| Research Article / Araştırma Makalesi|

Pre-Service Social Studies Teachers' Cognitive Structures on the Concepts of Effective Teaching and Effective Learning

Sosyal Bilgiler Öğretmen Adaylarının Etkili Öğretim ve Etkili Öğrenme Kavramlarına İlişkin Bilişsel Yapıları

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Abstract

Purpose: The purpose of this research is to reveal the cognitive structures of pre-service social studies teachers regarding effective teaching and effective learning.

Design/Methodology/Approach: The research was designed according to the survey model. Word association test was used as a data collection tool. The research was carried out with 122 pre-service teachers.

Findings: According to the research result, it has been observed that pre-service teachers mostly associate the concept of effective teaching with teacher, material, student, active student, and the concept of effective learning with student, active student, material, motivation. In the study, it was determined that 12 connections were established between the concept of effective teaching and the concept of effective learning. It was seen that the connection between these concepts is structured with the common components of teaching and learning such as student, material, and motivation.

Highlights: In order to understand the teaching and learning process, it would be useful to emphasize the descriptive and distinctive features of the concepts in teacher professional courses.

Öz

Çalışmanın amacı: Bu araştırmanın amacı, sosyal bilgiler öğretmen adaylarının etkili öğretim ve etkili öğrenme kavramlarına ilişkin bilişsel yapılarını ortaya koymaktır.

Materyal ve Yöntem: Tarama modeline göre yürütülen araştırmada veriler kelime ilişkilendirme testi ile toplanmıştır. Araştırmaya Türkiye'de bir devlet üniversitesinde öğrenim gören 122 öğretmen adayı katılmıştır.

Bulgular: Araştırma sonucunda öğretmen adaylarının etkili öğretim kavramını en çok öğretmen, materyal, öğrenci, aktif öğrenci; etkili öğrenme kavramını öğrenci, aktif öğrenci, materyal, motivasyon gibi kelimelerle ilişkilendirdikleri belirlenmiştir. Çalışmada etkili öğretim kavramıyla etkili öğrenme kavramı arasında 12 bağlantının kurulduğu saptanmıştır. Bu kavramlar arasındaki bağlantının öğrenci, materyal, motivasyon gibi öğretme ve öğrenmenin ortak bileşenleri ile yapılandırıldığı görülmüştür.

Önemli Vurgular: Öğretme-öğrenme sürecinin anlaşılması için öğretmenlik meslek derslerinde kavramların tanımlayıcı ve ayırt edici özelliklerinin vurgulanması faydalı olacaktır.

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INTRODUCTION

Schools are functional institutions in education (Cafoğlu, 1995). Studies aimed at increasing the quality of education in schools revealed the concept of effective school (Ada & Akan, 2007; Helvacı & Aydoğan, 2011). The main determining criterion in these studies was success (Ada & Akan, 2007). With the term effective school, which is based on the understanding that all students can learn (Balcı, 1988), it is emphasized that not only a few elite classes but all classes within the school perform quite well in raising the school average (Ralph & Fennessey, 1983). Edmonds (1979), who defines an effective school as a school that enables weak students to acquire basic school skills, stated that these schools have "strong administrative leadership, high expectations for children's success, school climate conducive to learning, emphasis on acquisition of basic skills, and frequent monitoring of student progress". The role of effective teachers in effective schools is to teach all students to achieve high success (Brookover, 1985). Frequent monitoring of student progress in the teaching process, the existence of a positive learning environment, and emphasis on students' achievement of basic skills play a critical role in the development of an instructionally effective school (Bamburg & Andrews, 1990). According to Balcı (2014), effective school and the effectiveness of teaching interact and a culture that supports effective teaching should be created at school. According to him, this culture should emphasize teaching and point to the order and discipline that is the source of effective learning of students.

