

Investigation of the Relationship Between Learning Approaches and Academic Engagement of Teacher Candidates*

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ABSTRACT

The aim of this research is to examine the relationship between learning approaches and academic engagement of teacher candidates. The research carried out as survey model is executed by the data obtained from 194 students who responded the questions data collection tools appropriately. The data are collected via the study process questionnaire adapted into Turkish by Yılmaz and Orhan (2011), academic engagement scale developed by Korucu (2013) and the personal information form established by the authors. According to the study process questionnaire, 137 out of 194 students have deep approach while 57 students have surface approach. In addition, the scores received from academic engagement scale by students are demonstrated a significant difference by gender. According to the findings, there is a significant relationship between the scores gathered from deep approach of study process questionnaire and academic engagement scale at intermediate level in positive direction. There is no significant relationship between the scores gathered from surface approach of study process questionnaire and academic engagement scale.

Keywords: *learning approach, deep approach, surface approach, academic engagement, teacher*

INTRODUCTION

Today, the amount of obtained information is increasing very quickly with the influence of technological developments. Therefore, continuous development and acquiring new knowledge in accordance with their needs are required for individuals. However, individuals have a wide range of differences, and these differences affect their learning. At this point, the learning approach and academic engagement of individuals emerges as two important concepts. The concept of learning approach introduced by the studies of Marton & Saljö (1976a, 1976b) is described through qualitative research on investigation individuals' effort to learn and understanding of a reading article (As cited in: Önder & Beşoluk, 2010). While a number of students consider reading text as a sum of the different units must be memorized in order to respond expected questions, the others see the text as a whole and try to get the author's opinion to

comprehend the meaning of the text in the studies conducted. The learning approach of the students in the first case is named as "surface approach" and the learning approach of the students in the second case is named as "deep approach" (As cited in: Önder & Beşoluk, 2010; Yılmaz & Orhan, 2011). The Academic engagement is defined as not only individual effort, academic, interpersonal and extra studies out of lessons but also the effort to communicate by Pascarella & Terenzi (2005). It can be inferred from this definition that the academic engagement is related to active participation of the students in the learning process. In other words, academic engagement is not a determined time interval and the evaluation of the effort expended by individuals in this time interval. The academic engagement covers all the effort expended by the individual during a course period.

It is important the research, since determining which type of learning approach, i.e. deep or surface, students use in the process of studying will contribute to design effective learning

environments and individuals who have surface learning approach will become individuals who have deep learning. According to review of literature, a plenty of research in which very different variables such as academic achievement, academic self-efficacy, critical thinking skill, locus of control, epistemological beliefs, thinking styles and assessment preferences as well as learning approaches are examined at once about learning approaches is conducted (Baeten, Dochy, & Struyven, 2008; Baeten, Kyndt, Struyven, & Dochy, 2010; Berberoğlu & Hei, 2003; Beşoluk & Önder, 2010; Biggs, 1988; Cano, 2005; Çuhadar, Gündüz, & Tanyeri, 2013; Gibbs & Coffey, 2004; Gijbels & Dochy, 2006; Gijbels, Watering, Dochy, & Bossche, 2005; Olpak & Korucu, 2014a, 2014b; Ozan & Çiftçi, 2013; Önder & Beşoluk, 2010; Özgür & Tosun, 2012; Rose, Hall, Bolen, & Webster, 1996; Segers, Gijbels, & Thurlings, 2008; Şahin Taşkın, 2012; Trigwell, Prosser, & Waterhouse, 1999; Wilson & Fowler, 2005; Yılmaz & Orhan, 2011; Zhang, 2000).

It can be said that the personal development of individuals and their efforts to learn are directly proportional. In this direction, the academic achievement is the most significant indicator of effort expended by the student to learn and achievement of the goals (Pascarella & Terenzini, 1991). There is a high level positive relation between academic achievement and student's personal competencies with facilities provided from the school (administrators, instructors, media and technological requirements) (Kuh, Kinzie, Buckley, Bridges & Hayek, 2006). According to Pascarella and Terenzini (1991), the relationship between academic engagement and academic achievement is not the score gathered from academic achievement tests in the middle and end of the academic year by the student. This relation is the expended effort in order to overcome the challenges students face during the learning process. Academic engagement, one of the most important components which increase the quality of teaching, (Astin, 1993; Kuh, 2001; Hu & Kuh, 2002) is composed of different components (Kuh, 2009). Educational activities have major importance on determination of these dimensions and demonstration of the academic engagement in the learning duration of student (Sutherland, 2010). These activities are educational activities such as

active participation, individual or group learning, attendance, communication with school, motivation, interaction with instructor, interaction with the environment and feedback emphasized in Pascarella & Terenzini's (2005) academic engagement (Kuh, 2001; Fredricks, Blumenfeld, & Paris, 2004; Appleton, Christenson, Kim & Reschly, 2006; Kuh, Kinzie, Buckley, Bridges & Hayek, 2006; Sutherland, 2010; Sheard, Carbone & Hurst, 2010).

