



## PROSPECTIVE TEACHERS' PERCEPTIONS ABOUT CONCEPT OF MIDDLE EAST THROUGH WORD ASSOCIATION TEST<sup>1</sup>

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### Abstract

The present study aims to reveal prospective teachers' cognitive structure about the Middle East through Word Association Technic (WAT). Research sample consisted of 420 prospective teachers studying at Ömer Halisdemir University Education Faculty and Kilis 7 Aralık University Education Faculty. Data were collected through WAT. As result of WAT, frequency table including key concepts and answer words was prepared. According to this frequency table concept network were drawn by the researcher. Results indicated that the prospective teachers mostly associated the Middle East with oil and war. This finding is similar to previous studies conducted through prospective social studies teachers. Moreover perception of the Middle East among the participant prospective teachers varies between the universities. Prospective teachers from Ömer Halisdemir University generally associate the Middle East with general words such as Saddam Hussain, Egypt, Turkey, weapon, Arab Spring, kingdom-sheikh while the participant prospective teachers from Kilis 7 Aralık University mostly associate the Middle East with death, massacre, bomb, rocket, poverty, section clashes, and dictator. In other words, it can be concluded that while the prospective teachers have general knowledge about the Middle East, the prospective teachers studying in Kilis 7 Aralık University have perception based on geography where they live, and experience that they underwent. This finding can be viewed as a proof that living place influence perception. Furthermore, it can be concluded that WAT is effective way in disclosing cognitive structure of individuals.

**Keywords:** Middle East, cognitive structure, word association test, prospective teachers.

### Introduction

The hypothetical construct representing the organization and relationships of concepts in a learner's long-term memory can be defined as cognitive structure (Tsai, 2001; Tsai & Huang, 2002) and it is the dominant determinant for the reconstruction of incoming stimuli (Tsai, 2001). Cognitive structure provides a stable and organized framework to construct new knowledge (Anderson, Randle, & Covotsos, 2001; Aktaran, Atabek-Yiğit, 2016). Therefore by exploring students' cognitive structures, educators can have an insight to "how learning occurs". Investigation of the organization and the relations between student's concepts can

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give information about their organization of knowledge. Therefore educators can get a chance to create better learning environments (Atabek-Yigit, 2015). There are several methods to externalize (or derive some Picture of the relations held between concepts] and to measure the cognitive structure of students. A word association test is one of the commonest and oldest methods for investigating cognitive structure, and has been used by several researchers (Deese, 1965; Shavelson, 1973, 1974; Geeslin & Shavelson, 1975; Preece, 1976, 1978; Johnstone & Moynihan, 1984; Carrie, 1984; Cachapuz & Maskill, 1987). The underlying assumption in a word association test is that the order of the response retrieval from long-term memory reflects at least a significant part of the structure within and between concepts (Shavelson, 1972). In a word association test, the degree of overlap of response hierarchies is a measure of the semantic proximity of the stimulus words (Deese, 1965; as cited in Bahar, Johnstone & Sutcliffe, 1999).

As result of constructive learning approach it was understood that traditional measurement and assessment has drawback in identifying knowledge and conceptual change and alternative and different strategies are needed. Researchers have become interested in student's conceptual structures and relationships between concepts, harmony between their self-constructed knowledge and real words in science. Furthermore, conceptual structure, conceptual relationships in this structure, strategies identifying those conceptual relationships are so important (Bahar, Nartgün, Durmuş & Bıçak, 2014).

Cognitive structure is a kind of network that allows description of conceptual density and relationships in mind. Conceptual change strategies refer to techniques that enable monitoring changes in concepts and relationships (Wandersee, Mintzes & Novak, 1994). Word Association Tests, Structural Communication Grid, Clinical Interview, Interviews about Instances and Events, Prediction-Observation and Explanation), Concept Maps, Related Diagrammatics, Classroom discussions, Computer Simulations, Diagnostic Tree, Journal Writing, Conceptual Change Texts, Discussion Web, analogy are those techniques (Bahar, 2003).

