STUDENTS' VIEWS ON THE CONSTRUCTIVIST LEARNING ENVIRONMENT IN ELEMENTARY SCHOOLS: A QUALITATIVE INQUIRY

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ABSTRACT

In this study, it was aimed to determine elementary students' qualitative views on the constructivist learning environment. In this study, semi-structured illustrative qualitative research methodology was used. The study sample was students from elementary schools in Niğde province, Turkey. The sample of the study consisted of 25 elementary school students, who were selected at random from the study population, that was, 5 students from a total of 5 different elementary schools. Two elementary schools for each socio-economic structure were selected for the study. In order to detect the sampling of the study, elementary schools in cosmos were chosen according to three-layer group sampling method according to socio-economic structure (high-middle-low) of their region. An extensive literature review had been made on the constructivist learning environment and some of the scales were examined in a semi-structured interview form regarding the constructivist learning environment. At the end of this literature examination, the semi-structured interview form of the study was prepared by the researcher. In this research, the data acquired were analysed with content analysis technique. Based on the content analysis, four themes of the constructivist learning environment were found. These themes are: (i) determination of objectives of courses, (ii) teaching-learning process, (iii) social interaction, and (iv) measurement-evaluation process.

Keywords: constructivist learning environment, new elementary curriculum, elementary schools.

INTRODUCTION

Curriculum development studies started with the proclamation of the republic in Turkey (Gözütok, 2003). The elementary school curriculum in the Turkish Education System has been changed several times. After establishment of the Republic of Turkey in 1923, the elementary school curriculum was restructured several times in 1924, 1926, 1936, 1948, 1962 and 1968 (Çelenk, Tertemiz & Kalaycı, 2000). Compulsory education in Turkey was for five years from 1923 to 1997. However, the Ministry of National Education, known as MEB made a radical decision to increase compulsory education to eight years in 1997. Therefore, the primary school curriculum and the middle school curriculum were combined in the elementary school system. However, at that time those curricula were not revised and restructured (Korkmaz, 2008). On the other hand, Turkey participated in TIMSS (Third International Mathematics and Science Study) assessment in 1999 for the first time and Turkish students ranked as 33rd out of 38 countries. TIMSS is an international educational assessment study. 38 countries jointed in this study which were mostly from Europe but also from Asia, Australia and United States of America. The PISA (Programme for International Student Assessment) which is another international assessment study results in 2003 and 2006 showed similar results. 41 countries participated in 2003 PISA assessment and Turkey was in the 37th rank in science education. Continuous unsuccessful results of the international assessments for the Turkish Education System urged that Turkey revise its academic curricula and come up with a new one in parallel with science education in the world (Acat, Anılan & Anagün, 2010). Hence,

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a new curriculum change movement began in Turkey based on the improvements of the information society, teaching episodes and relations with the European Union (EU) countries in 2003. The schools could not disregard the influence of information and communication technologies on mathematics, science, production, society, politics, education and also lifestyle (Koç, Işıksal & Bulut, 2007). In other words, in order to unify and integrate elementary school curriculum and to meet the demands of the 21st century, new elementary school curriculum was developed and introduced as a pilot study in the 2004-2005 academic year in some regions of Turkey. As a result of it, in 2005-2006 academic year the reconstructed elementary curriculum was introduced in the Turkish elementary schools (Korkmaz, 2008). The elementary curriculum has been renewed and it has been constructed on the philosophy of the constructivist learning theory (Demirel, 2005; Turan, 2006). The new elementary curriculum was developed by prioritising the student-centred learning approach to catch up with the contemporary education level, students' constructing their own knowledge and to improve independent thinking skills (Güneş & Baki, 2012). Thus, it can be stated that the new elementary curriculum has been based on the constructivist approach and stressed activity and student-centeredness (Gömleksiz, 2005).

Savery & Duffy (1995) evaluated constructivist learning as a philosophical view which is interested in arriving at knowledge rather than as another independent learning approach. Hence, constructivism as an epistemological philosophical view of knowledge acquisition emphasises knowledge construction rather than knowledge transmission (Fosnot, 1996). According to constructivism, knowledge construction is based upon students' previous knowledge experiences. So, the new knowledge is integrated with the previous intellectual constructs. Integration of such experiences is facilitated through social and collaborative natures of learning (Schunk, 2008). The general sense of constructivism is that it is a theory of learning or meaning making, that individuals create their own new understandings on their prior knowledge (Richardson, 2003). In other words, constructivism is a learning theory contenting that learners construct their own understanding based on prior learning and social interaction (Brooks & Brooks, 1999). According to Schunk (2008), constructivism is a psychological and philosophical perspective contenting that individuals form or construct much of what they learn and understand. The way in which people try to make sense of situations or how people create meaning is the main concern of the constructivist learning theory (Wilson, 1996). Constructivism is an epistemological view of learning rather than teaching (Bodner, 1986). So, constructivist learning applications predict a rich and interactive learning environment which supplies student requires to reach the knowledge, get and analyse it, arrange and use it in order to solve the problems (Gagnon & Collay, 2001). In the learning process, students are expected to produce their own products by searching, doing decisions, collaborating, using high level of thinking skills and using their own creativeness (Demirel, 2005). Thus, constructivists believe that certain activities and enrichments in the environment can enhance the meaning-making process, such as active learning, using kinaesthetic, visual and auditory modalities, creating opportunities for dialogue, fostering creativity and providing rich, safe and engaging environments (Brooks & Brooks, 1999). Constructivist learning is grounded in students' active participation in the problem-solving and critical thinking (Şaşan, 2002; Fer & Cırık, 2007). So, knowledge cannot simply be transferred from teachers to students, it has to be conceived (Von Glasserfeld, 1996). The essence of constructivism is that students actively construct knowledge (Cunningham, 1992). Hence, the core element of this assumption is that learners interpret new information using knowledge that they have already acquired (Wilson, 1996). Learners activate prior knowledge and try to relate new information to the knowledge they already possess (Blumenfeld, 1992). Thus, constructivism can be stated to be a view of learning that considers the learner as a responsible active agent in his/her knowledge acquisition process (Abbott & Ryan, 1999). Hence, it is possible to state that constructivism is one of these theories which tries to explain the nature of learning (Brooks & Brooks, 1999). According to Karaigorgi & Symeou (2005), constructivism is a learning theory that explains learning as internalising or constructing knowledge and understanding of the world after experiencing and reflecting on those experiences.

