Classroom Teachers' Possession Level of Characteristics Required by the Constructivist Approach [*]

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Abstract

The main theme of the constructivist approach is the construction of knowledge by students. The construction of knowledge by students in constructivist approach is defined as becoming more effective on re-creating and improving the knowledge that they already have. The knowledge cannot be transferred by the teachers. The main role of the teacher in the constructivist approach is creating an interactive, regenerative and informative learning environment. In this context, the purpose of this research is to determine the classroom teachers' possession level of characteristics required by the constructivist approach. Quantitative and qualitative data collection techniques were used during the data collection phase. A questionnaire was used in the collection of quantitative data and observation method was used in the collection of qualitative data. The universe of the research consists of the teachers of 1st, 2nd, 3rd, 4th and 5th grade classes in the central province of Afyonkarahisar in the education-instruction period of 2008-2009. Because of the application of quantitative and qualitative research methods simultaneously, sampling method is required and a study group is assigned. The questionnaire is applied to 390 class teachers that are assigned by random sampling. An observation application is administered on a group of 50 teachers out of the prior 390 teachers in the period between 29th April 2009 and 23rd May 2009. At the conclusion of the research, according to the findings, it is revealed that the classroom teachers in the sample possess the characteristics required by the constructivist approach. But according to the results of observation, it is revealed that the teachers do not possess the qualifications required by the constructivist approach sufficiently. It is found that there was no significant difference in terms of classroom teachers' possession level of characteristics required by the constructivist approach with respect to variables such as gender, seniority and graduated school type.

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Introduction

The approach used in the education programme which has been implemented since the school year of 2004-2005 is the constructive approach (MEB, 2004). It was developed as a philosophical approach and then, became used in the fields of sociology, anthropology, psychology and educational sciences (Koç, 2002). It was developed as a epistemological theory based on various studies of many philosophers, psychologists and educators and it attempts to account for the nature of knowledge (Açıkgöz, 2003; Airasian and Walsh, 1997; Brooks and Brooks, 1993; Duman, 2004; Tezci, 2002; Glickman et. al. 2004 cited in Çınar, Teyfur and Teyfur 2006). It is considered to be a philosophical prespective on how to reach understanding and knowing, but it can also be regarded as a theory of learning (Savery and Duffy, 1995). The constructive approach argues that individuals repeatedly construct their experience through active mental processes and that know is acquired as a result of reconstructed process (Spigner-Littles and Anderson, 1999). The basic assumption behind the approach is that students construct knowledge (Holzer 1994 cited in Gilakjani, Leong and Ismail, 2013). McCormick and Paechter (1999) state that in this approach construction of knowledge is a key concept referring to as the role of students in reconstructing their knowledge and development (cited in Büyüktaşkapu, Çeliköz and Akman, 2012).

Differences in the constructive approach in terms of knowledge and learning led to changes in traditional educational programs under the effects of behaviourist theory of learning (Erdamar Koç and Demirel, 2008). More specifically, the changes occurred in the roles of both students and teachers, the content of courses, teaching methods and equipment, and evaluation process. The role of teachers in this approach is very different from that in traditional approach in which courses are mostly delivered through lectures and teachers transmit and transfer the knowledge that is considered to be absolute to students (Hanley, 1994). However, in constructive approach the role of teachers is to provide the students with an interactive, vivid and informative learning environment (Schwartz 1999, cited in Gilakjani, Leong and Ismail, 2013). And the goal of education is to produce students who use his prior knowledge to new one and employ teaching methods that fit to his cognitive processes, and know how and when to use knowledge (Abbott and Ryan, 1999). Since the constructive approach focuses on developing learning and mental skills route memorization and encyclopedic knowledge are not favoured. It deals with how individuals learn and emphasizes knowledge that improve students' language, mental and social skills. Knowledge is not ultimate aim, but a device to develop various skills. Therefore, fundtional knowledge that improve skills are emphasized (Güneş, 2007 cited in Güneş, 2010). In this approach the responsibility for learning is shared by teachers and students (Jonassen, 1994). Titiz (1999) proposes the combination of the concepts of "teacher and students" and "learning cooperation". It assumes that students and teachers are not two different sides in the learning process, but a team which cooperates to achieve a common goal and overcomes the barries in this attempt. In the constructive approach which emphasize the active cognitive and affective roles of students teachers have significant roles in the learning process. One of these roles is provide the students with a learning environment for their cognitive and affective learning (Tuan, Chang, Wang and Treagust, 2000). Constructive teachers faciliates learning envionment, guide the students, encourage them, and assist them in their attempt to improve their cognitive skills. In addition, they provide a mental interaction in the classroom and direct the students to reason. They also maximize the mental interaction and communication among students (Morrisette, 2002; Kozanitis, 2005 cited in Güneş, 2010). Their other roles include the following: authentic activities proper to individuals, interactions among learners, cooperation, and environments where learners can clearly express their

