OPINIONS OF 5TH GRADE STUDENTS ABOUT DIFFERENT KIND OF MATERIALS AND CONCEPT MAPS PREPARED BY THEMSELVES BASED ON CONSTRUCTIVIST APPROACH IN SOCIAL STUDIES

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Abstract

This study presents a constructivist approach on a social studies course of fifth grade students. 30 students were enrolled in this study. The students prepared their files containing different kind of materials and concept maps about the unit. Qualitative methods were used in this study. Students's files, concept maps, observations and interviews were all used to collect the data. The results of the qualitative analyses showed that students exposed to constructivist approach enjoyed this activities. Moreover, there was a high correlation with the scores of students's files and concept maps.

Key Words: Constructivism, instructional materials, portfolio assessment, concept maps

Özet

Bu araştırma beşinci sınıf sosyal bilgiler dersi için oluşturmacı bir yaklaşım sunar. Bu çalışma 30 öğrenci ile yapılmıştır. Öğrenciler sosyal bilgilerin bir ünitesi boyunca farklı materyal türleri kullanarak materyal oluşturdular ve bir dosyada topladılar. Bu dosyalarını sürekli geliştirdiler ve değerlendirdiler. Bunun yanında öğrenciler ünite hakkında kavram haritası oluşturdular ve kendileri değerlendirdiler. Niteliksel yöntemin kullanıldığı bu araştırmada veriler öğrenci dosyaları, kavram haritaları, gözlem ve görüşme yapılarak elde edilmiştir. Araştırma süresince aktif olan bu öğrencilerin görüşlerinin derinlemesine yapılan analizleri sonucunda bu tür aktivitelerden hoşlandıkları ve sevdikleri görülmektedir. Ayrıca, öğrencilerin dosyalarını ve kavram haritalarını değerlendirme puanları korelasyonunun yüksek olduğu bulunmuştur. Bu durum öğrencilerin görüşlerinin benzer olduğunu göstermektedir. Niteliksel verilerin kodları bütün sonuçları desteklemektedir.

Anahtar Kelimeler: Oluşturmacılık, öğretim materyalleri, portfolio değerlendirme, kavram haritaları

1. Introduction

Constructivist approach is used educational studies recently (Colburn 2000). Constructivist learning is based on student's active participation into instructional tasks that they find relevant and engaging. These instructional tasks could be either problem solving situations or any other activities requiring high level thinking. Students are **"constructing"** their own knowledge by testing ideas and approaches based on their prior knowledge and experience, applying what they have already known to a new situation, and integrating the new knowledge with prior-existing intellectual constructs. Hiebert (1991) presents a basic definition of constructivism viewing learners as active participant in the creation of knowledge, because learners interact with and interpret the world.

The evidence from research on learning styles would suggest that there is no single, effective method for teaching and learning as students differ in their preferences (Osborne, 1996). The constructivist teacher encourages students to connect and summarize concepts by analysing, predicting, justifying, and defending their ideas. The teacher provides sample opportunities for students to test their hypotheses, especially through group discussion of concrete experiences. The constructivist approach involves students in real-world possibilities, and then helps them to generate the abstractions that bind phenomena together. In a constructivist classroom, students' autonomy and initiative are accepted and encouraged. The teacher asks open-ended questions and allows wait time for responses. Higher-level thinking is encouraged. Students are engaged in dialogue with the teacher and with each other. Students are engaged in experiences that challenge hypotheses and encourage discussion. The class uses raw data, primary sources, manipulative, physical and, interactive materials (Brooks & Brooks, 1993). According to Airasian and Walsh (1997) constructivism is a learning theory, not instructional approach. So, this theory focuses on student learning.

