Hazırlık Sınıfında Kavram Haritası Destekli İngilizce Öğretiminin Kullanımı Üzerine Bir Karma Yöntem Çalışması

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ÖZ

Bu araştırmanın amacı, hazırlık sınıfı öğrencilerinin kavram haritaları ile desteklenen dil bilgisi derslerinde kavram haritası performansları ile öğrencilerin kavram haritalarına ilişkin görüşlerinin incelenmesidir. Çalışmada karma araştırma yöntemlerinden açımlayıcı sıralı desen kullanılmıştır. Çalışmanın nicel aşamasında, tek bir çalışma grubuyla zayıf deneysel tasarım kullanılmış ve öğrencilerin kavram haritası performanslarını belirlemek için araştırmacı tarafından geliştirilen kavram haritası değerlendirme formu ile nicel veriler elde edilmiştir. Nitel veri ise araştırmacı tarafından geliştirilen öğrencilerin, kavram haritalarına ilişkin düşüncelerini ortaya çıkarmayı amaçlayan açık uçlu sorular formu ile toplanmıştır. Deney grubuna kavram haritası destekli ders öğretimi uygulanmıştır. Çalışma grubu Çağ Üniversitesi'nde dil bilgisi dersi alan 14 hazırlık öğrencisinden oluşmaktadır. Deney grubundaki öğrencilerin ön test ve son test kavram haritası performansları arasında anlamlı bir fark olup olmadığını ortaya koymak amacıyla ilişkili örneklemler için t testi analizi yapılmıştır. Nitel verilerin analizinde açık uçlu sorular için içerik analiz yöntemi uygulanmıştır. Araştırma sonucunda kavram haritası yöntemi kullanan deney grubu öğrencilerinin uygulama öncesi ve uygulama sonrası kavram haritası performansları puanları arasındaki değişimin son test lehine anlamlı düzeyde farklılık gösterdiği tespit edilmiştir. Bunula birlikte öğrencilerin görüşlerinin daha çok kavram haritası yönteminin öğretimde verimliliğe ve öğrenmede kalıcılığa olan etkisi üzerinde yoğunlaştığı görülmektedir. Kavram haritası yönteminin derste kullanılmasına ilişkin, öğrenciler kavram haritası yöntemi ile öğrenmelerinin daha kalıcı olduğunu belirtmişlerdir.

Anahtar Kelimeler: kavram haritası, dilbilgisi öğretimi, anlamlı öğrenme, yabancı dil, İngilizce

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A Mixed Methods Study on Using Concept Mapping Assisted English Teaching in A Preparatory Class

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ABSTRACT

The aim of this study is to examine preparatory students' concept mapping performances and their views on concept maps in the main course assisted by the concept mapping. In order to full the aims of the study, explanatory sequential design of mixed methods approach is employed. In the quantitative phase of the study, weak experimental design with a single study group was used and the quantitative data were obtained through concept map assessment form developed by the researcher to determine the students' concept mapping performances and the qualitative data were collected by the open-ended questions form, which aims to reveal the opinions of the students on concept maps, developed by the researcher. The concept mapping assisted instruction was applied to the experimental group. The study group is comprised of 14 prep students who take main course at Çağ University. Paired samples t-test analysis was employed for the related samples in order to determine whether there is a statistically significant difference between the pre-and-post-test concept map performances of the students in the study group. Content analysis method was applied in the analysis of qualitative data. The quantitative results of the study showed a statistically significant difference between pre-and-post-test scores of the study group. In addition, Quantitative results showed that the students' opinions mostly focus on the effect of the concept mapping method on efficiency in education and retention in learning. Regarding the use of the concept mapping method in the course, the students stated that the concept mapping method provided retention in learning, learning in a holistic way, concretizing the concepts, seeing the deficiencies in learning and they find the method effective.

Keywords: Concept map, grammar teaching, meaningful learning, foreign language, English language

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INTRODUCTION

English courses in Turkey, is one of the lessons the students in causing anxiety and prejudice. This is one of the reasons for failures in English classes (Tümen, 2006). However, it is seen that individuals who love to learn English by memorizing and discovering a way to understand English very much. Many methods that have been used in language teaching pedagogy for years can lead students to move away from English and take a dislike to English by encouraging students to learn by rote learning. Therefore, in order to make the teaching of English more effective, students should be interested in the lesson. Findings of Tümen's (2006) study revealed that as a result of the concept map method being taught in the English lesson, students showed positive reactions in terms of visualization of the information and the fact that the learning is concrete and free from memorization. However, in Turkish schools, learning was based on memorization and foreign language teaching was grammatical, so its success could not be achieved (Demircan, 2002, p. 144). It is thought that students' previous knowledge shifts are very important in learning new concepts. According to Ausubel, "the most important factor affecting learning is what the student knows before". As a result, a more meaningful learning takes place if a person consciously and distinctly establishes the relationship between the old concepts that his new knowledge already has (Kabaca, 2002, p. 19).

Rote learning occurs when a student simply memorizes the newly learned information without any attempt or motivation to relate it to the previous knowledge. For this reason, the rote student will have a less comprehensive network than the meaningful learner and less connection path between the concepts of knowledge. Novak and Gowin (1984) developed 'concept maps' to present meaningful associations between concepts and prepositions, based on Ausubel's meaningful learning principles. According to them, concept maps are a kind of cognitive and visual roadmap to connect the meanings of concepts. Novak (1991) states that concept maps serve to clarify the links between new and old knowledge and force the student to extract those links. Concept maps are structures that visually organize information. These are graphical teaching tools that collectively illustrate an event or subject and briefly describe concepts, relationships between concepts, and principles (Karapür, 2002, p. 18).

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The concept mapping method requires a connection between concepts known and known in learning. When learning with concept maps, students think and apply simultaneously think (Novak & Gowin, 1984, p. 111).