Although learning at school is tried to be realized with planned activities, the concepts of failure, deficient or inadequate learning are still mentioned for many students for various reasons, including effective teaching (Oral, 2015). Learning is defined as the process of perceiving, recording, remembering and using knowledge, most of which is the result of an individual's active effort (Yıldırım, Doğanay, & Türkoğlu, 2009, p. 19). Today, it is argued that in an environment where the knowledge base in society is rapidly increasing and the learning environment is quite comprehensive and rich, learning objectives should focus less on acquiring knowledge but more on producing knowledge with others (Watkins, Carnell, Lodge, Wagner, & Whalley, 2002). In this process, which is known as effective learning, the active role of learners in the learning process is widely accepted, and it is known that meaningful and retention learning is possible with the learner's own effort and contribution (Yıldırım et al., 2009, p. 3). According to Mortimore (1993), effective learning is active, hidden and complex, and is influenced by various contexts and individual differences among learners. Effective learning in school and in the classroom is promoted through (a) activity, reflection and making sense, b) collaboration for learning, (c) responsibility to learn, and (d) learning to learn (Watkins et al., 2002).

Studies in education basically aim to increase learning, and the high level of learning indicates the need for effective teaching (Bellibaş & Gedik, 2016). Teaching is an intentional activity and an interactive process involving teachers, students, and tasks (Brown, 1993). Since teaching is about providing learning opportunities to students in general (Brown, 1993), the realization of education depends on the planning, implementation and assessment of teaching to create learning for certain goals (Senemoğlu, 2018, p. 395). There is no single definition of effective teaching acceptable to everyone (Cashin, 2003, p. 537). According to Senemoğlu (2018, p. 395), effective teaching requires understanding the nature of the learning event and the characteristics of students in different developmental stages. Effective teaching is at the center of effective schools (Dunne & Wragg, 1994). Teachers, who are primarily responsible for teaching, have to create effective teaching environments in order to facilitate learning and make it retain (ie, appropriating learning experiences to students) (Oral, 2015). Feldman (2007, p. 115) defined the factors of "being prepared/organizing the course and, clarity, pursued course objectives, stimulation of interest in the course or the subject matter, and motivating the students to do their best" among the most important teacher behaviors that contribute to effective teaching. If the concept of effective teaching is explained based on the qualities of effective teachers, it can be said that effective teaching includes the following features (Rosenshine & Stevens, 1986, p. 377):

• Begin a lesson with a short review of previous, prerequisite learning

• Begin a lesson with a short statement of goals

• Present new material in small steps, with student practice after each step

• Give clear and detailed instructions and explanations

• Provide a high level of active practice for all students

• Ask a large number of questions, check for student understanding, and obtain responses from all students

• Guide students during initial practice

• Provide systematic feedback and corrections

• Provide explicit instruction and practice for seatwork exercises and, where necessary, monitor students during seatwork

Cognitive structure, which plays an important role in learning and remembering, determines the general framework in which new knowledge is fused and how the connection between knowledge is (Özenç Uçar & Olşen Güzeldere, 2006, p. 10). It is known that cognitive structures guide perceptions and perceptions guide actions (Girgin, 2019, p. 464). It is necessary to reveal how teachers and pre-service teacher's structure knowledge, with the thought that their knowledge structures about professional concepts will guide their teaching actions (Gürkan, 2019, p. 635). Cognitive structure is a hypothetical structure that refers to the relationships of concepts in memory and is measured by word association test (WAT) (Shavelson, 1972, p. 226-227). The WAT is

the the most common and oldest test used among the few methods in the literature to determine cognitive structures and elicit the relationships between concepts (Bahar, 1999; Bahar, Johnstone, & Sutcliffe, 1999). The basic logic of the word association test is that the order of the response given to the concept reflects an important part of the structure between the concepts (Shavelson, 1972, p. 227). According to the order of writing, the words written previously are associated with the key concept at a higher level (Başol, 2016). In this method, which can provide evidence about the frequency and infrequency of the individual's responses to the words (Gough, 1976), the words that come to mind about any key concept within a certain period of time (usually 30 seconds) are given as an response (Bahar, Nartgün, Durmuş, & Bıçak, 2015, p. 68). The WAT is a powerful tool that helps to see the cognitive structures, the connections between concepts, the relationships that the individual establishes between the concepts, and the errors (Başol, 2016, p. 87). In addition, it is effective in revealing the types and numbers of concepts in the cognitive structures of individuals (Bahar et al., 1999; Derman & Eilks, 2016) and determining misconceptions (Çelikkaya, 2018; Ercan, Taşdere, & Ercan, 2010; Gödek, Polat, & Kaya, 2019; Gürkan, 2019; Hastürk, 2017; Özatlı, 2006). When the literature is examined, it can be seen that the WAT is frequently used to determine the cognitive structures of students (Ay & Tokcan, 2019; Bahar et al., 1999; Bahar & Özatlı, 2003; Deveci, Çengelci Köse, & Gürdoğan Bayır, 2014; Ekici, Gökmen, & Kurt, 2014; Gürkan, 2019; Işıklı, Taşdere, & Göz, 2011; Karakuş, 2019; Karatekin & Elvan, 2016; Kostova & Radoynovska, 2008; Özatlı & Bahar, 2010; Polat, 2013; Ünal & Er, 2017).

