
The classroom teachers' skills to organize constructivist learning environment

ÜMran Sahin

Faculty of Education, Pamukkale University, Denizli, Turkey

Email address:

umransahin20@gmail.com

To cite this article:

Umran Sahin. The Classroom Teachers' Skills to Organize Constructivist Learning Environment. *International Journal of Elementary Education*. Vol. 2, No. 2, 2013; pp. 16-22. doi: 10.11648/j.ijeedu.20130202.11

Abstract: A training program based on constructivism, constructivist learning environment teachers facilitate learning that form is important for learners. The aim of this study was determine teachers' skills in organizing constructivist learning environment. The research has a search model. The work group includes 210 classroom teacher of the primary school dependt on Denizli. In this research data have been collected with "Constructivist Learning Environment Scale". According to the results of all dimensions other than the conceptual contradiction size classroom teachers behave accordance with the constructivist learning environment. Constructivist learning environment in the classroom teachers by gender in favor of male teachers there are differnces in the regulations. Organizing skills of classroom teachers' constructivist learning environment in terms of occupational experience there are significant differences in favor of the teachers working in 10-15 years.

Keywords: Constructivist Learning, Constructivist Program, Constructivist Learning Environment

1. Introduction

Learning is the changing process of the opinion, perception and behaviour ocurring in person with her/his interaction with environment. However, there are many different views about how this changing occurs. It is tried to be explained how learning happens via cognitive and behavioral theories. according to cognitive theorists, learning is mental process and it happens by understanding information which reach mind. This understanding changes according to student's self experience, the culture which she/he owns, nature interaction in which learning occurs, and his/her role in this process (1). In recent years, constructivist learning theories, which are about how learning happens, are propounded.

Basically there is constructivist learning theory which claims information is constructed in learner's mind. This theory's basic fundamental is stated in five stages. The first of all is that learning is a process. Second stage consists that pre-accumulated knowledge affects learning. Third stage is about, learning occurs in a more healthy way when students' existing knowledge is proved to be incorrect or not in satisfying level. In fourth stage it is mentioned that learning is a social process and cognitive development is resulted from social interactions. The last stage mentions

that learning requires additional concepts and new applications enable students to strengthen their knowledge about the topic (2, 3, 4).

Bruner, in the constructivist learning approach, as it is based on reconstruction of information done by the learner, learning is defined to be active process and education is suggested to be by the learners participation. In this process, student choose the necessary ones among existing knowledge or newly learned informations then transforms and decides and reconstruct the knowledge. In the constructivist learning approach as the information is not presented to the student directly, individuals thinking different trues and other options which can be also valid instead of one true are aimed in one learning environment (5).

Different perspectives which are brought by the the constructivist learning approach to the information and learning caused a change in traditional learning programmes which are under the influence of behavioral learning theory. Learner's being in the center of the education programme requires many points such as; the learning aims should be diagnosed according to the process and advanced learning, the learning content should be

according to the student's interests and related to real life, learning and evaluation activities should be planned, applied and evaluated together with the learners. As known, constructivism is defined as the process of the student who reconstruct and comment on the newly information met through the guidance of the teacher while getting benefits of pre learnings (6).

When constructivism is realized to have an active role on learning, it is then constructivism is applied to the education programmes. According to the education programme based on the constructivism; learners duty in the classroom is to question the existing knowledge and research for filling the gaps in knowledge; to participate learning process in social environments with the help of critical and creative thinking process. However, learning ability and success of the student is partly up to student in this approach (7). Teacher is the advisor in the position of guide. However, the teacher has more responsibilities in the background of the constructivist classroom compared to behaviourist teacher. Behaviourist teacher conveys the information traditionally and controls the classroom by discipline. According to Jones and Brader-Araje (2002)', in constructivist classroom teachers searches meanings and pre information which are formed by students about the concepts. Teacher helps students to learn by presenting the new information to the class, questioning, encouraging the research, and leading to investigate (8, 9). Constructivist teacher is "open-minded, modern, self-perpetuating, taking individual differences into consideration, enabling convenient learning experiences, and learning with the learner (10).