Constructivists believe that knowledge and truth are constructed by individuals and do not exist outside the human mind (Duffy & Jonassen, 1991). It is assumed that learners have to construct their own knowledge and understanding through cooperatively or individually. Each learner has a tool kit of concepts and skills with which (s)he must construct knowledge and solve the problems presented by the environment (Davis, Maher & Noddings, 1990). In constructivist environments, students are asked to deliberately take action to create meaning from what they are studying. In other words, learners adopt the role of seekers and problem solvers while teachers become facilitators and guides rather than presenters of knowledge, students learn how to use or apply the information in diverse contexts (Dunlop & Grabinger, 1996). Providing learning environments in which students take the responsibility of their own learning does not indicate that they have complete freedom of decision-making based on their learning (Marlowe & Page, 1998). The teacher's role in a constructivist classroom is not so much to lecture at students, but to act as an expert learner who can guide students into adopting cognitive strategies such as self-testing, articulating understanding, asking probing questions and reflection. Hence, the role of the teacher in constructivist classrooms is to organise information around big ideas that engage students' interests, to assist students in developing new insights, and to connect them with their previous learning. So, the activities in the constructivist learning environment are student-centred and students are encouraged to ask their own questions, carry out their own experiments, make their own analogies, and come to their own conclusions (Brooks & Brooks, 1999). Consequently, becoming a constructivist teacher who helps learners to search rather than follow is rather challenging, yet, not impossible to attain (Honabein, 1996). In this sense, constructivist teacher roles require encouraging student autonomy and initiative, allowing students' goal setting and choice of instructional strategies and altering content, inquiring students' understanding of concepts before sharing their own understandings, encouraging students in dialogue both with the teacher and the peers, seeking elaboration of students' initial responses, allowing wait time after voicing questions both for constructing relationship and metaphors, inquiring students with questions that utilise their critical thinking and encouraging them to ask too and engaging students in experiences that might engender contradictions to their initial hypotheses (Brooks & Brooks, 1999).

When constructivist learning theory is regarded the best way to define learning, then it follows that in order to promote student learning it is necessary to create learning environments that directly expose the learner to the material being studied. For only by experiencing the world directly can the learner derive meaning from them (Tam, 2000). This gives rise to the view that constructivist learning must take place within a suitable constructivist learning environment (Tam, 2000). So, it can be considered possible to claim that the design of the constructivist learning environment is important in enabling the effective use of collaboration. Learners share information to collaboratively construct socially shared knowledge (Jonassen, 1999). As Savery (1994) contends the more structured the learning environment, the harder it is for the learners to construct meaning based on their conceptual understandings. A facilitator should structure the learning experience just enough to make sure that the students get clear guidance and parameters within which to achieve the learning objectives, yet the learning experience should be open and free enough to allow for the learners to discover, enjoy, interact and arrive at their own, socially verified version of truth.

In Turkey, the learning atmosphere is usually teacher-oriented and follows a traditional route, where learners are usually passive receivers of knowledge and the teacher is the purveyor of it (Altun & Büyükduman, 2007). In contrast to this view, constructivist instructional design involves purposeful knowledge construction, multiple representations of reality, and case-based learning environments rather than pre-determined instructional sequences and social interaction. Therefore, as an alternative to traditional learning, constructivist learning has to be fostered in education (Altun & Büyükduman, 2007). In this regard, research studies have provided consistent and convincing evidence that the quality of the classroom environment is a significant determinant of student learning (Fraser, 1994). It has been established that a positive learning environment is influential in student academic achievement and

attitudes (Fisher, Henderson & Fraser, 1995). Previous researches have indicated that students' perceptions of learning environment are an important factor in explaining their cognitive and affective outcomes (Fraser, 1994).

There are many studies on the constructivist learning environment (Honabein, Duffy & Fishman, 1993; Taylor, Fraser & White, 1994; DeVries & Betty, 1995; Wilson, 1996; Taylor, Fraser & Fisher, 1997; Jonassen, 1999; Kim, Fisher & Fraser, 1999; Yaşar, 1998; Brooks & Brooks, 1999; Ziegler, 2000; Margianti, Fraser & Aldridge, 2001; Yurdakul, 2004, 2005; Çınar, Teyfur & Teyfur, 2006; Çetin & Günay, 2007; Gültekin, Karadağ & Yılmaz, 2007; Dündar, 2008; Erdamar & Demirel, 2008; Yıldırım & Dönmez, 2008; Aygören, 2009; Bal & Doğanay, 2009; Ünal & Çetinkaya, 2009; Acat, Anılan & Anagün, 2010; Anagün & Anılan, 2010; Argün & Aşkar, 2010; Aybek & Ağlagül, 2011; Baş, 2012a; Gökçe, İşcan & Erdem, 2012; Tatlı & Ayas, 2012) in the related literature. However, these studies focused on the quantitative aspect of the constructivist learning environments especially from the views of teachers. The studies carried out for the views of students on the constructivist learning environment are very limited and they also focused on the quantitative aspect of this learning environment (Altun & Büyükduman, 2007; Özgür, 2008; Özkal, Tekkaya & Çakıroğlu, 2009; Acat, Anılan & Anagun, 2010; İlgen, 2010). In these studies, for example, Altun and Büyükduman (2007) carried out a research for evaluating the effects of a constructivist instructional design on a group of students and their teachers at a university. Whereas, Acat, Anılan & Anagün (2010) studied on the determination of the needs and problems of classroom teachers about designing constructivist learning environments. On the other hand, Özgür (2008), Bal & Doğanay (2009), Özkal, Tekkaya & Çakıroğlu (2009) and İlgen (2010) carried out quantitative studies in order to evaluate the constructivist learning environment in elementary schools from the views of students. In this regard, as there are no studies in relation with the qualitative aspect of students' views for the constructivist learning environment in Turkey, the determination of elementary students' qualitative views on the constructivist learning environment is very crucial in order to create a more student-centred and constructivist classroom atmosphere in elementary schools. Besides, the determination of the constructivist learning environment in elementary schools from the views of students is believed to contribute more to the curriculum evaluation and development studies of the new elementary curriculum accepted in 2005-2006 academic year. According to Acat, Anılan & Anagün (2010), the design of the learning environment is one of the most important factors for implementing the curriculum effectively. The success of the new elementary curriculum in Turkey depends heavily on conducting the researches which examine learning environments deeply and determine the existing problems. In this context, the purpose of this study was to determine elementary students' views on the constructivist learning environment. In order to determine the qualitative views of elementary students on the constructivist learning environment, the following research questions were posed in the study:

1. How is the objective of the courses in schools are determined?
2. How teachers teach in schools?
3. What kind of instructional methods and techniques are used in courses in the classroom?
4. How is the social interaction in the classroom?
5. Do teachers let students interact with their peers in the classroom?
6. How do teachers measure and evaluate students' academic success and other skills in the classroom?

This research sought to improve the understanding of teachers on the constructivist learning environment in elementary schools. Hence, the findings obtained in the study may provide information for policymakers, educational administrators and curriculum developers as well as insights that may be relevant to similar studies elsewhere.

METHOD

In this section, the study model, study group, application stages of the study, data collection tools and analysis methods will be discussed.

Study Model
This is a qualitative case study. In this research, a "semi-structured interview technique" was used which takes place in "interview method", one of the qualitative data collection instruments in the literature. Certain kinds of questions are prepared for use in all interviews of semi-structured interviews. The questions prepared are put to the participants in the same order, but this is an interview technique which allows the participants to state their views to a larger extent (Yıldırım & Şimşek, 2008).

Study Group
The study sample was students from elementary schools in Nigde, Turkey during 2011-2012 academic year. The sample of the study consisted of 25 elementary school students, who were selected at random method (Karasar, 2005) from the study population, that was, 5 students from a total of 5 different elementary schools. In order to detect the sampling of the study, elementary schools in cosmos were chosen according to three-layer group sampling method according to socio-economic structure (high-middle-low) of their region, volunteered to participate in the research (McMillan & Schumacher, 2006). Two elementary schools for each socio-economic structure were selected for the study. The students in the sample group were interviewed directly by face-to-face. Moreover, it was stated that the data collected for the study would not be used for any other purpose except the research in order for the participants to answer all the questions, and they were also asked not to mention their names to allow them to express their views confidently. The questions were asked in the same order to all of the participants in the study and their answers to the interview questions were not limited to enable them to express their views freely. The participants were assured for the anonymity and confidentiality for their responses in the study. Thus, the students were given the opportunity to express all the ideas and views that they considered important regarding the constructivist learning environment in their classrooms in the research process.

Gender, grade level, and the settlement place of the elementary schools according to the high-middle-low socio-economic structure of the students who participated in the research are presented in Table 1 below.

When Table 1 is examined, it can be seen that 13 (52%) of the students are females and 12 (48%) of them are males. When the grade level of the students is examined, it can be seen that 7 (28%) of them are in 8th grade, 9 (36%) of them are in 7th grade, and 9 (36%) of them are in 6th grade. It can also be stated clearly that 9 (36%) of the students are educated in elementary schools with high socio-economic structure, 8 (32%) of the students are educated in elementary schools with middle socio-economic structure, and 8 (32%) of the students are educated in elementary schools with low socio-economic structure.

Data Sources
An extensive literature review had been made on the constructivist learning environment and some of the scales (Taylor & Fraser, 1991; Taylor, Fraser & White, 1994; Taylor, Fraser & Fisher, 1997; Alridge et al., 2000; Tenenbaum et al., 2001; Johnson & McClure, 2004; Fer & Cırık, 2006; Karadağ, 2007; Balım et al., 2009; Evrekli et al., 2009, 2010; Arkün & Aşkar, 2010; Köse et al., 2011) were examined in a semi-structured interview form regarding the constructivist learning environment.

Table 1. Study group and its characteristics

Student	Gender	Grade	Socio-Economic Structure of School
1	F	8	High
2	M	8	High
3	M	7	High
4	F	7	High
5	F	6	High
6	M	6	High
7	M	8	Middle
8	F	8	Middle
9	M	7	Middle
10	M	7	Middle
11	F	6	Middle
12	F	6	Middle
13	M	8	Low
14	F	8	Low
15	M	7	Low
16	M	7	Low
17	F	6	Low
18	F	6	Low
19	M	8	High
20	F	7	High
21	F	6	Low
22	M	6	Middle
23	F	7	Middle
24	M	6	High
25	F	7	Low

Data Collection Tool

At the end of the literature examination, the semi-structured interview form of the study was prepared by the researcher. In order to sustain the validity of the research form, two experts on Curriculum and Instruction and five teachers were consulted for their views on the questions prepared for teachers in this regard. The reliability of the study was sustained by the researcher and one of his colleagues, who was an expert in the field on creating the themes one by one and then reaching an agreement determining the subjects. In order to determine the reliability between two experts, the formula (Reliability= consensus / consensus + dissidence X 100) suggested by Miles & Huberman (1994) was used in the research. At the end of the comparison of students' views, an agreement rate of 91% with two experts was reached regarding which subjects should be included. As it was stated in the literature that at least 70% of consensus between experts is accepted as sufficient (Miles & Huberman, 1994), the necessary reliability level of the data analysis was thought to be sustained in the research. After the validity and reliability studies carried out in the research, the students, selected by random sampling method were interviewed with the created semi-structured interview form. All interviews were written by the researcher and afterwards these written documents were analysed thematically. All the written views of the students participated in the study were translated from Turkish into English by the researcher himself in the research.

Data Analysis

The data gathered in qualitative research is analysed with two ways: (i) descriptive analysis and (ii) content analysis. In this research, the data acquired were analysed with "content analysis technique". The

data that are basically similar to each other were brought together in the framework of certain concepts and themes and evaluated in an organisational format that readers could understand clearly. In the analysis of the content of the data, a four-step qualitative content analysis technique was used (Yıldırım & Şimşek, 2008): (i) codification of the data, (ii) finding out of the themes, (iii) organising and defining the data according to codes and themes, and (iv) evaluation of the findings.

