

## Investigation of University Students' Online Self-Regulated Learning Levels

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### **Abstract**

*The purpose of this study is to investigate online self-regulated learning of university students according to different variables. In this general framework, whether self-regulated learning levels of university students in online learning environment differentiate significantly according to their gender, general satisfaction levels in online lessons, daily average internet usage periods and expertise levels they perceived related with internet usage have been examined. It is a descriptive study aiming to reveal an existing situation. The study sample consists of 291 freshmen of Faculty of Education, Faculty of Medicine and Vocational School of Health Services of a foundation university in Turkey, who are studying three online courses. In this research, employed data gathering tools are Online Self-Regulated Learning Questionnaire (OSLQ) and personal information questionnaire. The result of the study demonstrated that the online self-regulated learning levels of the university students depending on their gender and expertise levels perceived related with internet usage are similar. Moreover, time management strategy usage levels of university students in online learning environment differentiate according to their satisfaction levels from online lessons and daily average internet usage and that their self-evaluation strategies differentiate only according to daily internet usage.*

**Keywords:** *Self-regulated learning, online learning, internet usage, satisfaction, gender*

### **Introduction**

In learning-teaching environments, the transition from teaching instructor approach to learning student attitude requires in the teaching process the change of students from passive learners into active individuals who knows where and how to acquire the

knowledge needed, who can think critically, who bears the responsibility of learning, who can control his/her own learning processes and actively participate in learning process, trusts in his/her own skills and employs these skills in a positive way or in other words learn how to learn (Gülümbay, 2005). Learning how to learn is regarded as the key to success and life-long learning in this age of information (Doyle, 1994). On that account, the modern educational theories and approaches are constructed in a way to gain these qualities to individuals and learning environments are designed to activate the learners. Self-regulated learning approach that expresses an active and constructive process where the individual attempts to regulate his behaviors, metacognitive competency and self-motivation in line with the preset learning objectives, directs and restricts his objectives according to environmental effects bears a significant function in developing life-long learning skills (Pintrich, 2000; Zimmerman, 2002). According to Zimmerman (1994) the students who employ self-regulated learning skills actively possess three basic qualities. The first one is that they use several cognitive strategies that assist knowledge structuring and memorizing. The second one is that to control their own progress they actively supervise their own learning by using metacognitive strategies like planning and monitoring. Finally they focus on their courses and overcome the emotional failures in a rational manner through self-motivation (Miltiadou & Savenye, 2003).

Online learning environments that diminish the space, time and physical material limitations to a great extent allow the students to achieve control in studying which course in which way and when (Cunningham & Billingsley, 2003). Student autonomy which is amongst the significant qualities of students with self-regulated learning skills and of online learning environments manifests that in online learning environments, self-regulated learning is a vital variable for success attainment (Ally, 2004; Hodges, 2005; Fisher & Baird, 2005; Kitsantas & Dabbagh, 2010). It is thought that determination of the differentiation of self-regulating learning strategies used in online learning environment according to which variables may be important for the design of these environments as well as the features of the learners in these environments (Korkmaz & Kaya, 2012). In this context, the purpose of this study is to investigate online self-regulated learning

of university students according to different variables. In this general framework, whether self-regulated learning levels of university students in online learning environment differentiate significantly according to their gender, general satisfaction levels in online lessons, daily average internet usage periods and expertise levels they perceived related with internet usage have been examined.

### Method

This research is a descriptive study aiming to reveal an existing situation. The study sample consists of 291 freshmen of Faculty of Education, Faculty of Medicine and Vocational School of Health Services of a foundation university in Turkey, who are studying three online courses. In this research, employed data gathering tools are Online Self-Regulated Learning Questionnaire (OSLQ) and personal information questionnaire. OSLQ has been used to determine students' levels of using online SRL strategies in online learning environments. OSLQ has been originally developed by Barnard, Lan, To, Paton and Lai (2009) and adapted into Turkish by Korkmaz and Kaya (2012). The scale consists of 6 sub factors. The whole duration for this five-graded Likert scale varying between choices "Strongly disagree" (1) and "Strongly agree" (5) is around 20-25 minutes. Students select their own agreement levels in the evaluation form corresponding to a statement on the scale. The findings related to reliability studies conducted by Korkmaz and Kaya, amidst 222 students from different departments; for the sub factors of scale Cronbach alpha values vary between 0.95 and 0.63. In this research, Cronbach alpha ( $\alpha$ ) reliability coefficients of the sub factors belonging of the scale are as demonstrated in Table 1.

