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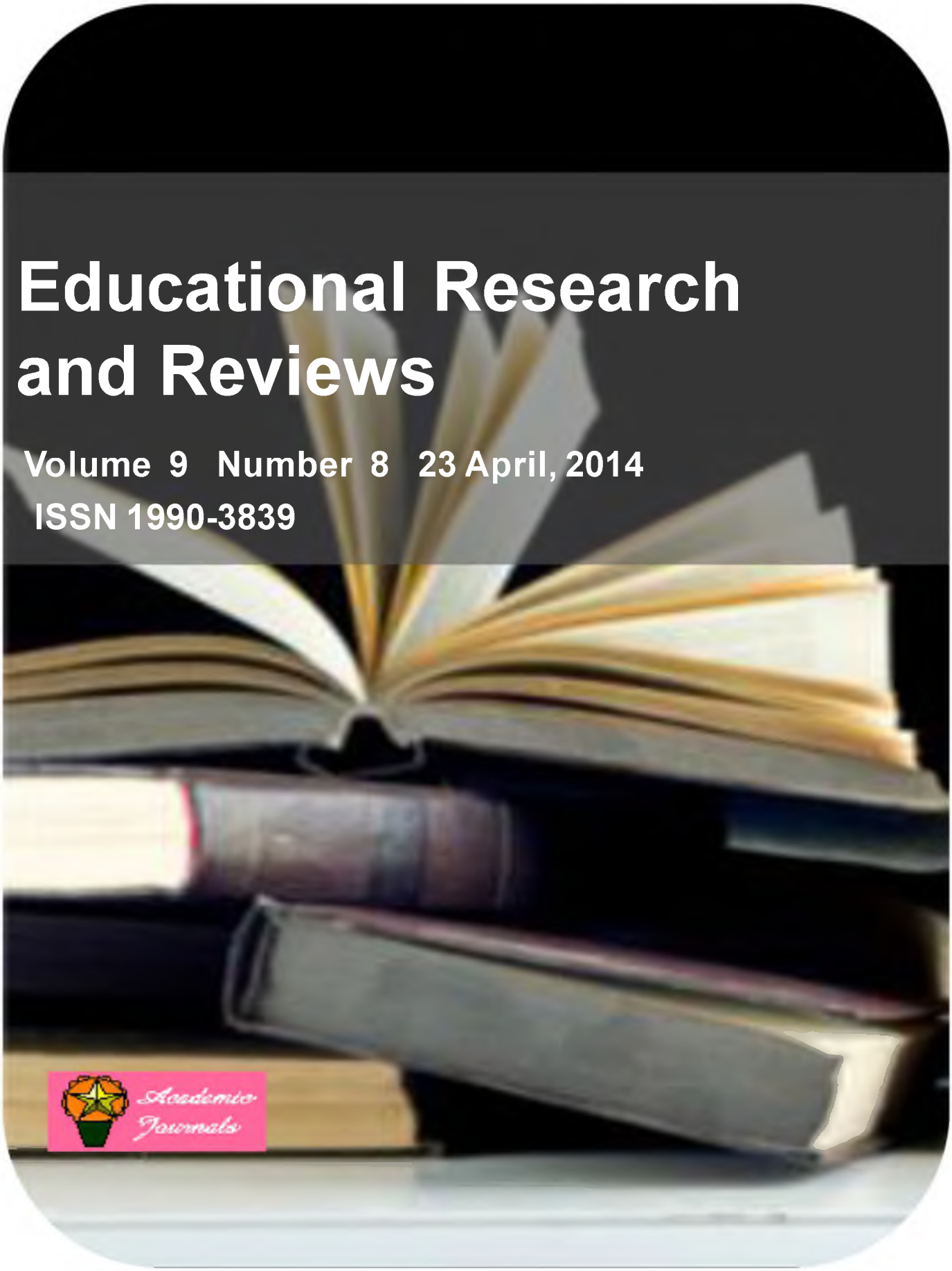

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Full Length Research Paper

Analyzing the classroom teachers' levels of creating a constructivist learning environments in terms of various variables: A Mersin case