FINDINGS and DISCUSSIONS

The main theme and sub-themes which were determined from the views of the elementary students were given in this part of this research. The findings related to these main themes of the research were presented respectively below.

a. Determination of Objectives of Courses
Descriptive statistics concerning the pre-service teachers' scores obtained from the environmental awareness questionnaire before they took the environmental education course designed based on micro-teaching method and after they took the course are presented below.

The views of the elementary students participated in the research in regard of the determination of objectives of courses were given in Table 2 below.

Table 2. Views of students on the determination of objectives of courses

Main Theme	Sub-Themes	6th Grade	7th Grade	8th Grade	Total
		η	η	η	η
Determination of Objectives of Course(s)	Only by teachers	9	8	6	24
	Both by teachers and students	-	-	1	1

In regard of the determination of objectives of courses in elementary schools, nearly of the students from 6th, 7th, and 8th grades agreed that the objectives of courses were determined only by their teachers (η= 24), not mutually both by their teachers and themselves. Only one student claimed that the objectives of their courses were determined mutually both by their teachers and peers in the classroom. As look to the following views of the students participated in the research in respect to the determination of objectives of courses, this can be seen clearly in some of the examples below.

> *Our teachers come to the classroom and they say, "open you books, page…", and then they start to give the course to us. So we don't know the objectives at the beginning of the courses. (S-8)*

> *We don't know the objectives of courses. Our teachers only teach us, they don't say the objectives to us. Thus, we can't determine the objectives of courses together with our teachers. We don't know the objectives neither before, not after the course at school. (S-14)*

> *No, not really! We don't have objectives. If we are interested in the subject we are learning, we can look at those objectives in our books. But our teachers don't determine the objectives of the courses with us, because our classrooms are overcrowded in our school. So they can't do it easily. (S-5)*

The objectives of the courses are already determined by the teachers. We never sit and determine the objectives of the courses together with our teachers at school. (S-3)

As could be understood clearly from the views of the elementary students participated in the research, most of the students claim that they do not determine the objectives of courses together with their teachers at school. Their teachers use ready objectives for the courses and the students are not much aware about the objectives of courses neither before, not after the courses. On the other hand, only one student claims that they determine the objectives of some of the courses together with their teachers in the classroom. The view of this student can be seen below.

Yes, of course. We, in some courses such as English, science and technology, social studies, determine the objectives of courses together with our teachers in the classroom. For example, we determine an objective with our teacher and try to obtain that objective in our next course at school. We have flexible courses in our school, since the classrooms are not overcrowded in our school. (S-1)

In conclusion, nearly all of the students participated in the research claim that they do not determine the objectives of courses together with their teachers in the classroom. However, only one student claims that they determine the objectives of courses together with their teachers in the classroom. According to this student's claim, the classrooms are not overcrowded in their school so that their teachers have opportunity to determine the objectives of courses together with their students and also meet their needs and demands.

b. Teaching-Learning Process
The views of the elementary students participated in the research in regard of the teaching-learning process were given in Table 3 below.

Table 3. Views of students on the teaching-learning process

Main Theme	Sub-Themes	6th Grade η	7th Grade η	8th Grade η	Total η
Teaching-Learning Process	Direct instruction	1	2	3	6
	Exploratory learning	1	1	1	3
	Project-based learning	1	-	2	3
	Cooperative learning	1	-	1	2
	Discussion	2	2	1	5
	Question-answer	2	1	2	6
	Critical thinking	1	-	-	1
	Problem-based learning	-	1	-	1

As could be seen in Table 3, most of the students participated in the research claim that their teachers use direct instruction ($\eta= 6$), question-answer ($\eta= 6$), and discussion ($\eta= 5$) mostly in the classroom. Very few students agreed that their teachers use project-based learning ($\eta= 3$), cooperative learning ($\eta= 2$), problem-based learning ($\eta= 1$), critical thinking ($\eta= 1$) and exploratory learning ($\eta= 3$) methods of instruction in their courses. According to the views of most of the students in the research, the students cannot participate in the learning process actively and freely in the classroom. Some of the views of the students participated in the research are given on this very issue below.

Most of the time, our teachers only teach us. I mean they always talk and we always have to listen to them and take some notes, of course. Our teachers often ask some questions to us while they are teaching us in the classroom. (S-9)

Actually, we are not very active most of the time in the classroom. Sometimes our teachers let us solve problems on the board. Our teachers come to the classroom and they always teach us the subject in the same way, directly teaching us. We listen to them and answer their questions. (S-23)

We are very passive in the classroom. We only to listen to our teachers and they always lecture us in order to teach us. This is so boring. But we can't do anything about this, I'm very sorry. (S-12)

For example, we sometimes carry out some simple experiments in the classroom. Our teacher makes us explore the events in the experiments and examples. However, we always follow up our course books and our teachers mostly make us do the activities in our course books. This is so boring indeed. We aren't active in the classroom, as you can well understand. (S-4)

We often listen to our teachers. If they ask us questions, we try to answer them. Instead of that, in courses such as social studies we sometimes discuss events with our friends. Of course, our teacher lets us do this in this course. We evaluate our friends' projects and criticise them according to some certain criteria defined before the course. We also give feedback to our friends' these projects accordingly. (S-24)

We spend most of our time in courses listening to the teachers in the classroom. We mostly do the activities in our course books and our teachers control them. The courses pass like this mostly on weekday. We can't participate so much in the activities in the classroom. (S-18)

My teachers are always wiling to make us think critically on events in the classroom. However, when we think critically on the subjects or events, our teachers don't like our responses on critical thoughts so that we are very offended to state our critical thoughts on events freely in the classroom. (S-11)

However, according to few of the claims of the students, their teachers use some instructional methods such as project-based learning, cooperative learning and problem-based learning in the classroom. Some example views belonging to these students are presented below.

