Asian Journal of Education and Training
Vol. 4, No. 4, 302-308, 2018
ISSN(E) 2519-5387
DOI: 10.20448/journal.522.2018.44.302.308

Examination of the Effect of the Instructional Styles of Pre-Service Physical Education and Sports Teachers on the Ability of Self-Regulation

Mehmet Behzat TURAN[1]
Kenan KOÇ[2]

[1]*Erciyes University Physical Education and Sport Department, Kayseri/Turkey*
Email: behzatturan@erciyes.edu.tr Tel: +90 542 824 00 66
[2]*Erciyes University Physical Education and Sport Department, Kayseri/Turkey*
Email: kenankoc@erciyes.edu.tr Tel: +90 505 651 63 13

(✉ Corresponding Author)

Abstract

The purpose of this study is to examine the effects of pre-service physical education teachers' instructional styles on self-regulation skills. For this purpose, the sample of the research consists of 608 students who were randomly selected among the ones who 4th-grade students continue their education at Physical Education and Sports College in Erciyes, Omer Halisdemir, Aksaray, Dumlupinar, Gaziantep, Firat, Selcuk, Ahi Evran, Inonu, Erzincan and Haci Bektas Veli Universities. In the study, 2 scales were used as data collection tool. The first of these, Instructional Style Preference Scale (ISPS), was developed by Renzulli *et al.* (2002). The Self-Regulation Skill Scale (SRSS) was developed by Arslan (2008) in order to determine the self-regulation skill levels of pre-service teachers. In addition, personal information forms developed by the researcher were used in the study. Statistical analyzes of the data obtained from the Personal Information Form were made with the SPSS 22.0 package program. The personal information and inventory total scores and factor scores for the candidates were given by determining the frequency (f) and percentage (%) values. Pearson Moments Multiplication Correlation analysis (r) was used to show the relationship between scores obtained from the scales. Multiple regression analysis (β) was applied to determine whether the scores obtained were predictive of each other. A significant relationship was found between the discussion, which is among the instructional styles, cognitive regulation sub-dimension and the programmed instruction. It has been found that there is a high level of correlation between the effort regulation sub dimension and the straight narration between the instructional styles. In addition, there was a significant positive correlation between the subscale of the organization of the study and the literal expression between the instructional styles. When the results of the study were examined, it was thought that, generally, those who are aware of and make use of the learning styles have higher self-regulation skills than those who do not pay attention to the use of instructional style and are more successful in terms of academic achievements.

Keywords: Instructional styles, Self-regulation, Physical education, Sport.

Citation | Mehmet Behzat TURAN; Kenan KOÇ (2018). Examination of the Effect of the Instructional Styles of Pre-Service Physical Education and Sports Teachers on the Ability of Self-Regulation. Asian Journal of Education and Training, 4(4): 302-308.
History:
Received: 29 March 2018
Revised: 20 June 2018
Accepted: 8 August 2018
Published: 28 August 2018

Publisher: Asian Online Journal Publishing Group

Contribution/Acknowledgement: All authors contributed to the conception and design of the study.
Funding: This study received no specific financial support.
Competing Interests: The authors declare that they have no conflict of interests.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study was reported; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained.
Ethical: This study follows all ethical practices during writing.

Contents

1. Introduction

In our era, it is important that the applied teaching methods are determined as taking and shaping the information with the participation of the learners, together with the learning and teaching of self-regulating skills. Therefore, learning environments in which one's learning process has the responsibility, decision-making and self-regulation opportunities, forced the use of mental abilities and active participation are being developed (Açıkgöz, 2003). The effect of the learners on the learning process has brought the concept of self-regulation into the agenda (Üredi and Üredi, 2007).