Several of conceptual change strategies (prediction-observation-explanation, conceptual change texts, and analogy) are employed as way of teaching instruction, some of them (Word association test, structured grid, diagnostic tree) are used as a way of measurement and assessment. Moreover some of them (concept cartoons) are used as both way of measurement and assessment, instructional strategy. WAT is one of the most widely used strategy in identifying conceptual structure. (Ercan, Taşdere & Ercan, 2010:138).

WAT is described as a alternative measurement and assessment strategy that allow to observe conceptual structure, investigate relations among concepts in long-term memory (Bahar, Johnstone & Sutcliffe, 1999; Bahar & Özatlı, 2003:75; Özatlı & Bahar, 2010:10).

In development of WAT, 5-10 key concepts are determined. Those concepts are iteratively written 10-15 times in a sequence on a sheet. The first page includes instructions and the second page includes a sample. Students are asked to write what those concepts evoke themselves in 30 seconds. Teacher decide whether student pass another concept or not. It is very crucial that each of the concepts cannot be seen on following sheets. This prevents probability of chain response. Because, if a student returns the concept, he can write what he knows about the concept. After students complete key concepts, WAT is taken back and evaluated by the teacher (Güneş & Gözüm, 2013:252; Kırtak, 2010:39; Işıklı, Taşdere & Göz, 2011:55).

WAT is used both as measurement-assessment strategy and as a diagnostic instrument. Before the course WAT is administered as pre-test, it can be carried out as post-test after the course. Pre-test and post-test results are compared. Thanks to this conceptual change among students can be monitored (Bahar, Nartgün, Durmuş & Bıçak, 2014).

WAT can be evaluated in two ways. In the first way of evaluation, rating is taken into consideration. If student response is true, one point is given to his response and test point can be calculated. Teacher may demand students to write a sentence in order to define whether the response is meaningful. Second way of evaluation depends on frequency of responses. A frequency table is prepared. This frequency table enables observing cognitive structure and conceptual relations. In creating concept network cut-point developed by Bahar, Johnstone, and Sutcliffe (1999) can be used. Cut-point represents the first schema which composes of the highest frequency, while cut-point which is drawn downward indicates concept network until it goes out concept network. According to this technique, the most repeated response is used as downward cut-point for any concept. Response repeated more than this cut-point is written into the first section. Afterwards, cut-points are taken down in certain intervals, and this operation continues until each concept is revealed. Concepts emerged in each of cut-points repeated as many as the number of students in this interval. For instance, concepts emerged 20-29 intervals are responded by 20-29 numbers of students. This kind of concept map proves how students perceive relations between concepts and lead to discovering new relations. Teacher queries his instructional strategy and emphasizes missed concepts (Işıklı, Taşdere & Göz, 2011: 56; Güneş & Gözüm, 2013:254).

WAT does not take so much time so it is easy to prepare, apply and evaluate. Therefore, it can be preferred by teachers and applied on mass number of students (Tokcan, 2015:150).

WATs have been used for different purposes. It was used in identifying conceptual structure and perceptions (Bahar, Johnstone & Sutcliffe, 1999; Cardellini & Bahar, 2000; Şimşek, 2013; Atabek-Yiğit, 2016; Aydemir, 2014; Işıklı, Taşdere & Göz, 2011; Özata-Yücel & Özkan, 2014; Özata-Yücel & Özkan, 2015; Köseoğlu & Bayır, 2011; Kurt, 2013; Kurt & Ekici 2013; Kurt, Ekici, Aktaş & Aksu 2013a; Kurt, Ekici, Aktaş & Aksu 2013b; Özatlı & Bahar, 2010; Polat, 2013; Eren, Şahin, Çelik & Aktürk, 2014; Tokcan, Yiter, Oğuz, Kesmeçi & Karakuş 2015; Tokcan, 2016; Tokcan & Topkaya, 2016; Yiğit, 2016; Bahar & Özatlı, 2003; Ercan, Taşdere & Ercan, 2010) in discovering conceptual change on students (Nakiboğlu, 2008), establishing conceptual relation (Bahar & Hansel, 2000; Kırtad & Demirci, 2012), determining preparedness of students (Güneş & Gözüm, 2013). However those studies were conducted in science teaching.