Our teachers mostly teach us in the classroom. They sometimes make us create some projects individually and in groups. We have a great fun. Of course, there is much noise in the classroom while we are studying in groups, but I like this group work. (S-20)

We play some games in the classroom. For example, our teacher makes us organise in groups and gives us some tasks. After we complete these tasks with our peers in the groups, our teacher asks some questions in relation to the tasks to us. If we know most of the questions of our teacher, we come first, second or third and get some awards in the end of the process. (S-2)

Our teacher sometimes creates problem-based activities and makes us find solutions to the problems that he creates in the classroom. We discuss the problem with our friends and try

to find a possible solution for the problem. This kind of activity is rather challenging, but we like it very much indeed. (S-1)

According to these few students' views above, the teachers are understood to create activities based on project-based learning and cooperative learning in the classroom. However, most of the students claim that their teachers are still using traditional methods of instruction in their classrooms.

c. Social Interaction

The views of the elementary students participated in the research in relation to the social interaction were given in Table 4 below.

Table 4. Views of students on the social interaction

Main Theme	Sub-Themes	6th Grade η	7th Grade η	8th Grade η	Total η
Social Interaction	Student-student	2	1	-	3
	Teacher-student	4	6	7	16
	Both student-student and teacher-student	3	1	1	5

In respect to the views of the students participated in the research, it was seen that the social interaction was mostly between teacher-student ($\eta= 16$) in the classroom. Few students claimed that the social interaction in the classroom was between both student-student ($\eta= 3$) and amongst student-student and teacher-student ($\eta= 5$). Some of the views of the students who claim the social interaction was mostly between teacher-student in the classroom are presented below.

Mostly we interact with our teachers in the classroom. They start the activities and then let us do these activities individually. After our responses to the questions in the activities, our teachers give feedback for our wrong answers in the activities. Yes, of course I want to interact with my friends in the classroom, but it is not allowed. (S-8)

We are forbidden to talk with our friends in the classroom, even about the subject of the course. For example, while I was asking about a point in the activity to my friend next to me in mathematics course, the teacher got very angry with me though I explained the matter was dealing with the course itself to the teacher. (S-13)

We sit in a row in our classroom, so we can't interact with our friends for the discussion of a matter in order to better understand it. We always have to ask that matter to the teacher. The teacher is the only source and authority in the classroom. I don't like my courses because they aren't enjoyable. (S-7)

Our teacher don't let us study together with our friends in the classroom since as they say our classrooms are overcrowded and there is much noise if we study together with our peers in the classroom. I mean we can't interact with our peers in the classroom mostly. The teacher asks us the questions and we have to answer them correctly. I'm bored with this process really. (S-6)

There are few views of the students in relation to the social interaction between student-student and amongst student-student and teacher-student interaction in the classroom. Some of the views on this issue are given below.

Our teachers mostly let us study with our friends in the classroom. We carry out project work in these interactions. We discuss events and matters in relation to the subject so that we do understand the target subject better via the social interaction with our friends in the classroom. (S-19)

The teachers start the activities and make us study collaboratively with our friends in the classroom. If we have problems, our teachers help us where and when necessary. We can ask questions to our teachers about the subject matter when we need. Of course, our teachers do their best in order to help us understand the subject better in the courses. (S-1)

As could be seen from the views of the students participated in the research, the social interaction amongst students in a very limited level in the classroom. As students claim that this is because of the overcrowded classrooms and the classroom organisation in relation to the desks.

d. Measurement-Evaluation Process
The views of the elementary students participated in the research in regard of the measurement-evaluation are given in Table 5 below.

Table 5. Views of students on the measurement-evaluation process

Main Theme	Sub-Themes	6th Grade η	7th Grade η	8th Grade η	Total η
Measurement-Evaluation Process	Tests	3	3	4	10
	Open-ended questions	2	2	3	7
	portfolios	1	-	1	2
	Project work	1	1	1	3
	Observation forms	1	-	-	1
	Self, peer and group assessment forms	1	-	1	2

As looked to the findings obtained in the research in relation to the measurement-evaluation process main theme, it was seen that most of the students agreed that their teachers use measurement and evaluation methods such as tests (η= 10) and open-ended questions (η= 7) in examinations in order to measure and evaluate their students' academic success in the classroom. It was also seen in the research that few teachers were understood to use alternative methods of measurement and evaluation such as portfolios (η= 2), project work (η= 3), observation forms (η= 1), and self, peer and group assessment forms (η= 2) in the classroom. Some of the views of the students in regard of measurement and evaluation in the classroom are given below.

Our teachers mostly measure our success through tests and traditional examinations with open-ended questions. Our teachers don't prefer using other measurement instruments in order to measure and evaluate our success in the classroom. (S-22)

We have examination times at school. We mostly have three examinations for each course. Our teachers ask some questions through tests in these examinations. The test questions [items] have four choices each, such as in the Level Determination Examination that we have to take every year. (S-11)

In examinations, the teachers ask eight to ten questions in relation to the subjects we have learnt in courses. These examinations are sometimes constructed with multiple-choice

questions [items] and/or open-ended questions. Tests are easy to do, but open-ended questions require memorisation. They are hard to do. (S-9)

We have only examinations done three times per course in each semester. Instead of these examinations, some of our teachers make short examinations like quizzes such as in English course. That's all! I can't remember any other measurement instruments that our teachers apply on us in order to measure and evaluate our success in the classroom. No, not really! (S-17)

We have formal examinations for each course at school. In addition to this, we have some examinations with multiple-choice items for the preparation of the Level Determination Examination after school in two weeks time. We have to attend in these examinations since they are compulsory in our school. Most of our teachers use the results of these examinations for the evaluation of our success at the end of the term. (S-21)

Although most of the teachers were understood to use traditional measurement instruments such as multiple-choice item tests and open-ended questions in examinations. It was seen that few teachers were seen to use alternative assessment methods such as portfolios, self, peer and group assessment forms and observation forms in the classroom according to the views of the students obtained in the research. Some of the views belonging to these students are presented below.

