



Student Teachers' Perspectives on the Cognitive and Metacognitive Strategy Practices in Instructional Design Course *

Sinan Kaya ¹, Ebru Kılıç Çakmak ²

Abstract

This is a case study which aims to investigate student teachers' perspectives on the practices related to the use of cognitive and metacognitive strategies integrated in the course content. 90 sophomore student teachers at two different state universities participated in this study. Cognitive strategy practices are conducted in the first participating group while metacognitive strategy practices are conducted in the latter group. Structured interview consisting of open-ended questions is employed with the aim of determining participants' perspectives. Descriptive analysis is used for data analysis. Findings show that their satisfaction levels in terms of the practices are high, and that they believe in the usefulness of the practices in terms of the knowledge and skills in the use of strategy and content area. Also, it is found that they are satisfied with the practices in terms of opportunities for the revision of the previous knowledge and adapting studying. However, it is clear that they are annoyed with the weekly conducted practices.

Keywords

Cognitive strategies
Metacognitive strategies
Student teachers
Self-regulated learning

Article Info

Received: 01.02.2014
Accepted: 06.10.2015
Online Published: 11.14.2015

DOI: 10.15390/EB.2015.3019

Introduction

Self-regulated learning that emphasizes the internal factors of an individual to reach his learning aims is an active and constructionist process, in line with the learning aims of the individual, in which he tries to adjust his behaviour, metacognitive competence and motivational level, limits and guides his aims according to environmental effects (Zimmerman and Bandura, 1994). The strategies used in this process are called self-regulated learning strategies. These strategies are evaluated in two dimensions as learning strategies and motivational strategies. Learning strategies part is categorized under three subgroups as cognitive strategies, metacognitive strategies, and resource management strategies, and sub-dimensions for each group are defined. Cognitive strategies consist of rehearsal, elaboration, organization, and critical thinking skills (Duncan and McKeachie, 2005; Pintrich, Smith, Garcia and McKeachie, 1993). Individual who use these strategies properly are called self-regulated learners. Self-regulated learners use cognitive strategies which help them construct the knowledge

* This research is done on the basis of doctoral thesis with the title "The effects of cognitive and metacognitive strategy activities on pre-service teachers' achievements in instructional design course and their levels of cognitive and metacognitive strategy usage" that was presented by Sinan Kaya under the supervision of Assoc. Prof. Ebru Kılıç Çakmak for Gazi University Institute of Education Sciences in 2012.

¹ Ondokuz Mayıs University, Faculty of Communication, Turkey, sinan.kaya@omu.edu.tr

² Gazi University, Faculty of Education, Department of Computer and Instructional Technologies Education, Turkey, ekilic@gazi.edu.tr

and keep it in mind, control their own learning actively by using metacognitive strategies like planning-setting goals and monitoring, and overcome the emotional challenges logically (Canca, 2005). The previous studies show that there is a positive relation between learners' motivational levels and self-regulated learning strategies, and academic success (Butler and Winne, 1995; Chung, 2000; Ley and Young, 1998; Pintrich and De Groot, 1990; Zimmerman and Martinez-Ponz, 1990).