Roblyer, Edwards& Havriluk (1997) determined six design principles:

1. Provide experience with the knowledge construction process.
2. Provide experience in and appreciation for multiple perspectives.
3. Embed learning in realistic and relevant contexts.
4. Experience learning in **"rich"** environments.
5. Encourage learning in social experience.
6. Encourage self-awareness or reflective practice of the knowledge construction process. Gagnon and Collay's (1996) constructivist learning

design emphasizes six important elements: Situation, grouping, bridge, questions, exhibit and reflections. These elements are designed to provoke teacher planning and reflection about the process of student learning. Teachers develop the situation (Duckworth, 1987; Fosnot, 1996) for students to explain, select a process for groupings (Johnson and Johnson, 1975, Slavin, 1980) of materials and students, build a bridge. This has some grounding in the set induction described by Gagne (1970), the anticipatory set of Madeline Hunter (1982) and the advanced organizer of Ausubel (1978) between what students already know and what they want them to learn, anticipate questions (Bloom's 1956; Sanders 1966; Flanders' (1970) to ask and answer without giving away an explanation, encourage students to exhibit (Wiggins (1995). Documentation from Engel (1994), portfolios from Carini (1986), a record of their thinking by sharing it with others, and solicit students' reflections (Hunter's (1982) description of **"transfer,"** Cooper (1991), about their learning. Students in this process are asked to actively construct their own knowledge by making meaning out of the situation by themselves with support and guidance from the teacher. Teachers organize the situation and then provide encouragement and questions to groups of students who are trying to construct and to display their own explanations assessment of constructivism based on process rather than product. Evaluation in the constructivist culture is rigorous and multidimensional. It is focused on the quality of the learner's understanding its depth, and its flexible application to related contexts (Lindschit, 1999). Chung (1991) described, a constructivist learning environment is characterized by (1) shared knowledge among teachers and students; (2) shared authority and responsibility among teachers and students; (3) the teacher' new role as guide in instruction; and (4) heterogeneous and small groupings of students. With respect to instruction, students should participate in experience that accommodate these ways of learning such as experience include problem-based learning, inquiry activities, dialogues with peers and teachers, exposure to ***multiple sources of information***, and opportunities for students to demonstrate their understanding in ***diverse ways*** (Lindschitl, 1999). Student-centred orientation in the constructivist approach is an alternative to the teacher- centred classrooms (Mathews, 1994 in Lindschitl, 1999). Mayer (1996) describes teachers as **"guides,"** and learners as **"sense makers".** Gergen (1995) describes teachers as facilitators, coordinators, resource advisors, tutors or coaches.

What lies behind the fact that some students see so little value in learning about social studies? Social studies teachers point out that students

have trouble applying and transferring knowledge, that they do not have enough problem-solving skills, or that they do not understand the importance of what they are asked to learn (Bevevino, 1999). In the teaching of social studies research is based on new approaches. A melding of a more traditional method such as inquiry with current cognitive theory may well provide an even more powerful approach to social studies teaching and learning for the 21st century (Olsen, 1998). Past research has shown that social studies instruction has generally relied on teacher talk, memorization of facts, passive learning, and a textbook (Shaver, Davis & Helburn 1979 in Rice & Wilson 1999). Rice & Wilson (1999) emphasized how technology aids constructivism in the social studies classroom. Major benefits to social studies teachers who integrate technology to support constructivism in the social studies include the ability to obtain relevant information in the form of documents, photographs, transcripts, video, and audio clips; The capability of providing virtual experiences that otherwise would not be possible; and the opportunities for students to examine a variety of viewpoints so they can construct their own knowledge of various social studies topics. Many types of activities can be used in the social studies classroom to incorporate the use of technology to promote constructivist learning. In each of these activities, the teacher acts as a facilitator, providing guidance where needed and allowing the students to form their own hypotheses and conclusions (Rice & Wilson 1999). Windschitl (1999) indicated teaching of constructivist social studies, educator struggle with how specific instructional techniques fit into the constructivist model of instruction. Regardless of the particular techniques used in instruction, students will always construct and reorganize knowledge rather than assimilate information from teachers or textbooks. Jadallah (2000) explained constructivist learning experience for social studies education. They emphasized that knowledge and experience are foundation of constructivist teaching and learning. In Taiwan, Hu (1997) surveyed 135 elementary teachers about the views of constructivist teaching. He indicated that the dominance of objectivism deeply influenced our schools and the belief of science teaching. Teachers used to guide students to follow their trails of well-prepared lesson plans. Yen (1999) determined exemplary elementary science teacher's beliefs, practices, and views about constructivist teaching. Qualitative research method was applied on this study. 6 dimensions support final form of this study. They are,

