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Emotional intelligence and self-efficacy beliefs as predictors of academic achievement among high school students

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Abstract

The purpose of the present cross-sectional study was to investigate the influence of emotional intelligence and self efficacy beliefs on academic achievement of high school students. The sample consisted of 407 (Female= 236, Male= 171) participants recruited from high school students. The instruments of this study were: The Emotional Intelligence Questionnaire, Self-Efficacy Beliefs Scale and a demographic information form. The results indicated that age, gender and self-efficacy are the significant predictors of academic achievement. We found statistical evidence of an interaction effect between academic achievement and socio-economic status. On the other hand females' academic achievement scores were found to be significantly higher than males.
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1. Introduction

On the basis of increasing technology and knowledge-based occupations, academic qualifications and equipment of high school students today are of great importance more than ever. Academic deficiencies and low levels of secondary school students on the way of being professional staff, may cause great damages as both individual and societal. Despite the critical importance of education at secondary education level, has been reported that in one year, more than 360 thousand high school students whose ages are between 15-19 had dropout the school in Turkey (Eğitim Reformu Girişimi, 2009). According to this report, there is a negative relationship between academic achievement of students and leaving the school. In other words, students' academic failure may be the reason of school dropouts. When we consider the growing importance of education of secondary students, it is not surprising that many studies have been made investigating the factors affecting students' academic success in this period. Academic achievement, as well as intelligence and ability were found to be associated with many factors, such as socio-economic factors (Lillydahl, 1990), peer relationships (Bjarnason, 2000), motivation (Bergin, 1998; Bong, 2001), test anxiety and the perception of social support (Yıldırım & Ergene, 2003).

Recently, another factor that is thought to have an impact on the academic achievement is the emotional intelligence. Initially, the emotional intelligence that was regarded as a sub-dimension of social intelligence, in the further studies has been suggested as a wide type of intelligence that also takes the social intelligence into (Salovey

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& Mayer, 1997). Emotional intelligence is defined by Salovey and Mayer (1990) as the process of one's assessment of his own and others' emotions accurately, to express feelings appropriately and process of emotional information including the regulation of emotion to make the life better. According to Cooper and Sawaf (1997), the emotional intelligence is the ability of using effectively the emotions' power and acumen, as a source of human energy, information, connection and influence. Goleman (2010) has been defined the emotional intelligence as recognizing and managing feelings, self-action, the ability of understanding the others' feelings and to conduct the relationships. According to Espstein (1998), emotional intelligence is a mental a skill and requires not only having emotions, but also to understanding of their means. Individuals with higher emotional intelligence, are persons who grew up in families emotionally sensitive, open to criticism, know how to express their feelings in different and effective ways, can share and discusses their feelings, aesthetics, morals, ethics, leadership, social, and are individuals with advanced level of knowledge related to problem solving and spiritual issues (Mayer, Salovey and Caruso, 2004). When all these positive features are considered, it is pleasing to know that the emotional intelligence is learnable and property can be developed (Mayer and Salovey, 1997). In educational applications with giving importance to cognitive intelligence as well as emotional intelligence, it is thought that there will be positive developments in academic achievement and quality of life of the students.

Other features that are effective on students' academic achievements are the self-efficacy beliefs. Self-efficacy beliefs that emerged with Social Learning Theory for the first time can be defined as personal judgments about how well the individual act in dealing with possible situations (Bandura, 1982). Academic self-efficacy belief is about how extent a person feels himself in completing the academic tasks successfully. Students' goals, motivation levels, academic achievements affect their adequacy beliefs in learning and getting greater academic achievements (Schunk, 2009). Bandura (1995) stated that the self-efficacy beliefs have four main sources. These are direct experiences and indirect experiences provided by social or models, verbal persuasion, and individuals' physical and emotional situations. The most effective of these on self-efficacy beliefs are direct experiences. While a person can develop a strong belief in self-efficacy with having success as a result of his own experiences, in opposite his failures may effect these beliefs negatively. Efficacy beliefs related with past experiences' consequences, affect the success or failure status in the future and consequently affect the academic motivation. Students with high self-efficacy beliefs, become more willing in learning activities comparing with students with low self- efficacy. They spend more effort toward the activities and can develop more effective strategies against the difficulties they have faced (Eggen ve Kauchak, 1997). Self-efficacy is known to provide individuals acquire new knowledge and to develop their skills for a better life or for their own purposes (Bandura, 1995). Therefore, strengthening students' individual resources such as self-efficacy, would contribute to achieve to the objectives of education system.