In the concept map method, the concepts are hierarchically associated with question envelopes and conjunctions. In each encounter with new meaning, relationships that have not previously been perceived can be seen. The individual thus finds new meanings and integrates them into their emotions. In other words, a link is established between what is already learned and what is new. The concept map also reveals information that has been learned incorrectly (Akgündüz, 2002, p. 8).

In general, it can be said that concept maps are a method that requires the connection between the existing knowledge and the newly learned knowledge and that makes the student active and directs them to think.

Novak and Gowin (1984) state that Concept Maps can be used in the following situations:

1- To discuss the significance of concepts with students,

2- In organizing information,

3- In reducing misunderstandings,

4- Developing high level thinking skills.

When analyzed studies conducted in Turkey, findings of Türkhan's (2013) study revealed that 8th grade science and technology lesson of the success of the students investigated the effect of the use of concept maps in teaching the subject of the Periodic Table. In his study, Girgin (2012) examined the effect of concept maps on reading comprehension and retention of students.

Burak (2010) investigated the effects of concept maps supported education on students' success in mathematics geometry learning. Canbolat (2008) investigated the effect of concept map usage on student

achievement and attitude in science and technology course. In his study, Yaman (2006) investigated the effect of the use of concept map method on student achievement in the second level Turkish grammar courses. In his study, Girgin (2012) investigated the effect of concept maps on students' reading comprehension and retention.

Concept maps in Turkey are being used in more science and math education. Moreover, concept maps used in Turkish language teaching, the number of studies that used in English language teaching in Turkey appears to be limited.

It is thought that the choice of teaching methods to be used in English classes is very important in grammar teaching. Grammar, which plays an important role in the development of language skills today, is an area that nourishes and shapes the basic language skills and cannot think independently of these skills. The methods and techniques used unchanged during the teaching of grammar subjects in English classes do not contribute sufficiently to improve the meaningful learning of the student. For this reason, it is thought to be useful to use the concept maps method which will improve students both visually and mentally. Most of the concepts that students come across in English grammar classes are abstract concepts. Therefore, students have difficulty in understanding the concepts. Concept maps are an important method for meaningful learning by reducing this difficulty. Concept maps that analyze information help to graphically concretize concepts of any subject; in other words, it provides visual arrangement of information in the minds of students. Because visuality is at the forefront, it becomes easier to keep information and concepts in mind. In this process, students think about finding appropriate connections while creating concept maps. Moreover, they use mental skills such as analyzing the content of the subject. The information learned becomes more permanent as they create concept maps by making effort, making and living. Thus, the students make the abstract concepts in their minds concrete with the concept map method. The dynamic nature of the concept maps enables the student to add new concepts to the concept maps drawn by his knowledge and develop his maps. The existing knowledge of the student integrates with new knowledge and concepts and helps the student to acquire new information. Adding a new one to the previous concepts, the student now learns how to structure information. The concept maps that enable the student to be organized in learning are also aimed at teaching the student how to learn. Some of the previous studies have shown that using concept maps empowers students in the learning process. Chang, Sung and Chen (2002) designed three different concept maps in their studies to investigate the effect of concept maps on understanding and summarizing the text. As a result of the research conducted on 126 5th grade students, it was seen that concept maps improved students' comprehension and summarization skills. In his study, Khalil (2008) investigated the effect of concept maps on grammar learning levels of 9th grade students learning English as a foreign language. In the study in which 113 students participated, the courses were taught using concept maps in the experimental group and traditional methods in the control group. At the end of the research, grammar success test was applied and a significant difference was found in favor of the experimental group. Kurnaz (2010) aimed to develop students' skills in creating concept maps, giving meaning and answering the questions asked with concept maps in their study as an action research. The data were obtained from the implementation of the activities prepared according to the constructivist approach and the group interviews. Before the applications, students could not create concept maps, could not make sense of concept maps and failed; afterwards, it was concluded that students' success increased and they knew how to create concept maps. Astane and Berimani (2014) investigated the effect of jigsaw technique and concept maps, which are word teaching methods, on Iranian students learning English as a foreign language. In one of the groups, word teaching was carried out with the jigsaw technique and in the other with the concept mapping method. When the post-test results were compared, it was seen that the concept map group was more successful in word learning. Yang (2015) investigated the effects of automatic scaffolding and measurement of three-layer concept maps on improving university students' writing summaries. A sample of 107 university students were divided into experimental and control groups. The study results revealed that the experimental group made more significant improvement in reading comprehension and summary writing than the control group. Akkoç (2019) investigated the size of the common effects by reaching the master's and doctoral theses, articles and reports investigating the effect of concept maps on academic success between 2005 and 2017. In the study, 78 studies that examine the effect of concept maps on academic achievement were analyzed. As a result of the study, the researcher found out that

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concept maps are very effective in enhancing the academic achievement of students and must be used in the education process.

Limited usage of concept maps in teaching English Studies conducted in Turkey, is considered to be one of the reasons of such research.

Purpose of the Research

The aim of this study is to examine the effect of using concept map method on students 'English learning situations and students' concept map performances within the scope of Main Course.

