method $p < 0.001$, $X^2(5, N=320)=161.582$ and $\chi^2 = 0.599$ (Wilks lambda).

7. Score Centroid: As it is shown in table 2, score Centroid for the only discriminant function by Enter method for successful group is 0.815, in unsuccessful group is 0.815, and by stepwise method is 0.815 for successful group and 0.815 for unsuccessful group. This means that cutting point of academic success and failure in students for discriminant function is zero and the given discriminant function is a suitable discrimination function to separate the successful and unsuccessful group. Thus, if the scores of one group is being put in discriminant equation and the score is positive, it is predicted that the group is successful and if it is negative, the group is unsuccessful.

8. The prediction of group membership: The given discriminant function by Enter method (5 predictor variables) generally 79% of groups and with stepwise method (5 predictor variables) 79% of groups are well classified.

9. Kappa coefficient: This coefficient shows the modified precision of prediction (Khojastemehr, 2005). In explanation No. 8 it was said that the given discriminant function prediction power is 79% by Enter method. As it is shown in table 2, the modified precision of this prediction is 0.588. The modified precision of prediction power of discriminant function by stepwise method is 0.588.

10. Meaningfulness of Kappa coefficient: Kappa coefficient for the given discriminant function by Enter and stepwise method is meaningful at $P < 0.001$. Thus, it can be said that prediction power of the above discriminant function is meaningful.

Stepwise discriminant analysis of academic success and failure of students was done on 5 predictor variables (Intelligence, EQ, academic self-concept, locus of control and social – economical status) and the results are shown in table 3. According to the information of this table, after presenting 5 variables, each 5 variables remained. In the first stage, IQ in the second stage academic self-concept, in the third stage, social-economic status, in the fourth stage, EQ and in the fifth stage, locus of control came into analysis in which F for 5 variables at $P < 0.001$ is meaningful.

Standard coefficients, non-standard, structural and classification of predictor variables of discriminant function are shown in table 4. As it is clear from the information in table 4, for the only discriminant function with two analysis, four types of standard coefficients, non-standard, structural and the classification of discriminant function are shown. As it is shown in standard coefficient column of table 4, by Enter method, IQ variable is the highest and again

in stepwise method, IQ variable is the highest variable. By non-standard coefficients shown in table 4, discriminant function equation is obtained. Thus, by putting the scores of each group in the function, the predicted score is obtained. Considering the scores Centroid of successful and unsuccessful groups in table 2, if the discriminant score is positive, it is predicted that the group is successful and if it is negative, it is predicted that the group is unsuccessful. Regarding the column of non-standard coefficients and constant number of discriminant function by Enter method the following predictor equation was obtained.

$$)X_5 (0.074 + X_4) (0.077) - X_3 (0.055+ X_2) (0.015 - X_1) (.0.070 + 7.195= - y' =D$$

Regarding the column of non-standard coefficients and constant number of discriminant function by stepwise method the following predictor equation was obtained.

$$)X_5 (0.074 + X_4) (0.077) - X_3 (0.055+ X_2) (0.015 - X_1) (.0.070 + 7.195= - y' =D$$

It is worth to mention that y' or D is the discriminant score or predictor score of each pair. AS it is shown in table 4, for both Enter method analysis and stepwise method, classification coefficients are indicated. According to the column of the classification coefficients of discriminant function by Enter method of successful group in comparison with the unsuccessful group IQ, academic self-concept and social-economic status show higher scores and EQ and locus of control have lower scores. The same condition is true about classification coefficients by stepwise method for each 5 variables in the analysis. In table 4 respectively structural coefficients of Enter and stepwise method, the biggest absolute correlation is between IQ and the only discriminant function. As it is shown in table 4, IQ, academic self-concept, locus of control, social-economic status and EQ respectively have the highest correlation with the only discriminant function with 5 predictor variables by Enter method. As it is shown in table 4 IQ, academic self-concept, locus of control, social-economic status and EQ variables have the highest correlation with the only discriminant function with 5 predictor variables by stepwise method. It is worth to mention that discriminant function may be named to determine the variable that can have the highest relation with it. Considering the information in table 4, the only discriminant function has the highest correlation with IQ variable. So, we can name the only discriminant function as IQ. Considering the classification coefficient of discriminant function and concurrent values and with stepwise method, we can create two discriminant equations and by putting the scores of each pair in two equations, two discriminant