It is thought that the concept of self-regulation is one of the most important components of success and academic performance. For this reason, this concept has been modeled and defined by a number of theoretical perspectives. Self-regulation according to Üredi and Üredi (2007) is "an effective and constructive process in which learners set their own learning goals, try to adjust their cognition, motivations, and behaviors, and are directed and limited by their purpose and contextual features in their environment". Kauffman (2004) defines the concept of self-regulation as "an effort by learners to control and manage complex learning activities." Pajares (2008) describes this concept as "the supra-cognitive process that allows learners to understand and evaluate behaviors they exhibit, as well as to plan the alternative ways of success at the same time". Self-regulation draws attention to the role of individual control in human behavior and is primarily defined as the individual's control of his own behavior (Boeree, 2006).

Based on the performed studies, it is thought that self-regulation is influenced by various variables. When examining the relationship between self-regulation and the school and the educational environment, it is possible to think that the teaching styles are also one of these variables. Boakerts (1999) suggested that the learning style that an individual possesses plays an important role in the formation of self-regulation skills. Accordingly, one of the three basic elements of self-regulation based learning is the findings from the studies on learning styles. Individuals learn in different ways. At the end of the learning-teaching process, the fact that positive development cannot be achieved in all students has started the process of concentrating on learning styles (Lukow, 2002). Rani (2012) defines the learning style as "the state of choosing a learning state or condition from other situations and circumstances". Rani explains that learning styles are included in the teaching, "if the learning is good in a class with a large number of learners, then the students are learning individually, in other words, they have discovered the learning style." Tulbure (2012) stated that a learning style-oriented teaching enhances the academic success of the students and that this type of teaching has positive effects on learning outcomes, attitudes towards the lesson, and learning motivations. Li and He (2016) argue that giving learners the opportunity to learn with their preferred learning style will make it easier for students to learn. They also add that learning styles increase academic achievement, increase motivation, make learning more effective and beneficial, that the teacher has more knowledge about the level of learning, and that it greatly reduces learning difficulties.

The purpose of our study is to determine the extent to which pre-service physical education teachers in physical education and sports college are 'studying the effects of instructional styles on self-regulation skills' and, if so, how. When it comes to the literature, it is seen that studies on the subject are very few, especially in the field of physical education and sports. From this point of view, our work is thought to be contributing to the literature.

2. Material and Method

2.1. Study Group

In the study, relational scanning method was used. The relational scanning style is a research model aimed at determining the presence and/or the degree of exchange between two or more variables (Karasar, 2009). Accordingly, in the research, it was examined whether there is a meaningful relationship between instructional style preferences and self-regulation skills and which style preferences predict self-regulation skills.

2.2. Data Collection Tool

In the study, during the implementation of the questionnaires, the explanations were made by the researchers, each of the pre-service teachers, within a wide range of time and without haste, and an attempt was made to create an evaluation process sufficient for the participants. In addition, favorable conditions have been provided for candidates to fill out forms in a comfortable environment. Data collection instruments used in the research were Instructional Style Preference Scale, Self-Regulation Skill Scale, and also the personal information forms developed by the researcher.

2.3. Instructional Style Preference Scale

The Instructional Style Preference Scale (ISPS) was developed by Renzulli *et al.* (2002) and adapted to Turkish by Öğretme (2001). The main purpose of the scale is to determine which teaching style students prefer to learn. The scale consists of 65 items and nine dimensions as the project, independent study, practice and memorization, discussion, direct teaching (straight narration), programmed teaching, simulated teaching, peer learning and teaching games.

2.4. Self-Regulation Scale

It was developed by Arslan (2008) in order to determine the self-regulation skill levels of pre-service teachers. The scale consists of one dimension and 20 items. The items in the measure are arranged as a 5-point scale as "I strongly agree", "I agree", "Undecided", "I do not agree", "I strongly disagree". 12 of the items in the scale are positive, and eight are negative. The highest total score of the scale is 100 and the lowest score is 20. In the study, negative questions were taken into consideration by inverse scoring. The Cronbach Alpha internal consistency coefficient of the original scale was calculated as .87.

2.5. Creation of Voluntary Groups

The research will be conducted through the study group. The study group is composed of 4th-grade students who are studying in the Department of Physical Education and Sports College in Erciyes, Omer Halisdemir, Aksaray, Dumlupinar, Gaziantep, Firat, Selcuk, Ahi Evran, Inonu, Erzincan and Haci Bektas Veli Universities.