Problem Statement

What are the concept map performances of the students in the concept map supported English teaching?
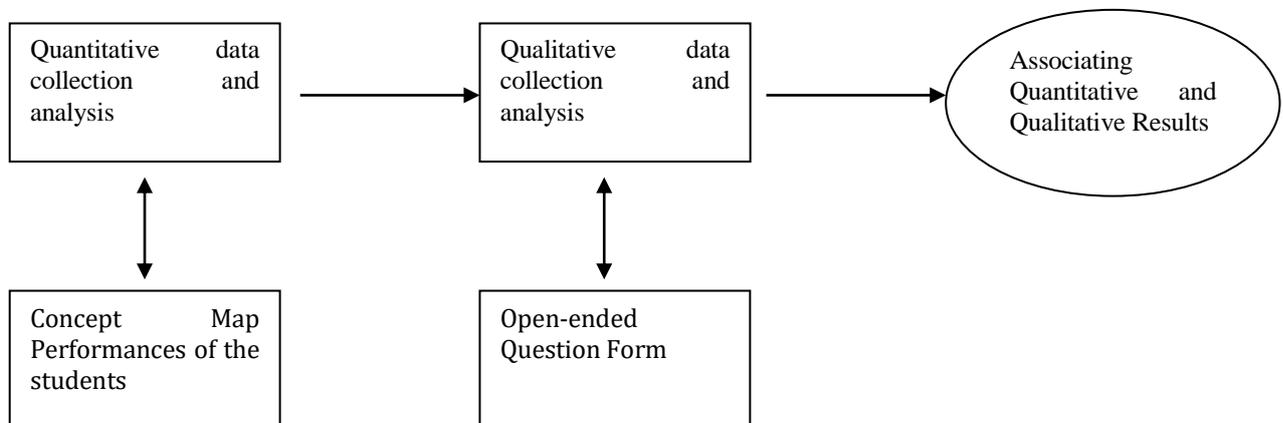
Research Questions

1. Is there a significant difference between pre-test and post-test concept map performances of experimental group students with concept map supported instruction?

2. What are the opinions of the experimental group students about concept map supported teaching?

METHOD

Research Model

The design used in this research is the explanatory sequential design that is one of the mixed approaches and in which quantitative and qualitative data are collected and analyzed in the same time or consecutively, and also the data are integrated in one or more stages of the study (Creswell, 2013; Johnson & Onwuegbuzie, 2004). This design is a process in which firstly quantitative data are collected and analyzed; then qualitative data are collected and analyzed to build on a solid ground the obtained data (Creswell & Clark, 2007; Creswell, 2013). In the researches in which mixed research model is used, it is needed to explain the reason of using the method (Dörnyei, 2007; Tashakkori & Creswell, 2007). It is possible to understand quite superficially the human feelings and thoughts with the assessment instruments used in the quantitative chapter of the research (Türnüklü, 2000). At this point, it was benefited from the qualitative research approach that provides researcher to obtain more detailed information about the topic. In the quantitative dimension of the study, one group pretest-posttest model was applied. Accordingly, concept map performance was applied to the experimental group as a pre-test. After the application, concept map performance was applied to the experimental group as posttest. In the qualitative aspect of the research, the students were interviewed to describe their views on the concept map supported course. The research pattern model designed by the researcher is shown below.

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Figure 1. *Exploratory Sequential Pattern Model*

In this research, quantitative and qualitative research methods were used together in the process of data collection. The use of quantitative and qualitative data by supporting each other increases the validity

and reliability of the research (Creswell, 2003). At the same time, data was diversified. Data diversity is defined as the use of more than one research method and technique to search for the same research question (Yıldırım & Şimşek, 2005).

1. Study Group (SG): Concept map supported teaching (CMST) group.

Table 1. *Experimental Research Design of the Study*

Groups	Pre-test	Instruction	Post-test
Study group (SG)	$O_{1.1}$	X	$O_{1.2}$

SG; shows the study group that created concept maps as a result of the concept map supported instruction. Pretest was taken from the study group students. After 6 weeks of instruction, the final test was taken from the study group students.

Since the concept map supported teaching and concept maps were created in the study group, the students were informed about the concept maps by the researcher before the application.

Study Group

In this research, the study group consisted of 14 students studying English as a foreign language at Çağ University Preparatory School. 8 of the participants were male, 6 were female, 7 were faculty of economic and administrative sciences, 5 were faculty of law and 2 were faculty of arts and sciences.

Table 2. *Demographic Characteristics of the Study Group*

		N
Gender	Male	8
	Female	6
Faculty	Faculty of Economics and Administrative Sciences	7
	Faculty of Law	5
	Faculty of Arts and Sciences	2

Experimental Process

Before starting the study, a pretest was applied to the study group. In the pre-test, participants were asked to create a concept map according to the instructions. After the pre-test, it was started for 6 weeks. In this process, the study group was informed about the concept maps and the students were informed before the application and a 6 week concept map supported course was applied in the study group. The students were asked to create a concept map at the end of each week and in addition, the course diaries were taken at the end of each week. The teaching processes are arranged for the students' concept maps and their views in the course diaries. At the end of the 6-week practice, the study group students were asked to create concept maps as a post-test in the pre-test. In order to examine the students' views on the concept map supported course teaching, open-ended questions form was applied to the study group students at the end of the 6-week practice.

Table 3. *Course Syllabus and Objectives*

Units	Course Syllabus	Objectives
Unit 1: Talk	Present simple and present continuous	Talk about different forms of communication
		Describe experiences in the present
Unit 2: Modern Life	Present perfect simple and past simple	Talk about experiences of work and training
	Present perfect simple and present perfect continuous	Talk about technology
Unit 3: Relationships	Narrative tenses	Tell a story

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Unit 4: Personality	Modals and phrases of ability	Describe people and their abilities Describe feelings Offer and ask for help
Unit 5: The Natural World	Future forms	Talk about the future
Unit 6: House and Home	Modals of deduction	Describe a building Describe a town or city

Data Collection Tools

The quantitative data of the research were collected through the concept map evaluation rubric which was created by the researcher in order to measure the concept map performances of the students. The first version of the form was presented to the opinions of 2 academicians and 2 English instructors in the field of education programs and teaching and finalized in line with their suggestions. The assessment rubric consists of 5 sub-dimensions and 22 items involving organization, concepts, relationships between concepts, hierarchy and examples. It is scored as (5) "Excellent", (4) "Quite adequate", (3) "Adequate", (2) "Inadequate" and (1) "Should be improved".