**Table 1.** Cronbach alpha values of the sub factors of Online Self-Regulated Learning Questionnaire

Sub factors	$\alpha$	Item number
Goal Setting	0,86	5
Structuring the Environment	0,84	4
Task Strategies	0,80	4

Time Management	0	3
	,80	
Help Seeking	0	4
	,72	
Self-Evaluation	0	4
	,82	

In the study, one-way variance analysis and independent sample t-test were used for data analysis. The significance level of 0.05 was used to interpret the findings.

**Findings**

The t test results related with the distribution of self-regulated learning strategies usage levels of the university students in online learning environment according to their gender and the significance of the difference between their mean scores are submitted in Table 2.

**Table 2.** Result of the t test on the difference between the mean scores on online self-regulated learning according to gender

Variables			M	D		
Goal Setting	Female	238	15,23	4,39	0,46	0,68
	Male	53	14,94	5,19		
Structuringthe Environment	Female	238	15,24	3,29	2,18	0,03
	Male	53	14,13	3,61		
Task Strategies	Female	238	11,01	3,50	0,27	0,79
	Male	53	10,87	3,74		
Time Management	Female	238	7,96	2,73	-0,01	0,99
	Male	53	7,96	2,96		
Help Seeking	Female	238	12,62	3,22	0,26	0,79
	Male	53	12,49	3,64		

Self- Evaluation	Female	238	11,74	3,67	0,42	0,64
	Male	53	11,47	4,11		

In table 2, t test was applied to check whether goal setting, task strategies, time management, help seeking and self-evaluation mean scores differences of university students according to gender is significant or not and it was understood that the differences between mean scores is not significant. It was also understood that the difference of structuring the environment mean scores among university students according to gender is high in favor of female students ( $p < 0,05$ ). According to this finding, it can be said that female students can use their structuring the environment strategies more efficiently compared to male students in online learning environment. The distribution of self-regulated learning strategies usage levels of university students in online learning environment according to general satisfaction levels in online lessons is submitted in Table 3.

Table 3. Mean scores on online self-regulated learning according to the satisfaction levels in online lessons

Variables	Not satisfied (n=108)			Undecided (n=95)		Satisfied (n=88)
	D	D	D	D	D	D
Goal Setting	14,49	4,16	15,32	4,79	15,88	4,64
Structuring the Environment	14,96	3,00	15,01	3,73	15,17	3,43
Task Strategies	10,57	3,07	11,17	3,70	11,30	3,87
Time Management	7,43	2,41	8,16	2,99	8,40	2,84
Help Seeking	12,57	2,84	12,49	3,36	12,74	3,74
Self- Evaluation	11,35	3,57	11,76	3,85	12,02	3,85

In Table 3, it was observed that the goal setting, structuring the environment, task strategies, time management, help seeking and self-evaluation mean scores of university students who are satisfied with online lessons are higher compared to students who are not satisfied. The variance analysis results related with the significance of the differences between mean scores are submitted in Table 4.

Table 4. Results of the variance analysis on the mean online self-regulated learning according to the satisfaction levels in online lessons

Variables	Variabls	Sum of Squares	df	Mean Square	F	p	Scheffe
Goal Setting	Between Groups	95,57	2	47,78	2,34	0,10	
	Within Groups	5883,14	288	20,43			-
	Total	5978,71	290				
Structuring the Environment	Between Groups	2,22	2	1,11	0,10	0,91	
	Within Groups	3295,29	288	11,44			-
	Total	3297,51	290				
Task Strategies	Between Groups	29,91	2	14,96	1,20	0,30	
	Within Groups	3600,	288	12,50			-

	n	03					
	Groups						
	Total	3629,95	290				
Time Management	Between Groups	51,39	2	25,69	3,42	0,03	
	Within Groups	2164,12	288	7,51			1-3
	Total	2215,51	290				
	Between Groups	2,82	2	1,41	0,13	0,88	
Help Seeking	Within Groups	3135,14	288	10,89			
	Total	3137,96	290				
	Between Groups	22,53	2	11,26	0,80	0,45	
	Within Groups	4046,02	288	14,05			
Self-Evaluation	Total	4068,54	290				