(1) sufficient time for students and teachers to engage in learning;
(2) less units in textbooks;
(3) teachers who agrees to constructivist teaching;
(4) students with the positive attitudes toward learning;

(5) parents who discard their traditional education thought; and
(6) school administrators who equate teachers with professions at school.

Tynjala (1999) examines the potential of constructivist learning environments for developing prerequisites of expert knowledge during university students. Students in the constructivist learning environment acquired more diversified knowledge.

Although there has been so much research on other courses, social studies research about constructivist approach is limited. So, the purpose of this study is to determine students' opinions about different materials and concept maps which were prepared themselves based on constructivist approach on fifth grade social studies.

2. Method

2.1.Subjects

This study was conducted with 30 fifth-grade social studies students in an elementary school. This study applied in public school in Turkey. Teacher was experienced more than 20 years.

2.2. Design and Procedure

The social studies course was scheduled as 2 hours a day. The study was conducted for 25 days during the unit, **"Our Country"**.

Before the treatment, the teacher of the group was informed about the fundamentals and principles of constructivist approach. The lessons plans which is consist of aims, objectives and clue of students activities prepared by the researcher were explained and given to the teacher. Activities and content of the lesson were constructed by the students.

During this treatment, the teacher was a facilitator providing guidance where needed, and allowing the students to form their own hypotheses and conclusions. She was also a coach of and a co-learner with her students. Besides, students were highly active that they did research, prepared materials and resources with their peers about their topics. At the end, students constructed different materials files by themselves. And then concept maps were constructed by students of the experimental group. In the process of treatment, the researcher video recorded the classrooms. During and after the treatment, the researcher interviewed the students, the teacher and the parents.

After the treatment, the students' files and concept maps were constructed by the group students.

In this study, the constructivist lesson process in social studies course was constructed for this study as indicated previous constructivist design principles (Osborne and Wittrock1985; Novak and Gowin 1984; Osborne, 1996; Brooks & Brooks, 1993; Roblyer, Edwards& Havriluk 1997; Gagnon and Collay 1996; Fosnot, 1996 and Lindschit, 1999). This lesson process in this study as given below:

1) **Determine theme of the topic or problem**: It is a strong relationship between the teacher and the students beginning of this process. Teachers give topic or problem, and students understand them.
2) **Guidance:** The teacher or other people (especially the parents) guide the students for their preparations in their environment.
3) **Students' preparations**: They use prior knowledge for preparation. Also, they use their environment. They need to use different aids or materials for presentation. They balance their pre-existing schemas with new experience. So, they construct their new knowledge, skills or affective characteristics.
4) **Teaching of Students**: The students share experiences with the teacher and their friends as group or individual. So, they affect one another. Different materials are used by learners in this process (Charts, pictures, models audio- visual materials etc.). The teacher's role is to be a co- learner with their students, and she/he facilitates their students. The students are active, guide, teacher for other group or their friends. The students solve the problem or supply the topic by different activities (Verbal or audio- visual presentations, play the games, poems, songs, dances, wrote essay or article, group investigation results, brainstorming on the problem, simulations, cooperative learning, social discussion, multiple perspectives of events). Research on how best to teach declarative, procedural, and conditional knowledge would certainly be useful to social studies educators in that they deal extensively with declarative knowledge and with some procedural knowledge, e.g., preparing research projects whether as formal papers or as any of a variety of computer presentations such as power point or construction of web sites (Olsen 1998).
5) **Assessment of Students:** The students construct their assessment material. They assess and evaluate their performance. The teacher

sometimes gives the explanations about student performance to the students. The teacher also observes students' performance, and guides different assessment materials (Concept maps, student portfolios, pictures, exhibitions, demonstrations etc.). Real-world tasks and situations are evaluated as authentic.