In order to create the concept map performance evaluation rubric, 2 academicians and 2 English lecturers, who are experts in the field of education programs and teaching, received their opinions through 10 point rating scale and findings about the quality of the rubric were obtained by obtaining inter-specialist fit indices (Wynd, Schmidt & Schaefer, 2003). According to the results, the Kappa statistics got 0.16 points over all items in the scale regarding the suitability of the rubric. In accordance with the recommendation of Fleiss (1971), there is a bad conformity of the experts regarding the suitability of all substances. However, these values are not universally accepted as a guide for interpreting the kappa value. There is a disagreement between statisticians about the comments and even ranges given. Landis and Koch (1977) did not provide theoretical evidence for the ranges and comments they gave in their writings and these statements can only be regarded as personal beliefs. These ranges and comments can make researchers forget the fact that Kappa value is also affected by the number of variable categories. It is stated that this criterion may be more harmful than helping, since the number of categories and topics will affect the magnitude of the value (Gwet, 2001). It is known that the smaller the number of categories, the greater the kappa value (Sim & Wright, 2005). In some cases, Fleiss Kappa may bring low values even if the deal is high. This is a known (and largely unavoidable) problem and is therefore less popular than other measures of interrater agreement. Both the percent agreement and the Fleiss Kappa analysis have difficulties and limitations. Percentage agreement statistics can be easily calculated and interpreted directly. The key limitation is that the raters do not take into account the possibility of making a score prediction. Therefore, it overestimates the real agreement between raters. Kappa is designed to take into account the possibility of guessing, but its assumptions about rater independence and other factors are not well supported, and can therefore significantly reduce the estimate of the deal. Moreover, it cannot be interpreted directly, and therefore it has become common for researchers to accept low kappa values in their reliability studies. Low levels of interrater reliability are not accepted in healthcare or clinical trials, especially if the results of studies can alter clinical practices to lead to poor patient outcomes (McHugh, 2012).

The qualitative data were collected by using open-ended questions form. This form was prepared by the researchers and by taking expert opinion in order to learn the opinions of the students involved in the research on the concept map method. Since the questions did not include any alternatives, they were intended to reflect the feelings of the student. The data were collected from 14 students. The question "What is the effect of the concept mapping method on learning English? Answer based on your experience and thoughts in the process." asked to the study group.

Data Analysis

In the quantitative stage of the study, the data related to the concept map performances of the students were obtained by evaluating 22 items on 14 individuals independently from each other by evaluating the 3 evaluators and calculating the average of the scores given by the raters for each item. In the analysis of quantitative data, paired samples t-test analysis was performed for related samples.

Firstly, it was tested whether the necessary assumptions were met for the analysis. The normal distribution test was used to analyze whether the scores of the dependent variable and the difference scores show normal distribution. Shapiro-Wilk test was used because of n<30 to determine if the data showed normal distribution, and p value was calculated as greater than 0.05.

The content analysis method was used for the analysis of qualitative data. Content analysis is to bring together similar data within the framework of certain concepts and themes and interpret them in a way that the reader can understand (Yıldırım & Şimşek, 2006). Content analysis is a scientific approach that allows an objective and systematic examination of verbal, written and other materials (Tavşancıl & Aslan, 2001). Qualitative data analysis is a process in which the researcher organizes the data, divides them into analysis units, synthesizes, reveals patterns, discovers important variables and decides what information to reflect on the report (Özdemir, 2010). The content analysis of the data obtained in the research was carried out in three stages. In the first stage, the main categories emerging for the purpose of the research from the answers given to the research question were determined. In the second stage, the data were organized by reading according to the main categories previously determined and sub-categories of the main categories were determined. In the third stage, the data are defined according to the main category and sub-categories, and the information that comes up with the necessary quotations is presented in relation to each other.

The data obtained with the open-ended questions form, in which the students in the study group expressed their opinions about the Concept Map method, were arranged and appropriate themes were created by 2 different experts. Then the coding reliability of the data obtained in the study was calculated using Miles and Huberman's formula (Reliability = consensus / (consensus + divergence) * 100). The fact that the coding among the coders is at least 80% indicates that the research results are reliable (Miles & Huberman, 1994; Patton, 2002).

Table 4. *Open Ended Questionnaire Reliability Coefficient*

Question Number	Miles Huberman Reliability Coefficient
1.	0,88

Since the reliability coefficient of Miles Huberman for the question in the open-ended questionnaire was above .80 (80%), it was concluded that the consensus among the coders was reliable.

The statistical analysis of the quantitative data of the research was performed by using SPSS 23.0 program. Firstly, it was investigated that the study group had the normal distribution characteristics for 2 separate measurements in the pre-test and post-tests. The normality test results of the pre-test and post-test of the study group are presented in Table 3.

Table 5. *Normality Test Results of the Pre-Test and Post-Test of the Study Group*

	Shapiro-Wilk			Descriptives for normality Skewness and Kurtosis			
	Stat.	df	Sig.	Skewness	Std. Er.	Kurtosis	Std. Er.
Pretest	.914	14	.180	-.508	.597	-1.164	1.154
Posttest	.896	14	.098	-.359	.597	-1.257	1.154

When Table 5. is examined, it is seen that the pretest scores obtained from the concept map performances evaluations of the participants in the study group met the normality assumptions (Concept map performances pretest =, 180p> .05,).

It was seen that the test scores obtained from the concept map performances of the participants in the study group met the normality assumptions (Concept map performances posttest = .098p> .05,).

For normality analysis, standard skewness ($Z_{Skewness}$) and standard kurtosis ($Z_{Kurtosis}$) values were also taken into account at these levels of independent variables. Considering the Kalaycı 2005 criteria (Kalaycı, 2005: 212) with a 95% probability that it is between -1.96 and +1.96; on the basis of 99%

probability, it is in the range of -2, 58 and +2, 58, indicating that normality precondition is met in these measurements. In this context, the concept mapping performance of the study group pretest reveals that the standard skewness ($Z_{Skewness} = -.508$) and standard kurtosis ($Z_{Kurtosis} = -1.164$) values show a normal distribution and posttest reveals that the standard skewness ($Z_{Skewness} = -.359$) and standard kurtosis ($Z_{Kurtosis} = -1.257$) values show a normal distribution.