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Abstract

In this research, it was aimed to analyze the classroom teachers' level of creating a constructivist learning environment in terms of various variables. For that purpose, relational screening model was used in the research. Classroom teachers' level of creating a constructivist learning environment was determined using the "constructivist learning environment inventory" developed by Tenenbaum et al., (2001), and adapted into Turkish by Fer and Cırık (2006); "teachers' variables information form" was used in order to determine demographical features of classroom teachers. Cronbach alpha internal consistency coefficients related to dimensions of constructivist learning environment inventory varied between .89 and .94. The measurement instruments were performed to total 504 classroom teachers carrying on their duties in 32 elementary education schools affiliated to Mersin province Akdeniz, Yenişehir, Toroslar and Mezitli central districts. The research results revealed that there was a significant difference at $p<.01$ level of significance between classroom teachers' ages, professional seniority and their level of creating a constructivist learning environment. No significant difference was found between classroom teachers' gender and their level of creating a constructivist learning environment. Moreover, the research also proved that the teachers with high professional seniority perceived the learning environment as more constructivist rather than the teachers with lower seniority.

KeyWords: Classroom teacher, constructivism, various variables, learning environment.

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Full Length Research Paper

Analyzing the classroom teachers' levels of creating a constructivist learning environments in terms of various variables: A Mersin case

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In this research, it was aimed to analyze the classroom teachers' level of creating a constructivist learning environment in terms of various variables. For that purpose, relational screening model was used in the research. Classroom teachers' level of creating a constructivist learning environment was determined using the "constructivist learning environment inventory" developed by Tenenbaum et al., (2001), and adapted into Turkish by Fer and Cırık (2006); "teachers' variables information form" was used in order to determine demographical features of classroom teachers. Cronbach alpha internal consistency coefficients related to dimensions of constructivist learning environment inventory varied between .89 and .94. The measurement instruments were performed to total 504 classroom teachers carrying on their duties in 32 elementary education schools affiliated to Mersin province Akdeniz, Yenişehir, Toroslar and Mezitli central districts. The research results revealed that there was a significant difference at p<.01 level of significance between classroom teachers' ages, professional seniority and their level of creating a constructivist learning environment. No significant difference was found between classroom teachers' gender and their level of creating a constructivist learning environment. Moreover, the research also proved that the teachers with high professional seniority perceived the learning environment as more constructivist rather than the teachers with lower seniority.

Key Words: Classroom teacher, constructivism, various variables, learning environment.

INTRODUCTION

In rapidly changing world, transition from industrial society to information society has gained speed through the developing technology. With this point of view, the educational system has also renovated itself, and made reforms related to meeting the needs of new human model. Turkey adapted a curriculum based upon the constructivist approach through a radical change actualized in programs at elementary education level in 2005 to 2006 academic year. Constructivism is an epistemology, and theory of learning and making meaning (Applebee,

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1993; Richardson, 1997; Abdal Haqq, 1998; Sewell, 2002). According to this theory which explained the nature of knowledge and how people learn, people create new meanings through the interactions formed among the ideas, events and activities they have encountered or experiences before. The knowledge is acquired through participation rather than repetition or memorizing. The learning activities in this approach are organized depending the activities such as active participation, analyzing, problem solving and cooperation with others (Abdal Haqq, 1998). Hackmann (2004) defined the constructivism as a process in which the learners create their own reality, or interpret the meaning depending upon their own experiences and perceptions, and accordingly a process when the individuals use their knowledge to interpret their previous experiences, mental structure, and the meaning of objects and events. For that reason, the constructivist approach purges the ideas on knowledge from only being some processes developing out of students, and puts the learner at the center of learning. The knowledge is a product structured by anyone as result of interactions though their surrounding (Bhatnagar, 1997). According to Snyder et al. (1992 Akt: Turgut, 2001), the knowledge in constructivism has "a created, discovered, and experienced structure." According to Applebee (1993), the knowledge in constructivism has a feature that cannot be defined absolutely, but structured through the social activities.