ideas and ask questions (Brooks and Brooks, 1999). Teachers develop proper teaching methods based on students' prior knowledge and level of learning and encourage students to analyse, interpret and predict through dialogue among students, asking various questions and providing attractive stimuli (Akyol, 2007). Teachers should guide students in connecting their prior knowledge with those they have learned and be models for them to improve their thinking skills (Duman, 2007). In short, teacher qualities in constructive approach are as follows: faciliating student work, guidance, encouragement, group study, being neutral in classroom discussions, employing student experience in class, discovering students' abilities and constructive student assessment (Witfelt, 2000).

Like the roles of teachers the roles of students in the learning process are different in the constructive approach and students are active participants of their learning (Kumar, 2006; Özden, 2005; Spigner-Littles and Anderson, 1999). Students in this approach are not passive recipient of knowledge. Instead they learn through their active attempts and interaction with their environment. They receive knowledge through various activities such as research, reasoning and problem-solving and then actively process it and connect it with their prior knowledge. Finally they interpret it in their own terms and add it to their mind. Therefore, students control their learning. They make decisions over their learning process and guide their learning process together with teacher (Basque,1999; Labédie and Guy 2001; Güneş 2007 cited in Güneş, 2010). In constructive classrooms students learn concepts through practice, research and other inquiries. During this process students discuss different solutions and learn through discovery. Students actively participate in the evaluation process. They evaluate their outcomes and products and become aware of what they learned and which experiences they gained (Alesandirini and Larson, 2002).

As stated earlier the constructive qualities of teachers in Turkey should be evaluated in relation to the educational program implemented since it is based on constructive approach(Özden, 2005). There are several studies on this topic. For instance, the constructive qualities of classroom teachers in Turkey were evaluated in social sciences course (Ağlagül, 2009; Dündar, 2008) and in science and technology course (Birikim, 2008; Tomul and Tatlı, 2007; Yılmaz 2006; Ünal and Akpınar, 2006). In addition, classroom teachers' level of constructive knowledge was analysed (Özdemir, 2007). The levels of constructive teacher qualities of both classroom teachers and student teachers were also examined (Saylan and Yurdakul, 2005) and basic education programs were reviewed in terms of teacher qualities (Gözütok, Akgün and Karacaoğlu, 2005). The constructive program can only be successfully implemented if teachers have necessary qualities. In other words, the success of educational programs is based on best educational practices by teachers (Yaşar et. al. 2005). Because as research suggests effective learning can occur only through effective teaching (Duman, 2009) and and teachers qualities are among those significant factors influencing the success of teaching. However, there are other significant factors affecting student learning and achievement. It is the responsibility of teachers to organize all these factors to achive the goals (Duman, 2009). In this regard, the study aims at the level of constructive qualities of classroom teachers based on several variables. In parallel to this aim, the study tries to answer the following research questions:

- At which level do classroom teachers have constructive qualities in relation to planning, practice and evaluation dimensions of teaching-learnng process?