In the analysis of qualitative data, frequency analysis and content analysis method was used for open-ended questions. The main purpose of content analysis is to reach the concepts and relationships that can explain the collected data (Yıldırım & Şimşek, 2003). The abbreviations used in the findings were used as M for Male and F for Female. FL was used for the Faculty of Law, FEAS for the Faculty of Economics and Administrative Sciences, FAS for the Faculty of Arts and Sciences, and VS for Vocational School. For example; (M, FL, 3) M is a male, FL Law School student, which means 3 student numbers.

FINDINGS

Findings Related to the First Research Question

In the first sub-problem, paired samples t-test analysis was performed for the related samples in order to determine whether there was a statistically significant difference between the concept map performances of the students who were instructed by concept map before and after the experimental process. Pre-test and post-test mean scores related to concept map performances and standard deviation values of study group students are presented in Table 6.

Table 6. *Concept Map Performances of Study Group Students Pre-Test Post-Test Mean and Standard Deviation Values*

	Pre-Test			Post-Test		
Group	N	$\overline{X}$	Sd	N	$\overline{X}$	Sd
Study	14	52,35	10,82	14	94,85	8,15

When the Table 6. is examined, the mean scores of the study group students who used the concept map in the Main Course application course before performance were $\overline{X}$= 52.35 and this value was $\overline{X}$= 94.85 after the application. Accordingly, an increase was observed in the mean scores of the concept map performances of the study group students in which the concept map application was made.

The t-test results are presented in Table 7. for the related samples that explain whether the changes in the scores of the pre-and post-concept map performances of the study group students using the concept map in the Main Course differ from each other.

Table 7. *Pretest-Posttest Concept Map Performances Scores Means t Test Results*

MEASUREMENT	N	$\overline{X}$	S	sd	t	p
Pretest	14	52,35	10,82	13	-14,30	,000
Posttest	14	94,85	8,15			

In order to determine whether being in the group where concept map assisted teaching is performed has a significant effect on students' pre-test and post-test concept map performances, t-test was used for the related samples. There is a statistically significant difference [$t_{(13)}$= -14,30,p<0.05] between the mean concept map performance score before the application($\overline{X}_{Pre-test} = 52,35$) and the mean concept map performance score after the application($\overline{X}_{Post-test} = 94,85$).

According to the results of this change, there is a significant difference between pre-test and post-test achievement of concept maps and study group.

Findings Related to the Second Research Question

In the second sub-problem of the research, an open-ended question form was given to the students in order to learn the opinions of the students in the study group about the concept map supported course teaching. The students were asked to answer an open ended question about concept map supported course instruction. The categories, definitions, frequency and percentage values of the answers given by the students are given in Table 8.

Table 8. *Student Views on Concept Map Supported Course Instruction in Main Course*

Categories	Definitions	f	%
		50	
Retention in learning	Students' statements indicating that the use of concept maps in the course increases the retention in learning	14	28
Effectiveness of the method	Students' statements that the use of concept maps in the course increases the efficiency of learning	13	26
Regard learning as a whole	Students' statements that concept maps integrate learning	10	20
Concretizing concepts	Students' statements that the use of concept maps in the course concretize the abstract concepts	6	12
Facilitating learning	Students' statements that the use of concept maps in the course makes learning easier	5	10
Seeing learning deficiencies	Students' statements that the use of concept maps in the course makes them aware of the weak points	2	4

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In Table 8, the opinions of study group students about concept map supported teaching are given. It is seen that students' opinions are gathered around 6 themes. These themes are retention in learning (f = 14), effectiveness of the method (f = 13), regard learning as a whole (f = 10), concretizing concepts (f = 6), facilitating learning (f = 5) and seeing learning deficiencies (f = 2).

Regarding the concept map supported teaching of the study group students, the students stated that concept maps increased "The retention in learning" (f=14). For example;

M,FL,6 ''Concept maps enable us to learn and reinforce what we have learned in an easy and understandable way''.

M,FL,3 ''It summarized our knowledge and helped us consolidate it in our minds.''.

M,FAS,1 ''Thanks to the concept map, I began to remember the form of any time or modal verbs more quickly. ''.

F,FAS,2''Collecting all of the Tense topic together and having it in a short way enabled me to understand and remember the subject. ''.

Another category in which students' views are concentrated is "The effectiveness of the method" (f=13). For example;

M,FEAS,2 '' Thanks to the concept map, my study became much easier when I was studying and remembering what I learned. In my opinion, it is a very efficient and effective way of learning and method.''.

F,FL,5 ''Our concept mapping made a great contribution to my study, learning and repetition.''.

Another category in which students' views are concentrated is ''Regard learning as a whole'' (f=10). For example;

F,FL,3 ''Concept maps enabled us to summarize and consolidate our knowledge. It has become easier to remember the information. It simply made it easy to summarize the books that were exaggerated. ''.

Another category in which students' views are concentrated is ''Concretizing concepts'' (f=6). For example;

M,FL,6 ''This method of teaching our visual memory allows us to learn in an easy and understandable way and to reinforce what we have learned by drawing our own concept maps and drawing them under the guidance of the teacher.''.

F,FEAS,1 '' The concept maps that we have made the topics we are clearer in our minds. Thanks to the concept maps, we have summarized some of the topics we have studied. We learned all the subjects in a more understandable way without confusion. In this way, we were able to better understand what is to be used and where.''.