There are very few studies in social studies (Şimşek, 2013; Arcan, 2014; Tokcan, Yiter, Oğuz, Kesmeçi & Karakuş 2015; Tokcan, 2015; Tokcan, 2016; Tokcan & Topkaya, 2016).

## **Method**

### **Aim of the Study**

Due to civil wars in the Middle East, Turkey has experienced an intense migration. The fact that the high number of migrants has given rise to a major influence and pressure on the society. In this context, the concept of Middle East is creating different perceptions in Turkey. Therefore, this study aims to prospective teachers' conceptual structure about the concept of "Middle East" through WAT.

### **Design of the Study**

The present study is descriptive survey research. Descriptive survey research describes a situation which exist or existed in the past (Karasar,1999).

### **Study Group**

Study group consists of 420 prospective teachers studying in Ömer Halisdemir University and Kilis 7 Aralık University. 210 of them are from Ömer Halisdemir University, 210 of them are Kilis 7 Aralık University. Students from the same departments in the education faculties of the universities in the Niğde province where Syrian refugees live the

least, and in the Kilis province where Syrian refugees live the most, were selected. Table 1 indicates characteristics of study group.

**Table 1.** Characteristics of Study Group

University	Science Education		Primary Education		Social Studies Education		Turkish Language Education	
	M	F	M	F	M	F	M	F
Ömer Halisdemir	20	17	26	33	50	26	18	20
<b>Total</b>	<b>210</b>							

University	Science Education		Primary Education		Social Studies Education		Turkish Language Education	
	M	F	M	F	M	F	M	F
Kilis 7 Aralık	34	2	28	9	58	37	32	10
<b>Total</b>	<b>210</b>							

### Data Collection Instruments

WAT form was used to collect data. The relevant literature has been examined and the concept to be used in the word association test has been determined after expert opinion has been obtained. WAT form was displayed in Figure 1.

**Figure 1.** Sample of WAT

Cinsiyetiniz: Kız (X) Erkek ( )  
 Fakülte: Muallim Rifat Eğitim Fakültesi  
 Anabilim Dalınız: Fen Bilgisi Öğretmenliği Sınıf: Hazırlık ( ) 1 ( ) 2 ( ) 3 (X) 4 ( )

Ankara	Başkent
Ankara	Atatürk
Ankara	Anıtkabir
Ankara	Kedi
Ankara	Keçi
Ankara	Meclis
Ankara	Soğuk
Ankara	İç Anadolu
Ankara	
Ankara	

Ortadoğu	savaş	Ortadoğu	katledilen çocuklar
Ortadoğu	göçebe	Ortadoğu	ölüm insanlık
Ortadoğu	ayrımçılık	Ortadoğu	reket
Ortadoğu	suçlu	Ortadoğu	bomla
Ortadoğu	isid	Ortadoğu	zalimlik
Ortadoğu	korku	Ortadoğu	Allaha Haat
Ortadoğu	zavallı	Ortadoğu	
Ortadoğu	fakir	Ortadoğu	
Ortadoğu	petrol	Ortadoğu	
Ortadoğu	musulmanlık	Ortadoğu	
Ortadoğu	kanal	Ortadoğu	

The first concept (Ankara) on the WAT is an example for prospective teachers to understand how to fill out the form. The second concept (Middle East) is that prospective teachers should answer. Before WAT was conducted, instructions about WAT form were given. One minute was given to the prospective teachers to respond and they wrote their responses which they thought related to concept of “Middle East” on the WAT form.

