



Compilation on Metacognition Concept

Ayşenur Kuloğlu¹, Osman Karahan², Veli Batdı¹, Hasan Aydemir³, a. Egemen Akmençe¹

¹Firat University Faculty of Education, ²Hakkari University Faculty of Education, ³nonu University Faculty of Education (Turkey)

akuloglu33@hotmail.com

Abstract

The purpose of this study is to analyze the dissertations which prepared from 2005 to 2013 on metacognition concept from different aspects. The study has been carried out by the method of documentation and analysis of them. The data of this research is 55 postgraduate dissertations which are obtained by searching key words related to metacognition. The dissertations obtained in this study has been analyzed in terms of purpose, type of study, date of study, method and results. According to analysis, it is determined that most of these dissertations about metacognition are master degree dissertations, they are mostly prepared in 2012 and experimental method has been used mostly. When we look through the purposes of the research, it is seemed that there are studies regarding to defining the effects of individual's metacognitive skills on academic achievement and attitude. Then, definition of person's metacognition level and metacognitive learning strategies follow this. According to results of the analysis, it is observed that the courses which are carried out by using method of metacognitive thinking and skills improve metacognitive level and skills and these strategies also improve academic achievement and the attitude towards lesson. Moreover, some variables are effective on metacognitive level. According to some other research results, it is observed that it has both positive and negative effects on reading strategies and understanding what you read. In brief, with regards to thesis, concept of metacognition in learning and teaching process has been paid attention and given much importance recently.

1. Introduction

This concept which is called as "metacognition" in English and in our country, is known as "metacognition", "executive cognition", "cognition of cognition" and "beyond cognition".

The metacognition concept with its simplest definition as "thinking with cognition" or "thinking about thinking" is one of the subjects which has drawn attention in recent years (Aktürk and Şahin, 2011). However, there is no accurate definition on this concept and discussions are still continuing. The reason of not having sufficient definition is that there is not enough research on this subject and because of not being explained of this concept with its all aspects. Another reason is that there are many term for only one concept such as "metacognition", "executive cognition", "cognition of cognition" and "beyond cognition" and these terms are used on behalf of the other. (Akin, 2006). According to Flavell, metacognition is "one's knowledge about cognitive process and controlling the cognitive process of knowledge" The following studies of Flavell, he defined motacognition as "cognition and knowledge about cognitive concept" (Flavell, 1979; Akt. Pilten, 2008). According to Woolfolk (1988) metacognitoin is a process which controls the process of acquiring information. This process includes attention, regular repetition, detailed repetition, organizing the information and making it more detailed. According to him, producing a strategy by using metacognition is affected by personal differences (Akt:Candan,2005).



2. Method

This study whose purpose is to analyze the dissertations which prepared from 2005 to 2013 on metacognition concept in terms of purpose, type of study, date of study, method and results has a descriptive feature and its method is documentation. Documentation can be defined as collecting data studying some other records and information. The process of documentation consists of finding the sources for specific purpose, reading them, taking notes and evaluation. Screening method is based on taking sample from the universe and explaining and defining the situation (Karasar, 2005). The data of this study was obtained from 55 post graduate dissertation found in Documentations and International Information Searching Center of YOK. For interpretation of this data descriptive statistics “f” and % were used.

3. Finding and Interpretation

3.1. Demographic Classification of the Dissertations on Metacognition

3.1.1 Finding and Interpretation of the Dissertations on Metacognition as Type of Study

Table.1. Classification of the Dissertations on Metacognition as Type of Study

Type of Study	Master Degree	Doctorate
f	30	25
%	54.5	45.5

When table 1 is examined, the master degree dissertation about metacognition is f=30 (%54.5) and doctorate degree dissertation is f=25 (% 45.5) as type of study. Meanwhile, when the study results are checked, it found out that most of these researches are master degree dissertation.