In an education programme based on the constructivism, it is very important that classroom teachers can create constructivist learning environment. For this reason the abilities of the teachers who create constructivist learning environment are specified. From this point forth, the question "What are the abilities of the teachers to create constructivist learning environment?" designates the problem of this research. Related to this problem, these sub-questions are searched to be answered:

1. What are the levels of the teachers in the extents for creating constructivist learning environment; debate and interview; conceptual dilemma; sharing the ideas; aiming the materials and sources to resolution; reflection and motivation for discovering concepts; fulfilling the needs of the learner; forming a meaning; creating the bond between the real life?

2. Does the gender of the teachers matter in creating the constructivist learning environment?

3. Does the length of service of the teachers matter in creating the constructivist learning environment?

2. Methodology

In this research as the opinions of the classroom teachers will be taken into consideration, research is designed as a descriptive study in the survey model. These survey models

are the research approaches aiming to describe a situation (in the past or present) as it is (11).

2.1. Population and Sample

Population is formed by employed 1444 class teachers in governmental elementary schools in Denizli city centre, school year of 2011-2012 spring semesters. Research group consists of 210 class teachers chosen by random sampling from population. Number of samples representing the population is designated according to the table suggested by Gay (1996). The rate of representing the population by samples is %6,24. Information related to the teachers attending to research is presented on the Table 1.

Table 1. Demographics of teachers in the sample

Gender	f	%
Women	104	49,5
Men	106	50,5
Sum	210	100
Seniority	f	%
10-15 years	68	32,4
15-20 years	82	39
20 years and over	60	28,6
Sum	210	100

2.2. Data Collection Tool

In the study, "Constructivist Learning Environment Scale Teacher Form" is used as data collection tool designed by Tenenbaum, Naidu, Jegede and Austin (2001) and adapted to Turkish by Fer and Cırık (2006). Scale consists of 30 articles and 7 factors defining constructivist learning environment. These factors are debate and interview (articles 1-5, alpha=.90), conceptual dilemma (articles 6-8, alpha=.94), sharing the ideas (articles 9-12, alpha=.90), aiming the materials and sources to resolution (articles 13-15, alpha=.90), reflection and motivation for discovering concepts (articles 16-21, alpha=.89), fulfilling the needs of the learner (articles 21-27, alpha=.89), forming a meaning; creating the bond between the real life (articles 27-30, alpha=.90). As a result of the study of adaptation which Fer and Cırık (2006) did, the Cronbach alpha reliability coefficient belonging to the scale is 91.

In the scale, codes of answers of the each article changes between 1.00 ile 5.00. Grading articles includes options of "1-Never, 2-Rarely, 3-Occasionally, 4-Usually, and 5-Always". Based on the assumption that interval is equal, score interval coefficient for arithmetic average is found as 0.80. Score interval = (Peak Value-Lowest Value)/5 = 4/5 = 0.80. Options and their levels are evaluated according to score intervals as used in the scale.

1. Nothing	1.00-1.80
2. Little	1.81-2.60
3. Partially	2.61-3.40
4. Very	3.41-4.20
5. Completely	4.21-5.00

2.3 Data Analysis

Data collected in the research is analyzed through statistic programme SPSS 15. To analyze the ability of the teachers creating constructivist learning environment, arithmetic average, frequency and standard deviation calculation was done. To compare the genderwise and service year results, independent groups t test and one-way analysis of variance (Anova) was used.

3. Results and Discussion

The first sub-problem of the research is about the levels of class teacher's creating constructivist learning environment; debate and interview; conceptual dilemma; sharing the ideas; aiming the materials and sources to resolution; reflection and motivation for discovering concepts; fulfilling the needs of the learner; forming a meaning; creating the bond between the real life. To answer this sub-problem, the frequency, percent, arithmetic average

and standard deviation value were checked.

"Constructivist Learning Environment Scale" consists of 7 sub aspects (debate and interview; conceptual dilemma; sharing the ideas; aiming the materials and sources to resolution; reflection and motivation for discovering concepts; fulfilling the needs of the learner; forming a meaning; creating the bond between the real life). Analysis related to every sub aspects are presented in the tables below.