- Do their levels of constructive qualities vary based on gender, teaching experience and graduation of origin?

- Is there any parallelism between the answers of classroom teachers and in class observations regarding constructive qualities?

Method

The study employed a mixed method. The mixed method is neither quantative nor qualitative method, but both to understand the problem at hand (Creswell and Plano-Clark, 2007). In the quantative side the study employed survey questionnarie based on scanning model. Scanning models aim at describing any case or event, past or present, as it is (Karasar, 2005). In the qualitative side of the study observations were used. Observations are employed to have a detailed picture of behaviour in a setting. In other words, observations provide the researcher with opportunity to have comprehensive and long-term picture about a behaviour (Bailey, 1982, cited in Yıldırım and Şimşek, 2006). In the study, "semi-structured observations" were used and the study was carried out as a "nonparticipant observation" in the natural class environment.

Participants

The participants of the study were 390 classroom teachers working at 40 basic education schools in Afyonkarahisar province during the school year of 2008–2009. They were selected through random sampling technique. Personal characteristics of the classroom teachers sampled are given in Table 1.

Table 1. Demographical Characteristics of the Participants (N:390)

Variable		f	%
Gender	Female	181	46.4
	Male	209	53.6
	Total	390	100.0
Teaching experience	1–10 years	102	26.1
	11–20 years	182	46.7
	21> years	106	27.2
	Total	390	100.0
Classroom size	1–15 students	13	3.3
	16–30 students	175	44.9
	31–45 students	188	48.2
	45> students	14	3.6
	Total	390	100.0
Grade level	1. grade	68	17.4
	2. grade	78	20.0
	3. grade	85	21.8
	4. grade	85	21.8
	5. grade	74	19.0
	Total	390	100.0
Graduation	Faculty of education	261	66.9
	Faculty of arts and sciences	40	10.3
	Other	89	22.8
	Total	390	100.0

As can be seen above, 46,4% of the participants were females and 53,6% males. The teaching experience of the participants is as follows: 26,2% had 1–10 years of experience, 46,7% had 11–20 years of experience and 27,2% more than 20 years of teaching experience. The class sizes were found as follows: 3,3% were teaching 1–15 students, 44,9% were teaching 16–30 students, 48,2% were teaching 31-45 students, and 3,6% were teaching more than 45 students. The grade level the classroom teachers teach was found as follows: 17,4% were teaching 1. grade, 20% 2. grade, 21,8% 3. grade, 21,8% 4. grade and 19% 5. grade. In terms of graduation, it was found that 66,9% were graduates of the faculty of education, 10,3% of faculty of arts and sciences, and 22,8% other higher education institutions (Higher Teaching School, Education Institute, etc.).

The classes of fifty classroom teachers who took questionnaire were observed between 29 April 2009 and 23 May 2009 and the data were recorded in semi structured observation forms. Table 2 presents the characteristics of participants whose classes were observed.

Table 2. Demographical Characteristics of Teachers whose Classes were Observed (N= 50)

Variable		f	%
Gender	Female	21	42
	Male	29	58
Teaching experience	1-11 years	0	0
	11-20 years	24	48
	21> years	26	52
Classroom size	16-30 students	25	50
	31-45 students	23	46
	46> students	2	4
Grade level	1. grade	11	22
	2. grade	11	22
	3. grade	9	18
	4. grade	10	20
	5. sın grade ıf	9	18
Graduation	faculty of education	26	52
	faculty of arts and sciences	2	4
	other	22	44

Table 2 shows that 42% of the participants were females, while 58% males. In terms of teaching experience it was found that 48% had the teaching experience of 11–20 years, and 52% more than 21 years. Class sizes were found as follows: 50% were teaching 16–30 students, 46% 31–45 students, and 4% 46 or more students. The grade level the classroom teachers teach was found as follows: 22% were teaching 1. grade, 22% 2. grade, 18% 3. grade, 20% 4. grade and 18% 5. grade. In terms of graduation, it was found that 52% were the graduates of the faculty of education, 4% faculty of arts and sciences, and 44% other higher education institutions (Higher Teaching School, Education Institute, etc.).