In the literature, studies examining the perceptions of teachers and pre-service teachers about the concepts of teaching (Alger, 2009; Bullough, 1991; Hamilton, 2016; Işık, 2014; Leavy, McSorleya, & Boté, 2007; Shaw & Mahlios, 2008; Stylianou, Hodges Kulinna, Cothran, & Kwon, 2013; Szukala, 2011), learning (Alger, 2009; Işık, 2014; Leavy et al., 2007; Saban, Koçbeker-Eid ve Saban, 2014; Stylianou et al., 2013; Szukala, 2011), effective learning (Kasapoğlu, 2014; Özgün Koca, Yaman, & Şen, 2005) and effective teaching have been found (Carnell, 2007; Hativa, Barak, & Simhi, 2001; Özgün Koca et al., 2005; Ünver, 2013). Unlike these studies, there is also a study in which the cognitive structures of primary school pre-service teachers regarding the concept of instruction were determined by WAT (Gürkan, 2019). However, no study has been encountered on effective teaching and effective learning, especially on social studies pre-service teachers. Examining pre-service teachers' prior knowledge and perceptions about teaching and learning is an effective way to help them build meaningful knowledge and understanding (Bullough & Gitlin, 1995, as cited in Leavy et al., 2007, p. 1218). Likewise, investigating how pre-service teachers cognitively construct teaching and learning concepts, which are of professional importance, is considered important in terms of creating meaningful knowledge and understanding. As a matter of fact, it is thought that the way social studies pre-service teachers' structuring of these concepts may affect their teaching practices in the future, as teachers are not only in the position of teaching, but also would take the role of providing learning (Şentürk & Oral, 2008). Effective teaching and effective learning concepts were investigated together in the study, since learning is the basis of the teaching concept (Karslı, 2012, p. 15) and all teaching is based on learning (Brown, 1993, p. 213). The aim of the study is to reveal the cognitive structures of social studies pre-service teachers regarding the concepts of effective teaching and effective learning.

METHOD

Research Design

The main aim of this study is to determine the cognitive structures of pre-service social studies teachers regarding the concepts of effective teaching and effective learning. The study has been conducted using the survey model. Survey models are research approaches aiming to describe a past or current situation as it exists (Karasar, 2009). Since the cognitive structures of pre-service social studies teachers regarding these concepts were tried to be determined, the survey model was used in the research.

Study Group

The study group consists of 122 students studying in the program of the Social Studies Teaching of a state university in Turkey in the spring semester of 2019-2020 academic years. Criteria sampling method was used in the selection of participants. Since assessment is referred to as an important component of effective teaching, the research was conducted with pre-service teachers who had taken the measurement and evaluation course. 55 of the pre-service teachers are juniors and 67 are seniors. 76 of the participants were female and 46 were male.

Data Collection Tool and Process

Data for the study were collected with the word association test (WAT). An application guide and an example are presented on the first page of the WAT. A page layout was created with each key concept located on one page. Before the application, necessary explanations were made about the WAT, and a pilot application was carried out by examining the sample in the test. In the test, students were asked to write six words about the concepts of effective teaching and effective learning. During administration of the test, pre-service teachers wrote down the words that came to their minds about the concept within the 30-second period allowed for each concept. It took about eight minutes to distribute the test, to make the necessary explanations and to implement it. An example application is as follows.
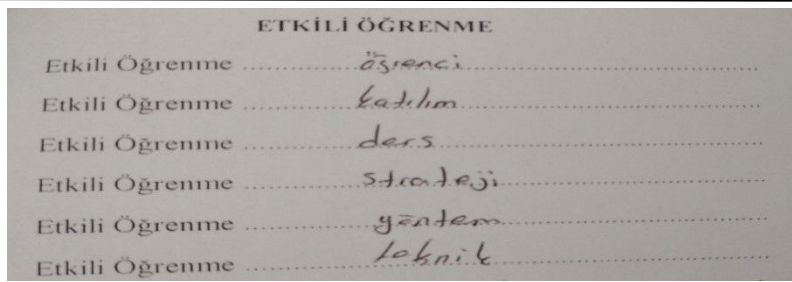
ETKİLİ ÖĞRENME