A total of 645 students, who were selected randomly and studied in the department of physical education teaching, participated in the study. At least 5 people, and at most 10 people at each university were not included in the study group because they encoded the form and the inventory incompletely. As a result, the sample of the research consisted of 608 individuals in total.

Table-1. Socio-demographic information of participants

	Variables	N	%
Gender	Male	274	45.1
	Female	334	54.9
Age	18-20	12	2.00
	21-23	385	63.3
	24-26	124	20.4
	Over 27	87	14.3
Universities	Erciyes	61	10,0
	Omer Halis Demir	59	9,7
	Aksaray	56	9,2
	Dumlupinar	54	8,9
	Gaziantep	51	8,4
	Firat	52	8,6
	Selcuk	60	9,9
	Ahi Evran	52	8,6
	Haci Bektas Veli	53	8,7
	Inonu	57	9,4
	Erzincan	53	8,7
Weekly Class Work Duration	1-10	380	62.5
	11-20	147	24.2
	21-30	52	8.6
	31+	29	4.8
General Academic Avarege	1.50-2.25	57	9.4
	2.26-3.00	269	44.2
	3.01-3.50	236	38.8
	3.51-4.00	46	7.6

2.6. Socio-Demographic Information Form

While creating the socio-demographic information form of the study, "Self-regulation and Learning Styles" and "Socio-demographic information forms" in the literature were examined and a pool composed of the characteristics to be examined in the students was created. Later, with the help of statistics experts, a socio-demographic information form was created. This socio-demographic information form is composed of 5 questions in order to obtain participants' age, gender, weekly course duration, graduation status and general academic grade average information.

2.7. Analysis of Data

The data obtained from the "Instructional Styles and Self-Organizing Scale" with the Personal Information Form and the scores reached were entered into the SPSS 22.0 program pack and analyzed through this program. The personal information and inventory total scores and factor scores for the candidates were given by determining the frequency (f) and percentage (%) values. Multiple regression analysis was applied to determine whether Pearson Moments Multiplication Correlation analysis (r) and the scores obtained were predictive of each other and to reveal the relationship between the scores obtained from the scales (β).

3. Findings

Table-2. Descriptive statistics of students' responses to the questionnaire

		N	Minimum	Maximum	X±SD
Self-regulations	Cognitive regulation	608	1,00	5,00	3.65±0.69
	Regulation of effort	608	1,00	5,00	3.39±0.79
	Regulation of time and work	608	1,00	5,00	2.98±0.82
Instructional Styles	Project	608	1.67	4.89	3.57±0.60
	Independent study	608	1.50	4.88	3.60±0.58
	Practice and memorizing	608	1.75	5.00	3.52±058
	Discussion	608	1.38	5.00	3.75±0.60
	Direct teaching	608	1.71	5.00	3.85±0.64
	Programmed teaching	608	1.57	5.00	3.62±0.56
	Simulation	608	1.17	4.83	3.41±0.62
	Peer teaching	608	1.17	5.00	3.54±0.63
	Instructional games	608	1.00	5.00	3.25±0.73

When Table 2 is examined, it was determined that the average of the Cognitive Regulation sub-dimension is 3.65, the average of the Effort Regulation dimension is 3.39, and the average of the Time and Work Regulation dimension is 2.98. On the other hand, the average of the Project sub-dimension was 3.57, the average of the Independent Study was 3.60, the average of the Practice and Memorizing dimension was 3.52, the average of the Discussion feature was 3.75, the average of the Straight Narration style was 3.85, the average of the Programmed Teaching method was 3.62, the average of the simulation style was 3.41, the average of the Peer Teaching was 3.54, and the average of the Instructional Games style was 3.25.