Data collection tools

The data of the study were collected through two different tools. One of them is the questionnaire of constructive qualities of teachers. The questionnaire was developed by the authors. The other one is observation form. The draft form of the questionnaire included 75 items about planning, practice and evaluation dimensions of constructive teaching. The draft was reviewed by four specialist in classroom teaching and eight specialist in educational sciences in terms of content

validity. They evaluated each items stating whether or not it was appropriate and the minimum rate for each item to be appropriate was set at 80%. Based on this review those that were repeated were excluded from the questionnaire. The number of such items were 16. The first section deals with personal and professional characteristics of the participants. More specifically, the variables of gender, teaching experience, class size, grade level and the school they graduated were asked. The second part included constructive teacher qualities and included a total 59 items of which 15 was concerned with planning, 27 with practice/implemetation and 17 with evaluation. The questionnaire was administered to 150 classroom teachers before the study to test the reliability of items. In this pilot study the following cronbach alpha values were found: for planning dimension it was .81, for practice dimension it was.88, for evaluation dimension it was .85 and for the questionnaire as a whole it was .93.

After the administration of the final questionnaire the following alpha values were identified: for planning dimension it was .86, for practice dimension it was .92, for evaluation dimension it was .89 and for the questionnaire as a whole it was .96. as can be seen above the alpha values are high, indicating the reliability of items. Sample items for three dimensions are as follows: for planning dimension "while planning activities I make use of student ideas.", for practice dimension "In order for students to connect their previous knowledge to newly acquired knowledge I provide additional knowledge, examples and opportunities to make practice." and for evaluation dimension "I make use of alternative assessment techniques to evaluate students from from different dimensions." The participants answered the items with the options of "never", "rarely", "sometimes", "mostly", and "always".

The observation form used during the observations included 20 items which were answered with the options of "Yes" "sometimes" and "no". The form was reviewed by field specialists in terms of language and understandability of items. Based on suggestions, the form which included items about personal, professional information and constructive teacher qualities was finalized.

Data analysis

The data obtained were analysed with the use of SPSS. The Shapiro-Wilk test was used to analyse the appropriateness of the date for mormal distribution and to identify which statistical methos is required for data analysis. Since the data had no normal distribution the Mann-Whitney U test which is a non-parametrical measure was employed in two-tail comparisons (more specifically, changes in constructive teacher qualities based on gender). Another non-parametrical measure, the Kruskall-Wallis test, was used for three sides comparisons (the effects of teaching experience and graduation on constructive teacher qualities) (Büyüköztürk, 2007). In evaluating constructive teacher qualities at the levels of planning, implementation and evaluation aritmethical mean ($\overline{X}$) and standard deviation (sd) were used. In order to determine the consistency between answers to questionnaire and observational results the Mann-Whitney U test was employed. Since different response patterns were used in two data collection tools, the score were standardized.

Results

Findings about the constructive qualities of classroom teachers

Table 3 presents means and standard deviation about constructive teacher qualities at three levels, planning, implementation and evaluation.

Table 3. Means and Standard Deviations About the Dimensions of Planning, Practice and Evaluation

	N	Arithmetical mean	Median	Mod	Min	Max	Standard deviation
Planning	390	86,2	86,7	90,7	52,0	100,0	8,4
Practice	390	86,5	87,4	92,6	62,2	100,0	8,1
Evaluation	390	83,4	83,5	82,4	58,8	100,0	9,6

As can be seen in Table 3, at the level of planning the participants had mean score of 86,2, minimum score of 52, and maximum score of 100. For the level of practice these scores were found as follows: means=86,5, minimum score=62,2 and maximum score=100. The following scores were found for the level of evaluation: mean=83,4, minimum score=58,8, and maximum score=100. Therefore, the participants regarded themselves as having constructive teacher qualities at the levels of planning and practice with a mean of 86,2 and at the level of evaluation with the mean of 83,4.