Another category in which students' views are concentrated is ''Facilitating learning'' (f=5). For example;

M,FL,6 ''Our concept mapping allows us to learn in an easy and understandable way and to reinforce what we have learned.''.

M,FAS,1 ''In my opinion, this method simplifies the learning of anything.''.

M,FEAS,5 ''Our concept mapping makes learning easier.''.

Another category in which students' views are concentrated is ''Seeing learning deficiencies'' (f=2). For example;

F,FEAS,4 ''Seeing our past or current shortcomings, we studied hard on them''.

DISCUSSION AND CONCLUSION

The findings of this study showed that concept map supported course teaching had a positive effect on students' learning and concept map performances in the main course. When the findings of the study were examined, a significant difference was found between the mean scores of pre-test and post-test concept map performances of concept group and study group students.

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The pre-test and post-test achievement scores of the study group were examined in line with the solution of the problem posed. The average study group for the sub-problem increased from 52.35 to 94.85. As a result of the statistical analyzes, when these scores of the students were compared, a statistically significant difference was found in favor of the post-test. The results showed that teaching with the concept map helped to increase students' success in concept map performance and learning English. This result is in line with Akgündüz (2002), Çardak (2002), Kabaca (2002), Mclay & Brown (2003), Mergendoller & Sacks (1994), Roberts (1999), Slotte & Lonka's (1999), Taş (2001) findings compared the concept map method with the traditional method and determined that it was more successful. Findings of Kabaca's (2002) study revealed that in the group with the concept map supported education, a significant degree of success has been achieved compared to the other group. Findings of Çardak's (2002) study revealed that the level of success was higher in the group where the lesson was taught with the concept maps method compared to the other group. Robert's (1999) participants stated that they can obtain valuable qualitative information, which is used to illuminate their misunderstandings and cannot be obtained by traditional methods.

Every individual has his own way of learning. Because of this situation arising from individuality, each new concept can create different associations in individuals. The use of different teaching methods can play an important role in concept teaching. One of these teaching methods is concept maps. Concept maps are an appropriate method for accurate classification of new knowledge to be learned. When the name of the concept to be taught to the individual is mentioned first, the process of establishing a correct connection between the connotations occurring in the mind and the existing features of the concept can be provided by concept maps. In addition, as a result of the concept map supported course teaching, establishing connections between the concepts will facilitate the analysis of the relations, thus enabling the clarification of the minds of the individual. The visualization of the generated maps will allow the new concept learned to be added to the existing concepts, thus linking the new and old information..

The students' opinions indicate that the concept map supported course teaching has a positive effect on their learning according to the current method. This situation is supported by the increase in students' concept map performance scores. The most intense theme that expresses the students' views is "retention in learning". The students stated that the concept map method increases the retention in learning. For example, the students stated that the concept maps enable them to learn and reinforce what they have learned in an easy and understandable way. In addition, they stated that it summarized their knowledge and enables them to consolidate in their minds. The views of Novak and Gowin's (1984, pp. 24-28), " concept maps reinforce the meaning of the concepts and the meaning formed in relation to the concepts in the learning process and make the learner active. It helps learners understand the concepts and the relationships between them for meaningful learning." support the students' opinions.

The students stated that thanks to concept maps, they started to remember the form of any time or modal verbs more quickly and that the gathering of the times subject together in a shorter and holistic way enables them to understand and remember the subject. In addition, Ausubel (1968), who works on meaningful learning, is similar to the suggestion that concept maps, one of the pre-organizers, can be used to draw the student's attention to new material, to elucidate the relationship between concepts, and to recall preliminary information on the subject. In addition, Şenay (2007, p. 28) stated that as one of the benefits of concept maps, "It contributes to the students to remember their knowledge easily".

One of the other views of the students is that concept maps provide a holistic view of learning. The students, who stated the effect of concept maps on visuality, commented that the concept map method is directed towards their visual memories and both they draw their own concept maps and they draw concept maps under teacher guidance in an easy and understandable way and they reinforce their learning. At the same time, Karapür (2002, p. 18) stated that "Concept maps are structures that organize information visually". Concept maps that analyze information help to graphically concretize concepts of any subject; in other words, it provides visual arrangement of information in the minds of students. Because visuality is at the forefront, it becomes easier to keep information and concepts in mind.

The students stated that concept maps enabled them to summarize and consolidate their knowledge and it was easier for them to remember the information they summarized, making it easier to summarize the books that were exaggerated in a simple and clear way. Uğuz's (2013, pp. 80-81) implications "concept map, which summarizes the subject of the course, can use the concept map to give preliminary information about the subject at the beginning of the course or to remember the subject when entering the course at a different time." are similar to the students' views.

As a result, the results obtained from this study are similar to previous studies. Concept map assisted course teaching had a positive effect on students' English learning and increased their concept map performance scores.

IMPLICATIONS

In the light of the findings obtained as a result of the research, the following suggestions can be developed for the concept maps method that provides active learning. The teacher should first use the concept maps that he has prepared. The teacher can process the lesson with the concept maps method and then ask the students to create their own concept maps. Learning environments are required to create concept maps for students. If such environments are created, the creativity of students will also emerge. As many rules and generalizations are taught, the concept maps method should be used more frequently in the English lesson. The importance of concepts should be emphasized while explaining the topics.

Based on this research data, the following can be stated for new researches. Effects of concept maps on listening, reading and writing skills in foreign language course can be investigated. Appropriate concept maps can be added to the units in the textbooks. Students may be asked to create concept maps about the subject taught in the assigned tasks. In this way, what the student has learned from the subject and the new concept can be easily determined. Concept maps can be used as an assessment tool to asses other language skills.

REFERENCES

Akgündüz, D. (2002). *İlköğretim fen bilgisi dersi öğretimi 6. sınıf biyoloji konularında kavram haritalarının kullanımı ve başarıya olan etkisi.* Yayınlanmamış yüksek lisans tezi, Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, İlköğretim Ana Bilim Dalı, Fen Bilgisi Öğretmenliği Bilim Dalı, Ankara.