Etkili Öğrenme	....	öğrenci
Etkili Öğrenme	....	katılım
Etkili Öğrenme	....	ders
Etkili Öğrenme	....	strateji
Etkili Öğrenme	....	yöntem
Etkili Öğrenme	....	teknik

Figure 1. Response Sheet of One of the Participants

Data Analysis

In order to evaluate the results of the WAT for the study, responses given to the key concepts were examined in detail and then a frequency table was prepared showing how frequently those words were used for each key concept. A concept map was created in line with the cut-off points determined by considering the frequency table. According to Bahar et al. (1999), for any key concept in the WAT, fewer than 3-5 words from the most frequent words are determined as the cut-off point. The number of responses over this range is written in the first part of the concept map. Afterwards, the cut-off is pulled down at regular ranges and this process continues until all keywords appear in the concept map. Concepts emerging in each cut-off point range are repeated as many times as the number of students in that range. For example, the concepts with the cut-off point in the range of 6-15 were shown as response words created between the numbers of 6-15 participants. The data of the study were analyzed by looking at the relations between the concepts in the concept maps.

FINDINGS

The frequencies of the words produced by the pre-service teachers regarding the concepts of effective teaching and effective learning are given in Table 1.

Table 1. Frequencies of Produced Words Related to Key Concepts

| Key Concepts	Produced Words
Effective Teaching	**Teacher** (41), **Material** (36), Student (26), **Active student** (15), **Motivation** (12), **Course** (12), **Classroom environment** (11), **Technique** (10), **Learning** (10), **Student-centered** (10), **Communication** (9), **Method** (9), **Discovery teaching** (9), **Discipline** (9), **Constructivist education** (9), **Planned-programmed** (9), Making student active (8), **Knowledge** (8), **Retention learning** (8), **Activity** (8), **Study** (7), **Plan** (7), **Time** (6), **School** (6), **Lecture** (6), **Counseling teacher (**6), **Content** (6), **Skills** (5), Efficient use of time (5), Appropriate learning environment (5), Knowledgeable (5), **Education** (5), Presentation (5), **Learning by doing** (5), Smart board (5), **Concept map** (5), Diction (5), Participation (5), Effective lecturing (5), **Readiness** (4), **Application** (4), **Qualified teacher (**4), **Understanding** (4), Systematic (4), **Achievement** (4), Relativity to the student (4), Question-answer (4), Sense-making (4), **Process (**4), **Environment** (4), **Person** (3), **Brainstorm** (3), **Questioning** (3), Expert (3), **Examples** (3), **Permanent behavior change** (3), Experienced (3), **Knowledge transfer** (3), Individual (3), Democratic classroom environment (3), Goal-directed (3), **Transfer** (3), **Gesture and facial expression** (3), **Responsible student** (3), **Feedback** (3), Effective course (2), Suitability for instructional level (2), **Homework** (2), Book (2), Preparedness (2), **Ability** (2), Entertainment (2), Instilling knowledge (2), **Openness** (2), **Attention** (2), **Interactivity** (2), Useful (2), **Confidence** (2), Drama (2), **Gamification** (2), Contemporary (2), Different method (2), Giving responsibility (2), **Regular** (2), Cooperation (2), **Strategy** (2), Relationship (2), Concrete experience (2), Classroom management (2), **Attracting attention** (2), Individual difference (2), **Visual** (2), **Concretization** (2), **Educational game** (2), Diagonal (2), **Assessment** (2), Individual learning (2), Willingness to teach (2), **Effort** (2), Effective teaching (2), **Active learning** (2), **Comprehension** (2), Face to face teaching (2), **Goal** (2), Conscious (2), Attitude (2), Subject mastery (2), Reinforcement (2), Development (2), **Cognitive** (1), Teaching qualification (1), Concept cartoon (1), Instructional comics (1), Expository instruction (1), Learning by discussion (1), Decision making (1), Self-development (1), Practical thinking (1), **Parent** (1), Ability to understand the student (1), **Acquisition** (1), **Test** (1), Rote avoidance (1), Physical difference (1), Valuing the student (1), Individual lecturing (1), Education-instruction system (1), **Team work** (1), Common learning (1), Peer education (1), **Productive** (1), **Product** (1), Dignity (1), Valuing (1), Lesson plan (1), Obeying class rules (1), Foresighted (1), Merciful (1), Field knowledge (1), Using Turkish correctly (1), Add something (1), Helper (1), Interest (1), **Transfer** (1), Schema (1), Discovery (1), Layered curriculum (1), Project-based teaching (1), Free thought (1), Figure (1), **Thinking** (1), Intelligence (1), Continual (1), Effectice result (1), **Mastery learning** (1), Opinion development (1), Aquarium (1), Social (1), Independent (1), Word (1), Slide (1), Demonstration (1), Quick thinking (1), Influencing the other (1), Change the opinion (1), Equipped (1), Active teaching (1), Flued teaching (1), Information exchange (1), Learning together (1), Scientific knowledge (1), Teaching model (1), Range of knowledge (1), Filter (1), Pragmatist (1), Concept (1), Achievement level (1), Family-school (1), **Family** (1), Groups (1), Formal education (1), **Demonstration** (1), Station (1), Mind map (1), Snowball (1), Research-examination (1), Directly (1), Lesson duratin (1), **Question solving** (1), Material design (1), **Harmony** (1), **Teacher-student relationship** (1), **Usability** (1), Change (1), Progress (1), Purpose of education (1), **Instruction** (1), **Teacher-student**