scores are obtained. If the given score is close to the scores Centroid of successful group, it is predicted that it is a successful group and if the score is close to the scores Centroid of unsuccessful group, it is predicted that it is an unsuccessful group.

4. Discussion and Conclusion

The results of the current research was with the prediction purpose of academic success and failure by IQ, EQ, academic self-concept, locus of control and social-economic status. The results as was expected proved the purpose of the research. Regarding IQ, the results of the current research are compatible with the results of stein Mayer, Ziegler & Trauble (2009), Lasiter and Baradus (2006), Riedel and Lansbury (2004), Thelma (1998), Karbalayi Harfte (2004), Khalatbari (1997) and Naghibi (1996)

Grisson (1999) in a research reported that IQ is the best predictor of academic success, because the average IQ of 15% of unsuccessful students was under 110. Anderson (1992) believed that the intelligence difference of people is due to the different dealing of the initial processing and thinking that itself leads into knowledge. Thus, there is difference between people with the initial processing speed of information. In addition, Shofild & Ashman (cited in Glover and Bruning, 1990, cited in Kharazi, 2004) reported that intelligent students in terms of information processing are better than high average students and high average students are better than low average students. They came to the conclusion that the students with higher IQ in comparison with the students with lower IQ, have better academic performance. On the other hand, according to Graham (1986, cited in Shahni Yiyilagh, 1996) stating about IQ, IQ with the high leaning ability, positive attitude to the problems and solving them, rapid conclusion, creativity and concentration lead into academic success. So, we can say that a percent of academic failure is due to the students mental inability.

Regarding EQ, the result of the current research is compatible with the results of Marjorie, parker, Wiener, Waters, Wood& oke (2009), Abraham (2006), petrides, Frederickson and furnham (2004), Shalchi (2006) and Dehshiri (2006).

Congelosi & Peterson (1998) stated in their research that students who fail in the school have weak communication skills. But students with high EQ, have less deviant behavior, escape from school and expulsion from school. Also, Pamplin (2005) in his research showed that the students with high EQ, have higher self-efficiency and self confidence and they can better cope with problems. In addition, Shot and Malof (2002) in a research on freshman students found that the students, who participated in the

instructional course of EQ, have higher academic success and social adaptability in comparison with the student who didn't participate in this course.

Regarding academic self-concept, the results of the current research is compatible with the results of pullmann & Allik (2008), Avad (2007), Javir and Sanchez (2005), Karimzadeh (2005) and Nasr Esfahan (2003)

The researches showed that teenagers who value themselves are successful in dealing with others and are more stable facing difficulties. If these people know consider themselves weak, give up very soon (Marsh and young, 1999 cited in Karimzadeh, 2005). Also, Seligman (1974, cited in Biabangard, 2001) believe that unsuccessful students have negative feelings about their abilities. Probably these students work a little, but due to the vain efforts, they can't achieve success and they found that they are not able to achieve success. This feeling leads into the lack of effort and if they insist on their belief, it is not expected that they learn anything.