In a constructivist learning environment, teachers are the ones who establish a dialogue with learners and help them to constructs their own knowledge. According to this feature, teachers know the learners in terms of their various characteristics, and place within the center of learning. The teacher whose main role is to create an environment that will facilitate learning in terms of learners is an important factor of the constructivist approach. A constructivist teacher should direct the process of teaching-learning, should be a guide to students, prepare an efficient learning environment, and have a strong field knowledge (Alesandrini and Larson, 2002; Brooks and Brooks, 1993; Güneş and Asan, 2000; Jadallah, 2000; Şimşek, 2004; Tobin, 1993). Because the student is in the center of learning in a constructivist learning environment, interest and needs of a student is the first degree determinative of the factors within the environment. The learning activities in this approach are organized on the basis of activities such as the active participation of student, analyzing, problem solving and cooperation with others. According to this approach, learning is the process of creating an understanding related to the world. In learning environment, the knowledge is produced through the social interactions and specific to individual (Fox, 2001). This viewpoint related to knowledge and learning necessitates a democratic classroom appearance. Besides democratic process in a classroom environment provides learners the opportunity of being active and free, it also provides teachers to have the chance of being more productive.

The features such as presenting the multi-dimensional explanations of reality, providing the formation of information, emphasizing that the duties should be in a meaningful sense, supporting the ideational reflection upon expressions, supporting the formation of information through content and context, and forming information in cooperation through social interactions are the leading to create a constructivist learning environment (Tezci and Gürol, 2001). Beside these features, the studies that have been carried out also reveal the characteristics of a constructivist learning environment. Hand et al. (1997) investigated creating a classroom environment based upon the constructivist approach, and how learners perceived the features of a classroom environment prepared in accordance with the constructivist learning approach. As result of the study, it was determined that the learners had chance to use their ideas and knowledge freely, got aware of their changing role and responsibilities in a classroom, their self-confidence and desire for participating into the learning process increased. Tenenbaum et al. (2001) mentioned the basic features of a constructivist learning environment as arguments, discussions and debates, conceptual conflicts and dilemmas, sharing ideas with others, materials and resources targeted towards solutions, motivation toward reflections and concept investigation, meeting learners' needs, and making meaning, real life examples.

The researchers have emphasized that the factor determining the features of a constructivist learning environment is the interest and needs of students, and their individual characteristics. The researches that have been carried out related to the constructivist learning environment have revealed that the constructivist program has positive effects upon the academic success of learners (Lord, 1999; Maypole and Davies, 2001), their thinking skills (Tynjala, 1998), and problem solving skills (Wolff, 1994). Similarly, there have also been studies in our country related to the positive effects of the constructivist learning environment upon the academic success of students (Bukova-Güzel, 2007; Gültepe et al., 2008), their creativity (Tezci and Gürol, 2002), student and teacher views (Altun and Büyükduman, 2007; Tanrıseven and Üredi, 2009).

Starting to practice elementary education programs based upon the constructivist approach in 2005 to 2006 in Tukey has brought about many problems that should be overcome. The leading of these problems was teachers' level of presenting behaviors appropriate for the constructivist learning environment. In our country, overcoming the problems relevant to application of a curriculum based upon the constructivist approach necessitates researches that will be carried out upon

various variables related to teachers. From this point of view, we analyzed the classroom teachers' level of creating a constructivist learning environment in terms of various variables, in this study. In the research, it was aimed to determine the classroom teachers' level of creating a constructivist learning environment in terms of various variables (gender of teachers, ages and their professional seniority). In accordance with this purpose, answers to those sub-problems were sought:

1. What are the classroom teachers' levels of creating a constructivist learning environment?
2. Does classroom teachers' level of creating a constructivist learning environment differ according to their gender, ages and their professional seniority?

METHODOLOGY

Research model

The research was carried out in relational screening model, and it was a descriptive study. Classroom teachers' level of creating a constructivist learning environment was described; and moreover, teachers' level of creating a constructivist learning environment was analyzed in terms of various variables.

Population and sample

The research population included primary school teachers carrying on their duties in all official primary schools in central districts (Mezitli, Yenişehir, Akdeniz, and Toroslar) of Mersin province in 2012 to 2013 academic year. The research sample included 32 primary schools chosen randomly in schools that have different socio-economic levels (high, mid, low). And the sample included totally 504 primary school teachers including 277 female and 227 male teachers working in these schools. In the research, 22% of teachers included into the sample worked in schools located on a surrounding with high socio-economic level, 49.0% worked on a surrounding with mid socio-economic level, and 28.8% worked on a surrounding with a low socio-economic level. The personal data related to primary school teachers were analyzed, their frequency and percentage table was created and presented in Table 1.