	communication (1), Listening (1), Respect for opinion (1), **Teacher-student** (1), **Lifelong** (1), **Psychomotor** (1), Empathy (1), Effective learning (1), **Rehearsal** (1), Model (1), **Rules** (1), Consciousness (1), **Teaching** (1)
Effective Learning	**Student** (36), **Active student** (29), **Material** (17), **Motivation** (16), Effective listening (13), **Rehearsal** (12), **Environment** (12), **Knowledge** (11), **Understanding** (10), **Readiness** (10), **Teacher** (10), **Attention** (10), **Achievement** (10), **Retention learning** (10), **Comprehension** (10), **Person** (9), **Application** (9), **Feedback** (9), **Reinforcement** (8), **Study** (8), **Effort** (7), **Classroom environment** (7), **Course** (7), Research (7), Meaningful learning (6), **Activity** (6), Curiosity (6), Planned study (6), **Time** (6), **Team work** (5), **Concretization** (5), **Thinking** (5), Note taking (5), **Skill** (5), **Technical** (5), Cooperative learning (5), **Examples** (5), **Method** (5), **Communication** (4), **Goal** (4), Creative thinking (4), Interest (4), Individual speed (4), Implementation (4), Productive time (4), **Learning by doing** (4), **Learning** (4), **Active learning** (4), **Assessment** (4), Imagination (3), Suitability for student level (3), Course preparation (3), **Permanent behavior change** (3), **Interaction** (3), **Student-centered** (3), **Counseling teacher** (3), Need (3), Desire to know (3), **Questioning** (3), **Acquisition** (3), Grit (3), **Lifelong** (3), Adaptation (3), **Strategy** (3), **Plan** (3), **School** (3), **Education** (3), **Productive** (3), **Product** (3), **Openness** (3), Aid (3), **Lecture** (3), **Homework** (2), **Visual** (2), **Process** (2), Question solving (2), Difference (2), **Regular** (2), Inquiry (2), Ability to criticize (2), Positive result (2), **Harmony** (2), Expression (2), Lifelong learning (2), Small steps (2), Sharing (2), **Brainstorm** (2), Willing (2), Association (2), Logical (2), **Content** (2), Synthesis (2), **Ability** (2), Freedom (2), Technology (2), **Gamification** (2), **Test** (2), Dynamism (2), Rest (2), Behavior (2), **Family** (2), Performance (2), **Responsible student** (2), Regular attendance to class (2), Theory (2), Required knowledge (1), Optional (1), Test-retest (1), **Mastery learning** (1), Collegium (1), Order (1), Knowledgeable teacher (1), Speaking (1), Guidance (1), Noticing (1), Definition (1), Quick decision making (1), **Gesture and facial expression** (1), Direct lecturing (1), 3D thinking (1), **Demonstration** (1), Active class (1), **Parent** (1), Adequacy of resource (1), In-class behaviors (1), Not being abstracted (1), **Confidence** (1), Satisfaction with knowledge (1), Patience (1), Venturous (1), Teaching by understanding (1), Cumulative learning (1), **Qualified teacher** (1), Intermittent study (1), **Concept map** (1), Perception (1), Studying by coding (1), Adaptation for environmental (1), Systematic thinking (1), Print out (1), Functionality (1), **Transfer** (1), **Usability** (1), Respect (1), Learning style (1), Having the skill (1), Analyzing knowledge (1), Learning to Learn (1), Knowing what you don't know (1), Attract attention (1), **Educational game** (1), Do together (1), Social participation (1), Discovery learning (1), Learning by understanding (1), Progressive teaching (1), From simple to complex (1), Current (1), **Constructivist education** (1), Fishbone (1), **Instruction** (1), Abstract (1), Association (1), **Planned-programmed** (1), Exam (1), Trip-observation (1), Self-regulated (1), Build of schema (1), Hardworking (1), Suitable conditions (1), Receiver (1), Love-respect (1), Objective (1), Classroom climate (1), Devoted (1), Values (1), Mind (1), Finding solution (1), Learning level (1), Conclusion (1), Value system (1), Systematic (1), **Cognitive** (1), **Psychomotor** (1), Affective (1), Creating (1), Practicality (1), Physiological environment (1), One-to-one (1), Six thinking hats (1), Report preparation (1), Presentation preparation (1), **Material design** (1), Activity preparation (1), Test analysis (1), Student feature (1), Advance (1), Experience (1), **Attracting attention** (1), Cognitive preparation (1), Intelligence type (1), Establishing a cause-effect relationship (1), **Knowledge transfer (**1), Level and capacity (1), Interpreting what has been learned (1), Preliminary (1), **Teacher-student relationship** (1), Friend relationship (1), Scope (1), Induction (1), Interaction with the group (1), **Teaching** (1), Sensitive (1), Generating new ideas (1), Transferring knowledge (1), Teacher knowledge (1), Passive student (1), Ability to express (1), Transfer to the across (1), Not rote (1), Hard to forget (1), Meeting the need (1), **Rules** (1), **Teacher-student** (1), **Transfer** (1)

