Determination of Cognitive Structures of Secondary School Students on Active Citizenship Theme in Social Studies Course

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Abstract: Student's learning and retention of academic content in a meaningful way depends on strengthening their cognitive structures. Once this structure, which provides a framework in which new knowledge will be included, is ascertained, engaging in teaching activities can create an opportunity for learners to have a different learning experience. Word association test are very functional in revealing the networks between the cognitive structure of the students and the concepts in this structure. The aim of this research is to reveal the cognitive structures of secondary school students who take social studies course towards the concepts in the unit of "active citizenship". In the research conducted in the survey model, the word association test was used as a data gathering tool in the study. As a result of the research, it has been observed that students mostly associate the concept of institution with school, organization with country, management with presidential, involvement with vote, and active citizen with mindfulness.

Keywords: Social studies, Cognitive structure, Word association test, Active citizenship

Introduction

Social studies is a discipline that aims to understand the world, guides how to use what has been learned in life, and strives for the participation of responsible individuals in society (Barr, Barth, & Shermis, 1977). Adopting an interdisciplinary understanding will ensure the integration of social sciences and will be effective in fulfilling the competencies expected from the student. The primary purpose of social studies is to raise effective citizens. An active citizen is a citizen who has adopted the values of the society he lives in and lives in harmony with the society culturally (Safran, 2015). Raising citizens who learn from the past, have decision-making skills and have high awareness in the society are among the duties expected from social studies (Levstik, & Tyson, 2008).

Today, there are basic skills aimed at gaining students. Social studies play a leading role in gaining these skills. Learning units within the social studies discipline are prepared for the acquisition of these basic skills. Each learning unit also contributes to the development of different thinking skills in students (Mutluer, 2013). The active citizenship study area within the scope of the social studies course has undertaken an intermediary mission in drawing the boundaries of the definition of the ideal citizen and in raising awareness of active participation as a citizen. Within this learning unit, it was aimed to reveal some questions in the cognitive structures of the students and they were provided to find answers to these questions: What does the concept of citizenship mean? What is active participation? What are our rights and responsibilities as citizens? What is the role of individuals in management? What is the place of non-governmental organizations in society? (Myers et al., 2002). Cognitive structure provides a broad visualization of how various concepts are perceived by students.

In order for students to perform a meaningful learning without falling into misconceptions, they should be provided to construct knowledge by associating information with correct concepts, away from rote understanding (Ausubel, 1968). The individual tries to complete the process by associating the newly learned concept or knowledge with another concept in his cognitive structure in the meaningful learning stage. Failure to make the correct association between concepts causes misconceptions to emerge at the end of the process (Novak, et al., 2005). Piaget stated that if there is a disconnection between newly acquired knowledge and existing knowledge, new connection points can't be created where this relationship can be established. Thus, a new pattern can be created in the cognitive structure of the student (Ünal, 1999). Social studies is one of the disciplines in which meaningful learning is provided by associating the information in the learning fields. Revealing the cognitive structures of the students related to the active citizenship learning field, which is within the scope of the social studies discipline, provides information about the realization of the meaningful learning goal (Doğanay, 2008). Social studies programs aim to raise principled citizens in themselves. The cognitive structures of the students related to the active citizenship learning unit are indicative of the level of realization of these goals. The fact that this field of study adopts the principle of raising individuals with various skills, respectful to democratic values, and social consciousness also serves the purpose of the social studies course (Parker, & Jarolimek, 1984). Especially in recent years, it has been accepted by societies that social studies have an undeniable effect on the ideal of being an active citizen. This situation was supported by the active citizenship learning unit. This learning unit aims to raise individuals who have acquired moral values, are conscious of human rights and are highly aware of the obligations of their rights. This emerging situation responds to the expectation of the society about the active citizen (Ross, 2006).