There 5 items in the sub aspect of debate and interview. When table 2 is analyzed, arithmetic average value of the articles changes between 3.76 and 4.31. Getting the benefit of debate and interview in constructivist learning environment is seen to be "Much" ve "Completely". In this aspect the highest average is (Xort= 4.31, completely) as "lessons are done by information exchange". The result is reached that class teachers teach the lessons by debate and interview, information exchange.

Table 2. Discussion and interview on substances in the bottom of dimension, mean, standart deviation, frequency and percentage values

Items	Participation Level										N	Xort	Ss
	Completely		Very		Partially		Little		Nothing				
	f	%	f	%	f	%	f	%	f	%			
Issues treated in class discussion and interview survey.	72	34,3	93	44,3	30	14,2	10	4,75	5	2,37	210	4,12	0,73
Students were encouraged to demonstrate an original thought.	60	28,6	112	53,3	30	14,2	5	2,38	3	1,42	210	4,10	0,67
Lessons, in the class, making information exchange has been proceed.	79	37,6	60	28,6	41	19,5	20	9,53	10	4,6	210	4,31	0,63
Students have learned to improve the mental point of view.	41	19,5	90	42,9	60	28,5	10	4,75	9	4,28	210	3,76	0,75
Lessons were examined by comparing different perspectives.	41	19,5	91	43,3	58	27,5	12	5,70	8	3,8	210	3,82	0,73

In the constructivist class, the learner should question the information via pre-knowledge to form knowledge and to put peculiar ideas forward. During the process of learner's forming peculiar ideas, they should be in social interactions. The result of the research shows that teachers have this information and they teach the lesson in the debate and interview environment. Similar to this finding, in the thesis by Ağlagül (2009) (13), the result is reached that teachers convey the lessons through debate. According to the result of the study by Yelken, Üredi, Tanrıseven ve Kılıç (2010) (14) inspectors stated that %72, 1 of the teachers teach the lessons via debate and interview in a middle level. In the study by Çınar, Teyfur, Teyfur (2006) (15) on teachers and inspectors, the result was reached that lessons, which constructivist learning leads the student to think and search, should be done via debates. According to study by Zhang (2008) (16) the result was reached that learning is more effective in the classes where teacher becomes guide in the constructivisim and different ideas are discussed.

The second sub-aspect is conceptual dilemma. In this aspect totally there are 3 items. In constructivism, duty of the students is to create their own personal view not to see the world through teacher's point of view (17). Teacher's duty is to organize the information, questions and disagreement around the concept according to students' knowledge (9). In this aspect, it is looked for that class teacher enables students to gain different perspectives by creating dilemmas. Data concerning this aspect is given in Table 3.

In Table 3, the arithmetical average of items related to conceptual dilemma is 1, 99, 2, 20 and 2, 21 (rarely). According to the result of research, it is seen that class teachers "rarely" create activities that will make the students experience dilemmas which make understanding the lessons easier and creating different ideas. The reason for this can be that teachers think that students will not be able to deal these problematic situations. Similar to this data Arslan (2010) (18) states in the study conveyed on

prospective teachers that these teachers come to a conclusion. This is learning environment is not enough to create cognitive imbalance. Similar to these are also found in Yılmaz (2006) and Ağlagül (2009)'s thesis.

Table 3. On substances that conceptual conflict subscale mean, standart deviation, frequency and percentage values

Items	Participation Level										N	Xort	Ss
	Completely		Very		Partially		Little		Nothing				
	f	%	f	%	f	%	f	%	f	%			
Lessons, students are caused live in introduction	4	1,9	12	5,7	47	22,4	110	52,4	37	17,6	210	2,21	0,86
Lessons, students ideas to blend caused	4	1,9	12	5,7	22	10,5	112	53,3	60	28,6	210	1,99	0,89
Lessons, students different subjects was living contradictions	4	1,9	12	5,7	45	21,4	110	52,4	39	18,6	210	2,,20	0,87

Table 4. Share your thoughts on substances in the bottom of dimension mean, standart deviation, frequency and percentage values