When Table 1 is examined, it is observed that a total of 345 words related to the concepts of effective teaching and effective learning were produced. Looking at the response words most associated with each key concept, the words teacher (f=41) for the concept of effective teaching and student (f=36) for the concept of effective learning were repeated. In the research, the data in Table 1 were taken into account in revealing the cognitive structure between the concepts. In this framework, four ranges were determined as the cut-off point and the cut-off point were shown in different colors. Arrows in the concept map created according to cut-off point 36 and above are black; arrows on the concept map created according to cut-off point 26-35 are blue; arrows in the concept map created according to cut-off point 16-25 are orange; arrows in the concept map created according to the cut-off point 6-15 are green. Below are the concept maps created according to the cut-off points 36 and above, 26-35, 16-25 and 6-15, respectively.
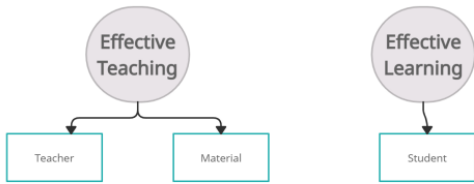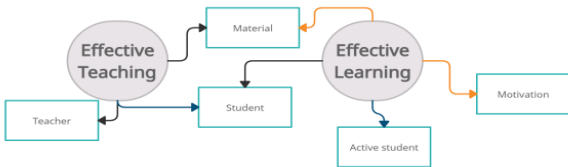
Cut-off point 36 and above