Table-3. Correlation Coefficients between Students' Self-Regulation Skills and Instructional Styles

		1	2	3	4	5	6	7	8	9	10	11	12
Cognitive thinking[1]	r	1											
	p												
	N	608											
Regulation of efforts[2]	r	.284**	1										
	p	.000											
	N	608	608										
Regulation of time and work[3]	r	.117**	.412**	1									
	p	.004	.000										
	N	608	608	608									
Project[4]	r	.216**	.227**	.122 **	1								
	p	.000	.000	.003									
	N	608	608	608	608								
Independent study[5]	r	.223**	.235**	.143 **	.587**	1							
	p	.000	.000	.000	.000								
	N	608	608	608	608	608							
Practice memorizing [6]	r	.245**	.174**	.125 **	.668**	.599**	1						
	p	.000	.000	.002	.000	.000							
	N	608	608	608	608	608	608						
Discussion[7]	r	.376**	.206**	.141 **	.623**	.590**	.647 **	1					
	p	.000	.000	.000	.000	.000	.000						
	N	608	608	608	608	608	608	608					
Direct teaching[8]	r	.351**	.324**	.196 **	.547**	.581**	.575 **	.704 **	1				
	p	.000	.000	.000	.000	.000	.000	.000					
	N	608	608	608	608	608	608	608	608				
Programmed teaching[9]	r	.327**	.224**	.113 **	.598**	.561**	.575 **	.604 **	.623 **	1			
	p	.000	.000	.005	.000	.000	.000	.000	.000				
	N	608	608	608	608	608	608	608	608	608			
Simulation[10]	r	.172**	.096	.040	.506**	.391**	.531 **	.437 **	.377 **	.583**	1		
	p	.000	.018	.319	.000	.000	.000	.000	.000	.000			
	N	608	608	608	608	608	608	608	608	608	608		
Peer teaching[11]	r	.296**	.165**	.057	.501**	.370**	.400 **	.497 **	.535 **	.497**	.457**	1	
	p	.009	.000	.159	.000	.000	.000	.000	.000	.000	.000		
	N	608	608	608	608	608	608	608	608	608	608	608	
Instructional games[12]	r	.201**	.097*	-033	.557 **	.427**	.494**	.391 **	.343 **	.451 **	.540 **	.495**	1
	p	.000	.017	.421	.000	.000	.000	.000	.000	.000	.000	.000	
	N	608	608	608	608	608	608	608	608	608	608	608	608

*p<o.o5,**p<0.001

Table-4. Regression Table for Predicting the Instructional Styles of Students' Self-Regulation Skills

Self-regulation	Instructional styles	*β*	t	*p*	*R*	*R²*	F	P
Cognitive regulation					.431	.186	15.148	.000
	Project	-.129	.2.217	.027				
	Independent study	-.053	-2.217	.310				
	Practice and memorizing	-.003	-.044	.965				
	Discussion	.263	4.384	.000				
	Direct teaching	.113	1.908	.057				
	Programmed teaching	.169	2.969	.003				
	Simulation	-.085	-1.672	.095				
	Peer teaching	.110	2.233	.026				
	Instructional games	.070	4.384	.161				
Regulation of effort					.347	.121	9.120	.000
	Project	.127	2.106	.036				
	Independent study	.080	1.469	.142				
	Practice and memorizing	-.058	-.949	.343				
	Discussion	-.090	-1.438	.151				
	Direct teaching	.312	5.072	.000				
	Programmed teaching	.047	.794	.428				
	Simulation	-.048	-.908	.364				
	Peer teaching	-.008	-.148	.883				
	Instructional games	-.043	-.823	.411				
Regulation of time and work					.243	.059	4.172	.000
	Project	.079	1.260	.208				
	Independent study	.062	1.097	.273				
	Practice and memorizing	.035	.559	.576				
	Discussion	-.014	-.210	.833				
	Direct teaching	.180	2.825	.005				
	Programmed teaching	-.007	-.107	.915				
	Simulation	-.002	-.042	.967				
	Peer teaching	-.025	-.470	.639				
	Instructional games	-.160	-2.985	.003				

F (9.598)