In the literature, there are studies on the field of active citizenship learning (Akar, 2021; Avcı, et al., 2020; Çağrı, 2020; Yeler, & Ocak, 2021). It is seen that the studies are not aimed at examining the cognitive structures of the students related to this learning unit. The aim of this study is to reveal the cognitive structures of students at different grade levels towards the learning domain of active citizenship. At the same time, this study is also important in terms of making determinations about whether there is conceptual confusion about the concepts in the learning field.

Method

The research's based on survey model since it is tried to explain the existing cognitive structures of secondary school students regarding the concepts of institution, organization, management, participation and active citizen. In descriptive studies, the situation that is the subject of the research is described in its own conditions and as it exists (Karasar, 2012).

Participants

The participants of the study consist of 213 students studying in 5 (n=71), 6 (n=70) and 7th grades (n=72), one private and two public secondary schools located in a city center in Turkey. 108 of the students are female and 105 are male. While determining the schools, diversity was tried to be ensured, and students taking the social studies course were included in the study.

Data Collection and Analysis

The cognitive structures of the students for the concepts selected from the active citizenship learning unit of the social studies course curriculum were collected by using the word association test. On the first page of the word association test, an application example and an instruction on how to perform the application are presented. Then, a page layout was created with each concept on one page. Key concepts were written ten times under each other to prevent chain response risk (Bahar, & Özatlı, 2003). During the application phase of the test, a 45-second period was given for each key concept, and students were asked to write down the words that came to their minds about the key concept during this time. The process was completed in 10 minutes, including the necessary instructions about the test and the sample application.
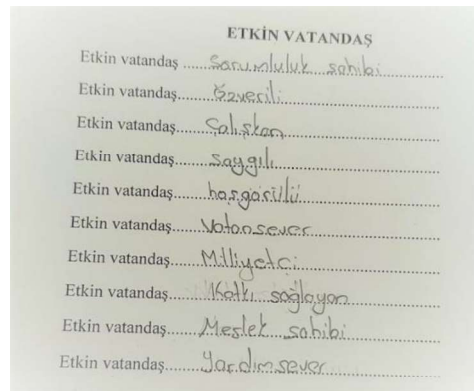

Figure 25. Response sheet of one of the participants

After the implementation of the WITs, the words obtained regarding the concepts were examined in detail and a

table showing the frequency of the words was prepared. Considering the frequencies in the table, word clouds and concept networks were created. While the frequency of the words produced about the key concepts are included in the word clouds, the relationships between the words and concepts in the cut-off range determined by using the cut-off points technique (Bahar, Johnstone, & Sutcliffe, 1999) are shown in the concept networks. For example, concepts with a cut-off point in the range 31-45 represent participant-generated response words between 31-45.

Results

The results obtained from the research are presented with tables and figures. The frequencies of the words produced for the concepts of institution, organization, management, involvement, and active citizen are given in Table 1, and the frequency of the words produced for each key concept, taking into consideration the frequencies, is given in the word clouds.

Table 1. Frequencies of produced words related to key concepts

Response words	Key words				
	Institution	Organization	Management	Involvement	Active citizen
Important	2	1	3	2	1
Private	4	-	1	-	1
Family	4	1	1	-	-
Educational	5	1	-	-	-
Organization	9	-	2	-	-
Country	-	43	33	-	10
Place	9	3	7	-	-
Region	-	1	-	-	-
Established	2	6	-	-	-
Institution	-	13	4	1	-
Good	-	-	3	1	19
Leadership	1	-	23	1	-
Presidential	7	-	112	5	1
Control	-	-	1	-	-
Socialization	-	-	1	-	1
Rationale	-	-	-	1	-
Saving	-	-	-	-	2
Beauty	-	1	-	-	1
School	160	27	25	4	1
Hospital	58	16	3	-	-
Public	-	-	4	2	3