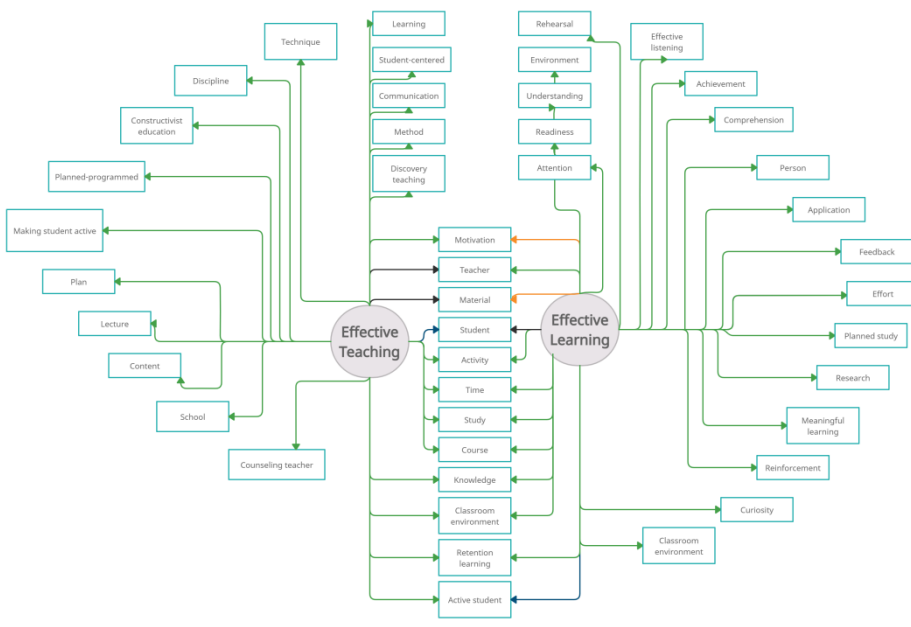**Figure 2. Concept Map Structured According to Cut-off Point 36 and Above**
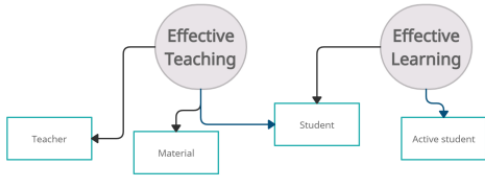
Cut-off point 26 and 35 range

Figure 3. Concept Map Structured According to Cut-off Point 26 and 35 Range

Cut-off point 16 and 25 range

Figure 4. Concept Map Structured According to Cut-off Point 16 and 25 Range

Cut-off point 6 and 15 range

Figure 5. Concept Map Structured According to Cut-off Point 6 and 15 Range

Cut-off Point 36 and Above: In this range, the concept of effective teaching was associated with the response words "teacher" and "material", and the concept of effective learning was associated with the response word "student". The concepts emerging in this range are still unassociated with each other.

Cut-off Point 26 and 35 Range: In this range, it is seen that the concept of effective learning is associated with the response word "active student", and as a result of associating the concept of effective teaching with the response word "student" that appeared before, a relationship is established between the concepts of effective teaching and effective learning. Thus, the associations between concepts started in this range.

Cut-off Point 16 and 25 Range: In this range, the concept of effective learning was associated with the response word "motivation". In addition, as a result of associating the concept of effective learning with the response word "material" that appeared before, a second relationship was established between the concepts of effective teaching and effective learning.

Cut-off Point 6 and 15 Range: In this range, the concepts of *effective teaching* are "technique", "learning", "student-centered", "communication", "method", "discovery teaching", "discipline", "constructivist education", "planned-programmed", "making student active", "knowledge", "retention learning", "activity", "study", "plan", "time", "school", "lecture", "counselin teacher" and "content" were associated with the response words. On the other hand, the concept of *effective learning* is "effective listening", "rehearsal", "environment", "knowledge", "understanding", "readiness", "teacher", "attention", "achievement", "retention learning", "comprehension", "person", "application", "feedback", "reinforcement", "study", "effort", "classroom environment", "course", "research", "effort", "research", "meaningful learning", "activity", "curiosity", "planned study" and "time" were associated with the response words.