3.1.2. Finding and Interpretation of the years of Dissertations on Metacognition

Table.2. Classification of the Dissertations on Metacognition according to years

Yıl	2005	2006	2007	2008	2009	2010	2011	2012	2013
F	2	2	5	4	7	9	9	12	5
%	3.6	3.6	9.1	7.3	12.7	16.4	16.4	21.8	9.1

When table 2 is examined, it can be seen that the post graduate dissertations about metacognition are divided into years as f=2 (%3.6) in 2005, f=2 (%3.6) in 2006, f=5 (9.1) in 2007, f=4 (% 7.3) in 2008, f=7 (% 12.7) in 2009, f=9 (% 16.4) in 2010, f=9 (% 16.4) in 2011, f= 12(% 21.8) in 2012 and f=5 (9.1) in 2013. According to results of the study, the number of the dissertation is the highest in 2012.

3.1.3. Finding and Interpretation of the sample groups of Dissertations on Metacognition

Table.3. Classification of the Dissertations on Metacognition according to sample groups

Method	Primary School Students	Secondary School Students	High School Students	Bachelor Degree Students	Teachers
F	10	12	4	27	2
%	18.2	21.8	7.3	49.1	3.6



When table 3 is examined, it can be seen that the post graduate dissertations about metacognition are divided into sample groups as $f=10$ (%18.2) for primary school students, $f=12$ (% 21.8) for secondary school students, $f=4$ (% 7.3) for high school students, $f=27$ (%49.1) for bachelor degree students, $f=2$ (% 3.6) for teachers. According to results of the study, the number of the sample group is the highest for Bachelor Degree Students group.

3.1.4. Finding and Interpretation of the Method of Dissertations on Metacognition

Table.4. Classification of the Dissertations on Metacognition according to Method Type

Method	Experimental	Quantitive	Qualitative	Mixed
F	31	18	2	4
%	56.4	32.7	3.6	7.3

When table 4 is examined, it can be seen that the post graduate dissertations about metacognition were prepared by using different methods as; $f=31$ (%56.4) of them experimental, $f=18$ (% 32.7) of them quantitative, $f=2$ (%3.6) of them qualitative and $f=4$ (%7.3) of them mixed. According to results of the study, the number of the method is the highest for experimental type.

3.1.5. Finding and Interpretation of the purpose and results of Dissertations on Metacognition

Table.5. The purpose and results of the dissertations on metacognition

The purpose of the dissertation	F	The result of the dissertation	F
Is it effective on metacognitive reading and understanding what you read?	10	It has a positive effect on understanding what you read.	8
		It does not have any effect on understanding what you read.	2
Is metacognitive thinking effective on motivation, self-sufficiency and self-organizing during the problem solving process?	3	Metacognitive thinking is effective on motivation, self-sufficiency and self organizing during the problem solving process.	3
Are the teaching materials effective on self-organizing, metacognitive awareness and success?	1	The teaching materials are effective on self-organizing, metacognitive awareness and success.	1
Examining metacognitive awareness levels	11	It is effective according to grade.	1
		Different kinds of methods are effective.	7
		It is effective in wiew of variables.	3
Are specific courses applied for different methods effective on metacognitive skills, academic achievement and attitude?	20	They are effective on metacognitive skills, academic achievement and attitude positively.	18
		They are not effective on metacognitive skills, academic achievement and attitude.	2
Is using metacognitive strategies effective on success, attitude and thinking types?	8	Using metacognitive strategies is partly .effective	2
		Using metacognitive strategies has positive effects.	5
		Using metacognitive strategies has no	1



		positive effects.
Identifying teachers' teaching style and their metacognitive strategies	1	It has been determined that teachers have 1 transformative teaching style.
Examining the metacognitive strategies according to some variables.	1	Gender is an effective variable on 1 metacognitive learning strategies.