Election	-	2	8	6	5
Involvement	1	-	2	2	1
Vote	-	1	6	24	46
Nation	3	1	1	-	1
Republic	1	3	4	-	-
Authority	-	1	2	-	-
Principal	11	-	69	-	-
Responsibility	-	-	2	1	51
Tax	-	-	-	-	57
Patriot	-	-	-	-	10
Community	5	3	-	-	-
Justice	-	-	4	-	5
Manage	12	4	8	7	-
Right	-	-	2	1	17
Democracy	-	-	8	6	3
Rule	-	-	1	-	2
Political	1	-	1	-	-
Mindfulness	-	-	-	-	59
Helpful	-	-	-	-	35
Individual	-	1	-	4	9
State	22	16	22	2	2
Governor	10	-	34	-	-
Civil society	-	11	-	-	-
Municipality	15	-	12	-	-
Ministry of National Education	2	1	1	-	-

Figure 26. Frequency of words produced about the institution key concept

The frequency of the words produced by the students regarding the institution key concept is presented in the word cloud image above (Figure 2). The words most frequently associated with the key concept are school

(f=160), hospital (f=101), state (f=22), municipality (f=15), manage (f=12), principal (f=11) and governor (f=10).

Figure 1. Frequency of words produced about the organization key concept

The frequency of the words produced by the students regarding the key concept of organization is presented in the word cloud image above (Figure 3). The words most frequently associated with the key concept are country (f=43), school (f=27), hospital (f=16), state (f=16), institution (f=13) and civil society (f=11).

Figure 2. Frequency of words produced about the management key concept

The frequency of the words produced by the students regarding the key concept of management is presented in the word cloud image above (Figure 4). The words most frequently associated with the key concept are president (f=112), principal (f=69), governor (f=34), country (f=33), school (f=25), state (f=22), leadership (f=13) and municipality (f=12).
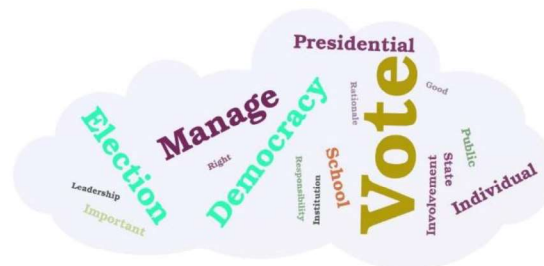

Figure 3. Frequency of words produced about the involvement key concept

The frequency of the words produced by the students regarding the key concept of participation is presented in

the word cloud image above (Figure 5). The words most frequently associated with the key concept are vote (f=39), manage (f=7), democracy (f=6), election (f=6) and presidential (f=5).

Figure 4. Frequency of words produced about the active citizen key concept

The frequency of the words produced by the students regarding the active citizen key concept is presented in the tree image above (Figure 6). The words most frequently associated with the key concept are mindfulness (f=59), tax (f=57), responsibility (f=51), helpful (f=35), vote (f=31), right (f=30), patriot (f=22), good (f=19) and country (f=10). In the analysis of KIT results, the number of common answer words given to key concepts and the order in which they are said are also important, as well as the types and frequency of the answer words given to the key concepts. It enables the analysis of semantic closeness between these keywords and transforming it into a concept network. The concept network is constructed using data from the frequency table. The concept networks prepared for the answer words given to the key concepts in the research with a frequency value above 15 are shown below.
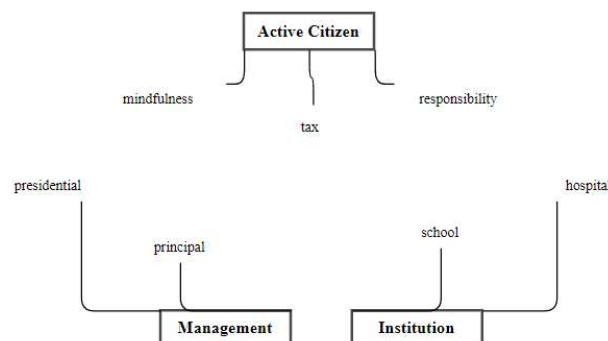