Findings about constructive teacher qualities based on gender

Table 4 provides the mean score of the Mann-Whitney U test indicating the level of constructive teacher qualities at three levels based on gender.

Table 4. Comparison of Participants Based on Constructive Teacher Qualities and Gender (Results of the Mann-Whitney U Test)

	Gender	N	Arithmetical mean	Median	Min	Max	Standard deviation	Range mean.	Mann-Whitney U z	P
Planning	F	181	65.5	66.0	43.0	75.0	6.2	211.2	-	
	M	209	64.0	65.0	39.0	75.0	6.2	181.9	2.558	0.011*
Practice	F	181	117.2	118.0	86.0	135.0	11.1	199.5	-	
	M	209	116.5	118.0	84.0	135.0	10.8	192.1	0.648	0.517
Evaluation	F	181	71.1	72.0	50.0	85.0	8.6	199.4	-	
	M	209	70.6	71.0	52.0	85.0	7.8	192.1	0.641	0.521
Total	F	181	253.5	255.0	193.0	295.0	23.8	201.5	-	
	M	209	251.1	251.0	186.0	293.0	22.3	190.3	0.971	0.332

*p<0,05

Table 4 shows that at the level of palnning there is a statistically significant difference in favour of female participants (p=0.011,<0,05). However, gender was found to have any other significant effects in the remaining two dimensions and in total scores (p>0,05).

Findings about constructive teacher qualities based on teaching experience

Table 5 provides the mean score of the Kruskall-Wallis H test indicating the level of constructive teacher qualities at three levels based on teaching experience.

Table 5 shows that teaching experience do not have any signficant effect on planning, practice and evaluation scores as well as total score (p>0,05).

Table 5. Comparison of Participants based on their Teaching Experience
(Results of the Kruskall-Wallis H Test)

	Teaching experience	N	Aritmethical mean	Median	Min	Max	Standard deviation	Range mean	Kruskall-Wallis H	
									KWH	P
Planning	1–10	102	63.7	64.0	39.0	75.0	6.4	177.8		
	11–20	182	64.8	66.0	43.0	75.0	6.5	199.2	3.696	0.158
	21>	106	65.4	66.0	51.0	75.0	5.6	206.3		
Practice	1–10	102	115.1	116.0	86.0	135.0	10.2	175.2		
	11–20	182	117.7	119.0	84.0	135.0	11.6	207.6	5.414	0.067
	21>	106	117.0	117.0	94.0	135.0	10.2	194.3		
Evaluation	1–10	102	70.1	70.5	50.0	85.0	7.4	183.7		
	11–20	182	71.0	72.0	51.0	85.0	8.8	201.0	1.573	0.455
	21>	106	71.3	71.0	52.0	85.0	7.7	197.4		
Total	1–10	102	248.8	249.5	186.0	295.0	21.4	177.2		
	11–20	182	253.2	257.0	193.0	294.0	24.9	203.5	3.743	0.154
	21>	106	253.7	252.5	205.0	293.0	20.9	199.4		

Findings about constructive teacher qualities based on graduation

Table 6 provides the mean score of the Kruskall-Wallis H test indicating the level of constructive teacher qualities at three levels based on graduation.