### Data Analysis

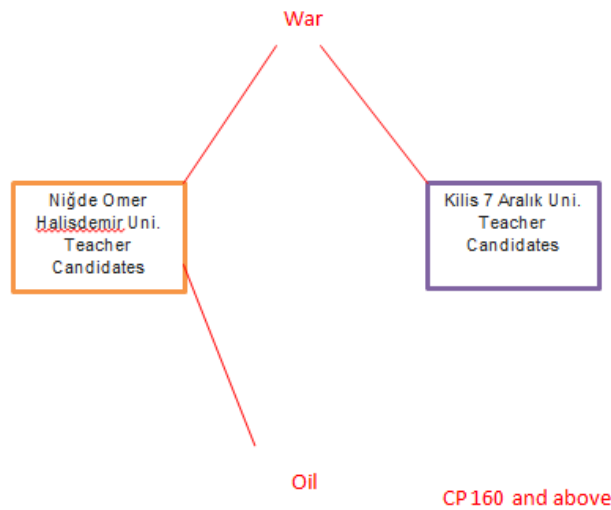
Responses were examined in detail. Frequency table was prepared which indicates how many responses were repeated. Concept network was devised by taking this frequency table into consideration. In development of concept network cut-point invented by Bahar, Jonstone and Sutcliffe (1999) was used. According this way of analysis, responses of low interval for the most repeated response is assigned as cut-point for each of concepts.

Responses over this interval and frequency are written in the first section of the concept network. Afterwards, cut-point is taken down by certain intervals and until every key concepts emerges in the network, this operation is repeated. For example, key concepts emerged between 40-59 intervals, are determined as answer word by 40-59 prospective teachers.

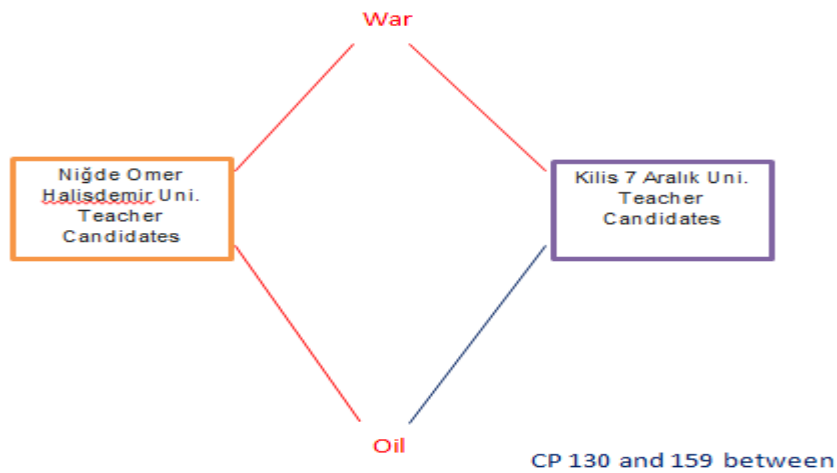
## Results

Conceptual network was prepared through frequency table and indicates cognitive structure of the prospective teachers. The conceptual network was displayed as follows.

The Concept network was interpreted as follows.