Items	Participation Level										N	Xort	Ss
	Completely		Very		Partially		Little		Nothing				
	f	%	f	%	f	%	f	%	f	%			
Lessons in the class by providing social interaction has been processed.	75	35,7	95	45,2	36	17,1	2	1	2	1	210	4,17	0,74
Lessons treated with different and varied learning activities.	74	35,2	100	47,6	30	14,2	4	1,9	2	1,1	210	4,18	0,70
Students had opportunities to express themselves.	60	28,6	105	50	36	17,1	6	2,86	3	1,43	210	4,15	0,69
Students had opportunities to share their experinences with friends.	69	32,9	105	50	30	14,2	4	1,9	2	1	201	4,15	0,69

According to Table 4, arithmetical aspects of sharing the ideas sub-aspect changes between 4.15 and 4.18 and "Very Much". In accordance with constructivist learning environment, class teachers can be said to do the activities of sharing the ideas among the students. According to Howe (19) (2002)' in constructivist learning environment, teacher should give importance to idea sharing. Teacher should ask many questions and be able to pasify her/himself to increase the contrubition of the students. According to the result of the research, teachers can be said to be successful to enable students interact in a social environment. By the findings of Yılmaz (2006) it is on the sufficient level that of the activities students share their ideas with the others.

Data concerning sub aspect of the materials and sources to is in the Table 5.

According to Table 5 arithmetical average of this aspect varies between 4.15 and 4.19 (Always). It can be said that class teachers create constructivist learning environment in which students can reach convenient answers, resources. In the study by Yelken, Üredi, Tanrıseven and Kılıç (2010) with the help of inspector's views, %74'7 of inspectors states that alongside physical mediums, the materials and sources to resolution which indicates the usage of raw data and primary sources. Similar results in the study by Loyens and Gijbels (20) (2008) were reached.

Data reflection and motivating for the discovery of the concept of sub sized materials to is in the Table 6.

Table 5. Materials and resources and aim to bring a solution for substances subscale mean, standart deviation, frequency and percentage values

Items	Participation Level														
	Completely				Very		Partially		Little		Nothing		N	Xort	Ss
	f	%	f	%	f	%	f	%	f	%					
In lessons, students learned how to reach the appropriate responses.	69	32,9	105	50	30	14,2	4	1,9	2	1	210	4,15	0,69		
In lessons, students have learned that they need to reach the sources and use of.	69	32,9	112	53,3	20	9,5	5	2,3	4	1,9	210	4,18	0,70		
Lessons are appropriate to the treated samples	60	28,6	112	53,3	29	13,8	6	2,8	3	1,4	210	4,19	0,65		

According to Table 6 arithmetical average of the points given to the articles by the class teacher's change between 4.04 and 4.13 (Always). We can say that class teachers are motivated to do conceptual discovery. According to Jonassen, Peck & Wilson (21) (1999) reflection accelerates learning and when students gather what they have learnt,

write their experiences or discuss, learning becomes much easier. According to the result of the research class teachers meet the requirements of constructivist learning environments' needs. Similar to this finding, in the study of Ağlagül (13) (2009) it is precipitated that teachers are successful in motivating students in the class activities of

reflection and concept discovery. Different from these findings, in his study Arslan (2010) (18) comes to the result that prospective teachers think that learning environments partly suitable for the students encouraging for reflection and discovering the conceptual structure. Difference in these findings can stem from the result of the difference in the sample group. Data concerning the sub-aspect of fulfilling the needs of the learner is in the Table 7.

According to the Table 7 arithmetical average of this aspect varies between 4.00 and 4.15 (Always). According to the result of the research, we can say that class teachers fulfill the needs of the learners in accordance with the constructivist learning environments. According to Jonassen, Peck&Wilson (21) (1999) class, in constructivist

learning environment, should be seen as place where the learners perform the activities related to their interests; talk; share the reflections. Ideas created together will be accepted more easily and continuance will be raised. Result of the research supports this information. In the researches of Jonassen, Peck&Wilson (1999), Yılmaz (2006), Ağlagül (2009), Yelken, Üredi, Tanrıseven and Kılıç (2010) come to similar results. In the studies by Arslan (2010) and Arslan, Orhan and Kırbaş (2010) it is stated that class teachers partly consider students' interest and needs. The reason for this can originate from the difference of sample group.

Data concerning the last sub-aspect is forming a meaning and creating the bond between the real lives is in the Table 8.