Data Collection

In the research, "teachers' variables information form" developed by the researcher in order to collect information of various variables related to teachers included into the study group. In "teachers' variables information form," questions related to gender of teachers, ages and the period of their professional seniority were asked.

In the research, "constructivist learning environment questionnaire (CLEQ)" developed by Tenenbaum et al., (2001) and adapted into Turkish by Fer and Cırık (2006) was used to determine the primary school teachers' level of creating a constructivist learning environment. The evaluation instrument included 30 items and 7 sub-factors describing the appearance of a constructivist learning environment. These sub-factors were arguments, discussions, debates (5 items , α= .90), conceptual conflicts and dilemmas (3 items, α= .94), sharing ideas with others (4 items, α= .90), materials and resources targeted toward solutions (3 items α= .90), motivation towards reflections and concept investigation (6 items, α= .89), meeting learners' needs (5 items, α= .89), and making meaning, real life examples (4 items, α= .90). The scale was a 5-point Likert type evaluation instrument. The grades determined from one to five varied between "never" and "always." Cronbach Alpha internal consistency coefficients related to the dimensions of the evaluation instrument varied between .89 and .94.

Data Analysis

In the research, frequency (f) and percentage (%) distribution tables were created to describe the primary school teachers' level of forming a constructivist learning environment. Whether primary school teachers' level of creating a constructivist learning environment showed a significant difference or not according to the gender and type of school (the variables creating chaos) was determined using unrelated group t-test. Whether it showed a significant difference according to age, the grade they train, the professional seniority, and type ıf school graduated finally (the variables creating chaos) was determined using one way variance analysis (ANOVA). Turkey test was performed to determine among which variables (age and professional seniority) the difference of creating a constructivist learning environment exists. In whole statistical analysis, 0,05 level of significance was accepted as the criteria. The data obtained from the research was analyzed using the standing for statistical package for the social sciences (SPSS) Windows 17.0 statistical package program.

FINDINGS

In the first sub-problem of the research, classroom teachers' level of creating a constructivist learning environment was determined. Factor total scores obtained from the answers given by classroom teachers to the constructivist learning environment inventory were categorized as low, medium and high. The data obtained from the answers given by classroom teachers to "constructivist learning environment inventory" were analyzed; frequency and percentage table was created and the results were presented in Table 2. When Table 2 was analyzed, majority of primary school teachers in total (f=347, %68,8) were noticed to create the constructivist learning environment at medium level. Whereas 15.1% of primary school teachers created the constructivist learning environment at low level, 16.1% created at high level.

In the second sub-problem of the research, it was analyzed whether classroom teachers' level of creating a constructivist learning environment differed significantly according to gender. In order to find an answer to this sub-problem, and to determine whether level of creating a constructivist learning environment differed according to gender, unrelated group t-test analysis was performed. The t-test results related to whether teachers' level of creating a constructivist learning environment differed according to gender or not were presented in Table 3.

Table 1. Frequency and percentage distribution table related to the study group:

Variables	Participants	f	%
Gender	Female	277	55,0
	Male	227	45,0
Age	21-25 years old	5	1,0
	26-30 years old	61	12,1
	31-35 years old	84	16,7
	36-40 years old	84	16,7
	41-45 years old	126	25,0
	46 years old and over	144	28,6
Seniority	1-5 years	36	7,1
	6-10 years	76	15,1
	11-15 years	100	19,8
	16-20 years	82	16,3
	21-25 years	103	20,4
	26 years and over	107	21,2

Table 2. Frequency and Percentage Distribution Table related to primary school teachers' level of creating a constructivist learning environment.

