Relationships of Cognitive, Emotional and Behavioral Engagements with Students' Self-Efficacy

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A B S T R A C T

The aim of this study was to determine the relationship between cognitive, emotional and behavioral engagements and self-efficacy of male high school students in Bandar Abbas (Iran) in the academic year 2014-2015. In order to determine the sample size according to Morgan Table, 200 subjects were selected using random sampling method. Data collection tool for academic self-efficacy beliefs was McIlroy and Bunting Questionnaire (2002) and to collect data regarding the cognitive, emotional and behavioral engagements Fredericks et al Questionnaire (2004) was used. Data were analyzed by descriptive and inferential statistical tests of Pearson and regression. Regression analysis results show that cognitive engagement at the level of $p<0.087$, behavioral engagement at the level of $p<0.635$ and emotional engagement at the level of $p<0.001$ significantly explain students' self-efficacy. Finally, it can be concluded that cognitive, emotional and behavioral engagements have a significant relationship with self-efficacy. Therefore, given the research results we come to the conclusion that cognitive, emotional and behavioral engagements increase students' self-efficacy.

Keywords: Self-Efficacy, Cognitive Engagement, Emotional Engagement, Behavioral Engagement.

INTRODUCTION

High school students' academic achievement is one of the important aspects in Iran education system and it can be mentioned as a significant indicator of teaching quality measurement. Academic achievement is ordinarily measured based on the results of the final tests and the scores that the students gain in different educational courses and fields are considered a sign of their academic progress[1].

The findings of other studies show that academic achievement is not the result of just one factor, but rather several factors influence on this variable. Some of these factors can be mentioned as motivational factors. Although there are many motivational structures that have direct application in the classroom, it is the

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student's belief in his/her own ability that enables him/her to perform the task. Researchers and theorists have presented various models to explain the relationship between motivational factors and academic achievement, among which Pintrich and De. Groot's research can be noted[2]. These researchers used a motivational model called Value Expectation Model to select motivational variables.

The expectation in this model means the learner's beliefs about how well he/she can do a task in the future. Accordingly, self-efficacy as one of the motivational variables in the expectation – value model represents the individuals' beliefs about performing their own tasks. Self-efficacy theory stems from Bandura's social learning general theory. Self-efficacy as a person's tangible ability to learn or act at determined levels. Self-efficacy is a person's self-constructed judgment about his/her own abilities to perform the duties successfully[3].

Self-efficacy is as a key structure for learning improvement (academic achievement), and many studies indicate that self-efficacy and academic achievement are correlated[4, 5, 6].

In addition, the studies show that there is a relationship between self-efficacy and components of academic engagements. The results of researches indicate that those high school students who believe they are capable, use more cognitive and metacognitive strategies and in comparison with those who do not trust their ability to perform tasks show more stability[4]. Self-efficacy is the crucial aspect of motivation and it predicts the behavior between individuals and also the amount of a person's self-efficacy change[7]. The belief in self-efficacy affects the selection of challenging purposes, the amount of effort and endeavor for doing the tasks, the amount of persistence and perseverance to face problems and the level of stress tolerance.

Cognitive engagement refers to the individual volunteer efforts for understanding and mastering the challenging tasks, emotional engagement refers to positive or negative feelings about the learning environment and behavioral engagement refers to individual's participation in the educational environment. As mentioned before, cognitive engagement is one of the components of academic engagement and it has been emphasized in most of studies as mediator variables[6]. Cognitive engagement is the level of psychological investment that needs learning purpose and also it is giving priority to hard work[7]. Lynn Brink and Pinerych mentioned cognitive engagement as indicator of cognitive and metacognitive strategies usage. Moreover, Ababaf examined cognitive engagement as cognitive and metacognitive strategies[2]. Pinerych and De Groot showed that those learners who were involved in their assignments in terms of cognitive, that is to say, those who attempted to help their learning through organizing the content and practice, had better performance compared to those learners who did not desire to take the advantages of these strategies[4]. In general, the results of the studies carried out by Azad Abdollahpoor[7], Amini[3] and Mohsenpour[4] showed that cognitive engagement has a direct and positive effect on the academic achievement of

students and the learners who use high levels and metacognitive strategies, in comparison with those who use lower levels and cognitive strategies, are cognitively more involved in carrying out the academic tasks.