Akkoç, A. E. (2019). *Kavram haritalarının akademik başarıya etkisi: Bir meta analiz çalışması.* Yayınlanmamış yüksek lisans tezi, İnönü Üniversitesi, Eğitim Bilimleri Enstitüsü, Eğitim Bilimleri Ana Bilim Dalı, Eğitim Programları Ve Öğretim Bilim Dalı, Malatya.

Astane, E. & Berimani, S. (2014). The effect of jigsaw technique vs. concept map presentation mode on vocabulary learning of low-intermediate efl learners. *ELT Voices, 4*(6), 113-123.

Ausubel, D. P. (1968). *Educational psychology. A cognitive view.* New York: Holt, Rinehart and Winston, Inc.

Belet, D. (2005). *Öğrenme stratejilerinin okuduğunu anlama ve yazma becerileri ile Türkçe dersine ilişkin tutumlara etkisi.* Yayımlanmamış doktora tezi, Anadolu Üniversitesi, Eskişehir.

Burak, B.S. (2010). *İlköğretim 6. Sınıf Matematik Dersi Geometri Öğrenme Alanında Kavram Haritası Kullanmanın Öğrencilerin Başarıları ve Bilgilerin Kalıcılığı Üzerine Etkisi.* Yayımlanmamış yüksek lisans tezi. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, İlköğretim Anabilim Dalı, İlköğretim Matematik Öğretmenliği Bilim Dalı, Ankara.

Büyüköztürk, Ş. (2003). *Veri analizi el kitabı.* (2.bs.). Ankara: Pegem A Yayıncılık.

Canbolat, S. (2008). *Fen ve teknoloji dersinde kavram haritası kullanımının öğrencilerin başarıları ve tutumlarına etkisi.* Yayımlanmamış yüksek lisans tezi, Gazi Üniversitesi, Ankara.

Chang, K., Sung, Y., & Chen, I. (2002). The effect of concept mapping to enhance text comprehension and summarization. *The Journal of Experimental Education, 71*(1), 5-23.

Creswell, J. W. (2013). *Araştırma deseni: Nicel, nitel ve karma yöntem yaklaşımları* (S. B. Demir, Çev.). Ankara: Eğiten kitap.

Creswell, J. W. & Clark, V. L. P. (2007). *Designing conducting mixed methods research.* Thousand Oaks, CA: Sage.

Çardak, O. (2002). *Lise birinci sınıf öğrencilerinin canlıların çeşitliliği ve sınıflandırılması ünitesindeki kavram yanılgılarının tespiti ve kavram haritalarıyla giderilmesi.* Yayımlanmamış doktora tezi, Selçuk Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Ana Bilim Dalı, Konya.

Demircan, Ö. (2002). *Yabancı dil öğretim yöntemleri.* İstanbul: Ders Yayınları.

Dörnyei, Z. (2007). *Research methods in applied linguistics.* Oxford: Oxford University Press.

Fleiss, J. L. (1971). Measuring nominal scale agreement among many raters. *Psychological Bulletin, 76*(5), 378–382.

Girgin, Y. (2012). *İlköğretim 8. sınıf türkçe ders kitaplarındaki metinlerde kavram haritası kullanımının öğrencilerin okuduğunu anlama becerileri üzerine etkisi.* Yayımlanmamış doktora tezi, Atatürk Üniversitesi, Erzurum.

Gwet, K. (2001). *Statistical Tables for Inter-Rater Agreement.* Gaithersburg : StatAxis Publishing.

Johnson, R. & Onwuegbuzie, A. (2004). Mixed methods research:A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

477

Kabaca, T. (2002). *Ortaöğretim matematik eğitiminde kavram haritalanması tekniğinin kullanımı*. Yayınlanmamış yüksek lisans tezi, Marmara Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.

Kalaycı, Ş. (2005). *SPSS uygulamalı çok değişkenli istatistik teknikleri*. Ankara: Asil Yayın Dağıtım.

Karaçorlu, T. A. (2018). *EBA platformundaki kavram haritaları ve infografiklerin kullanımına ilişkin öğretmen ve öğrenci görüşleri*. Yayınlanmamış yüksek lisans tezi, Fırat Üniversitesi Eğitim Bilimleri Enstitüsü, Bilgisayar ve Öğretim Teknolojileri Eğitimi Anabilim Dalı, Elazığ.

Karapür, İ. (2002). *Van'daki liselerde olasılık öğretiminde görülen kavram yanılgıları*. Yayımlanmamış yüksek lisans tezi, Yüzüncü Yıl Üniversitesi Fen Bilimleri Enstitüsü, Van.

Khalil, M. (2008). *The effect of using concept maps on achieving English grammar among ninth graders in Gaza governorate.* Unpublished master's thesis, The Islamic University, Gaza.

Kurnaz, M. A. (2010). Kavram haritalarının öğretim sürecinde kullanılması: bir aksiyon araştırması. *Türk Eğitim Bilimleri Dergisi, 8*(1), 175-199.

Landis, J.R. & Koch, G.G. (1977) The measurement of observer agreement for categorical data *Biometrics, 33*, 159-74.

McHugh, M. L. (2012). Interrater reliability: The Kappa statistic. *Biochemia Medica*, *22*(3), 276–282.

Mclay, M. & Brown, M. (2003). Using concept mapping to evaluate the training of primary school leaders. *International Journal of Leadership in Education*, *6*(01), 73-87.

Mergendoller, J. R. & Sack, C. H. (1994). Concerning the relationship between teachers' theoretical orientations toward reading and their concept maps. *Teaching & Teacher Education, 10*(6), 589-599.

Miles, M. B. & M. Huberman (1994). *Qualitative Data Analysis: A Sourcebook of New Methods*. Beverly Hills, CA: Sage Publications.