Constructivist learning environment	Low		Medium		high	
	f	%	f	%	f	%
Arguments, discussions, debates	96	19,0	312	61,9	96	19,0
Conceptual conflicts and dilemmas	127	25,2	248	49,2	129	25,6
Sharing ideas with others	90	17,9	272	54,0	142	28,2
Materials and resources targeted toward solutions	49	9,7	361	71,6	94	18,7
Motivation toward reflections and concept investigation	95	18,8	289	57,3	120	23,8
Meeting learners' needs	104	20,6	150	29,8	250	49,6
Making meaning, real life examples	90	17,9	305	60,5	109	21,6
Total	76	15,1	347	68,8	81	16,1

When Table 3 was analyzed, it was noticed that female and male teachers' constructivist learning environment questionnaire score averages were similar to each other. As result of the unrelated t-test, there was no statistically significant difference ($p>.05$) within the context of constructivist learning environment's general and sub-factors.

Moreover, in the second sub-problem of the research, it was analyzed whether classroom teachers' level of creating a constructivist learning environment differed significantly according to their ages and their professional seniority. In order to find an answer to this sub-problem, and to determine whether level of creating a constructivist learning environment differed according to their ages and their professional seniority, one-way variance Analysis (ANOVA) was performed. After ANOVA analysis, Tukey test was performed in order to determine among what variables (their ages and their professional seniority) there were differences in terms of classroom teachers' level of creating a constructivist learning environment. ANOVA analysis results related to whether teachers' level of creating a constructivist learning environment differed according to age was presented in Table 4.

When Table 4 was analyzed, significant differences at $p<.01$ level of significance were noticed between primary school teachers' level of creating a constructivist learning environment according to their ages. This difference was also observed in all other sub-dimensions of constructivist learning environment questionnaire apart from the

Table 3. Unrelated Group t-test results according to the difference of primary school teachers' creating a constructivist learning environment from gender.

CLEQ	GENDER	N	$\bar{x}$	SD	Sh	Sd	t	p
Arguments, discussions, debates	Male	227	19,6875	3,3006	,2223	502	-3,496	.251
	Female	277	19,2655	3,3400	,1722			
Conceptual conflicts and dilemmas	Male	227	7,7266	2,8415	,2363	502	-6,276	.242
	Female	277	8,0708	2,5428	,1625			
Sharing ideas with others	Male	227	16,6641	2,5294	,2374	502	-4,627	.551
	Female	277	16,4956	2,5669	,1801			
Materials and resources targeted toward solutions	Male	227	12,0703	1,9968	,1908	502	-4,941	.141
	Female	277	11,7434	2,0035	,2135			
Motivation toward reflections and concept investigation	Male	227	22,9766	3,7405	,1861	502	-3,054	.953
	Female	277	22,9513	3,9308	,1892			
Meeting learners' needs	Male	227	18,7734	2,9248	,1731	502	-6,178	.131
	Female	277	18,2257	3,4522	,1226			
Making meaning, real life examples	Male	227	16,8438	6,0853	,1491	502	-5,013	.126
	Female	277	15,9735	2,6058	,1127			
TOTAL	Male	227	113,2159	19,7692	,6682	502	-1,503	.133
	Female	277	114,9747	21,0853	,5179			

sub-dimensions of conceptual conflicts and dilemmas, sharing ideas with others, making meaning and real life examples. Tukey test results performed related to determine which ages the level of creating a constructivist learning environment showed difference according to ages showed parallelism in scale dimensions. According to these results, it can be said that the primary school teachers between 26 to 30 years old created a constructivist classroom environment at a higher level than the primary school teachers between 31 to 35 years old. According to the research result, the primary school teachers between 26 to 30 years old can be said to have higher level of creating a constructivist learning environment rather than the teachers at 31 to 35, 41 to 45, and 46 years old and over primary school teachers in terms of arguments, discussions and debates, material and resources targeted toward solutions, motivation toward reflections and concept investigation, and meeting learners' needs. Moreover, according to research result, the primary school teachers between 21 to 25 years old can also be said to have higher level of creating a constructivist learning environment rather than the teachers at 31 to 35, 41 to 45 and 46 years old and over primary school teachers in terms of material and resources targeted toward solutions, motivation toward reflections and concept investigation, and meeting learners' needs..

