SERVICE TEACHERS' ACADEMIC ACHIEVEMENTS IN ONLINE DISTANCE EDUCATION:
The Roles of Online Self-Regulation and Attitudes

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ABSTRACT

The purpose of this study is to examine pre-service teachers' academic achievements in terms of different variables such as online self-regulated learning skills and attitudes towards distance education. This study is descriptive in nature. Survey study design was implemented to examine the relationships among variables.

The study was implemented at Afyon Kocatepe University Faculty of Education in Turkey. The study group consists of 114 students from different departments including primary school education, social studies education and preschool education. 84 (73.7%) were females and 30 (26.3%) were males. Ages of the group ranged between 18 and 28 with a mean of 19.42 (SD: 1.30). In Afyon Kocatepe University some courses named "Computer II" and "Principles of Ataturk and the History of Revolution" are presented by using computer based online distance education. We selected "Computer II" as data collection medium. The course was introduced to students for one semester. Online self-regulated learning scale (α=0.948) and attitude scale towards distance learning (α=0.835) are used as data instruments. Students' final grades were taken into account as achievement scores to examine the relationship between achievement attitude and self-regulated learning. Pearson's correlation coefficient, multiple regression analysis, independent samples t-test and one-way ANOVA are conducted to analyze collected data. The results showed that online self-regulated learning strategies and attitude towards distance education accounted for 15 % of variation of students' achievement. Attitude made a significant contribution to the prediction of achievement while the sub factors of self-regulated learning did not make a significant contribution to achievement.

Keywords: Self-regulated learning, distance education, attitude, and achievement.

INTRODUCTION

The advent of personal computers and internet dramatically affected educational phenomenon. Both educational and corporate institutions sought ways to integrate technology into teaching learning process, since internet technologies made learning environment more flexible.

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One of the most known technology aided learning environments is online education. In this paper, online education is regarded as a subcategory of distance education. Online learning has made it possible to reach learning content in anytime from anywhere. In this type of learning environments, learners feel themselves more autonomous; however, to benefit online learning effectively, there are some issues that should be taken into consideration. Learning online requires interaction among some processes such as cognition, meta-cognition and motivation similarly in traditional education (Azevedo & Witherspoon, 2009). Within this perspective, there have been numerous researches to bring light to factors affecting online learners' autonomy in the literature. Self regulated learning provides a framework which contributes the autonomy issue in online learning (Lynch & Dembo, 2004). Academic Self regulated learning defined as the degree which learners meta-cognitively, motivationally, and behaviorally active in their own learning process. Meta-cognition refers to student's capability to plan, organize and assess learning strategies to achieve desired goals, motivation refers to self efficacy and high intrinsic motivation and behavior refers to student's behavioral characteristics they use while they are trying to make learning more efficient (Zimmerman &Martinez-Pons, 1988). Self regulated learners direct their own efforts to acquire knowledge and skill without depending upon their teachers, parents or other members of the instruction (Zimmerman, 1989). They set meaningful goals, find appropriate learning strategy to achieve their goals, monitor and assess their learning processes and focus the learning environment by eliminating distractions in the learning environment (Zeidner, Pintrich and Boekaerts, 2000).

The self regulation in online environments is an important factor and may be more important compared to traditional courses because of the teachers' less activity in online education (Jonassen, Davidson, Collins and Haag, 1995).

King, Harner, and Brown (2000) also suggested that the necessity of self regulation in online learning is higher than traditional learning context. There are also some studies which present the positive significant correlation between self regulated learning and academic achievement. One of his studies Chang (2007) found that self monitoring strategy effects academic achievement and motivation significantly; students who used self-regulated strategies performed better than students who did not use on both academic achievement and motivational beliefs. Wang, Peng, Huang, Hou and Wang (2008) also found that learning strategies and learning motivation are clearly related to learning outcomes. Researches clearly show that a relationship between self regulated learning and academic achievement exists.