According to Table 4, a significant difference was observed in time management mean scores depending on the satisfaction levels of university students about online lessons

( $p < 0,05$ ). As a result of the Scheffe test which was conducted in order to determine which groups are the reasons of the difference, it was determined that time management mean scores of students who are satisfied with the online lessons are higher compared with the students who are not satisfied. Depending to this finding, it can be said that the students who are satisfied with online lessons use time management strategies more than the students who are not satisfied. It was determined that the differences between mean scores of other sub dimensions of self-regulated learning are not significant ( $p > 0,05$ ). The distribution of self-regulated learning strategies usage levels of university students in online learning environment according to their daily average internet usage is submitted in Table 5.

**Table 5.** Mean scores on online self-regulated learning according to daily average internet usage

Variables	Less than 1 hour (n =36)		1- 2 hours (n =122)		3- 4 hours (n =94)		More than 4 hours (n =39)	
	D	D	D	D	D	D	D	D
Goal Setting	6,19	,45	4,69	,22	5,03	,97	6,13	,39
Structuring the Environment	5,28	,30	4,57	,29	5,49	,26	5,21	,87
Task Strategies	1,86	,22	0,64	,49	0,81	,72	1,69	,41
Time Management	,67	,52	,47	,78	,04	,70	,64	,90
Help Seeking	3,36	,64	2,25	,47	2,40	,25	3,46	,17
Self- Evaluation	2,36	,03	0,98	,81	1,90	,76	2,74	,84

In table 5, it was observed that the goal setting, task strategies and time management mean scores of students who use



internet less than 1 hour per day are the highest. Besides, it was observed that structuring the environment mean scores of students using internet for 3-4 hours per day have the highest structuring the environment mean scores and that the students using internet for more than 4 hours per day have the highest help seeking and self-evaluation mean scores. The variance analysis results related with the significance of the differences between mean scores are submitted in Table 6.

**Table 6.** Results of the variance analysis on the mean online self-regulated learning according to daily average internet usage. According to Table 6, a significant difference was observed in time management and self-evaluation mean scores depending on their daily average internet usage ( $p < 0,05$ ). As a result of the Scheffe test which was made to determine from which group or groups the difference is originated it was

	Variables	Sum of Squares	df	Mean Square	F	p	Scheffe
Goal Setting	Between Groups	103,64	3	34,55	1,69	0,17	
	Within Groups	5875,07	287	20,47			
	Total	5978,71	290				
Structuring the Environment	Between Groups	48,60	3	16,20	1,43	0,23	
	Within Groups	3248,91	287	11,32			
	Total	3297,51	290				
Task Strategies	Between Groups	64,65	3	21,55	1,74	0,16	
	Within Groups	3565,30	287	12,42			
	Total	3629,95	290				
Time Management	Between Groups	66,33	3	22,11	2,95	0,03	
	Within Groups	2149,17	287	7,49			1-2 2-4
	Total	2215,51	290				
Help Seeking	Between Groups	68,70	3	22,90	2,14	0,10	
	Within Groups	3069,26	287	10,69			
	Total	3137,96	290				
Self-Evaluation	Between Groups	124,70	3	41,57	3,03	0,03	
	Within Groups	3943,85	287	13,74			2-4
	Total	4068,54	290				

determined that the students who use internet for less than 1 hour per day have higher time management mean scores compared with the students who use internet between 1 and 2 hours per day. Moreover, it was determined that the students using internet for 1-2 hours per day have significantly lower time management and self-evaluation mean scores compared with the students using internet for more than 4 hours per day. Depending on this finding, it can be said that university students using internet averagely 1-2 hours per day use time management and self-evaluation strategies in online learning environment less than students who use internet more than 4 hours per day and use time management strategies less than students using internet less than 1 hour per day. It was determined that the differences between the mean scores of other sub dimensions of self-regulated learning are not significant ( $p>0,05$ ). The distribution of self-regulated learning strategies usage levels of university students in online learning environment according to the expertise levels perceived related with internet usage is submitted in Table 7.