Table 6. Comparison of Participants based on their Graduate Schools
(Results of the Kruskall-Wallis H Test)

	Graduation	N	Aritmethical mean	Median	Min	Max	Standard deviation	Range mean	Kruskall-Wallis H KWH	p
Planning	FE	261	64,4	65,0	39,0	75,0	6,4	191,60		
	FAS	40	63,8	65,0	43,0	75,0	7,0	185,48	2,416	0,299
	OTHER	89	65,6	67,0	52,0	75,0	5,5	211,44		
Practice	FE	261	116,3	117,0	84,0	135,0	11,3	191,84		
	FAS	40	115,3	118,0	86,0	132,0	10,6	181,83	2,858	0,240
	OTHER	89	118,6	120,0	95,0	135,0	9,7	212,37		
Evaluation	FE	261	70,9	71,0	50,0	85,0	8,3	198,48		
	FAS	40	69,0	70,0	55,0	83,0	7,4	168,81	2,502	0,286
	OTHER	89	71,1	71,0	51,0	85,0	8,2	198,76		
Total	FE	261	251,6	251,0	193,0	295,0	23,9	193,93		
	FAS	40	246,9	250,0	186,0	281,0	22,2	171,73	3,465	0,177
	OTHER	89	255,3	255,0	202,0	294,0	20,6	210,78		

FE: Faculty of Education, FAS: Faculty of Arts and Sciences, Other: (Higher teaching institutions, Institute of education, etc.). Table 6 indicates that types of faculties the participants graduated from do not any significant effects on their scores in regard to the levels of planning, practice and evaluation as well as on their total score (p>0,05).

Findings about obervations

The data obtained from observations were grouped as constructive teachers behaviours and their frequency and percentage were calculated. Table 7 presents these behaviour from the most frequent to less frequent.

Table 7. Frequency and Percentage of the Observed Constructive Teacher Behaviour

Observed behaviour	Yes		Sometimes		No	
	f	%	f	%	f	%
They provide a positive classroom environment in which students can express their feeling and ideas.	29	58	11	22	10	20
They make use of project activities.	28	56	14	28	8	16
They ask questions about students' prior knowledge.	27	54	15	30	8	16
They encourage students to assume responsibility.	24	48	16	8	36	18
Their crticisms are constructive.	23	46	16	32	11	22
When students make any mistake they help students in recognising it.	21	42	11	22	18	36
They make use of more than one teaching method and technique.	15	30	27	54	8	16
They regularly use necessary audio-visual teaching materials.	17	34	24	48	9	18
They make use of stories, puzzles etc. to activate students' prior knowledge.	18	36	24	48	8	16
They encourage students to use different sources.	19	38	20	40	11	22
They make use of labs, library and internet-based sources.	14	28	19	38	17	34
They ask those questions to students that improve their mental skills such as thinking, comprehension and reasoning.	15	30	18	36	17	34
They encourage students to participate in group activities and in cooperative work.	12	24	8	16	30	60
They provide those environments in which students can evaluate their work.	7	14	15	30	28	56
They provide those environments in which students learn from each other.	9	18	14	28	27	54
They use alternative assessment methods to evaluate them from different angles.	8	16	15	30	27	54
They take into account the student interest and ability in carrying out class activities.	13	26	11	22	26	52
They provide the students with activities that improve their critical thinking skills.	14	28	13	26	23	46
They make use of several techniques such as reasoning, brain stroming, problem-solving, ad discussion to make it possible for students to connect their previous knowledge with newly acquired knowledge.	14	28	17	34	19	38
They make use of case examples to improve the problem-solving skills of students.	17	34	15	30	18	36

As can be seen in Table 7, the teachers observed mostly provide a positive learning environment in which students can express their emotions and ideas, make use of projects, asks questions to deal with the previous knowledge of students, and encourage the students to assume the responsibility of their learning. Some of them were also observed to encourage students to use

different sources, to regularly use audio-visual equipment in courses, and to ask those questions improving mental skills of students. However, the following constructivist class activities occurred less in the observations: making use of cases to improve problem-solving skills of students and and of activities to improve their critical thinking skills, taking into account the student interest and ability in organizing class activities, making use of group activities, providing learning envrionment in which students learn together and in which they evaluate themselves, and making use of different measurement and assessment methods.

Findings about the consistency between data from questionnaire and date from observations

Table 8 provides the results of the Mann-Whitney U Test concerning the consistency of the data from questionnaire and those from observations.