Our teachers sometimes use observation forms and self, peer and group assessment forms in order to better evaluate our success in the classroom. For example, we put our homework and project work in our portfolios, and then we show the portfolios to our teachers and get marks from these. Also, we fill in some self, peer and group assessment forms after completing individual and group work in the classroom. (S-19)

One of my teachers is very keen on project work. We rarely have formal examinations such as tests and traditional examination with open-ended questions. Instead of these, our teacher uses the results of our project work for assessment of our success in the classroom. (S-20)

We know that some of our teachers are using observation forms in order to assess our success better. Instead of evaluating our success for one or two times through tests or other examinations, they prefer observing us for our performance through such observation forms in the classroom. (S-1)

In my school, yes of course, we have formal examinations. In addition to these examinations, our teachers use some evaluation methods such as portfolios and projects in order to better evaluate our success in the classroom. I like this way since if we fail in formal examinations because of a possible failure and stress we can compensate for this in portfolios and project work. (S-2)

As could be seen from the views of the students participated in the research, the teachers were understood to use traditional methods of measurement and evaluation mostly such as tests and traditional examinations with open-ended questions. According to the students' views, tests are the most applied measurement instrument in the classroom because of the Level Determination Examination (LDE) that students have to take every year. However, few teachers were detected to use alternative methods of evaluation such as portfolios, observation forms, project work, self, peer and group assessment forms in order to evaluate their students' success in the classroom.

DISCUSSION

The purpose of this study was to determine students' qualitative views on the constructivist learning environment in elementary schools. According to the first finding obtained in the research, nearly all of the students claimed that the objectives of their courses were determined only by their teachers at school. According to the finding related with the teaching-learning process in the classroom, the teachers were understood to use direct instruction, question-answer and discussion methods mostly in the classroom. Besides this, according to the views of the students in regard of the teaching-learning process main theme obtained in the research, the students were not very active in the learning process and their critical thinking skills are not promoted and reinforced in the classroom. On the other hand, the social interaction and collaborative studies in the classroom were seen to be very limited according to the students' views obtained in the research. The students also claimed in the research that their teachers were still using traditional methods of measurement and evaluation such as tests and open-ended questions in the examinations instead of alternative methods of measurement and evaluation in order to evaluate their students' success in the classroom. According to another finding in the research, the students were understood to participate in the research and did not find their learning environment enjoyable. Nonetheless, the students claimed that their learning environment in the classroom was boring for them.

According to the findings gathered in the research, it was found out that nearly of the students from 6th, 7th, and 8th grades agreed that the objectives of courses were determined only by their teachers, not mutually both by their teachers and themselves. Only one student claimed that the objectives of their courses were determined mutually both by their teachers and peers in the classroom. As could be understood from the views of the students participated in the research, teachers are still not meeting their students' demands and needs in the classroom. However, approaches based on constructivism stress the importance of mechanisms for mutual planning, diagnosis of learner needs and interests, sequential activities for achieving the objectives, formulation of learning objectives based on the diagnosed needs and interests (Brooks & Brooks, 1999). Brooks & Brooks (1999) also cite that constructivist teaching and learning attach importance on students' point of view. According to Şişman & Turan (2004), the Turkish Education System seems to be teacher-centred. In a study carried out by Altun and Büyükduman (2007), some students had defined the constructivist instructional design as a waste of time. In addition, it was also found out that they were accustomed to teacher-centred instruction. As a matter of fact, the knowledge level in relation with constructivist learning of teachers was found out to be in an average level (Özdemir, 2007). In Turkey, the learning atmosphere is usually teacher-oriented and follows a traditional route, where learners are usually passive receivers of knowledge and the teacher is the purveyor of it. In contrast to this view, constructivist instructional design involves purposeful knowledge construction, multiple representations of reality, and case-based learning environments rather than pre-determined instructional sequences (Altun & Büyükduman, 2007). So, it can possibly be stated that the teacher-centred structure of the Turkish Education System is effective on the result obtained in the study.

According to another finding obtained in the research that most of the students participated in the research claim that their teachers use direct instruction, question-answer, and discussion mostly in the classroom. Very few students agreed that their teachers use project-based learning, cooperative learning, problem-based learning, critical thinking, and exploratory learning methods of instruction in their courses. As the students' views are analysed, it can possibly be understood that students' perceptions for the constructivist learning environment in elementary schools are very low. In other words, as the notion of constructivism is one of the main thrusts of the new elementary curriculum in Turkey (Özkal, Tekkaya & Çakıroğlu, 2009), current study demonstrated that the elementary students have a tendency to perceive that their actual learning environments were less constructivist. In a study by Maypole & Davies (2001), three of the university students who participated in a qualitative study held in an ordinary classroom environment stated that they appreciated certain aspects of the class but emphasised that constructivism is difficult as it requires too much work. According to Güneş & Baki (2012), it is obvious that the teachers