METHODOLOGY

In this study, due to the nature of the research subject, objectives and assumptions, descriptive (non-experimental) method was applied and the research design was correlational one. The study population included all high school boy students in the District 1 of Bandar Abbas city from 2014 to 2015. To determine the sample size, according to the Morgan and Krejcie formula, 200 subjects were selected by random sampling method. Given the nature of the present study, data collection carried out by two methods of library and field study and according to the needs at each stage of the research, one or both of these two methods were used. To obtain theoretical foundation in the field of research and understanding theories, models and approaches, and to collect the required information, library resources, Internet sites, Persian references, authentic Latin papers and theses, documents and available data in the Statistic Center were studied and analyzed and descriptive and analytical information has been collected. Data collection regard to the population of the study carried out through field study using the tools of questionnaires and interview. In this study, following questionnaires used to assess the participants: In the present study, McIlroy and Bunting Questionnaire used in order to measure academic self-efficacy beliefs.

Fredericks et al. prepared a questionnaire with 19 questions whose answers were the range of Likert five-item, from strongly disagree to strongly agree and it measures three types of engagements, including behavioral engagement, motivational engagement and cognitive engagement. According to Bandura, quoted by Mohsenpour[4] when assessing the performance of individuals, their actual performance should be considered and the actual performance is reflected when the accomplishment of the task is important for the subjects and they have high motivation for doing it. Therefore, the final tests are extremely important.

In this study, the descriptive analysis of data was applied to describe the collected data, and they were analyzed using spss statistical software. The collected data were classified and summarized using frequency distribution tables. The central tendency and descriptive statistics dispersion such as mean and standard deviation, were used to summarize and describe the information.

RESULTS

Table 1. Mean and standard deviation of research variables in the sample

Variable	Mean	Standard Deviation
Cognitive Engagement	17.525	3.68746
Behavioral Engagement	20.55	3.91845
Emotional Engagement	8.445	2.07327
Self-Efficacy	108.84	12.5991

Descriptive findings according to Table 1 about research variables showed that the mean of cognitive engagement is equal to 17.525, the mean of behavioral engagement is equal to 20.55, the mean of emotional engagement is equal to 8.445 and the mean of self-efficacy is equal to 108.84.

Table 2. Results of determination model of the role of cognitive, emotional and behavioral engagement in self-efficacy prediction

Correlation Coefficient	Determination Coefficient	Adjusted Determination Coefficient
0.446	0.199	0.189

Results of regression test in predicting self-efficacy through cognitive, emotional and behavioral engagements showed that the desired model has a coefficient of determination equal to 0.199. This suggests that cognitive, emotional and behavioral engagements determine 0.187 percent of the students' self-efficacy.

Table 3. ANOVA of the role of cognitive, emotional and behavioral engagement in self-efficacy prediction

Model	Coefficient of Squares	Freedom Degree	Mean of Squares	F	P
Regression	1425.068	3	475.023	15.257	0.001
	5727.12	0.195	29.219		
Total	7152.80	199			

The results of ANOVA show that due to the value of F= 15.257 and P= 0.001 cognitive, behavioral and emotional engagements explain self-efficacy significantly.

Table 4. Self-efficacy prediction through cognitive, emotional and behavioral engagement

Variables	beta	t	p
Cognitive	0.128	1.718	0.087
Emotional	0.34	1.76	0.635
Behavioral	0.37	5.384	0.001

The results ultimately showed that cognitive engagement, given beta = 1.78 and P= 0.087 and emotional engagement, given beta = 1.76 and P = 0.635 are not significantly able to predict self-efficacy. However, behavioral engagement, given beta = 3.384 and P = 0.001 is significantly able to predict self-efficacy.

CONCLUSION

The results of the Pearson correlation coefficient regard to the relationship between cognitive engagement and achievement indicate that there is a significant relationship between the two variables at 99 percent level. Cognitive engagement based on Bloom's taxonomy has six levels of knowledge, understanding, applying, analyzing, combining and evaluating, and as the study shows there is a significant relationship between cognitive engagement and self-efficacy. This means that when the student learns well, his/her self-efficacy goes up and self-confidence is

attained. The results of the Pearson correlation coefficient regard to the relationship between self-efficacy and emotional engagement show that there is a significant relationship between the two variables at 99 percent level. As mentioned before, emotional engagement is more subject to the issue of attention and value. If students show interest in the subject and consider it as a valuable content, the students learning is positive and it will lead to self-efficacy. As this study confirms it, emotional engagement leads to self-efficacy. The results of the Pearson correlation coefficient regard to the relationship between behavioral engagement and self-efficacy show that there is a significant relationship between the two variables at 99 percent level. Behavioral engagement is coordination and cooperation between nerves, the nervous system and muscles. If it takes place, self-efficacy can occur in the student. As the results show, behavioral engagement leads to self-efficacy.

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