According to data from table 5, when we check the purpose of the dissertation on metacognitive concept, in the results of ten studies about its effect on reading strategies and understanding what you read, the results are like this; while eight of them say that it has positive effect on understanding what you read, two of them say it has no positive effect on understanding what you read. In three studies whose aim is to find the effectiveness of metacognitive thinking on motivation, self-sufficiency and self organizing say that it has positive effects on them. Besides this, it is found out that the teaching materials are effective on self-organizing, metacognitive awareness and success.

In eleven studies whose purpose are to determine metacognitive awareness level these results have been reached; it is effective according to grade and classroom level, different methods can be effective and some variables (gender, socio-economic features) can be effective for the metacognitive awareness.

In twenty studies whose aim is to find out whether specific courses applied for different methods are effective on metacognitive skills, academic achievement and attitude or not, eighteen of them say that specific courses applied for different methods are effective on metacognitive skills, academic achievement and attitude however two of them do not agree with them and say opposite.

Teaching based on metacognitive methods can be effective to transfer the concepts and to deal with the problems. Metacognitive teaching makes students feel responsible for their learning therefore it is believed that they become students more active during learning process. There are an increasing number of studies about the contribution of metacognitive teaching on students' success, attitude and thinking level. Teaching based on metacognitive activities was proved that it is effective to deal with misunderstanding the concepts about science education (Hennessey, 1999; Georghiades, 2000; Yürük, 2007; Yürük, Selvi and Yakışan, 2011Akt: Özkaya,2013).

There are eight studies whose aim are to find out the effects of metacognition on success, attitude, thinking style. It is observed that two of them say that using metacognitive strategies are partly effective, five of them say that it has positive effect and in one of them it is said there is no positive effect.

In the study of identifying teachers' teaching style and their metacognitive strategies, it is determined that most of the teachers have transformative style.

In the study of examining the metacognitive strategies according to some variables, it is found out that gender is effective to determine the metacognitive strategy.

4. Results and Suggestions

Finally, concept of metacognition has drawn attention of scholars at universities recently. In nine years, many studies, most of which are master dissertations, were carried out about this subject In the study, it has been determined that most of the documents which were used for this research were prepared in 2012. When the sample group is checked in these studies, it can be seen that most of them are bachelor degree students. It is understood that most commonly preferred method is experimental one and the least preferred one is qualitative method in these researches. It can be said that the main reason of choosing experimental method is researcher' making his study more measurable and depend on concrete findings. In these experimental studies rather that definition of metacognition concept, the effects of metacognitive skills on learning and academic achievement in general.

In Turkey, when dissertations which prepared from 2005 to 2013 on metacognition concept are analyzed, it is understood that most of these dissertations are about practices of metacognitive skills for specific courses, academic achievements and attitude. At the end of these studies, it is understood



that metacognition has positive effects on individual metacognitive level, academic achievement and attitudes

References

- [1] Akın, A. (2006). Başarı Amaç Oryantasyonları İle Bilişötesi Farkındalık, Ebeveyn Tutumları ve Akademik Başarı Arasındaki İlişkiler. Yayınlanmamış yüksek lisans tezi, Sakarya Üniversitesi Sosyal Bilimler Enstitüsü, Sakarya.
- [2] Aktürk, A. O. ve Şahin, İ. (2011). Üstbiliş Ve Bilgisayar Öğretimi. Selçuk Üniversitesi Ahmet Keleşoğlu Eğitim Fakültesi Dergisi, 31.
- [3] Karasar, N. (2005). Bilimsel Araştırma Yöntemi (15. Baskı). Ankara: Nobel Yayın Dağıtım.
- [4] Özkaya, A. (2013). Üstbilişsel ve internet tabanlı üstbilişsel öğretim yöntemlerinin öğrencilerin hücre bölünmesi ve kalıtım konusundaki başarılarına, tutumlarına ve üstbilişsel düşünme düzeylerine etkisi. Yayınlanmamış doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.
- [5] Pilten, P. (2008). Üstbiliş stratejileri öğretiminin ilköğretim beşinci sınıf öğrencilerinin matematiksel muhakeme becerilerine etkisi. Yayınlanmamış doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.