The determination of students' learning approaches and investigation their relationships with academic engagements are seen crucial since they assist to access more detailed information about variables whose effects on academic achievement are proved by several studies. However, the relationship between a learning approach which has notably importance on effective learning and academic engagement is not researched. Teacher candidates have participated in this research because their learning approaches and academic engagements can affect students will be trained by them in the future. The determination of the relationship between those students' learning approaches and academic engagements is believed to contribute to the literature. Therefore, in this research, the relationship between learning approaches and academic engagements of teachers aimed to be examined. In this context, following questions are aimed to be answered:

1. Which type of learning approaches do students have?
2. Is there a significant difference between students' learning approaches and gender?
3. Is there a significant difference between students' academic engagements and gender?
4. Is there a significant relation between students' academic engagements and their learning approaches?

METHOD

Research Model and Participant Group

This research is carried out by the survey model, in the spring semester of 2014-2015 academic year, at the Faculty of Education and department of Computer Education and Instructional Technology

(CEIT) with the participation of students at various grade-levels from two state universities (Ahi Evran University and Necmettin Erbakan University) in Turkey. Data are obtained from 194 students who respond all questions of data collection instruments correctly.

Data Collection Tools

The data collected via the study process questionnaire adapted into Turkish by Yılmaz and Orhan (2011), academic engagement scale developed by Korucu (2013) and the personal information form established by the authors.

Reviewing the literature, it can be observed that the scale developed by Biggs, Kember & Leung (2001) that allows classifying students' learning approaches as deep and surface is used frequently in order to determine learning approach of the students in higher education. The scale developed in English originally by Biggs et al. (2001) is used in many studies (Gijbels & Dochy, 2006; Gijbels, Watering, Dochy, & Bossche, 2005; Kember et al., 2004) and is adapted into different languages. It can be seen that the scale adapted into Turkish under various names by various researchers (Bati, Tetik, & Gürpınar, 2010; Önder & Beşoluk, 2010; Yılmaz & Orhan, 2011). In this research, study process questionnaire adapted by Yılmaz & Orhan (2011) is used in order to determine learning approaches of the students. The purpose of the study carried out by Yılmaz & Orhan (2011) is investigation of linguistic equivalence, validity and reliability of Turkish form of study process questionnaire developed by Biggs et al. (2001) for higher education students. There are 20 items in total and two dimensions including deep and surface learning approach in the scale. There are also two sub-dimensions involving motivation and strategy dimensions under each dimension. Five point Likert scale is used in responding to the questions and for each item; "never or only rarely true of me (1)", "sometimes true of me (2)", "true of me about half the time (3)", "frequently true of me (4)", and "always or almost always true of me (5)" options are presented. Exploratory factor analysis is performed in order to determine the structure resulted from application of the scale's Turkish form to students at the beginning of validation studies. In order to determine whether the factor structure of the original scale is compatible with

data obtained from Turkish students, the confirmatory factor analysis is performed. According to the results of the validity test; original structure which foresees the presence of sub-dimensions of deep motivation, deep strategy, surface motivation and surface strategy cannot be reached in the Turkish scale. However, Turkish scale can measure in a valid way whether the individuals have adopted deep or surface approach. In addition, Biggs et al. (2011) has stated that scale can be used to measure only deep and surface approach. Researchers state that the cause of the fact that results incompatible with original scale in terms of sub-dimensions is the difference of Turkish students' aims to study (motivation) and methods used by Turkish students. In order to test the stability of Turkish form in measuring test-retest method is applied and the results obtained are showed that the level of consistency between the two applications are acceptable. Furthermore, Cronbach's α reliability coefficient, calculated to determine the scale's internal consistency, is .79 for deep approach and .73 for surface approach. These values are higher than the ones in original scale and they are at acceptable level for reliability. The findings of the results of operations performed indicate that Turkish version of the scale is valid and reliable measurement tool with linguistic equivalence in order to determine the learning approach of higher education students in the conditions.