When Table 5 was analyzed, significant difference at $p<.01$ level of significance were noticed between the primary school teachers' level of forming a constructivist learning environment according to their professional seniority. This difference was noticed collaterally in all sub-dimensions of the constructivist learning environment questionnaire apart from the sub-dimensions of conceptual conflicts and dilemmas, sharing ideas with others, and motivation towards reflections and concept investigation. Tukey test results showed parallelism with the scale sub-dimensions. According to this result, score averages of the teachers having 26 years and over professional seniority and the score averages of the teachers having 11 to 15 years professional seniority revealed statistically significant difference in terms of total questionnaire, arguments, discussions and debates, materials and resources targeted toward solutions, meeting learners' needs, and making meaning, real life examples. This difference was found in favor of the teachers having 26 years and over professional seniority.

Table 4. One Way Variance Analysis and Tukey Test Results related to whether primary school teachers' level of creating a constructivist learning environment differs according to their ages.

CLEQ	Seniority	N	X	SD	F	p	Significant Difference
Arguments, discussions, debates	21-25 ages	5	17,4320	7,23187			
	26-30 ages	61	18,3889	4,46241			
	31-35 ages	84	19,5417	5,47872			
	36-40 ages	84	16,9684	4,11911	5,096**	,001	26-30>41-45 ages
	41-45 ages	126	15,2447	4,44639			
	46 ages and over	144	16,2624	4,23343			
	Total	504	17,5980	4,53644			
Conceptual conflicts and dilemmas	21-25 ages	5	7,8120	1,64837			
	26-30 ages	61	8,1879	2,45143			
	31-35 ages	84	7,8826	2,90968			
	36-40 ages	84	7,9784	2,78213	,453	,781	-
	41-45 ages	126	8,7843	2,49706			
	46 ages and over	144	7,8541	2,56871			
	Total	504	7,9950	2,38360			
Sharing ideas with others	21-25 ages	5	13,8520	2,83647			
	26-30 ages	61	12,1667	3,27957			
	31-35 ages	84	11,8333	3,25631			
	36-40 ages	84	11,9789	2,89821	,958	,474	-
	41-45 ages	126	12,4219	2,98521			
	46 ages and over	144	11,7521	2,89214			
	Total	504	12,2506	2,90294			
Materials and resources targeted toward solutions	21-25 ages	5	14,5038	3,75235			
	26-30 ages	61	13,8746	4,63211			
	31-35 ages	84	12,5857	4,02236			
	36-40 ages	84	13,5389	3,78542	2,453*	,039	21-25>46 and over ages
	41-45 ages	126	15,2345	4,85328			
	46 ages and over	144	12,6254	4,32104			
	Total	504	13,9564	3,85254			
Motivation toward reflections and concept investigation	21-25 ages	5	17,5346	7,43125			
	26-30 ages	61	19,6245	5,59871			
	31-35 ages	84	15,8417	4,56243			
	36-40 ages	84	16,9988	4,31912	4,257**	,001	26-30>31-35 ages
	41-45 ages	126	18,2849	4,47631			
	46 ages and over	144	17,3512	5,12141			
	Total	504	17,5980	4,53644			
Meeting learners' needs	21-25 ages	5	14,3937	3,89562			
	26-30 ages	61	13,5985	4,57901			
	31-35 ages	84	13,6871	4,02563			
	36-40 ages	84	13,3692	3,52761	2,748*	,033	21-25>46 ages and over
	41-45 ages	126	15,0354	4,84768			
	46 ages and over	144	13,0021	3,75614			
	Total	504	13,8561	3,87094			

Table 4. Contd.

Making meaning, real life examples	21-25 ages	5	12,1874	4,22351			
	26-30 ages	61	11,9334	3,75123			
	31-35 ages	84	10,4621	3,33214			
	36-40 ages	84	11,6312	2,89521	,864*	,549	-
	41-45 ages	126	11,7956	3,12456			
	46 ages and over	144	11,9561	3,45685			
	Total	504	11,9866	3,13773			
Total	21-25 ages	5	114,200	26,30969			
	26-30 ages	61	116,409	16,51199			
	31-35 ages	84	107,821	22,01049	3,085**	,001	26-30>31-35 ages
	36-40 ages	84	109,773	22,26746			
	41-45 ages	126	116,571	18,98733			
	46 ages and over	144	114,854	20,49321			
	Total	504	113,732	20,52893			