Considering the success in online education, students' attitude towards distance education should be taken into account. Kumar (1999) defined the attitude towards distance education as individual's reaction favorably or unfavorably to the different elements of distance education environment such as instructional materials, assignments, counseling services, support services. In general, either positive or negative, there is a significant association between attitude and achievement that is the attitude is one of the most important factors related to student success in online learning (Sanders & Morrison-Shetlar, 2001).

Kumar found that there was a positive, significant relationship between academic success and the attitude towards distance education. Based on the literature, the purpose of the paper is to examine the relationships between online self regulated, attitude towards distance education and academic achievement.

For achieving the goal of the study, the following research questions are proposed by the researchers:

> - What are the students' self-regulated learning scores?
> - Do students' self-regulated learning skills differ significantly according to the departments they belong to?
> - Are there any significant correlations among self-regulated learning, attitude towards distance education and academic achievement?
> - Are self-regulated learning and attitude towards distance education predictive of academic achievement?

METHODOLOGY

Research Design
This study was descriptive in nature. Survey research study was used to examine the relationships between pre-service teachers' academic achievement, their self-regulated learning skills in online environment and attitude towards distance education.

Course Medium
The study was implemented in Afyon Kocatepe University Faculty of Education in Turkey. The university teaches some courses such as "Computer II" and "Principles of Ataturk and the History of Revolution" through the medium of distance education, so all of the attenders have prior experience in distance education. For this study, the Computer II course was taken into account. In this course students learn how to operate office programs, fundamentals of internet communication, the basics of e-mail, chat and file transferring. The course was introduced to students for one semester. The distance education medium used for this project has so many features including interactive white board, video conferencing, presentation, discussion forums, chats, assessment tools, and blogs and so on.
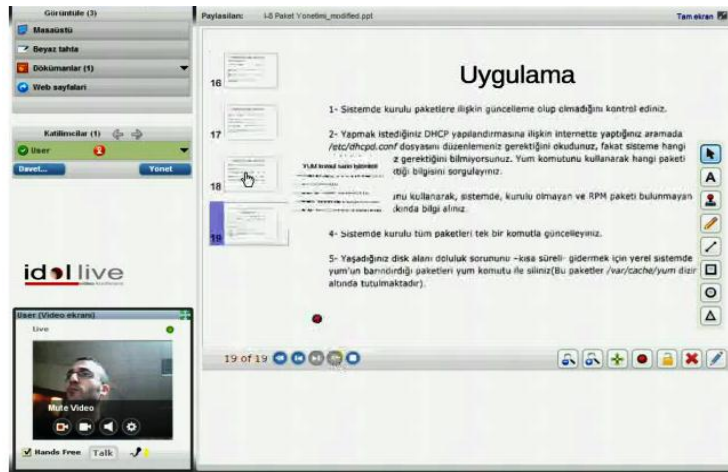
Study Group
The study group consists of 114 students studying at Afyon Kocatepe University from different departments including primary school education, social studies education and preschool education. 84 (73.7%) were female and 30 (26.3%) were male. Ages of the group ranged between 18 and 28 with a mean of 19.42 (SD: 1.30).

Data Collection Instruments
The data of this study was collected by the scales named Attitude towards Distance Education and Online Self-Regulated Learning. The following sections give details about the scales.

Attitude towards Distance Education
Attitude towards distance education scale was developed by Ağır, Gür and Okçu (2007). The scale was constructed as a quantitative, dimensional based on self-assessment. The scale which is 5 point likert consists of 21 items.

Possible scores range from 21 to 105. The points getting from the scale indicate one's attitude towards distance education.

It can be said that higher scores on this scale indicate positive attitude. The internal consistency coefficient value of the whole scale was found as 0,835.

Online Self-Regulated Learning Scale
The scale was developed by Barnard, Lan, To, Paton, Lai (2009) and adapted into Turkish by Korkmaz and Kaya (2012).