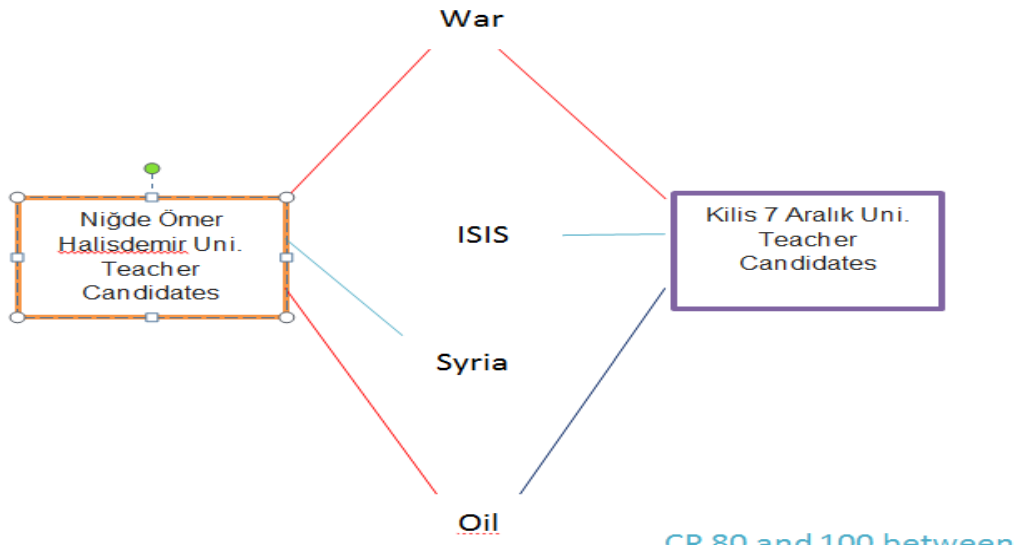


**Cut-Point for over 160:** Prospective teachers from both of the universities associated the Middle East with war word. In addition to that, the prospective teacher from Ömer Halisdemir University associated the Middle East with oil, one of the natural resources in the region.

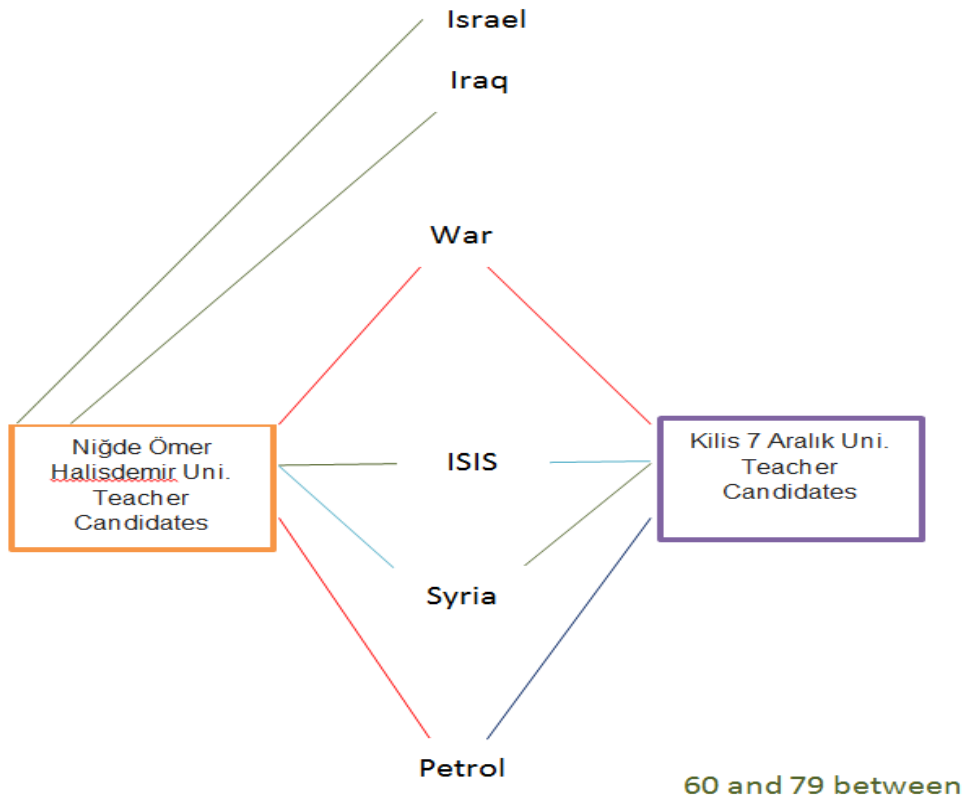


**Cut-point between 130 and 159:** In this interval, no new word emerged but it was observed that word of oil emerged from the responses of the prospective teachers from Kilis 7

Aralık University in this interval which emerged cut-points for 160 and over among Ömer Halisdemir University prospective teachers. In other words, oil was mostly associated with the Middle East after word of war.