who do not know about learner-centred environment would carry on implementations with their own methods. In this context, in a study carried out by Acat, Anılan & Anagün (2010), it was concluded by means of document analyses that the learning environments were not real-life oriented, that they did not sufficiently relate to students' experiences, that the constructivist approach was not grasped efficiently and that students were not properly granted autonomy in learning process. Similar findings to finding obtained by Acat, Anılan & Anagün (2010) were acquired by Güzel & Alkan (2005), Yılmaz (2006), Saracalıoğlu (2007), Özkal, Tekkaya & Çakıroğlu (2009), Temli (2009), Duru & Korkmaz (2010) and Güneş & Baki (2012) in their studies. For example, in the study carried out by Güneş and Baki (2012), it was observed that the infrastructures of the classrooms were not suitable for setting a learner-centred environment. It was found out in Güneş & Baki's (2012) study that the teachers who did not have a suitable environment had some difficulties while trying to set learner-centred environments. Overcrowded classrooms were also one of the main problems in front of a constructivist learning environment in Bulut's (2006), Yavuz's (2007) and Güneş and Baki's (2012) studies. As Çınar, Teyfur & Teyfur (2006) reported in their study, the most important handicap for the new constructivist curriculum was the problems of infrastructure in their schools. Tsai (2000) found that there were statistically significant differences between student perceptions of actual and preferred learning environments. Tsai (2000) also reported that Taiwanese 10th-grade students perceived their actual learning environment as less constructivist. According to the results obtained in a research carried out by Aykaç & Ulubey (2012), the teachers could not carry out the activities effectively and select techniques and methods complying with the content. In another study, Gökçe, İşcan & Erdem (2012) investigated the status of implementation lessons with the descriptions which teacher candidates carried out according to the primary school teachers' constructivism approach. According to the results from the findings of the study carried out by Gökçe, İşcan & Erdem (2012), primary school teachers observed by teacher candidates, generally did not carry out classroom activities according to constructivist 5E model which is one of the learning cycle used in the framework of constructivism. On the other hand, İlgen (2010) carried out a research in order to evaluate the constructivist learning environment in science and technology course by classroom teachers and their primary school students according to constructivist learning point of view. According to students' views in İlgen's (2010) study, students perceived the current learning environment to be constructivist. Besides this, Bal & Doğanay (2009) also found out that the constructivist learning environment was at a high level in mathematics courses according to the perspectives of students. Also, Özgür (2008) found out similar findings in relation to the findings of İlgen's (2010) study. In another study carried out by Aybek & Ağlagül (2011), it was found out that classroom teachers were determined to use principles of constructivist educational approach skills to the construct of the constructivist learning environment. However, in the constructivist learning environment students are taught through some instructional methods instead of traditional ones such as direct instruction, question-answer, etc. in courses. Students are guided to alternative learning environments and they are taught by using alternative methods of instruction such as project-based learning and cooperative learning in the classroom (Brooks & Brooks, 1999; Saban, 2004). According to Wilson & Lowry (2001), teaching may include all kind of activities. A constructivist learning environment should always be a place where learners may work together, draw upon resources using a variety of tools, supporting each other in their guided pursuit of learning goals and problem-solving activities (Wilson, 1996). According to Savery & Duffy (1996), problem-based learning is one of the best exemplars of a constructivist learning environment. As Lin et al. (1996) state that the constructivist learning environment should be a learning community in which students have the opportunity to plan, organise, monitor, and revise their own research and problem solving in a collaborative way. As for Savery & Duffy (1996), it is more obvious that constructivism implies specific learning activities or instructional principles, such as anchoring of all learning in large tasks or problems, activating the learners, challenging and supporting the learner's thinking, authentic tasks or problems, reflecting the complexity of the real world, the learners' ownership of the problem-solving process and the opportunity to reflect on the content and the learning process or project-based learning. Learning environment also requires manipulation space that provides learners a sufficient area to research, experiment, and pose hypotheses with the problem (Jonassen, 1999). It is assumed that

learners have to construct their own knowledge and understanding through cooperatively or individually. Each learner has a tool kit of concepts and skills with which (s)he must construct knowledge and solve the problems presented by the environment (Davis, Maher & Noddings, 1990). In constructivism, it is expected that the learner would be active and construct their knowledge. Putting emphasis on learning, instead of teaching, and changing role of students were evaluated as useful innovations (Kaptan, 2005). In constructivist environments, students are asked to deliberately take action to create meaning from what they are studying. In other words, learners adopt the role of seekers and problem solvers while teachers become facilitators and guides rather than presenters of knowledge, students learn how to use or apply the information in diverse contexts (Dunlop & Grabinger, 1996). On the other hand, the teacher's role here is so crucial since the teacher's role in a constructivist classroom is not so much to lecture at students, but to act as an expert learner who can guide students into adopting cognitive strategies such as self-testing, articulating understanding, asking probing questions and reflection. Hence, the role of the teacher in constructivist classrooms is to organise information around big ideas that engage students' interests, to assist students in developing new insights, and to connect them with their previous learning. So, the activities in constructivist learning environment are student-centred and students are encouraged to ask their own questions, carry out their own experiments, make their own analogies, and come to their own conclusions (Brooks & Brooks, 1999).

According to another finding obtained in the research, the students perceive that they are not very active in the teaching-learning process, and they are mostly the passive agents of the process. They cannot interact with their peers in the classroom and criticise the events and the process easily. There is teacher-student interaction in the classroom mostly, without letting students interact with their peers and discuss events in the courses easily. In the Turkish culture, the teacher may face difficulties in actualising this aspect of the constructivist learning environment since they mostly tend to acknowledge the question coming from students on their way of teaching as rude statements or misbehaviours (Özgür, 2008). Traditionally in the Turkish culture students are expected to have a high degree of respect for their teachers and not criticise their teachers about the way in which they are taught (Özkal, Tekkaya & Çakıroğlu, 2009). The research results of Marra (2005) exposed that teachers' epistemological beliefs have an impact on designing constructivist learning environments. Whereas, Brown (1996) supports the view that constructivist learning environment helps students gain the habit of working collaboratively and makes it easier to concentrate on the subject area. Social interactions with fellow students contribute to the construction of knowledge (Koç, 2006; Loyens, Rikers & Schmidt, 2007). In a study carried out by Yeşilyurt (2009), it was found out that cooperative learning had a significant positive effect on the behaviours at cognitive, affective and psychomotor domains of students. Loyens, Rikers & Schmidt (2007) also discuss that constructivist theories mostly share the idea that social negotiation and interaction is an important factor in the process of learning. In this regard, it can be said that constructivist teacher roles require encouraging student autonomy and initiative, allowing students' goal setting and choice of instructional strategies and altering content, inquiring students' understanding of concepts before sharing their own understandings, encouraging students in dialogue both with the teacher and the peers, seeking elaboration of students' initial responses, allowing wait time after voicing questions both for constructing relationship and metaphors, inquiring students with questions that utilise their critical thinking and encouraging them to ask too and engaging students in experiences that might engender contradictions to their initial hypotheses (Brooks & Brooks, 1999). A learning environment should be created in ways that involves opportunities for students to explain and justify their ideas to others, to listen and reflect on the viability of other students' ideas and to reflect self critically on the viability of their own ideas (Taylor, Fraser & Fisher, 1997; Aldridge, Fraser & Taylor, 2000). According to Tam (2000), constructivism does present an alternative view of learning other than the objectivist conception of learning, and provides a set of design principles and strategies to create learning environments wherein learners are engaged in negotiating meaning and socially constructing reality.