When Table 3 is examined, it is observed that the cognitive regulation feature's relation with the project method (r =.216 p =.000) was significant in the positive direction, with the independent study (r =.223 p =.000) was significant in the positive direction, with practice and memorizing (r =.245 p =.000) was significant in the positive direction, with the discussion method (r =.376 p =.000) was significant in the positive direction, with direct teaching (r =.351 p =.000) was significant in the positive direction, with programmed teaching (r =.327 p =.000) was significant in the positive direction, with simulation (r =.172 p =.000) was significant in the positive direction, with peer teaching (r =.296 p =.000) was significant in the positive direction, and with instructional games (r =.201 p =.000), was significant in the positive direction. Regulation of efforts' relation with the project method (r =.227 p =.000), with the independent study (r =.235 p =.000), with practice and memorizing (r =.174 p =.000), with the discussion method (r =.206 p =.000), with direct teaching (r =.324 p =.000), with programmed teaching (r =.224 p =.000) and peer teaching (r =.165 p =.000) was found to be significant in the positive direction. However, a low level of correlation was found between the regulation of efforts and instructional games (r =.097 p =.017) and simulation (r =.096 p =.018). The ability to regulate time and work's relation with the project method (r =.122 p =.003), the independent study (r =.143 p =.000), practice and memorizing (r =.125 p =.002), discussion method (r =.141 p =.000), direct teaching (r =.196 p =.000), and programmed teaching (r =.113 p =.005) was found to be significant in the positive direction. However, there were no significant correlations with peer teaching (r =.057 p =.159), instructional games (r = -.033 p =.421) and simulation (r =.040 p=.319).

When Table 4 is examined, it can be observed that the model formed between cognitive regulation and instructional styles provides a significant relationship (R = .431 R2 = .186; p <.001). When the results of the t-test for the significance of the regression coefficient were examined, it was seen that discussion (t = 4.384 p = .000), programmed teaching (t = 2.969 p = .003) and cognitive regulation characteristics predicted the instructional styles characteristic and explained 18.6% of the total variance F (9.598) = 15.148 (p<.005).

The model formed between regulation of efforts and instructional styles also provides a significant relationship (R = .347 R2 = .121; p <.001). When the results of the t-test on the significance of the regression coefficient were examined, it was seen that direct teaching (t = 5.072 p = .000) and regulation of efforts properties predicted the instructional styles characteristic and explained 12.1% of the total variance. F (9.598) = 9.120 (p<.005).

The model formed between instructional styles and the regulation of time and work also provides a significant relationship (R = .243 R2 = .059; p <.001). When the t-test results for the significance of the regression coefficient were examined, it was seen that instructional games (t = -2.985 p = .003) and regulation of time and work characteristics predicted the instructional styles characteristic and explained 5.9% of the total variance F (9.598) = 4.172 p<.005).

4. Discussion and Conclusion

In this study, a high level of positive correlation was found between cognitive regulation sub-dimension and instructional styles, discussion and programmed teaching. The use of instructional style predicted the variance of cognitive regulation sub-dimension as 18.6%. Sarıgöz (2013) defines the discussion method as providing students with the development of cognitive and affective areas by improving their ability to listen, think, inquire, criticize, synthesize and evaluate. According to Çubukçu *et al.* (2011) this method can be used to achieve goals in both affective and cognitive domains. According to Kaya and Kılıç (2008) "discussion is defined as a series of speeches made to explain the contradiction between two conflicting situations or an event made to reach reasonable, rational decisions". In the study conducted by Yazıcı (2003) it was found that after using the discussion method in primary education, there was an improvement in the subjects such as equality, openness, respect for the opinions, participation, resorting to the vote of the class, being scientific and willingness to discuss. In another study, Can (2005) found that the six thinking hats technique, which is another discussion method, positively affected student achievement in primary school social studies class. In Kısa (2007) he determined that the use of the brainstorming technique, another discussion method, was more effective than the method of narration in the teaching of concepts in the sixth-grade social studies course. On the other hand, in the teaching technology course, Anyasi *et al.* (2008) found that the programmed teaching method affected the academic achievement of the students. Uz (2009) found that programmed teaching method and cooperative learning method affect students' attitudes towards their academic achievements in the teaching of "Mixtures" in Science and Technology class. As noted in the literature, both discussion and programmed teaching methods are thought to be predictive of the cognitive regulation sub-dimension since they are methods that address the cognitive domain and are characterized by the regulation and systematization of learning.