N=504 * p<.05 ** p<.01

Table 5. One Way Variance Analysis and Tukey Test Results related to whether primary school teachers' level of creating a constructivist learning environment differs according to their professional seniority

CLEQ	Seniority	N	X	SD	F	p	Significant Difference
Arguments, discussions, debates	1-5 years	36	18,9592	3,1041			
	6-10 years	76	17,9020	3,0694			
	11-15 years	100	17,7149	3,4624			
	16-20 years	82	20,6510	3,5914	5,495**	,001	26 and over >11-15 years
	21-25 years	103	21,2360	2,4548			
	26 years and over	107	20,5484	2,6912			
	Total	504	19,4361	3,4513			
Conceptual conflicts and dilemmas	1-5 years	36	8,1884	2,4351			
	6-10 years	76	7,9350	2,3535			
	11-15 years	100	7,9366	2,5621			
	16-20 years	82	7,8022	3,1192	,395	,786	-
	21-25 years	103	7,4210	3,2482			
	26 years and over	107	8,0010	2,9419			
	Total	504	7,9642	2,6578			
Sharing ideas with others	1-5 years	36	12,5600	2,85297			
	6-10 years	76	12,3502	2,88128			
	11-15 years	100	12,1857	3,28644			
	16-20 years	82	11,9383	3,03704	,836	,453	-
	21-25 years	103	11,9749	2,89712			
	26 years and over	107	12,3289	2,78872			
	Total	504	12,2646	2,90294			
Materials and resources targeted toward solutions	1-5 years	36	16,2397	2,6821			
	6-10 years	76	15,6843	2,3685			
	11-15 years	100	15,5844	2,9367			
	16-20 years	82	17,9240	2,3975	9,193*	,037	26 and over >11-15 years
	21-25 years	103	16,7640	2,1653			
	26 years and over	107	17,7656	2,1081			
	Total	504	16,5565	2,5511			

Table 5. Contd.

Motivation toward reflections and concept investigation	1-5 years	36	9,1888	2,4948	,784	,652	-
	6-10 years	76	8,9100	2,3456			
	11-15 years	100	8,8286	2,5578			
	16-20 years	82	8,6000	3,0199			
	21-25 years	103	8,5000	3,2542			
	26 years and over	107	9,0000	2,9487			
	Total	504	8,9482	2,6473			
Meeting learners' needs	1-5 years	36	17,3352	2,5531	4,629**	,001	26 and over >11-15 years
	6-10 years	76	17,3454	3,0563			
	11-15 years	100	16,5890	3,5676			
	16-20 years	82	17,7756	3,2168			
	21-25 years	103	19,6118	2,5789			
	26 years and over	107	18,8628	2,4624			
	Total	504	18,4857	3,2847			
Making meaning, real life examples	1-5 years	36	15,4527	2,3462	7,745*	,028	26 and over >11-15 years
	6-10 years	76	15,2602	2,2308			
	11-15 years	100	14,9466	3,5096			
	16-20 years	82	17,4668	2,1623			
	21-25 years	103	16,3450	2,4654			
	26 years and over	107	17,1200	2,9231			
	Total	504	16,3898	4,2331			
Total	1-5 years	36	120,527	17,2915	3,525**	,001	26 and over >11-15 years
	6-10 years	76	111,320	19,3849			
	11-15 years	100	109,263	22,2287			
	16-20 years	82	112,719	21,3317			
	21-25 years	103	115,048	21,7406			
	26 years and over	107	116,383	18,7866			
	Total	504	113,732	20,5289			

N=504 *p<.05 ** p<.01

When the research findings were analyzed, the result emerged generally was that the primary school teachers having higher professional seniority created a more constructivist learning environment rather than the ones having lower professional seniority.