Table 8. Results of the Mann-Whitney U Test Concerning the Consistency of Data from Questionnaire and those from Observation

	N	Aritmethical mean	Median	Min	Max	Standard deviation	Range mean	Mann-Whitney U	
								z	p
Observation form	50	50,7	48,8	2,5	100,0	30,5	33,4	-5,905	0,000
Questionnaire	50	86,3	85,8	72,5	99,7	7,0	67,6		

*p<0,05

Table 8 indicates that the data obtained from the questionnaire and those collected through observations are not consistent and that there is a statistically significant difference between them (p=0,000<0,05). More specifically, the participants' mean score from the questionnaire is found to be 67,6, but it is 33,4 from the observation forms.

Discussion, Conclusion and Suggestions

The study aimed at the level of constructive qualities of classroom teachers based on several variables. The findings of the study suggest that the participants perceive themselves to be constructive teachers. This finding is supported by the findings by Saylan and Yurdakul (2005). In addition, Gömleksiz (2005) concluded that classroom teachers working at pilot schools implement and adapt to the new program better. Ağlagül (2009) also found that teachers provide a constructive learning setting. Demir, Önen and Şahin (2012) also concluded that student science teachers have higher levels of self-belief in regard to constructive planning, teaching-learning process, assessment process and learning environment. Tomul and Tatlı (2007), Özenç and Doğan (2012) and Kaya (2013) found that classroom teachers perceive themselves efficient in the constructive approach, supporting the finding of the current study. However, there are opposite findings in this regard. Karadağ, Deniz, Korkmaz and Deniz (2008) found that classroom teachers do not regard themselves as qualified for constructive teaching implementation. Similarly, Gözütok, Akgün and Karacaoğlu (2005) concluded that teachers are not sufficient in terms of the constructive dimensions of planning and implementation. There are other studies with similar findings (Gömleksiz, 2005; Özdemir, 2005; Özpolat, Sezer, İşgör and Sezer, 2007; Gömleksiz, 2007).

Although it is not statistically significant female participants have much more constructive qualities in regard to the levels of practice and evaluation. In the study by Dündar (2008) it was found that female social sciences teachers percieved their learning environment as much more constructive than male teachers. And the difference between perceptions of the two group was statistically significant. There are several findings supporting this finding of the current study. Studies by Karakuş (2003) and Yılmaz (2006) concluded that there is no correlation between the constructive roles of classroom teachers and their gender.

In the current study it was also found that teaching experience do not have any significant effect on the constructive quality perceptions of teachers. Similarly, Tomul and Tatlı (2007) found that the actualization levels of constructive teacher roles by the teachers observed do not vary based on their teaching experience. Karakuş (2003) also found that there no significant effect of teaching experience on the the actualization levels of constructive teacher roles. The findings by Yılmaz (2006) also support it. However, although it is not statistically significant, the current findings suggest that those pariticpants with less teaching experience did not exhibit constructive teacher qualities. In other words, although newly graduated teachers are expected to be open for change and improvement, the scores of experienced teachers sampled were higher than those of new teachers in regard to constructive teacher qualities. The reason for this can be that experienced teachers are working at more established schools which have much more opportunity for implementing constructive teaching and that those teachers with less teaching experience are mostly working at village schools with limited sources. This finding is similar to that by Dündar (2008) in that those social sciences teachers with 21 years or more teaching experience were found to perceive the learning environment they provided are much more constructivist. Özmen (2003) also concluded that teachers with 16 years or more teaching experience made use of more constructivist activities in their classes. Ağlagül (2009) reached similar findings. This finding is parallel with some previous findings (Gömleksiz, 2007; Karadağ, Deniz, Korkmaz and Deniz, 2008). The finding of the study suggests that the graduation of origin do not have any effect on the constructive teacher qualities. The findings by Karakuş (2003), and Tomul and Tatlı (2007) also support it.