Novak, J. D. (1991). Clarify with concept maps: A tool for students and teachers alike. *The Science Teacher*, *58*, 45-49.

Novak, J. D. & Gowin, D. B. (1984). *Learning how to learn*. New York, NY: Cambridge University Press.

Özdemir, M. (2010). Nitel veri analizi: Sosyal bilimlerde yöntembilim sorunsalı üzerine bir çalışma. *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi, 11*(1), 323-343.

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods, 3d Edition*. Thousand Oaks, CA: Sage Publications.

Roberts, L. (1999). Using concept maps to measure statistical understanding. *International Journal of Mathematical Education in Science and Technology*, *30*(5), 707-717.

Sim J, & Wright C.C. (2005) The Kappa statistic in reliability studies: Use, interpretation, and sample size requirements. *Physical Therapy, 85*(3), 257-268.

Slotte, V. & Lonka, K. (1999). Review and process effects of spontaneous note-taking on text comprehension. *Contemporary Educational Psychology, 24*(1), 1–20.

Şenay, A. (2007). *Kavram haritaları yöntemiyle metin öğretimi.* Yayınlanmamış yüksek lisans tezi, Selçuk Üniversitesi, Konya.

Tashakkori, A. & Creswell, J. W. (2007). Editorial: Exploring the nature of research questions in mixed methods research. *Journal of Mixed Methods Research*, *1*(3), 207-211.

Taş, B. (2001). *Fen bilimleri öğretiminde kavram haritaları üzerine deneysel bir çalışma*. Yayınlanmamış yüksek lisans tezi, Celal Bayar Üniversitesi, Fen Bilimleri Enstitüsü, Manisa.

Tavşancıl, E. & Aslan, E. (2001). *Sözel, yazılı ve diğer materyaller için içerik analizi ve uygulama örnekleri*. İstanbul: Epsilon Yayınevi.

478

Teo, A., Shaw, Y.F., Chen, J. & Wang, D. (2016). Using concept mapping to teach young EFL learners reading skills. *English Teaching Forum*, *54*(2), 20-28.

Tümen, S. (2006). *Kavram haritaları yönteminin yabancı dil öğretiminde öğrenci başarısına etkisi.* Yayımlanmamış yüksek lisans tezi, Fırat Üniversitesi, Elazığ.

Türnüklü, A. (2000). Eğitimbilim araştırmalarında etkin olarak kullanılabilecek nitel bir araştırma tekniği: Görüşme. *Kuram ve Uygulamada Eğitim Yönetimi*, *6*(4), 543-559.

Türkhan, S. (2013) *İlköğretim 8. Sınıf fen ve teknoloji dersi periyodik cetvel konusunda kavram haritası kullanımının öğrencilerin akademik başarısına etkisi*. Yayımlanmamış yüksek lisans tezi, Uşak Üniversitesi, Uşak.

Uğuz, S. (2013). Bilgisayar destekli kavram haritası tekniği yardımıyla öğretim materyali tasarımı. *Eğitim ve Öğretim Araştırmaları Dergisi*, *2*(2), 80-81.

Wynd, C. A. Schmidt, B. & Schaefer, M. A. (2003). Two quantitative approaches for estimating content validity. *Western Journal of Nursing Research, 25*, 508–518.

Yaman, H. (2006). *İlköğretim ikinci kademe dilbilgisi derslerinde kavram haritası tekniğinin öğrenci başarısına ve hatırlamaya etkisi*. Yayımlanmamış doktora tezi, Marmara Üniversitesi, İstanbul.

Yang, Y. F. (2015). Automatic scaffolding and measurement of concept mapping for EFL students to write summaries. *Journal of Educational Technology & Society, 18*(4), 273–286.

Yıldırım, A. & Şimşek, H. (2005). *Sosyal bilimlerde nitel araştırma yöntemleri*. İstanbul: Seçkin Yayıncılık.

APPENDICES

1. *Concept Map Evaluation Rubric*

	BOYUT	Mükemmel	Oldukça yeterli	Yeterli	Yetersiz	Geliştirilmeli
	1.Organizasyon	5	4	3	2	1
1.	İyi organize edilmiştir					
2.	Takip etmesi kolaydır					
3.	Harita ağaç dalı şeklinde iner					
4.	Harita okunaklıdır					
5.	Yazım hatası yoktur					
6.	Ana kavram açıktır					
	2.Kavramlar	5	4	3	2	1
1.	Ana kavramları içerir					
2.	Üniteye genel bir bakış sağlamak için gerekli olan kavramlara yer verilmiştir					
3.	Ünitenin kavramlarını, ünitenin bağlamında kullanılmıştır					
4.	Konuyla ilişkili kavramlar kullanılmıştır					
5.	Hiçbir yanlış anlama / hata yoktur					
	3. Kavramlar Arasındaki İlişkiler	5	4	3	2	1
1.	Kavramlar arasındaki ilişkiler doğrudur					
2.	Kavramlar arasında anlamlı bağlantılar kurulmuştur					
3.	Bağlantılar açıktır					
4.	Bağlantılar mantıklıdır					
5.	Oklar, kavramları açıklayıcı bir şekilde bağlanmıştır					
6.	Oklar üzerindeki bağlantı kelimeleri, kavramların diğer kavramlarla olan ilişkisini göstermektedir					
	4.Hiyerarşi	5	4	3	2	1
1.	Kavramlar arasında hiyerarşik yapı oluşturulmuştur					
2.	Kavram haritası genel kavramlardan özel kavramlara doğru yer verilerek oluşturulmuştur					
3.	Her bir alt kavram, üzerinde çizilen kavramdan daha özeldir					
	5. Örnekler	5	4	3	2	1
1.	Her kavram dalı için örnek verilmiştir					
2.	Özgün örnekler verilmiştir					