Table 6. Reflection and motivating for the discovery of the concept of subsized materials mean, standart deviation, frequency and percentage values

Items	Participation Level													
	Completely		Very		Partially		Little		Nothing		N	Xort	Ss	
	f	%	f	%	f	%	f	%	f	%				
Lessons motivate students to deepen their thoughts.	60	28,5	113	53,8	34	16,2	4	1,9	3	1,4	210	4,13	0,66	
Lessons, students encouraged to learn by examining the different perspectives of an issue.	63	30	102	48,5	39	18,5	3	1,4	3	1,4	210	4,10	0,70	
Lessons, dconsiderations motivated students.	50	51	105	44	21	24,2	5	2,3	5	2,3	210	4,08	0,70	
Student inquiry what they have learned lessons	52	24,8	110	52,3	42	20	3	1,4	3	1,4	210	4,04	0,66	
In lessons, students learned to use their knowledge	60	28,6	105	50	36	17,1	6	2,8	3	1,4	210	4,15	0,69	
Lessons in the future has motivated students in learning.	60	28,6	110	52,3	30	14,2	6	2,8	4	1,9	210	4,11	0,66	

Table 7. On substances that meet the needs of the learner subscale mean, standart deviation, frequency and percentage values

Items	Participation Level													
	Completely		Very		Partially		Little		Nothing		N	Xort	Ss	
	f	%	f	%	f	%	f	%	f	%				
Lessons were processed in accordance aith the needs and interests of students.	60	28,6	111	52,9	30	14,2	6	2,8	3	1,4	210	4,11	0,66	
Lessons, students learned to take advantage of learning difficulties.	69	34,9	102	48,5	32	15,2	3	1,4	4	1,9	210	4,15	0,69	
A class discussion of lessons agreed learning objectives.	58	27,5	105	50	40	19	4	1,9	3	1,4	210	4,08	0,70	
Lessons helped students to follow their individual goals.	52	24.8	108	51.4	41	19.5	5	2.3	4	1.9	210	4.00	0.69	

Table 8. Create a sense of connection to real life and on the substances subscale mean, standart deviation, frequency and percentage values

Items	Participation Level													
	Completely		Very		Partially		Little		Nothing		N	Xort	Ss	
	f	%	f	%	f	%	f	%	f	%				
To improve the learning environment and encouraged students to question their boughts.	66	31,4	105	50	30	14,2	6	2,8	3	1,4	210	4,15	0,69	
Threads and thoughts students' meanings with the focused on.	72	34,3	111	52,9	18	8,6	5	2,3	4	1,9	210	4,15	0,69	
Lessons were committed by linking real-life events.	111	52,9	77	36,6	11	5,2	7	3,3	4	1,9	210	4,30	0,61	
Lessons enriched samples processed.	106	50,5	80	38,1	18	8,6	3	1,4	3	1,4	210	4,32	0,62	

According to Table 8, arithmetical average of forming a meaning and creating the bond between the real life changes between 4.15 and 4.32. Two articles such as "learning environment encouraged the students to question and develop the ideas" and "it was focused on that students make sense of subjects and ideas" were answered as "Much". "Lessons were done by creating the bond between the real life" and "lessons were done by enriching with examples"

were answered as "Always". According to these results class teachers can be said to carry out these articles.

According to Cunningham, Duffy, and Knuth (22) (1993), teachers should be careful to design constructivist learning environment in a way that students can transffer in to real life what they learnt at school. Learners should know the importance of the knowledge they gather and see the field where they can use the information. Result of the research

shows that class teachers were aware of this situation. Research findings show consistency with studies Yılmaz (2006), Ağlagül (2009), Özel vd. (23) (2009) with Epçaçan and Erzen (24) (2008), Yelken Üredi, Tanrıseven and Kılıç (2010), Arslan, Orhan and Kırbaş (2010).

The second sub problem of the research is whether the gender of the teachers matter in creating the constructivist learning environment. To answer this sub problem t-test was applied. Findings were given in table.

According to Table 9, there are meaningful differences in creating the constructivist learning environment in support of male teachers. Male teachers can be said to be better than the female teachers in creating the constructivist learning environment. According to the studies by Yılmaz (2006), Ağlagül (2009) there are no genderwise differences in creating the constructivist learning environment.