In this study it is being investigated that how emotional intelligences and self-efficacy beliefs of secondary school students, can be predictor of their academic achievements. In addition it is examined if there is differentiation in the students' academic achievement as regards of gender and socio-economic status.

2. Method

2.1. Participants

The research group is composed of 407 (171 females, 236 Males) secondary school students. The mean of ages of the students is 11.16 (SD = 1.1) and the average of their academic scores is 75.93 (SD = 13.49). The majority of the students (82.8%) have a moderate level of economic income. 128 of the participants (31.4%) study in the ninth grade, 110 (27%) in the tenth grade, 114 (28%) in the eleventh grade and 55 (13.5%) in the twelfth grade.

2.2. Instruments

2.2.1. Data Collection Form

It is developed by the researchers to determine of academic achievements and some demographic characteristics of the students participating in the research. In this form, there are questions related the age, gender, class, socio-economic status of the family and the last semester academic scores averages.

2.2.2. Emotional Intelligence Scale

Turkish version of the scale that originally developed by Hall, were made by Ergin (2000). Totally 30-item scale, consists of five sub-factors as awareness of emotions, managing emotions, motivating oneself, empathy and handling relationships. The scale is a 6 Likert-type scale. The high scores from the scale, indicates a high emotional

intelligence. As a result of "item-total" factor analysis made for the EIS, it is understood that scale items range from .73 to .89. In the studies of the reliability of the scale, it is found that the scale total score correlation of the first-end application were .84. Half test reliability result of the scale obtained from the Cronbach alpha coefficient, were .79 (cited in Erol, 2004).

2.2.3. Self-Efficacy Scale

The self-efficacy scale to assess behavior and changes in behavior developed by Sherer and Madduks in 1982, have been translated into Turkish by Gözüm and Aksayan (1999). It is a 5 Likert-type self-evaluation scale. There are totally 23 item and four sub-factors in the scale as "starting behavior," "continuing behavior," "behavior completion" and "fight with obstacles". Some substances have required reverse scoring. Increase of the total score taken from the scale, means the good level of self-efficacy perception of the individual. The scale is applicable to adolescents and adults because it requires adequacy of the individual in perception of his own efficacy and judiciary about his own. With the Principal Component Analysis that has been done related to "construct validity" of Self-efficacy scale, the factoral structure of the scale has been examined. In the developed four-factor structure, factor weight of 22 articles from the 23, has been found over .40. In the studies Oriented to the reliability of the scale, test-retest correlation reliability has been found .92 and Cronbach alpha internal consistency coefficient has been found .81.

3. Results

3.1. Results of Multiple Regression Analysis Related Prediction of Students' Academic Achievements

As shown in Table 1, the variables explained 19% of the total variance ($F_{11,394}= 8.38$, p< .001). While the original contribution of the " being aware of emotions" ($\beta = .18$, p <.01) that is the sub factor of emotional intelligence, gender ($\beta = -.16$, p <.01), age ($\beta = -.23$, p <.01) and, "continue to the behavior" ($\beta = .28$, p <.01) that is the sub-dimension of self-efficacy are meaningful to the model, emotional intelligence and self-efficacy's other sub-factors are not significant in original contribution to the model.

Table 1: Multiple Regression Analysis on Students' Academic Achievements Prediction

Variables	B	SE	β	t	p	R	R²	Δ R²	F
Fixed	111.79	10.87	-	10.23	.001				
Gender	-4.46	1.37	-.16	-3.26	.001				
Age	-2.76	.57	-.23	-4.86	.001				
Being aware of emotions *	.46	.17	.18	2.69	.008				
Managing emotions *	.13	.14	.05	.93	.354	.44	.19	.17	8.38
Self-motivating *	-.27	.17	-.11	-1.64	.102				
Empathy *	-.18	.17	.-.07	-1.06	.292				
Handling relationships *	.17	.15	..07	1.11	.268				
Start behavior **	-.23	.14	-.10	-1.63	.103				
Behavior resume**	.71	.16	.28	4.54	.001				
Behavior completion **	-.28	.20	-.08	-1.43	.152				
Fight against the obstacles**	.29	.26	-.06	1.13	.258				

* Sub-factor of Emotional Intelligence Scale   ** Sub-factor of Self-efficacy Scale

3.2. Gender-Based Differences in Students' Academic Achievement

As shown in the Table 2, significant differences were found between male and female students' academic achievement (*t* = 5.17, p = .001). These differences have been occurred because the females' academic average (Mean = 79.87, SD = 11.20) is higher than academic average of the males' (Mean = 73.07, SD = 14:29).