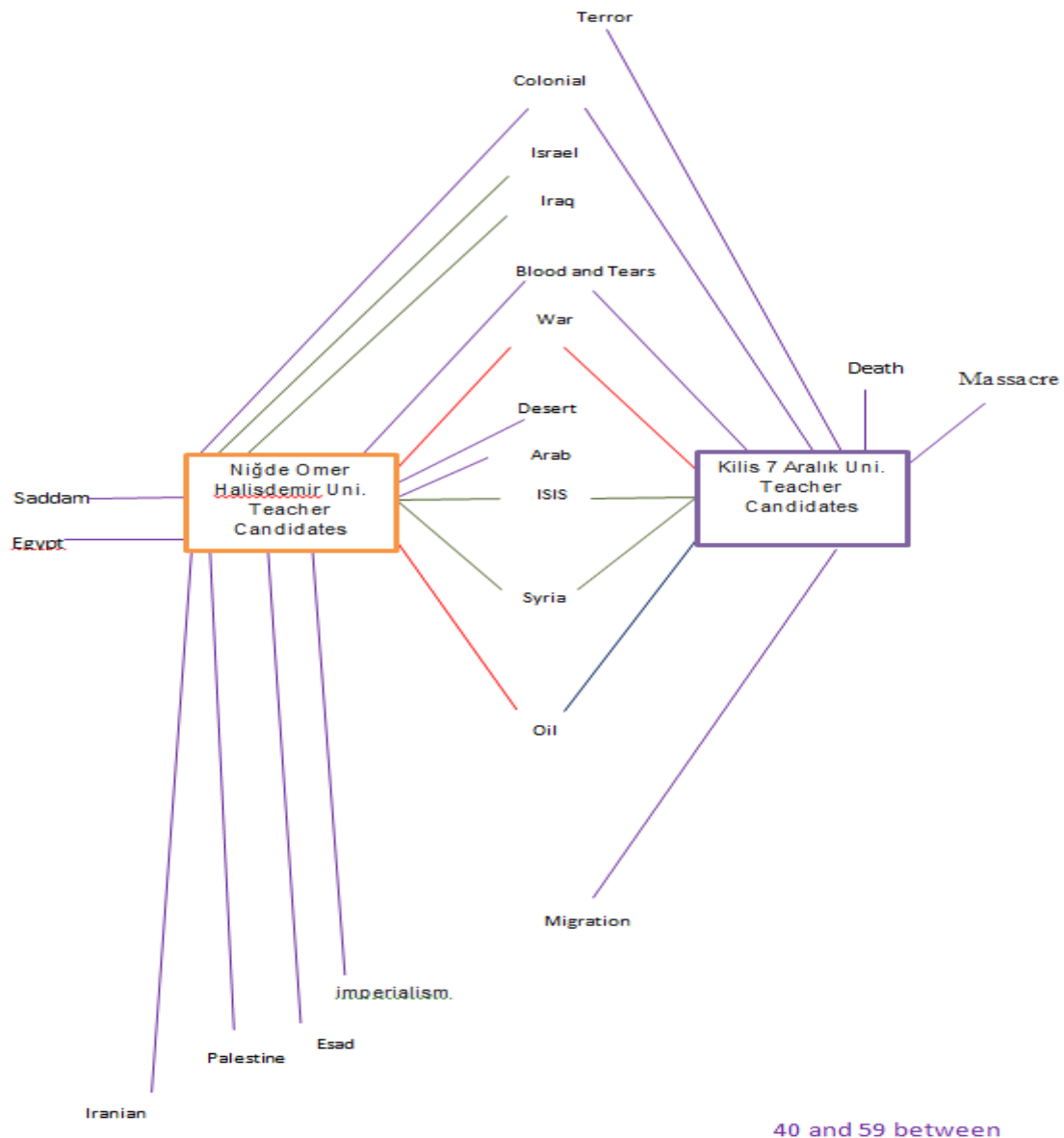


**Cut-point between 80-100:** No new word emerged in cut-point between 100-130 and responses for cut-point between 80-100 were addressed. One word appeared for the prospective teachers from both of the universities. In this interval, the prospective teachers studying in Ömer Halisdemir University associated the Middle East with Syria while the prospective teachers from Kilis 7 Aralık University associated the Middle East with ISIS.