Figure 5. Concept network structured according to cut-off point 46 and above

In Figure 7, there is a concept network created according to the cut-off point 46 and above. When the figure is analyzed, it is seen that the key concept of active citizen is associated with the word's mindfulness, tax and responsibility, the key concept management with the words president and principal, and finally the key concept institution with the words school and hospital. There was no relationship between key concepts in this range.
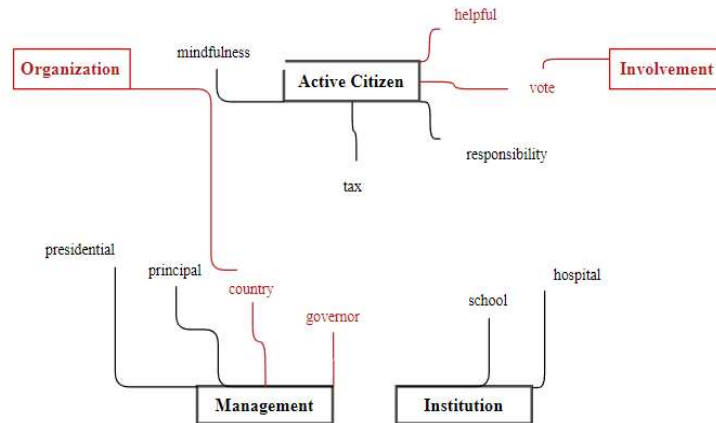
Figure 6. Concept network structured according to cut-off point 31 and 45 range

Figure 8 shows the concept network created for the breakpoint between 31 and 45. When the figure is examined, it is seen that words related to the key concept of involvement (vote) and organization (country) are produced. Relationships between key concepts started in this interval, thanks to the word vote, between the concepts of active citizen and involvement; Thanks to the word country, a relationship has been established between the key concepts of organization and management. In addition, the word helpful was produced for the concept of active citizen.
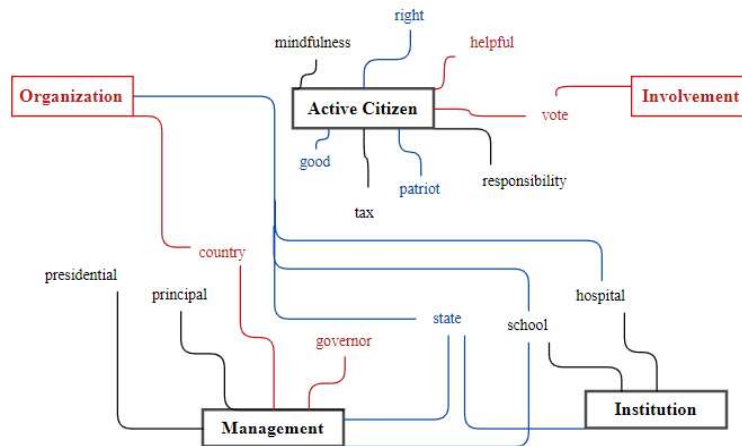

Figure 7. Concept network structured according to cut-off point 16 and 30 range

Figure 9 shows the concept network created for the breakpoint between 16 and 30. It is seen that words related to the active citizen (right, patriot, good) and management (state) key concepts are produced when the figure is observed. According to associations between the key concepts, it is clarified that there is a relationship between the concepts of organization, management and institution thanks to the word state. In addition, in this interval, the answer word school mediated the link between the key concept of institution and organization and management.

Conclusion, Discussion and Recommendations

In this study, the cognitive structures of the students for the key concepts of institution, organization, management, involvement, active citizen in the 7th grade active citizenship learning field were studied. It has been observed that the students derive 48 different words while associating the given key concepts. The fact that the resulting words are semantically far from each other can be interpreted as different cognitive structures of the students. It is seen that the key concept of Institution is associated with words such as school, hospital, state, municipality. Considering the words associated with the concept of Institution, it is seen that each of them is state-affiliated institutions. The fact that students especially relate the concepts of institution and state enables us to confirm that they accept institutions as parts of the state. Studies in this area also confirm the discourse that the state cooperates with institutions. Ayhan (2009) claims in his study that the prerequisite for the existence of nations by becoming a state is to have institutions.