Regulation of efforts sub-dimension and direct teaching, which is one of the instructional styles, has been found to be highly positively related. The use of instructional style predicts the variance of the regulation of efforts sub-dimension by 12.1%. It is helpful to use the method of narration when the time is limited, in describing the most important part of the subject, in explaining how to do the activities and in summarizing the information at the end of teaching and when it is necessary to tell the subject to a large group. In addition, this method also contributes to the students' being a good listener (Ünalan, 2001). In the method of narration that Ausubel suggested, the teaching is based on the approach, in which the information is presented to the students. Teaching through presentation is the process of giving information in a carefully arranged, sequenced and ready-to-receive form. In this way, it is taught that the general principles and concepts are given first and that detailed information is gained. When we look at the nature of the regulation of efforts sub-dimension, Chen (2002) pointed out that "the student intends to concentrate his attention on the job when he/she fulfills a task in the academic environment and wants to control the effort without being influenced by external stimuli." From this point on, the regular presentation of systematic information is considered to be a method for a student having a high level of regulation of efforts characteristic.

There is a significant positive relationship between the regulation of time and work sub-dimension and direct teaching, which is one of the instructional styles. The use of instructional style predicts the variance of the regulation of time and work sub-dimension by 5.9%. Time management strategy is the process of planning and adapting to the plan to use time effectively. Zimmerman *et al.* (1992) found in their studies that the academic

achievement levels of those who use this strategy are higher. On the other hand, the arrangement of the working environment is the way the student prepares the learning environment in a comfortable way before starting work.

According to Açikgöz (1998) in the direct teaching method, the speaker's organizing the information and planning in advance should not go out of the subject. He/she should be clear and understandable and have a tone in a way that attracts the attention of the listener. During the lecture, he/she should motivate the student using audiovisual tools, clues, questions and jokes. The presentation should be planned in the form of introduction, body and conclusion. Based on this information, it is thought that it would be normal for a person, who wants to use time and working environment, to prefer to use a planned presentation and work style by choosing the method of presentation.

When the results of the study are examined in general terms, it is considered that those who are aware of and use the learning styles have high self-regulation skills and are more successful in their academic achievements than those who do not pay attention to the instructional styles, so that teachers should know the instructional styles and use them according to the group and guide the students accordingly regarding the subject, and this will increase the quality of education.

5. Suggestions

- Style-focused course designs can be created in order to help learners better understand and improve their self-regulation by identifying their instructional style.
- Teachers' guidance to the students can be provided by giving them teachers' training on instructional style and self-regulation.
- Teaching environments can be improved in terms of technology and infrastructure for style selection and self-definition can be increased.
- Introductory work can be done and parents can be involved in raising support and awareness within the family.
- Not only in school but also in lifelong learning, awareness raising activities can be carried out in various non-formal education courses.

References

Açikgöz, K., 1998. Effective learning and teaching. 2nd Edn., İzmir: Kanyılmaz Press.

Açıkgöz, K.Ü., 2003. Active learning. Izmir: World Publications. pp: 23-25.

Anyasi, F.I., P.A. Otubu and F.E. Iserameiya, 2008. The merging of telecommunication and information processing: The technological undertiming. Journal of Mobile Communication, 2(3): 89-92. *View at Google Scholar*

Arslan, A., 2008. Effect of collaborative learning on accessibility, retention, self-efficacy belief and self-regulation skills. Unpublished Doctoral Thesis, Hacettepe University Institute of Social Sciences, Ankara.

Boakerts, M., 1999. Self-regulated learning: Where we are today. International Journal of Educational Research, 31(6): 445-457. *View at Google Scholar* | *View at Publisher*

Boeree, G.C., 2006. Personality theories. Retrieved from http://webspace.ship.edu/cgboer/bandura.html [Accessed 26.03.2016].