Online self-regulated learning scale is multidimensional likert type scale which consists of 24 items. The subcategories of the scale are Goal Setting, Structuring the Environment, Task Strategies, Time Management, Help Seeking and Self-Regulation. Possible scores range from 24 to 120. Higher scores getting from this scale indicate better self-regulation in online learning (Barnard et al., 2009).

The internal consistency coefficient value of the original scale was found as 0.90 in the original scale while that value was found as 0.948 in the Turkish version.

Defining Student Achievement
In this paper we used students' final grades as academic achievement scores. Although final grades have limitations for predicting student success and are regarded by some academics as unreliable, they convey practical meanings for measuring academic success. In addition, many things such as transferability, scholarships, passing the course depend on final grades (Puzziferro, 2008).

We preferred students' formal final grades instead of their self-reported final grades; because students' self-reported scores may be inaccurate in some circumstances. For instance Kuncel, Credé, and Thomas (2005) conducted a study which examines the correlations and differences between self-reported GPA and formal GPA. Kuncel et.al (2005) found that self-reported GPAs are unreliable.

For this reason we included students who voluntarily participated to the study and note down their ids on the scale. The grades were obtained from the student affairs system by using students' id.

RESULTS

Research Question 1
What are the students' self-regulated learning scores? (Descriptive statistic)

Variables	M	Sd
Goal setting	3,20	,84
Structuring the environment	3,89	,84
Task strategies	2,80	,87
Time management	2,60	,93
Help seeking	3,12	,71
Self-regulation	3,02	,90
Attitude	2,96	,41

The mean, standard deviation for each variable are presented in Table I. Descriptive statistics show that students tend to use goal setting, structuring the environment and help seeking strategies more than task strategies, time management and self-regulation. As shown in Table: 1 the mean value for goal setting, help setting and structuring the environment strategies were 3.20, 3.12 and 3.86 respectively while time management, task strategies and self-regulation were 2.60, 2.80 and 3.02. In addition, student's mean scores of attitude towards distance education were 2.96.

Research Question 2

Do students' self-regulated learning strategies differ significantly according to the departments they belong to? (Difference in self-regulated learning skills according to departments)

Table: 2
Anova results regarding student's self-regulated learning
strategies with respect to Department

		Goal setting		Structuring the environment		Task strategies		Time management		Help seeking		Self-regulation	
		X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
	1.(primary school education)	2,99	,81	3,78	,83	2,71	,80	2,43	,86	3,05	,72	2,84	,92
	2.(Pre-school education)	3,40	,50	3,96	,68	2,70	,89	2,7	,86	3,26	,62	3,13	,78
	3.(Social studies education)	3,53	1,01	4,08	,86	3,10	,97	2,82	1,11	3,18	,73	3,40	,92
	Total	3,20	,84	3,89	,84	2,80	,87	2,60	,93	3,12	,71	3,03	,92
		F	P	F	P	F	P	F	P	F	P	F	P
	department	5,002	,00	1,287	,28	2,080	,13	1,669	,19	,828	,43	3,829	,025
ANOVA	difference	1-2		-		-		-		-		1-3	

The results of student's self-regulated scores according to their departments are presented in Table: 2. The results demonstrated that there is no significant difference in student's structuring the environment, task strategies, time management, help seeking strategies according to their departments but there is a significant

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difference in student's goal setting (F=5,002, p=,00) and self-regulation strategies (F=3,829, p=,02). Students in the department of Pre-school education have a higher goal setting strategies than students in the department of primary school education. Students in social studies education have a higher self-regulation strategy than students in primary school education department.

Research question 3: Are there any significant correlations among self-regulated learning, attitude towards distance education and academic achievement?