However, in the study by Çınar, Teyfur, Teyfur (2006) the results were in favour of female teachers in creating the constructivist learning environment.

Table 9. Skills to the classroom teachers by gender constructivist learning environment

Gender	N	Xort	S	sd	t	p
Women	104	113,7	18,1	208	3,34	.001
Men	106	122,2	18,8			

The third sub problem of the research is whether teachers' creating the constructivist learning environment differentiate from each other according to the service year of the teacher. To answer this sub problem One-Way Anovo was applied. Findings were given in table.

Table 10. Skills to the classroom teachers seniority of constructivist learning environment

	Sum Squares	of	sd	Mean square	F	p	Significant difference
Intergroup	39527,834		2	19763,917	115,704	,00	(10-15)-(15-20)-(20 and over), (15-20)-(20 and over)
With in groups	35358,590		207	170,814			
Sum	74886,424		209				

According to Table 10, there is a reasonably meaningful difference in class teachers' abilities in creating the constructivist learning environment in terms of teachers' service year. According to the results of Tukey Test to find between which groups has differences, these are some outcomes. The results are more positive for the ones who have been serving 10-15 years compared to the ones who have been working 15-20 and 20 years above. Also the results are more positive for the ones who have been working 15-20 years compared to the ones who have been working above 20 years. Teachers who have been working 15 years and above have less abilities in creating the constructivist learning environment. According to this, it can be said that teachers who have been working 15 years and below have more positive attitudes in terms of applying different activities and organizing abilities.

4. Conclusions

Class teachers are examined for their abilities of creating constructivist learning environment in the 7 sub aspects (debate and interview; conceptual dilemma; sharing the ideas; aiming the materials and sources to resolution; reflection and motivation for discovering concepts; fulfilling the needs of the learner; forming a meaning; creating the bond between the real life). According to the results, class teachers behave according to the constructivist learning environment except for the conceptual dilemma. However, in conceptual dilemma, teachers are seen that they do "rarely" to awaken different ideas.

According to class teachers' genders, there are meaningful differences in creating the constructivist

learning environment in support of male teachers. Male teachers can be said to be better than the female teachers in creating the constructivist learning environment.

There is a reasonably meaningful difference in class teachers' abilities in creating the constructivist learning environment in terms of teachers' service year. The results are more positive for the ones who have been serving 10-15 years compared to the ones who have been working 15-20 and 20 years above. Also the results are more positive for the ones who have been working 15-20 years compared to the ones who have been working above 20 years.

5. Future Developments

The class teachers especially whose service year is 15 years and above should be conducted a seminar or given in-service training for making students' learning easier, creating activities for conceptual dilemmas

In this research, abilities of class teachers are wanted to be defined generally in creating constructivist learning environment. A few studies can be carried out for improving abilities of the class teachers for creating learning environment for every lesson.

This research can be applied to other branch teachers other than class teachers and the significance level can be observed.

In this research as the opinions of the classroom teachers have been taken into consideration, research is designed as a descriptive study in the survey model. The level of the application of the constructivist learning environment can also be examined by qualitative research methods (observation, teacher and student interviews).