Can, A.H., 2005. The impact of using the six hat thinking technique on students' achievements in sixth grade social studies class. Unpublished Master's Thesis, Fırat University Social Sciences Institute, Elazığ.

Chen, C.S., 2002. Self-regulated learning strategies and achievement in an introduction to information systems course. Information Tecnology, Learning and Performance Journal, 20(1): 11-25. *View at Google Scholar*

Çubukçu, Z., M. Taşdemir, M. Güven, C. Babadoğan, A. Oğuz and B. Aybek, 2011. Teaching principles and methods. (Ed. Bilal Duman). Ankara: Anı Publishing.

Karasar, N., 2009. Scientific research methodology. Ankara: Nobel Publishing. pp: 34-36.

Kauffman, D.F., 2004. Self-regulated learning in web-based environments: Instructional tools designed to facilitate cognitive strategy use, metacognitive processing, and motivational beliefs. Journal of Educational Computing Research, 30(1-2): 139-161. *View at Google Scholar* | *View at Publisher*

Kaya, O.N. and Z. Kılıç, 2008. A discussionist lecture for effective science teaching. Ahi Evran University Kırşehir Education Faculty Journal, 9(3): 89-100.

Kısa, F., 2007. The impact of using brainstorming technique in teaching concepts on the academic achievemtns of students in primary school 6th grade social studies class. Unpublished Master's Thesis, Gazi University Institute of Educational Sciences, Ankara.

Li, H. and Q. He, 2016. Ambiguity tolerance and perceptual learning styles of Chinese efl learners. English Language Teaching, 9(6): 213-222. *View at Google Scholar* | *View at Publisher*

Lukow, J.E., 2002. Learning style as predictors of student attitudes toward the use of technology in recreation courses. Doctoral Thesis. Indiana University, ABD.

Öğretme, M., 2001. The effect of differentiated physics instruction on 9th grade gifted learners. Unpublished Master Thesis, Boğaziçi University / Institute of Science.

Pajares, F., 2008. Motivational role of self-efficacy beliefs in self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Eds.), Motivation and self-regulated learning: Theory, research, and applications. New York: Lawrence Erlbaum. pp: 111-139.

Rani, P., 2012. Learning styles in education. International Journal of Research in Economics & Social Sciences, 2(5): 31-41.

Renzulli, J.S., M.G. Rizza and L.H. Smith, 2002. Learning styles inventory-version III: A measure of student preferences for instructional techniques. Technical and administration manual. Mansfield Center, CT: Creative Learning Press.

Sarıgöz, O., 2013. The impact of classroom and group discussion methods on academic achievements of vocational college students. Electronic Journal of Vocational Colleges, 3(3): 100-106.

Tulbure, C., 2012. Learning styles, teaching strategies and academic achievement in higher education: A cross-sectional investigation. Prodedia Social and Behavioral Sciences, 33: 398-402. *View at Google Scholar* | *View at Publisher*

Ünalan, Ş., 2001. Teaching Turkish. 2nd Edn., Ankara: Nobel Publication Distribution.

Üredi, I. and L. Üredi, 2007. Establishing a learning environment that enhances students' self-regulated learning skills. Edu, 7(2): 1-29.

Uz, Ö., 2009. The effect of programmed teaching and the collaborative learning approach on academic achievement and science attitude of 7th grade students. Master's Thesis, Sakarya University.

Yazıcı, K., 2003. The impact of using discussion method on the democratic attitudes of students in primary school 6th grade social studies class. Unpublished Master's Thesis, Gazi University Institute of Educational Sciences, Ankara.

Zimmerman, B.J., A. Bandura and M. Martinezpons, 1992. Self-motivation for academic attainment - the role of self-efficacy beliefs and personal goal-setting. American Educational Research Journal, 29(3): 663-676. *View at Google Scholar* | *View at Publisher*

Bibliography

Newman, R.S., 1994. Academic help seeking: A strategy of self-regulated learning. In D. H. Schunk, & B. J. Zimmerman (Eds.), Self-regulation of learning and performance: Issues and educational applications. İçinde, NJ: Lawrence Erlbaum Associates, Publishers. pp: 283–304.