**Table 7.** Mean scores on online self-regulated learning according to the expertise levels perceived related with internet usage

ables	Vari 8)	Low	dle	Mid	High	ry high	Ve	
		(n=1 8)	(n=20 20)	(n=1 29)	(n=1 24)	(n=24 =24)	(n n)	
		D		D		D	D	
Goal Setting	4,28	,27	5,13	,79	5,28	,47	5,54	,62
Structuring the Environment	5,00	,74	4,79	,61	5,32	,31	4,83	,93
Task Strategies	0,67	,05	0,77	,49	1,33	,62	0,50	,72
Time Management	,61	,50	,88	,65	,12	,92	,79	,75
Help Seeking	2,28	,32	2,57	,49	2,68	,27	2,54	,16
Self-Evaluation	2,44	,75	1,59	,72	1,67	,90	1,71	,10

In table 7, it was determined that the students properly perceiving the expertise level related with internet usage have

highest structuring environment, task strategies, time management and help seeking mean scores and that the students weakly perceiving the expertise level have the highest self-evaluation mean scores. The variance analysis results related with the significance of the differences between mean scores are submitted in Table 8.

Table 8. Results of the variance analysis on the mean online self-regulated learning according to the expertise levels perceived related with internet usage

	Variables	Sum of Squares	f	Mean Square	F	p
Goal Setting	Between Groups	19,32		6,44	0,31	0,82
	Within Groups	5959,39	87	20,76		
	Total	5978,71	90			
Structuring the Environment	Between Groups	18,41		6,14	0,54	0,66
	Within Groups	3279,09	87	11,43		
	Total	3297,51	90			
Task Strategies	Between Groups	28,15		9,38	0,75	0,52
	Within Groups	3601,79	87	12,55		
	Total	3629,95	90			
Time Management	Between Groups	6,89		2,30	0,30	0,83
	Within Groups	2208,62	87	7,70		
	Total	2215,51	90			
Help Seeking	Between Groups	2,95		0,99	0,09	0,97
	Within Groups	3135,01	87	10,92		
	Total	3137,96	90			
Self-Evaluation	Between Groups	11,48		3,83	0,27	0,85
	Within Groups	4057,06		14,14		

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		87
Total	4068,54	90

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According to Table 8, it was determined that the differences between mean scores of sub factors of self-regulated learning according to the expertise levels perceived by university students related with internet usage are not significant ( $p>0,05$ ). According to this finding it can be said that the self-regulated learning levels of university students in online learning environment according to the expertise levels perceived related with internet usage.

### Conclusion

In the research, it was examined whether self-regulated learning levels of university students in online learning environment differentiate significantly according to their gender, general satisfaction levels in online lessons, daily average internet usage periods and expertise levels they perceive related with internet usage and below results were obtained.

It can be said that the self-regulated learning levels of the university students depending on their gender and expertise levels perceived related with internet usage are similar. For instance the structuring environment strategy using levels of female students are higher in online learning environment. This result is similar to other research results. Yukselturk and Bulut (2009) stated that the self-regulated learning levels of university students do not differentiate according to sex in Programming Languages lesson lectured in online learning environment, Tsai (2009) stated that the self-regulated learning levels of university students do not differentiate according to sex in Geology lesson lectured in online learning environment, Korkmaz and Kaya (2012) stated that the self-regulated learning levels of university students do not differentiate according to sex in Computer II lesson lectured in online learning environment.

It was observed that the time management strategy usage levels of university students in online learning environment differentiate according to their satisfaction levels from online lessons and daily average internet usage and that their self-evaluation strategies differentiate only according to daily internet usage. The university

students who are satisfied with the online lessons in the online learning environment are higher than students who are not satisfied. Moreover, the students whose daily internet usage is more than 4 hours have higher time management and self-evaluation strategy using levels are higher than students whose daily internet usage are between 1 and 2 hours. However the time management strategy using levels of students whose daily internet usage are lower than 1 hour are higher than students whose daily internet usage is between 1 and 2 hours. This makes us think that the students using internet less than 1 hour per day have less requirement of time management. In the study made by Artino (2009), it is determined that the self-regulated learning level of online learners do not differentiate according to online technology expertise and online learning expertise. Usta (2011) stated that the online self-regulated learning levels of teacher candidates differentiate according to their attitudes related with internet, opinions related with the efficiency of web based education and their attitudes towards computer. Barnard-Brak, Paton, and Lan (2010) stated that, at the end of 18 weeks of online lesson, no significant difference occurred in the self-regulated learning levels of students who has no previous online lesson experience. According to this result, it can be interpreted that self-regulated learning levels of students do not change by itself due to online lesson experiences.

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