DISCUSSION AND CONCLUSION

According to the result revealed by the research, majority of primary school teachers were noticed to create a constructivist learning environment at medium level. Theoretically, there have been studies revealing that the curriculums are appropriate to the principles and standards of the constructivist approach (Sert, 2008). In a study carried out by Tanrıseven and Üredi (2009), majority of teachers were determined to create a constructivist learning environment at medium level. Besides, a research carried out by Sert (2008) obtained the result that teachers met the requirements of a constructivist curriculum at medium level. Furthermore, the studies depending upon the researchers' observation have indicated different findings. In a research conducted by Ünal and Akpınar (2006) upon this, it was determined that although teachers had ideas related to the importance of a constructivist learning environment, they could not present constructivist behaviors within the classroom environment. On the other hand, in a research carried out by Howard et el. (2000) upon the pre-service teachers, it was specified that the practices based upon the

constructivist approach caused a change from the objectivist epistemology towards a constructivist epistemology. In their research Kim et al. (1998) obtained the result that a teaching process based upon constructivism had a positive effect upon pre-service teachers' planning their teaching strategies depending upon constructivism. However, teachers need to have experiences depending upon constructivist practices not only during the pre-service period but also during their in-service trainings.

Majority of primary school teachers' creating a constructivist learning environment at medium level makes us consider that they encounter to some problems in practice. The conducted researches have indicated that the problems such as inadequate resources, crowded classrooms, the way of evaluations' being not clear, inadequacy of in-service training, and physical substructure deficiencies exist in creating a constructivist learning environment (Gözütok et al, 2005; Sert, 2008; Yapıcı and Leblebiciler, 2007).

In the research, it was noticed that constructivist learning environment questionnaire of female and male teachers showed similarities to each other. It was determined that there was no statistically significant difference within the context of constructivist learning environment's general and factors according to the genders of primary school teachers. It was noticed that there were significant differences between the primary school teachers' level of creating a constructivist learning environment according to their ages. Related to what ages the level of creating a constructivist learning environment differed, it can be said that the primary school teachers between 26 to 30 years old formed a constructivist learning environment at a higher level than the primary school teachers between 31 to 35 years old.

Significant differences were noticed between the primary school teachers' level of creating a constructivist learning environment according to their professional seniority. Professional seniority reveals itself as an important variable in teaching practices. In their study, Işıkoğlu et al. (2009) specified that the teachers with higher professional seniority had student centered teaching belief at a higher level. Similarly, Ünal and Akpınar (2006) the teachers having lower professional seniority created a more traditional learning environment. In their study, Tanrıseven et al. (2010) determined that there was a significant difference according to the views of primary school supervisors between the professional seniority and creating a constructivist learning environment. In the research, statistically significant difference was determined between the score averages of the teachers having 26 years and over professional seniority, and score averages of teachers with 11 to 15 years professional seniority in total of the scale. This difference was found in favor of the teachers having 26 years and over professional seniority.

Although there have been studies determining a relationship between the age and seniority of teachers and their emotional exhaustion and professional desensitization (Cemaloğlu and Erdemoğlu, 2007), the result obtained from the research group showed parallelism with this findings. Moreover, in his study Tanrıöğen (2000) specified a significant difference in favor of the teachers having 6-10 years professional seniority between the attitudes of teachers having 1-5 years and 11 years and over seniority towards change and the attitudes of teachers having 6-10 years seniority towards change. According to this result, the teachers having high professional seniority have more positive attitude towards practicing and actualizing the new ideas. Accordingly, the relationships between the professional seniority of teachers and the teaching practices can differ according to the characteristics of the sample group.

Increasing the primary school teachers' level of creating a constructivist learning environment can be possible through adapting the period of raising teachers using the student-centered learning as base. In their research Kim et al. (1998) obtained the result that a teaching process based upon constructivism had a positive effect upon pre-service teachers' planning their teaching strategies depending upon constructivism. However, teachers need to have experiences depending upon constructivist practices not only during the pre-service period but also during their in-service trainings. Consequently, reflection of a constructivist learning environment not only to the perception of teachers but also to their practices seems possible through a constructivist teacher training system beside overcoming the problems revealed in researches. For that reason, the quality of the constructivist approach is considered to increase through the reflection of both in-service trainings and teacher training programs creating the key point. Organization of in-service trainings that will be provided to meet these needs of primary school teachers in accordance with the constructivist approach can be offered as a suggestion to increase the level of creating a constructivist learning environment.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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