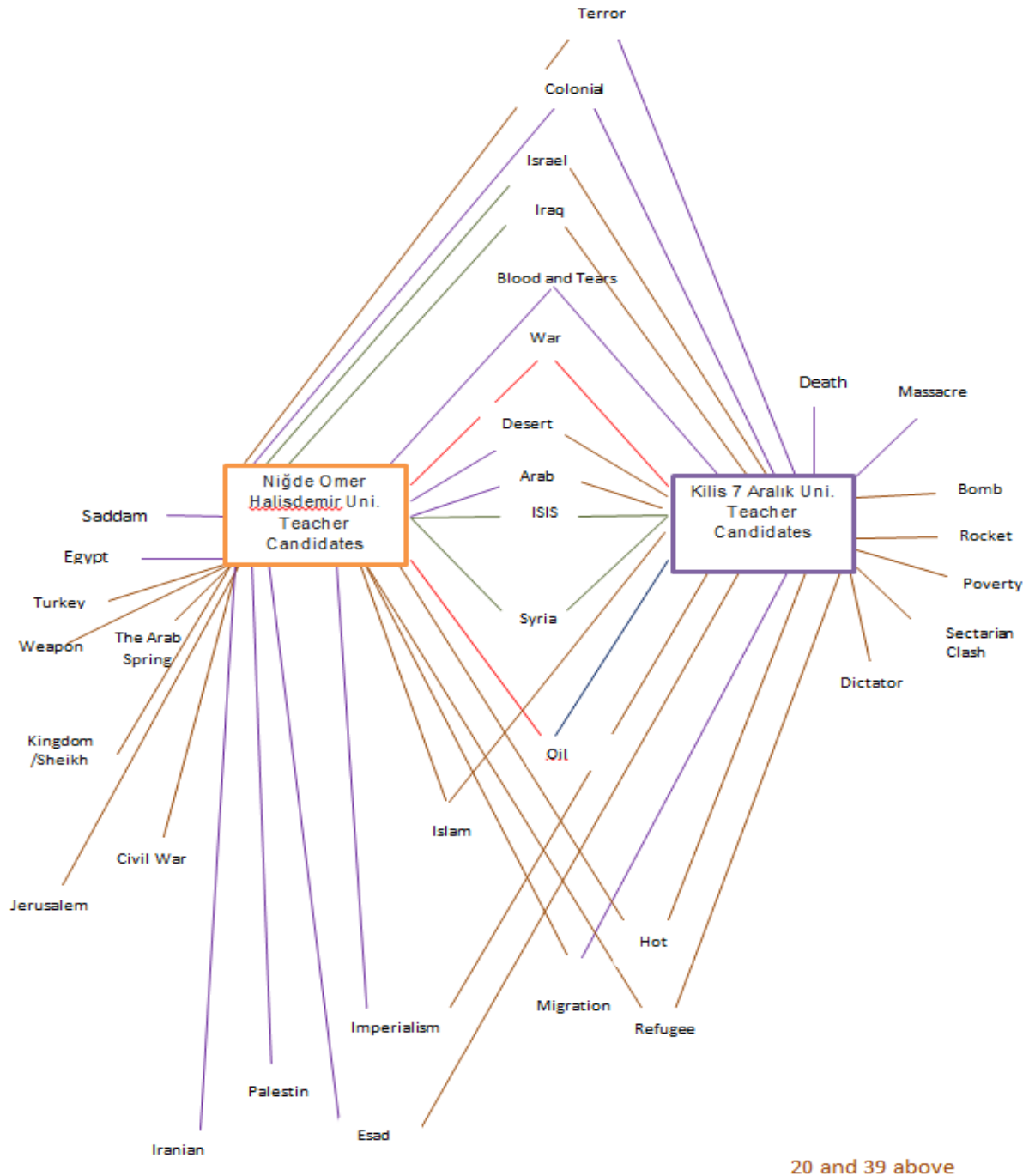


**Cut-point between 60-79:** In this interval, it was seen that Syria that was emerged in cut-point between 80-100 among Ömer Halisdemir prospective teachers, was emerged among Kilis 7 Aralık University prospective teachers in this interval. ISIS which was emerged in 80-100 intervals among Kilis 7 Aralık University in 80-100 intervals appeared as new words among Ömer Halisdemir University prospective teachers in this interval. Moreover, prospective teachers from Ömer Halisdemir University associated the Middle East with Iraq and Israel.