It has been seen that they associate the key concept of organization with words such as country, school, hospital, civil society. The reason why they associate the key concept of organization with the word civil society may be the similarity in the pronunciation of the words. Besides, the first thing that comes to mind when it comes to organization in society is civil society. This may be due to civil society organizations influencing people with their beneficial activities. Şahin and Akboğa (2019) supported this view with their studies. According to this study, people wanted to be a part of civil society institutions in order to be involved in democracy and be beneficial to society. The fact that the words associated with the concepts of institution and organization are the same indicates that there is conceptual confusion regarding these two key concepts.

The key concept of management is often associated with words such as president, principal, governor, country, school. Associating the key concept with the qualifications representing the managerial position of various institutions allows us to say that the concept of management is positioned correctly in the cognitive structures of students. We can also interpret that people in these positions are seen as leaders by looking at the associated words. Bulut and Bakan (2005) expressed a similar view in their studies and associated the concept of management with leadership. They stated that people who are managers should also have leadership characteristics. The keyword involvement is associated with words such as vote, manage, democracy. Considering the words associated with the concept of involvement, it can be said that this concept has a political counterpart in students' cognitive structures. In the studies in the literature, the concept of involvement has mostly been used to meet a political meaning (Eser, & Sarışahin, 2016; Gökçe, Özdemirci, & Ceylan, 2017; Gökçimen, 2008; Özdemir, 2019; Özgişi, 2014).

Participants often associated the key concept of active citizen with words such as mindfulness, tax, responsibility, helpful, vote, right, patriot. Based on the associated words, we can interpret that the person defined as an active citizen has positive characteristics in students' cognitive structures. In addition, the concept of active citizen has been associated with words expressing some social duties. A similar situation is also valid

in the studies in the literature. In the study of Kara, Topkaya and Şimşek (2012), students defined active citizens as citizens who know their rights and responsibilities. In the study conducted by Aydın and Çelik (2017), the students emphasized that the person defined as an active citizen should be beneficial to the society. Dere and Akdeniz (2021) stated in their study that a person who is defined as an active citizen should be helpful, patriotic and responsible. In their study, Eryılmaz, Bursa, and Ersoy (2018) stated that with the concept of active citizen, participatory, conscious, using their rights correctly and responsible people should come to mind.

While the key concepts of organization, management, institution are related through the answer words state, school; There is no common relationship including the concept of active citizen and involvement. The fact that the relationship between concepts belonging to the same learning unit is limited, based on common words, can be interpreted as the fact that the students cannot make enough connections between these concepts and therefore cannot make enough sense of them. The fact that the words associated with some concepts cannot meet the meaning in the literature shows that there is conceptual confusion in students.

In the findings, while the frequencies of the concepts of organization, management and active citizen are high, institution and involvement is striking that the frequencies of concepts are significantly low. This shows that while some of the concepts have equivalents in students' cognitive structures, their knowledge of some of them is limited. The gap in the cognitive structures of the students for these concepts may have been caused by the lack of learning or the forgetting of some information by the students. Learning is a process in which knowledge and skills are acquired for the student. In this process, the active participation of the student in the process should be ensured by the instructor in order to ensure permanent learning (Ünal, 1999). On the other hand, the parallelism of the words that students associate with key concepts with titles such as rights, responsibilities, benevolence, citizenship in the 5th, 6th, and 7th grade social studies textbooks shows that students achieve a certain level of success towards the goals of this learning unit.

- ✓ Studies can be carried out to identify and eliminate misconceptions about the learning field.
- ✓ By identifying the key concepts that students have the most difficulty in producing words, interdisciplinary studies can be carried out to teach these concepts.
- ✓ By organizing trips to various institutions and organizations, which are among the key concepts, it can be ensured that students gain concrete experiences regarding these concepts.

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