6) **Retention**: Students share things on the topic or the results of problem. They ask questions themselves and discuss answer the questions. The students motivate each other and give reinforcement one another. The teacher is also reinforcing. After this so much period of time, students learn. They can use the new things or knowledge to construct different things or knowledge.

2.3. Instruments

2.3.1. Student Portfolios (Different Materials files)

Students during the treatment in the group developed their files. Students prepared it by themselves and sometimes with their peers. Self-evaluation of the students was used for the assessment of files. Portfolio assessment process was used. Portfolio assessment process is based on the collection of student work (writing assignment, drafts, artwork, poem, interview etc.) that represents skill competencies, exemplary work, or the student's developmental progress (Glossary Of Education Terms and Acronyms).

2.3.2. Student Concept maps

Students in the group developed their concept maps. The concept maps were prepared after the treatment. There had been significant correlation between the students' evaluated of their portfolios and their concept maps. The students construct their concept map on the entire unit. They thought it and made a link between the units' topics themselves.

2.4. Data Analysis

Qualitative analysis was performed by students' portfolios and concept maps. Perceptions of the students on their portfolios and concept maps were determined by Strauss and Corbin's (1990) inductive coding techniques.

3. RESULTS AND DISCUSSION

3.1. The Results of Qualitative Analyses

The students evaluated concept map and portfolios by themselves. In order to determine the relationship between the qualitative data (Concept map score (CMS) and Student portfolio score (SPS)) correlation analysis

was used. As a result of the correlation analysis, there is a significant relationship among SPS and CMS. As a result, there is a high relationship between SPS and CMS about their answers (r: 0.543, correlation is significant at the 0.01 level).

Students wrote essays about their portfolios. After that, the researcher made coding in this essay. Table 1 presents perceptions of students' portfolios (SP).

Table 1. Perceptions **of students' portfolios (SP).**

Codes	F	%
Knowledge development	14	47
Self efficiency	7	23
Motivation	19	63
Student different materials and activities	22	73
Retention	6	20
More understandable	14	47
Skill development	16	53
Exhibition	4	13
Research	12	40
Being tidy	10	33
Reinforcement	6	20

N: 30

As seen in Table 1, 73% of students have reported about different materials and activities, such as, transparencies, pictures, poems, experiments, songs, games, essays, interviews, and summaries of unit CDs, articles, histories, hands-on activities, maps and questions. The students constructed all of these materials and activities themselves. Teacher was a facilitator during the instruction. After presentation of the studies, students prepared their portfolios day by day. Since this was first time for students to have been in such kind of an educational environment in social studies, they were highly motivated and interested (63%). The course was so enjoyable for them that they tried to do best of them in order to learn social studies. The themes of these codes can be development, self-efficiency and being active. They constructed their materials. Some of the views of the students are given below:

Ceyhun: **"I learned how to prepare a portfolio about all of the subjects. I think I did everything that I had to do. It couldn't be more perfect"**. Dilara: **"As I looked at my portfolio, I understood how beautiful things I had done"**. Pelin: **"I put each material I had prepared**

in my portfolio. All of us had our portfolios. It was enjoyable to construct a portfolio. I will never forget these studies in the future". Altay: **"I did every kind of effort I could. Because I had close relationships with my teacher (my friend) during the treatment, my behaviour has changed positively toward her "**.