In the research, to determine students' academic engagements of the students the academic engagement scale is developed by Korucu (2013) is used to. The academic engagement scale improved in a study carried out by Korucu (2013) is a five point Likert type scale including 39 items at the initially. At the range of the studies which has developed to determine the validity and reliability of the scale, the scale is applied to 410 university students. As a result of the analysis performed with the obtained data, 6 items whose item charge values have multiple factors are removed from the scale and a 33-item academic engagement scale that includes five factors is formed. These factors have been named as active learning, the engagements for lessons and requirements, student and teacher interaction, academic challenge and feedback situations. The final status of the five-point Likert type scale consists of 33-items. KMO value is calculated as 0.75 as a result of the statistical

analysis performed to determine content validity of academic engagement scale. Factor analysis enables all data collected from application's results divided into smaller groups is performed to examine the construct validity of the scale. The validity of the measurement instrument is determined by sub-dimensions which are gained from the results of revealing the accuracy of the factor structure predicted by the researcher instead of a single factor (Büyüköztürk, 2008). Reliability coefficient (α) established by Cronbach is calculated to ensure the reliability of the measurement instrument. Items of the scale in terms of factors and Cronbach's α reliability coefficients are (.777) for 7 items (m26, m27, m28, m29, m30, m31, m32) the engagements for lessons and requirements; (.768) for 6 items (m4, m5, m15, m16, m17, m18) student and teacher interaction; (.774) for 6 items (m20, m22, m23, m24, m33, m34) feedback situations; (.737) for 9 items (m1, m2, m3, m6, m7, m8, m9, m10, m39) active learning; (.643) for 5 items (m19, m21, m36, m37, m38) academic challenge. The minimum score taken from the scale is 33; the maximum score is 165. Scale can be evaluated with regards to sub-factors separately. While the maximum score received from this test explains the fact that individual's academic engagement is high; minimum score disclosures the fact that individual's academic engagement is low. This result will show similar results when evaluated for each dimensions separately. Thus, achieved results are revealed that the scale is a valid and reliable measurement tool which can be used to determine the academic engagement of university students.

Data Analysis

Acquired data is analyzed using the SPSS (The Statistical Package for The Social Sciences) software program. Parametric tests are utilized in the analysis of data because the data obtained from the research meets the parametric test assumptions. In this context, tests used for each sub-goal are described below.

Descriptive statistics are used to determine the students' learning approach. In order to determine whether there is a significant difference between the scores gained from learning approach's deep

and surface approach dimensions and gender or not, independent samples t-test is used. In order to test whether there is a significant difference between the scores gained from academic engagement scale and gender or not, independent samples t-test is used. In order to discover the relationship between students' learning approaches and academic engagements simple correlation technique is utilized.

FINDINGS

Findings related to learning approaches of students

Students' achievement was measured by a pre-test and a post-test. The pre-test and post-test were prepared to reflect the objectives of the classes during the experiment and were revised by two subject matter experts. The mean and standard deviation for each group are shown in Table 2.

Descriptive statistics related to the students' scores received from study process questionnaire are presented in Table 1.

Table 1. Descriptive statistics on students' learning approaches

Learning Approach	Range	N	\bar{X}	SS
Deep Approach	10-50	194	34.58	5.67
Surface Approach	10-50	194	30.05	6.39

As it is seen in Table 1, while the average of the students' scores obtained from deep dimension of study process questionnaire is 34.58, the average of the scores obtained from surface approach is 30.05. In a study managed by Yilmaz & Orhan (2011); it is stated that learning approaches are determined in accordance with the approaches (deep or surface) in which students get more scores.

The findings concerning the distribution of student' learning approaches in the study group in terms of gender are given in Table 2.

Table 2. Distribution of students' learning approaches in terms of gender

		Deep approach		Surface approach		Sum	
		N	%	N	%	N	%
Gender	Female	76	77.55	22	22.45	98	100
	Male	61	63.54	35	36.46	96	100

As seen in Table 2, the analysis made in relation to the students' learning approach demonstrates 137 students have deep approach, while the 57 students have surface approach out of 194 students in the study group.

Findings related whether there is a significant difference between students' learning approach and gender:

The t-test results of the students' learning approaches in accordance with the gender are given in Table 3.