References

- [1] Nakiboğlu, C. (1999). Kimya öğretmeni eğitiminde bütünleştirici (constructivist) öğrenme modelinin öğrenci başarısına etkisi. DEÜ Buca Eğitim Fakültesi Dergisi *Özel Sayı*, 11, 271-280.
- [2] Bodner, G. M. (1986). Constructivism: A theory of knowledge. *Journal of Chemical Education*, 63(10), 873-878.
- [3] Geelan, D. R. (1995). Matrix technique: A constructivist approach to curriculum development in science. *Australian Science Teachers Journal*, 41(3), 32-37.
- [4] Shiland, T. W. (1999). Constructivism: The implication for laboratory work. *Journal of Chemical Education*, 76(1), 107-109.
- [5] Özmen, H. (2004). Fen Öğretiminde Öğrenme Teorileri ve Teknoloji Destekli Yapılandırmacı Öğrenme. *TOJET*, ISSN: 1303-65421, 3:1.
- [6] Saban, A. (2002). Öğrenme-Öğretme Süreci. Ankara: Nobel Yayınları.
- [7] Horstman, B. ve White, W. G. (2002). Best Practice Teaching in College Success Courses: Integrating Best Practice Teaching Methods into College Success Courses. *The Journal of Teaching and Learning*, 6(1), 6-15.
- [8] Moreno-Armella, L. ve Waldegg, G. (1993). Constructivism and Mathematical Education. *International Journal of Mathematical Education in Science and Technology*, 24(5), 653-661.
- [9] Brooks, J. G. ve Brooks, M. G. (2001). In Search for Understanding the Case for Constructivist Classrooms. New Jersey: Prentice-Hall.
- [10] Demirel, Ö. (2008). Yapılandırmacı Eğitim. Eğitim ve Öğretimde Çağdaş Yaklaşımlar Sempozyumu, 03-04 Nisan 2008. İstanbul: Harp Akademileri Basımevi.
- [11] Karasar, N. (2000). Bilimsel Araştırma Yöntemleri, 10. Bas., Ankara: Nobel Yayın Dağıtım.
- [12] Fer, S., Çırık, İ. (2006). Öğretmen ve öğrencilerde, yapılandırmacı öğrenme ortamı ölçeğinin geçerlik ve güvenirlik çalışması nedir?, Yeditepe Üniversitesi Eğitim Fakültesi Dergisi, 2(1).
- [13] Ağlagül, D. (2009). Beşinci Sınıf Sosyal Bilgiler Dersinde Sınıf Öğretmenlerinin Yapılandırmacı Öğrenme Ortamı Düzenleme Becerilerinin Değerlendirilmesi. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi.
- [14] Yelken, T., Üredi, L., Tanrıseven, I., Kılıç, F. (2010). İlköğretim Müfettişlerinin Yapılandırmacı Program ile Öğretmenlerin Yapılandırmacı Öğrenme Ortamı Oluşturma Düzeylerine İlişkin Görüşleri. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, Cilt:19, Sayı:2.
- [15] Çınar, O., Teyfur, E., Teyfur, M. (2006). İlköğretim Okulu Öğretmen ve Yöneticilerinin Yapılandırmacı Eğitim Yaklaşımı ve Programı Hakkındaki Görüşleri. İnönü Üniversitesi Eğitim Fakültesi Dergisi Cilt:7, Sayı:11.
- [16] Zhang, L., J. (2008), Constructivist Pedagogy in Strategic Reading Instruction: Exploring Pathways to Learner Development in The English As a Second Language (ESL) Classroom, *Instr Sci.*, 36, 89-116.
- [17] Jonassen, D. H., Howland, J., Moore, J., & Marra, R. M. (2003). Learning to solve problems with technology: A constructivist perspective. New Jersey: Merrill Prentice Hall.
- [18] Arslan, A., Orhan, S. ve Kırbaz, A. (2010). Türkçe Dersinde Yapılandırmacı Yaklaşımın Uygulanmasına İlişkin Yönetici Görüşleri. Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 14(1), 85-100.
- [19] Howe, A.C. (2002). Engaging Children in Science (3rd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.
- [20] Loyens, S. M. M., Gijbels, D. (2008). Understanding the Effects of Constructivist Learning Environments: Introducing A Multi-Directional Approach. *Instr Sci*, 36:351-357.
- [21] Jonassen, D. H., Peck, K. L., & Wilson, B. G. (1999). Learning with technology: A constructive perspective. New York: Prentice-Hall Inc.
- [22] Cunningham, D., Duffy, T. M., & Knuth, R. (1993) Textbook of the Future. In C. McKnight (Ed.) Hypertext: A psychological perspective. London, Ellis Horwood Pubs.
- [23] Özel, H., Yılmaz, G., Beyaz, İ., Özer, S., ve Şenocak, E. (2009), "İlköğretim Okulları Sınıf içi Öğrenme Ortamları Üzerine Bir Araştırma", *İlköğretim Online*, 8(2), 493-498.
- [24] Epçacan, C. ve Erzen, M. (2008). İlköğretim Türkçe Dersi Öğretim Programının Değerlendirilmesi. *Uluslararası Sosyal Araştırmalar Dergisi*, 1(4).