Table 2: Differences in Students' Academic Achievements Related to the Variable of Gender

Gender	N	Mean	SD	*t*	p
Female	171	79.87	11.20	5.17	.001
Male	236	73.07	14.29		

3.3. Differences *in Academic Achievement of Students Based on the Level of Socio-Economic Status*

Differences based on level of socio-economic income on the academic success of students were tested with one-way analysis of variance (ANOVA) if there are. The results are shown in Table 3. Significant differences have been found among group's academic success ($F_{(2,404)} = 6$, $p < .01$). As a result of the Tukey HSD test, have been found that this difference is due to the fact that students with higher level of socio-economic income have meaningfully higher academic average (82.28) than academic average of students with middle socio-economic income (75.85) and the low socio-economic income (71.24).

Table 3: Differences in Students' Academic Achievement Based on Socio-Economic Status

	Sum of Squares	df	Mean Square	F	p
Between Groups	2129.87	2	1064.94		
Within Groups	71765.92	404	177.64	6.00	.003
Total	73895.79	406			

4. Discussion

The results of the study showed that variables like gender, age, "being aware of the emotion" and "continue to the behavior" explained academic achievement meaningfully. It has been seen that the most powerful predictor was variable of "continue to the behavior" that is self-efficacy belief's sub-factor. According to these, there are meaningful relationships between the students' academic achievement and self-efficacy beliefs in positive direction. This finding has been found consistent with the results of researches in the literature of self-efficacy beliefs that are positively related with the academic achievement (Schunk & Swartz, 1993; Wood & Locke, 1987) and are qualified in prediction of academic success (Lent, Larkin, & Brown, 1986; Pajares & Johnson, 1996).

Other variable that is a positive predictor of academic success of students is "being aware of the emotions" dimension that is one of the sub-factors of emotional intelligence. This finding is consistent with the findings of the literature that indicate the Emotional intelligence is a predictor of academic success (Erdoğdu & Edge, 2008; Parker, et al., 2004). However there are studies that suggesting the emotional intelligence is not a powerful predictor of academic success (O'Connor, Jr.. & Little, 2002). Still, can be said that IQ and EQ are not concepts opposite to each other, contrarily they support each other. If we consider that education system aims not only to gain general intellectual skills to the students, but also aims to bring some of the attitudes and behaviors; can be concluded that developed emotional intelligence is very important in the school environment.

It is also found that the age is a negative predictor of the academic success. Accordingly, it can be said that a decline will occur in academic success with increasing the age. Especially, when we consider the increased importance of peer relationships and social acceptance in adolescence, it is known that students' academic motivation and academic achievements can be affected negative (Phillips and Lindsay, 2006) or positively (Wentzel, 1991) according to the qualification of the friendship relationships.

According to the findings of the study, another significant predictor of the students' academic achievements is gender. It has been seen a negative relationship between academic achievement and gender. In addition, in analysis for determine of differences between the genders, has been seen that the academic success of female students were significantly higher than male students. This result is similar to other research results that show the females' academic motivation was higher than the males' (Pajares and Voliante, 2002). However, there are a lot of findings that indicates male and female students provide excellence to each other in different academic areas (e.g. Kitchenham, 2002; Warrington &Younger, 2000). These differences between the genders may occur with the effect of social gender roles should not be neglected.

Another finding of the study is that there are significant differences between students' socio-economic status and their academic achievements. According to this result that is similar to Muijs (1997) and Yang's (2003) study, the academic achievement of students with higher level of socio-economic status, are higher.

As a result, emotional intelligence and self-efficacy beliefs are significantly predictor of academic success. In addition, the academic achievements of students differ by gender and socio-economic status. There are many variables explaining academic achievement. In this study, only emotional intelligence, self-efficacy, age and gender

are discussed. For next studies, we recommended examination of different variables that predicted students' academic achievement. With longitudinal studies, can be examined that the secondary school students' emotional intelligence and self-efficacy beliefs how can predict the success rates of the university exam.

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