Because of the fact that all of the students have different materials for their portfolios, 53% of the students had reported how their skills were developed. Erten: **"The positive implication of my portfolio is the knowledge prepared by myself, pictures I had drawn and games I had played"**. Buket: **"I think my poem, art and history skills were developed by construction of my portfolio"**. Ceyhun: **"I used different CDs about some of the topics of unit, prepared pictures, histories, poems and hands on materials, made interviews with different people in our town and drew maps and concept map. So my skills' development was multiplied"**.

47% of students had reported about knowledge development and how easily they understood the unit. Gokhan: **"I could see our acquired knowledge. We downloaded our knowledge as if the knowledge was downloading to the computer"**. Burak: **"According to me the advantage of our portfolios was to study units more understandably. We made so much research. It was useful for me to have more knowledge in my portfolio"**.

40% of the students had reported about research activities: Dilara: **"... In addition, I enjoyed preparing my portfolio by research"**. Nurhan: **"The advantages of portfolio are; research of the subjects, more understanding, and retention."**

Tidiness of the portfolios was reported by 33 % of the students. Altay: **"I love my portfolio because it's tidy and beautiful...."**. Pelin: **"We transferred all of our knowledge into the papers day by day."**.

Although only 23% of the students reported about self-efficacy, it's included in all of the students' perceptions. Buket: **"It couldn't be more perfect"**. Beste: **"I did different kinds of activities with myself. There has been so much effort for those activities"**. Ozge: **"In order to prepare a portfolio; research and so much effort is needed. Since I did those by myself, I am sure that I will have a good score"**.

20% of the students reported retention and reinforcement: Burcu: " **Advantages of a portfolio are research, more and easily understanding and retention"**. Arslan: **"This approach may help us in the following school years."**. Burcu Uzuner: **"That will be easy to make a repetition. We can look at the subjects some another time"**.

Students emphasized advantages of this study. They liked this study.

Students' perceptions on concept maps were given in Table 2.

Table 2. Students' perceptions on concept maps

Code	F	%
Comprehension development	9	30
Reinforcement	14	47
Effort	12	40
Retention	11	37
Organisation of knowledge	11	37
Easy to prepare	10	33
Hard to remember	3	10

N: 30

Table 2 shows that, 47% of students have pointed on reinforcement. Because students learned themselves while they were preparing their concept maps. So, they enjoyed and motivated. The students developed self-reinforcement. Some directions were given by the teacher for preparation of concept map. Firstly, students learned **"What is concept map? What are the characteristics of concept map? How is it prepared?"** Students prepared their concept maps after the treatment. They organised their knowledge. For this reason, the students remembered unit's subjects. So, 37% of students have reported about organisation of knowledge and retention. The themes of these codes can be comprehension, retention and organization. Students organized their all of knowledge about the unit. Some of the views of the students are given below:

Ceyhun: **"I wrote subjects, subtopics, the topics' effects, kinds of topics, advantages and disadvantages of topics"**. Erten Eren: **".... I made my concept map by retention of all unit process.**

In addition, effort variable was very important for students' perception of concept map. They usually said **" It is hard, time is required etc."**. Hatice: **"While I was preparing my concept map on unit, it was difficult,**

but after the concept map, I understood that it was very perfect and useful for my learning". Gökhan: **"As I was constructing my concept map, since it was the first time I tried it, it took much time but I enjoyed a lot"**. Nihan: **"I made my concept maps during two hours since I made it without looking at my book. According to me, it was wonderful but hard to construct"**. Some of these students emphasised **"easy to prepare"** in their essay (33%). But a few students in this group said that **"hard to remember"** in their essay (10%). Some of the views of the students are given: Utku Göktan: **"It was very long and hard to prepare. I had much effort for preparation of it. But at the end, I understood that it had been a nice and useful study for me"**. Pelin Erdek: **"It was very difficult for me to think about concept map because I made it for the first time. But as I started preparing my concept map, it became easier for me"**. Burak: **"I didn't remember some topics of the unit while I was making my concept map. I could have prepared it longer, if I had remembered the entire unit"**.