Table: 3
Correlations among Online Self-regulated Learning Strategies,
Attitudes towards Distance Education and academic achievement

	1	2	3	4	5	6	7	8
1.achievement	1							
2.goalsetting	-,165	1						
3. Structuring the nvironment	-,035	,577**	1					
4. Task strategies	-,113	,627**	,400**	1				
5.Time management	-,105	,538**	,305**	,627**	1			
6. Help seeking	,067	,575**	,505**	,526**	,507**	1		
7. Self-regulation	-,070	,554**	,349**	,631**	,568**	,587**	1	
8.attitude	,255**	,259**	,267**	,226*	,226*	,290**	,273**	1

*p<.05   **p<.01

The results of the correlational analysis are shown in table3. As table indicates there is not a significant correlation between the sub-factors of self-regulated learning and achievement. In addition, it is found that there is a low, positive and significant correlation between achievement and attitude (r= .255 and p< .01). The results of also showed that attitude is significantly correlated with the sub factors of self-regulated learning, however the correlation coefficient is low between the variables. It can be said from the results that students who self-regulate tend to have more positive attitudes towards online distance education than students who do not.

Research Question 4
Are self-regulated learning and attitude towards distance education predictive of academic achievement?

Table: 4
Contribution of attitude and online self-regulated learning strategies to achievement

Variables	Standard scores		Standardized scores		
	B	SD	B	T	p
Constant	62,758	5,250		11,95	,000
Goal setting	-,47	,243	-,26	-1,933	,056
Structuring the environment	-,05	,257	-,02	-,197	,844
Task strategies	-,08	,292	-,04	-,296	,767
Time management	-,22	,330	-,08	-,690	,492
Help setting	,64	,329	,24	1,966	,052
Self-regulation	-,14	,264	-,07	-,558	,578
Attitude	,262	,082	,30	3,215	,002

R=.396, R²=.157, F=2,819

The results of the multiple linear regression analysis showed that online self-regulated learning strategies and attitude towards distance education accounted for 15 % of variation of students' achievement together (R=.39, F=2.819, p=.01). It was found that attitude made a significant contribution to the prediction of achievement (p<.05), while goal setting, structuring the environment, task strategies, time management, help seeking and self-regulation failed to make a significant contribution to prediction of achievement (p>.05).

CONCLUSION

Descriptive studies regarding sub-factors of self regulated learning showed that "time management" subscale had the lowest mean value, meaning that students have difficulties with organizing and controlling their time in online learning. This finding is consistent with the existing literature (Korkmaz & Kaya, 2012; Usta, 2011; García-Ros et al. , 2004).

On the other hand "Structuring the environment" has the highest mean value as a sub factor. As Lynch and Dembo (2004) stated since online learner don't study in a controlled traditional classroom context, online learners should control and manage their learning environment. They prefer connecting to the learning environment from a place where they feel themselves comfortable and from a computer or a device which have the necessary equipment.

According to the results there found to be a significant positive and low correlation between attitudes towards distance education and self-regulated learning skills. It can be said that the highest level of self-regulated learning skills are associated with the highest level of attitudes toward online distance education .One puzzling finding from the result was that there were no significant correlations between self-regulated learning skills and achievement. Also the multiple linear regression analysis showed that achievement and self-regulation skills together explained 15 % variation of student success and none of the sub factors by oneself made a significant contribution to the prediction of achievement. In literature, in the context of traditional face-to-face learning, research showed that there is a strong relationship between increased academic performance and self-regulated learning (Jenkins, 2009; Wolters, 1999; Turan & Demirel, 2010). The same effect was not observed in this study due to the nature of online learning context. This may be attributed to student entry characteristics.

Some students may be familiar with online learning context and computer technologies while some may not. Future studies could be repeated by controlling variables of the prior knowledge about computer technology and/or familiarity with online learning context. Self-regulated learning could change depending on the course content, context, and knowledge domain. According to Zimmerman (2000) while self-regulated learning skills are substantial for effective learning. The characteristics of the learners also affect self-regulated learning skills. This may be the explanation of the unexpected results of the study.

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