Regarding locus of control, the results of the current research is compatible with the results of Uguak, Elias, Uli & Suandi (2007), Hoover (2003), Karen (2002), Tahernejad (2004), Shararay, and Soleimani nejad (2001). The positive outcome of behavior that is attributed to the internal reasons such as ability and effort, create pride and self-esteem feeling in a person. But the success attributed to external factors such as luck or others help doesn't create pride and self-esteem feeling in a person. However the failure attributed to less ability, is leading more to embarrassment in comparison with the failure attributed to difficult duty or bad luck (Weiner, 1977, cited in Seif, 2005). Also, Flowers, Milner and Moor (2003) in their research found that the students with internal locus of control in comparison with the students with external locus of control have high academic expectancies. In addition, Donald & Wessler (1994, cited in Soleimani nejad, 2002) in some researches expressed that people who attribute their success to external factors, get more stressed and this many avoid their expectancy from success in future. So, the person doubts about his abilities to achieve success.

Regarding social-economic status, the results of this research are compatible with the results of Cutter and Guma (2006), Ingwiler (2005), Caldas (2000), Zaki (2005), Lavasani, and Dorani (2004).

The parents of low social and economical status emphasize more on respect toward authority, but the average status, insist more on curiosity growth, responsibility, internal control and working due to long-term goals and being sensitive to in communication with others (Tahurian, 1994, cited in Fathi, 2006). Also, the parents in high social-

economic status have higher dreams and motivations in comparison with the low social-economic statuses families. So, they expect that their students be successful in their studies and they try to support and encourage them and force others also to help their children (Zare, 1995, cited in Biabangard, 2001). In addition, O'Connor (2008) in a study on the social-economics status revealed that the parents education level, cultural, social and interpersonal deprivations are related to academic failure. Also, Pain & Bidel (1998, cited in Caldas, 2000) in a research indicated that social-economical status predict variance of 45.5% and poor families with two children in comparison with poor families with only child have more negative influence on academic progress. To make the results of this hypothesis clearer we can say beside the above explanations that some percent of academic failure is due to less attention in childhood, growing up in an environment without incentive or motivation and also mental inability and the lack of ability to learn. Also, high EQ with increasing positive mood changes for adaptive interaction in person, thinking organization and memory content, increasing the emotions recognition to cope with stressful situations and the management of disasters by emotions regulation all lead into the increase in academic success and its effective activity. On the other hand, the positive self-concept increase capability, high-mindness and ensuring thinking in the person, so, the person tries to do the works by selecting the real goals and doesn't lose the successful behavior opportunities. Also high internal locus of control make the person thinks that he has positive intervention on his destiny and their life events are the result of precise planning and continuous efforts. Therefore, they are not passive toward their life events and accept the responsibility of their behavior and deeds and try to achieve success. Also the low social-economic status and the lack of thinking in families and parents cause that they couldn't have good attitudes and emotional and logical relationship with themselves and their children to help them in their lessons or provide them with good educational instruments. In return, in high social-economic status, children do not have such problems.

As it was said, the research model was proved. In other words, by IQ, EQ, academic self-concept, locus of control and social-economic status variables we can predict academic success or failure and based on this model, a model can be provide to prevent academic failure or improving deficits in academic performance. As it is clear from the results of the research, intelligence in the current model has the main role and in this case, there is a reciprocal relationship between intelligence level and the

quality of academic output. Thus, to help students for improving the academic quality and achieving success, we should not ignore the importance of increasing their intelligence. By having an effective model by which we can predict intelligence assessments, EQ, academic self-concept, locus of control and Social-economic status before academic performance, the effect of intervention and problem-solving increase.

The limitations of the current research are as the followings: 1- being cautious about generalizing the results of the current research to girl students and other grades and other cities or provinces in the country, 2- less certainty of the current research results in comparison with experimental and quasi-experimental methods due to the correlation nature of information and not showing causative relations between variables and 3- The studied variables are not comprehensive representation of all the variables and approaches about academic success and failure.

It is recommended to analyze other personal, family, social and institutional factors effective in academic success and failures in future studies and do the researches similar to the current research about girl students and other provinces of the country. Also, as the strongest predictor of academic success and failure was intelligence, it is recommended that educational researchers and experts use the results of this research in health-instructional interventions.

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