Comprehension development is important for students. 30% of students had reported about comprehension development: Özge Duysak: **"We summarised and repeated all the topics in our country. We drew figures. I understand our unit better with these figures. So I have learned effectively"**. Dilek Laçin: **"I learned more things about my unit and I know how necessary these subjects are"**.

As a result of this study, students in constructivist group were active and constructed knowledge, skills and attitudes, academic self-concept during these activities. They multiply evaluated themselves.

According to the interview results with the students and the teacher the classroom environment had been mainly teacher-centred based on teaching and textbooks before the treatment. So constructivist approach leading all the students' active participation was so different for the students. The teacher said, **"I was disquieted at the beginning of this study. I am an experienced teacher (26 years) I was used to my method. I had to use different method for teaching of social studies because of this research. But after that, I enjoyed this process. My students began to study. They enjoyed their activities. In the other units I would often make exams. In this unit the students took an exam after the unit and they were able to answer the exam. They were evaluated by different methods. They constructed their files. The students made research and they prepared**

different activities and materials. Passive student was not in this unit. The students evaluated themselves. All the teachers should learn this process." A student said, **"I want to say something about my teachers' teaching of the social studies. Our teacher wrote summary on subject. She explained its means. She was a lecturer (as teaching). We wrote what she said. Then she asked questions. We answered them. She gave +, - for answers Sometimes, we went to picnic or excursion. But in this unit, we took special courses. We used computers, transparencies, pictures, poems etc. We enjoyed this unit"**. The other student said, **"We did not like social studies before. But this lesson is like a game. Now I like social studies"**. The other student said, **"This unit is different from the other units. In the other units, we had not used different materials. We had our files in this unit. I made an effort for this file. I prepared my products with my friends. And then I enjoyed our works."** As Grabe and Grabe mentioned (1998), constructivist learning experiences and appropriate classroom practices include reflective thinking and productivity; authentic activities including students' collaboration and consideration of multiple perspective, and student access to content area experts who can model domain-specific skills. All of the students had a good time during the treatment. They also enriched their learning strategies and thought each oh them. Sometimes even the teacher was the learner. There were so many teaching methods changing from student to student. Although the topics of the unit were directed by the teacher; the content of the topic were enriched by the students. Because they learned to learn by themselves, their self-efficiency, interest and attitudes increased towards social studies.

Conclusions and Implications

This study was performed to determine the effects of a constructivist approach on the fifth grade students in social studies course in the elementary education, as a qualitative research. Students liked their activities. Because the students in this group were able to understand within the framework of their prior knowledge. The students constructed their cognitive structures by themselves. In social studies, it's necessary to use knowledge in students' authentic experiences. Content and skills should be made relevant to the learner, so there should be a link between the classroom and the real life. Even the classrooms are the parts of the real life. In order to provide active, multiple, concrete student learning constructivist approach can be available. So there will not only be accumulation of information but there will also be an application of knowledge and a development of thinking, problem solving, decision-making and communication skills.

Qualitative results of the study suggest that constructivist-learning activities foster active learning. Both of the perceptions of students' their portfolios and concept maps emphasized active learning, comprehension of knowledge, self-efficiency and retention. The research provided strong indications for implementation of constructivism in social studies education. Prior knowledge is important for this study. Therefore, early grade students cannot be active in constructivist activities. Students can be active easily for fifth grade social studies education since they have enough experience. Future research should be made relevant to early grades.

Constructivist learning theory and its applications can be an essential subject within the various types of educational programs. Although applying constructivist principles in teaching is not an easy task, there will be no problem if both teachers and students are willing and make enough effort. Furthermore, because the students construct their knowledge by themselves, more sufficient time is required. This research shows the positive effects of constructivist approach in social studies. The students can construct new learning of the entire world if we provide opportunities for them. Future studies on application of constructivism may carry out different samples to examine curriculum and instructional practices.

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