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

The purpose of this research is to reveal the cognitive structures of pre-service social studies teachers regarding effective teaching and effective learning. As a result of the research, when the cognitive structures of pre-service teachers related to the concept of effective teaching were examined, it was determined that effective teaching was mostly associated with words such as teacher, material, student, active student, motivation, course, classroom environment. It was determined that the pre-service teachers often repeated the method-technique, material, active participation, planning in the sentences they formed with the words they produced, and only four participants referred to the concept of assessment. The findings of this study are compatible with those of other studies (Gürkan, 2019; Gürses, 2011; Ünver, 2013). In the study conducted by Ünver (2013), it was determined that doctoral students conceptualized effective teaching as active learning, learner-centered learning, student diversity, and learning materials. On the other hand, in Gürkan's (2019) research, it was revealed that primary school pre-service teachers mostly associate the concept of teaching with words such as student, teacher, school, knowledge, education, and class.

Pre-service teachers' explanations of the concept of effective teaching with words related to student learning are in line with the findings of Carnell (2007), Hativa et al. (2001) and Gürses (2011). In his study, Carnell (2007) asked teachers to give examples of effective teaching and found that teachers focused on student learning by establishing a link between effective teaching and student learning in their examples. Hativa et al. (2001) in their study, teachers accepted the importance of providing learning motivation, making the course interesting and maintaining attention, making students active in the course, and creating an enjoyable classroom environment suitable to learning in effective teaching. Gürses (2011), on the other hand, held the view that effective teaching is student-centered, contributes to the social and academic development of students by increasing their willingness to the course, and they argued that feedback is necessary for effective teaching. In the study, it was observed that almost all pre-service teachers could not associate the concept of effective teaching with assessment. Based on this finding, it can be thought that pre-service teachers do not have enough knowledge on this subject. As a matter of fact, it is useful to provide feedback to students frequently (Westwood, 1996) and to assess teaching (Güven, 2004) for effective teaching, which is the result of qualified planning (Tok, 2015). In this study, it was determined that 12 connections were established between the concepts of effective teaching and effective learning. It can be seen that the connection between these concepts is structured with the common components of teaching and learning such as student, material, and motivation.

When the cognitive structures of the pre-service teachers regarding the concept of effective learning were analyzed, it was determined that the pre-service teachers mostly associated this concept with words such as student, active student, material, motivation, effective listening, rehearsal, knowledge, and readiness. Considering the results of the study conducted by Aydede Yalçın and Öztürk (2016) on teachers, it can be said that teachers' perceptions of the concept of active learning as student activity, active participation, and readiness indirectly support the findings of this study. In the study of Aydın and Yılmaz (2015), pre-service

teachers' associating effective learning with features such as arousing curiosity in students, consideration of disparity between students, being student-centered, providing active participation and learning with fun, and increasing the retention of knowledge is similar to the findings. In addition, the pre-service teachers' association of effective learning with rehearsal and knowledge in this study is in line with the results of the study conducted by Işık (2014). Effective learning actively involves learners in the planning, monitoring and reflection processes (Biggs & Moore, 1993, as cited in Watkins, Carnell, Lodge, Wagner, & Whalley, 2000, p. 37). In effective learning, it is emphasized that for meaningful learning, students need to be active in the learning process, and to use learning strategies that will help students retain learning (İlhan Beyaztaş, 2014). In the literature, effective learning is treated together with terms like student-centered learning, learning to learn (Watkins, Carnell, & Lodge, 2007), active learning, cooperative learning (Carnell & Lodge, 2002; Watkins et al., 2007) and learning responsibility (Carnell & Lodge, 2002). Based on the literature, when the words that pre-service teachers often associate with the concept of effective learning are evaluated, it can be said that their cognitive structures on this subject are not at an adequate level. In terms of the effectiveness of teaching and learning processes in the realization of school learning, it can be thought that it is important for pre-service teachers to acquire and make sense of these concepts correctly in teacher education. In this context, it would be useful to emphasize the basic and distinctive features of the concepts in teacher professional courses. In future research, the cognitive structures of pre-service teachers and teachers regarding the concepts of effective teaching and effective learning can be examined through the WAT.

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Statements of publication ethics

I hereby declare that the study has no unethical issues and that research and publication ethics have been observed carefully.

Researchers' contribution rate

This research was conducted with a single author. I declare that all actions taken during the research process belong to me.

Ethics Committee Approval Information

The research was carried out as of 2020. The research is not an experimental study. Therefore, ethics committee approval was not required.

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