Assessment may be a problem in constructivist learning environments. Constructivists are mainly concerned with context-but for more instruction than individual assessment (Dick, 1992). In this context, according to the last finding of the research carried out in order to determine students' qualitative views on the constructivist learning environment in elementary schools, it was seen that most of the teachers were understood to use traditional measurement instruments such as multiple-choice item tests and open-ended questions in examinations. It was also seen that few teachers were seen to use alternative assessment methods such as portfolios, self, peer and group assessment forms and observation forms in the classroom according to the views of the students obtained in the research. According to Altun & Büyükduman (2007), evaluation techniques of the traditional instruction are replaced by process evaluation in the constructivist design, that is why a traditional paper-pen exam contradicts with all the bases of constructivism. The constructivist instruction is not a suitable model to measure the knowledge by the traditional pen-paper examinations since it is the process the design deals with, not the product. As a result, if the problem that the system being exam-oriented is solved, it can be said that constructivist design could be implemented more effectively (Altun & Büyükduman, 2007). In a study carried out by Yavuz (2007), teachers complaint that they lose too much time in putting everything in folders and measurement and evaluation had become so difficult since each course needed a different method of measurement and evaluation. As with Yavuz (2007), İnal (2008) and Bal & Doğanay (2010) also point out that there is measurement and evaluation problems in the constructivist learning environment. These problems are due to teachers' lack of knowledge of alternative assessment procedures, their unwillingness to implement new practices, their dependence on past measurement and evaluation assumptions and practices, and lack of resources and equipment (Bulut, 2006; Bal & Doğanay, 2010). Also according to Bayrak & Erden (2007), sufficient explanations about complementary evaluation techniques do not exist in the curriculum. According to the finding in relation with the measurement and evaluation main theme obtained in the current study, teachers are still using traditional methods of measurement and evaluation in their classrooms. In a study carried out by Aykaç & Ulubey (2012), it was found out that teachers could not use appropriate assessment techniques for evaluating their students' success at school. In this regard, according to Temli (2009), one of the most difficult parts of constructivist learning approach was students' success evaluation, because it might be very hard for teachers to give up their habits. In addition to this, some nation-wide examinations such as the Level Determination Examination (LDE) known as SBS in Turkish, lead to confusion in teachers' mind. In order to enable student to solve multiple-choice tests, some teachers tend to evaluate students' success through multiple-choice examinations to make them familiar with these kinds of examination questions (Metin & Cansüngü-Koray, 2007).

At the end of the research, it can possibly be said that the constructivist learning environment could not be sustained in elementary schools in spite of the new elementary curriculum, which was designed and developed according to constructivist learning theory and its practices on education. In this regard, based on the findings concerning the views of students on the constructivist learning environment in elementary schools and the conclusions driven in the same aspect, students should be informed about the objectives of the course(s) before the courses are started by the teachers. According to Gagné (1985), informing students about the objectives of the course before the course begins makes the management system in the brain active and then makes students develop expectations both for the course and the target subject. On the other hand, the essence of constructivism is that students actively construct knowledge (Cunningham, 1992). Hence, the core element of this assumption is that learners interpret new information using knowledge that they have already acquired (Wilson, 1996). Learners activate prior knowledge and try to relate new information to the knowledge they already possess (Blumenfeld, 1992). Thus, activities should be designed in order to make students solve problems from the real life. In addition, there should be more emphasis on the importance of establishing links between what students learn at school and what they experience in their real lives. The teachers should also be well-prepared to provide more examples from the daily lives of children especially in counties so that they can establish link between the topics and their daily lives. Students should be encouraged to ask more questions in the class to overcome the participation problem in most of the cases (Özgür, 2008). Continuing with the course book-centred

education is amongst the major reasons of the problems. Educational settings that will yield an authentic learning process in a natural environment should be created (Acat, Anılan & Anagün, 2010). Students should be more active in the process so that dramatisation and high-order thinking activities should be supported in the classroom. Hence, teachers should encourage student autonomy and initiative, allow students' goal setting and choice of instructional strategies and alter content, inquire students' understanding of concepts before sharing their own understandings, encourage students in dialogue both with the teacher and the peers, seek elaboration of students' initial responses, allow wait time after voicing questions both for constructing relationship and metaphors, inquire students with questions that utilise their critical thinking and encourage them to ask too and engage students in experiences that might engender contradictions to their initial hypotheses (Brooks & Brooks, 1999). Also, group activities and activities allow social interaction such as cooperative learning should be supported in the classroom (Chung, 1991). This study also implies that the students should be provided with adequate grounds for interaction in a social context within the principles of cooperative learning because interaction between group members in a social context is essential for learning as proposed in social constructive theory culture and context are important to understand what occurs in society and to construct knowledge (Derry, 1999). According to Scott & Ytreberg (1990), teachers should group the students together whenever and wherever possible. This does not mean that they have to work in groups all the time, but most students like to have other students around them, and also sitting with others encourages cooperation. Also, working with dialogues with pairs or groups is a useful way to develop the cooperative atmosphere in the classroom. So by this way, students do not afraid of a possible failure, or on the contrary of that, they work out in a fearless and reinforcing atmosphere in the classroom so that learning materialises in a natural way (Baş, 2012b). It is cooperative learning that allows the individual to go beyond the information given to them (Bruner, 1973) and move on to the zone of proximal development (Vygotsky, 1978). On the other hand, alternative methods of measurement and evaluation should be presented to teachers in a practical way and the problems in front of the applications of alternative measurement and evaluation methods in elementary schools should be solved. Teachers should be supported on this very issue in order to better use and/or apply alternative methods of measurement and evaluation in their classrooms. In order to create environments based on constructivist learning, teachers should be educated through seminars and in-service training courses on constructivist learning both theoretically and practically. Teachers should also be supported to attend to graduate courses at universities. In order for the constructivist learning environments to be implemented in the Turkish elementary schools properly, a school setting which reflects the real life needs to be created.

The qualitative aspect of the constructivist learning environment in elementary schools is lacking. As there are a few studies on the views of students on the quantitative aspect of the constructivist learning environment, there is a need to conduct more studies on the qualitative aspect of the constructivist learning environment in elementary schools. This current study may give insights for teachers about integrating constructivist learning approach into their elementary classrooms. In this regard, it is suggested that researchers should study each aspect of the constructivist learning environment in a deeper extend. The researchers should carry out qualitative studies comparing both students' and teachers' views on the constructivist learning environment in elementary schools. Besides, carrying out studies on the views of school principals and educational supervisors on the constructivist learning environment in elementary schools can be very useful. The researchers should also study the qualitative aspect of the constructivist learning environment in high schools in comparison with elementary schools.

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