Table 3. t-test results of the students' learning approaches in accordance with the gender

Learning Approach	Gender	N	\bar{X}	S	Sd	t	p
Deep Approach	Female	98	34.91	5.111	192	.806	.422
	Male	96	34.25	6.226			
Surface Approach	Female	98	28.57	6.252	192	-3.324	.001
	Male	96	31.55	6.237			

As shown in Table 3, according to the findings obtained by using t-test for independent samples, scores obtained from deep approach dimension of study process questionnaire are not significantly different according to gender ($p > .05$). In other words, students' scores received from deep approach dimension of students' study process questionnaire does not change with regard to gender. Scores obtained from surface approach dimension of students' study process questionnaire are significantly different according to gender ($p < .05$). In other words, students' scores received

from surface approach dimension of study process questionnaire alter with regard to gender.

Findings related to whether there is a significant difference between the scores gained from academic engagement scale and gender:

The t-test results of the students' academic engagements in accordance with the gender are given in Table 4.

Table 4. t-test results of the students' academic engagements in accordance with the gender

	Gender	N	\bar{X}	S	Sd	t	p
Academic Engagement	Female	98	130.19	16.029	192	3.007	.003
	Male	96	123.08	16.903			

As shown in Table 4, according to the findings obtained by using t-test for independent samples, there is a significant difference between the scores students receive from the academic engagement scale and gender ($p < .05$). In other words, students' scores gathered from the academic engagement scale vary according to gender.

Findings related to the relationship between students' learning approaches and academic engagements:

In order to discover the relationship between students' learning approaches and academic engagements simple correlation technique is utilized. If the correlation coefficient is 1.00, it demonstrates a perfect positive relationship; if it is -1.00, a perfect negative relationship; if it is 0.00, there is no relation. Although there is no full

consensus in the literature in terms the interpretation of the greatness of the correlation coefficient; the absolute value of the correlation coefficient between 0.70-1.00 can be defined as high; between 0.70-0.30 can be defined as medium; and between 0.30 to 0.00 can be defined as low (Büyüköztürk, 2008). Findings related to the relationship between students' learning approaches and academic engagements are given in Table 5.

Table 5. The relationship between learning approaches and academic engagements

Learning approach	Academic Engagement
Deep	.491*
Surface	-.103

* Correlation is significant at the 0.01 level.

As demonstrated in Table 5, there is a significant relationship between the scores gathered from deep approach dimension of study process questionnaire and academic engagement scale at intermediate level in positive direction. However, there is no significant relationship between the scores gathered from surface approach dimension of study process questionnaire and academic engagement scale.

CONCLUSION

As a result of this study, the scores students receive from study process questionnaire is demonstrated that 137 students have deep learning approach while 57 students have surface learning approach. Even though scores obtained from deep approach dimension of study process questionnaire is not stated a significant difference with regard to gender, there is a significant difference between scores obtained from surface approach dimension of study process questionnaire and gender. Scores obtained from the academic engagement scale are showed a significant difference in terms of gender. Although there is a significant relationship between the scores gathered from deep approach dimension of study process questionnaire and academic engagement scale at intermediate level in positive direction, there is no significant relationship between the scores gathered from surface approach dimension of study process questionnaire and academic engagement scale.

Having high level of academic engagement and deep learning approach are characterized as positive features for students in the literature. The findings of the research results achieved is reviewed in this respect; the fact that while there is a positive correlation between students' scores taken from deep dimension of study process questionnaire and the scores received from the academic engagement scale, a significant relationship cannot be found between students' scores taken from surface dimension of study process questionnaire and the scores received from the academic engagement scale is important. Additionally, it is emphasized that there are very few studies in respect of the effect of gender on participation in educational environments and academic engagement in the literature. In this context, the results of the research findings have supported by various researchers (Chavous, Rivas-Drake, Smalls, Griffin & Cogburn, 2008; Mo & Singh, 2008) and it is concluded that academic engagements of students differ in gender.

SUGGESTIONS

Study group of this research consists of the teacher candidates who are studying at the faculty of education in two state universities. Therefore, in order to generalize the research findings, an extended research which includes students from different education faculties is advised. In addition, research will be conducted in the future; taking into consideration the fact that holding studies with the participation of the students at different levels of education (such as undergraduate, graduate and post-graduate) with individual differences is important since it leads to acquiring information about more variables of learning approach and academic engagement.

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