In the observations carried out in the current study it was found that the following constructivist activities were common in the classes: provision of a positive learning environment in which students could exhibit their emotions and ideas, the use of projects, and asking questions to activate the prior knowledge of students. Some of them were also observed to encourage students to use different sources, to regularly use audio-visual equipment in courses, and to ask those questions improving mental skills of students.

However, the following constructivist class activities occurred less in the observations: making use of cases to improve problem-solving skills of students and and of activities to improve their critical thinking skills, taking into account the student interest and ability in organizing class activities, making use of group activities, providing learning envrionment in which students learn together and in which they evaluate themselves, and making use of different measurement and assessment methods. Teachers should provide the students with both variety of sources to be used in construction of knowledge and individual or group work assignments. Because in constructivist approach group work is considered to improve student achievement and social skills of students. Constructivist approach supports group work settings in which students jointly study for their common goals. In addition, group work provides significant opportunities for teachers and students to interact and it makes it possible for students to recognise different perspectives (Alesandrini and Larson, 2002). Dündar (2008) also found that in observations teachers do not include sufficiently cooperative group work in class. In the observations it was found that teachers observed did not efficiently provide learning environments in which students evaluate their own work or each other's work. The reason for it can be that class rooms are crowded and the responsibility for evaluation is assumed by only teachers. However, if students evaluate themselves, they are informed about their progress and they become aware of their individual learning style. The basic principle for active student participation in learning activities is the self-control of learning, learning through sharing knowledge and various sources, and assuming responsibility of learning (Kurubacak, 2003). The other observational finding of the study is that teachers observed do not sufficiently make use of alternative measurement and evaluation techniques. They mostly prepared the students for examinations using tests. Teachers report that they have information about alternative evaluation techniques, but it is time-consuming to use them. Coşkun (2005), however, concluded that teachers are not well-informed about evaluation process. The findings by Aydın (2005) showed that teachers do not know alternative measurement and assessment techniques and cannot employ them.

It was found that the data obtained from questionnaire and the observational data in the current study are not consistent. This difference is statistically significant. Therefore, although the participants perceive themselves as constructive teachers their teaching does not exhbit constructivist approach. It can be argued that the responses to the questionnaire items do not reflect the participants' actual level of knowledge about constructivist approach. In addition, they may not improve their professional knowledge base. Therefore, it can be argued that teachers do not have necessary levels of constructivist qualities. There are various studies supporting this finding. Özmen (2003) and Greer (1997) found that teachers perceive themselves not to be observers, but to be constructivists. Judson (2006) maintained that although teachers describe themselves as constructivists they do not exhibit any constructive quality in the class observations. The same finding was also reported by Ünal and Akpınar (2006). Gözütok, Akgün and Karacaoğlu (2005) found in their observation that teachers are not effective in organizing learnng-teaching process, developing materials and activities, and planning and implementing teaching based on new program. Damlapınar (2008) argues that although teachers adopt the constructive theory they do not commonly employ its premises. Similarly, Özbay (2009)

states that although teachers adopt constructivist approach and try to employ it, they cannot use it instead of traditional teaching approach.

Based on the findings the following practical suggestions are developed;

Student classroom teachers and classroom teachers should develop course plans based on the constructivist approach and be informed about how to implement these plans.

Teachers should be informed about the implementation/practice level of the constructive approach and provided with opportunities to use their theoretical knowledge in practice.

Classroom teachers should be informed about different teaching techniques and methods and be encouraged to employ them.

In the courses both traditional teaching materials and technological materials should be employed. However, in order to make teachers eligible for using technological materials there should be much more in-service courses.

It can be recommended that classroom teachers should be informed about alternative measurement and assessment techniques. Education in this subject should also involve applied studies and be given by field specialists.

Future studies may focus on quantative aspects of constructive teacher qualities.

In order for constructive approach to be successful the infrastructure, physical capacity, equipment and other hardware of schools should be improved.

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