**Cut-point between 40-59:** Blood, tear, and exploitation are the concepts which were mostly associated with the Middle East by the prospective teachers from both of the universities. However, the prospective teachers from both of the universities developed perceptions which were independent and irrelevant. Ömer Halisdemir University Prospective

teachers make association between Assad, Saddam Hussain, Egypt, Iran, Palestine, and imperialism in this interval. The prospective teachers from Kilis 7 Aralik University associated the Middle East with terror, death, massacre, and migration which are present problem in the Middle East.



**Cut-point between 20-39:** In this interval clear, common, and different relations emerges. Refugee, one of the major problem, Islam, common faith, and hot as result of the climate in the region emerged among the prospective teachers from Kilis 7 Aralik University, while desert, Arab, Iraq, Israel, imperialism, and Assad were associated with by the

prospective teachers from Ömer Halisdemir University in this interval. It was seen that the prospective teachers from both of the universities developed perceptions which are irrelevant, and independent to each other. Omer Halisdemir University prospective teachers associated the Middle East with Turkey, weapon, kingdom, sheikh, domestic war, whereas Kilis 7 Aralik University prospective teachers associated the Middle East with bomb, rocket, poverty, section clash, and dictator.

### **Discussion and Conclusion**

The prospective teachers from both of the universities mostly associated the Middle East with war and oil. This result can be viewed as proof that the prospective teachers from both of the universities identify the Middle East with oil and war. These results are similar to the research findings previously conducted on social studies prospective teachers. Yılmaz and Yiğit (2010) conducted a research on prospective social studies teachers and concluded that the social studies prospective teachers perceive the Middle East as oil, war, battle field, boiling pot, dangerous region, benefit clashes, chaos, disorder, the USA, Islamic countries. Common characteristics among statements of the prospective teachers are the fact that there are rich oil resources in the Middle East, these natural resources have been exploited by European countries and the USA which have understanding of foreign affairs based on exploitation and imperialism and as a result of unending wars. According to the participants, the Middle East is field in which super powers aiming to retain natural resources have carried out a policy that lead to perpetual disorders and wars. Aksoy and Karaçalı (2014) examined perceptions of prospective social studies about the Middle East through interview and reported that the prospective teachers view the Middle East as concept that is closely related to the domestic disorders and natural sources.

Syria, Iraq, and Israel, ISIS which have been active in the region, were considered as concept that is closely related to the Middle East by the prospective teachers from both of the universities.

When perceptions of the prospective teachers about the Middle East that within 40-59 and 20-39 intervals are investigated, it can be observed that location of the universities according to their distance to the Middle East vary. Within those intervals common perceptions are exploitation, blood, tear, refugee, Islam, and hot. On the other hand the prospective teachers' cognitive structures related to the Middle East change and the prospective teacher produce different and incoherent concepts related to the Middle East. Within this intervals, the prospective teachers from Ömer Halisdemir University more

emphasized Saddam Hussain, Egypt, Turkey, weapon, Arab Spring, kingdom, sheikh, whereas the prospective teachers from Kilis 7 Aralık University related the Middle East to death, massacre, rocket, poverty, section clash, and dictator. In other words, the prospective teachers from Ömer Halisdemir University have general knowledge, while the prospective teachers from Kilis 7 Aralık University have more detailed knowledge dependent on the location where they live. When this result is taken into consideration, the rocket fall events which were experienced in 2016 influenced perception of the prospective teachers who study in Kilis 7 Aralık University. This finding is supported by Cin (2008), because Cin (2008) concluded that the geography influence attitudes.

As result of WAT and research, it can be concluded as follows:

- WAT can be used as alternative technique in social studies to determine misconceptions about concepts in social studies.
- Different studies on location and perception can be conducted in future researches.
- The present study was designed descriptive survey research, which aim to define an event. WAT can be used in different research designs as pre-test and post-test instrument in experimental designs.

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