The research on self-regulated learning reveals some models to develop and assess the aforementioned skills (Boekaerts, 1992; Pintrich, et al., 1993; Winne and Hadwin, 1998; Zimmerman, 1989). Self-regulated learning is a skill which does not stand out in traditional classrooms, does not improve by nature, and can be taught despite its complex structure (Boekaerts, 1997; Cekolin, 2001; Hall, Myers and Bowman, 1999; Paris and Paris, 2001; Pintrich, 1995). Problems related to self-regulated learning are categorized under four groups as the component and design of intervention, integrated versus adjunct course design, the transfer of self-regulated learning strategies and learners' characteristics (Hofer, Yu and Pintrich, 1998). The factors that hinder the use of self-regulated learning strategies are claimed to be deficiency of skills in the strategy use and of knowledge in the task component, lacking of the learners' awareness on their own memory and learning process, inefficient use of time management, and the deficiency of knowledge in course content (Smith and Ragan, 2005). Ley and Young (2001) suggest principles that provide the embodiment of self-regulation support into the course content no matter what the environment, course content and learners' characteristics are by stating that the courses involving self-regulated learning principles contribute to overcome the learners' deficiencies in their self-regulated learning. These principles are claimed to be guiding learners to preparing their learning environment, arranging teaching practices to ease cognitive and metacognitive processes, to create opportunities for learners' self-evaluation and to provide continuance self-evaluation report. Moreover, it is required that learners are encouraged to monitor their own learning paces and to evaluate their peers' performances. It is also necessary to provide interactive atmosphere in which the strategies their peers employ can be monitored and to include not only knowledge on strategies but also practices which require strategy use. In their study which teachers' in-class interventions are analyzed to support developing self-regulated learning strategy use (Osman and Hannafin, 1992; Şimşek, 2006). Randi and Corno (2000) state that interventions combined with course content are more effective than those regardless of course content. Ragosta (2010) investigates the interventions designed to help learners acquire self-regulated learning strategies in a meta-analysis study. According to this study, it is seen that the interventions have an impact factor between low and medium level, that interventions provided by researchers have more impact than the interventions provided by teachers, and that the interventions between five and thirteen hours are more effective than those less or more. Besides, interventions about cognitive strategy use are found to have bigger impact than those for metacognitive strategies or both types. It is seen that interventions are provided more in the fields of study skills, psychology, reading and writing, information technologies, and math and science (Ragosta, 2010).

Kremer-Hayon and Tillema (1999) state that learners focus on their own self-regulated learning. However, when the role of self-regulated learning as for in-service and pre-service teacher education programmes is thought, it is highlighted that employing self-regulated learning helps student-teachers understand and learn better in teacher education context (Dembo, 2001; Randi, 2004). When the research on self-regulated learning in teacher education is considered, these three items as the effects of instructional planning practices based on self-regulated learning model on planning skills and tendencies, the ways teacher trainers as self-regulated learners make their own professional development, and the ways they contribute to their learners' self-regulated learning (Kitsantas and Baylor, 2001; Van Eekelen, Boshuizen and Vermunt, 2005). In addition, there are some differences between the perceptions of student teachers and teacher trainers on the importance of self-regulated behaviour in teacher education programmes, the practices conducted and self-regulation. The comparison of in-service teachers and student teachers' self-regulated learning skills and whether teacher trainers have self-regulated learning skills are observed. It is also seen that the research on investigation of in-class discussions by student teachers on self-regulated learning are made (Birenbaum and Rosenau, 2006; Kremer-Hayon and Tillema, 1999; Perry, Hutchinson and Thauberger, 2008; Tillema and Kremer-Hayon, 2002).

Although many studies are conducted on self-regulated learning, most of them are limited to qualitative research design. However, the conduct of quantitative research design will introduce a new perspective into the investigation of self-regulated learning (Özturan Sağırlı and Azapağası, 2009; Pressley and Harris, 2006; Sönmez Ektem, 2007). Also, it is recommended to use new assessment tools which provide understanding and assessing the self-regulated learning better with the others by considering self-regulation as a process (Boekaerts and Corno, 2005).

Although there are many studies on self-regulated learning which educators emphasize strongly nowadays (Weinstein, Husman and Dierking, 2000), there are many unanswered questions and findings about how different instructional programmes or interventions should be. Besides, uncertainty goes on. It is observed that primary and secondary school students are focused and different instructional approaches are used in interventions made to use and improve self-regulated learning strategies. It is seen that generally the strategy use towards certain self-regulated learning dimensions such as metacognitive strategies or cognitive strategies are tried to improve. It is obvious that the studies about learners' perspective on the interventions and the impact of interventions on self-regulated learning and different dimensions of the self-regulated learning are insufficient. This study makes contribution to remedy the deficiency of analyzing the effectiveness of the practices designed for two dimensions (cognitive and metacognitive) of the self-regulated learning by presenting the learners' perspective on strategy practices integrated into course content through quantitative data. The study will shed light into both practices and further studies since it reveals the situations with which learners are satisfied or dissatisfied about the course content and practices integrated with cognitive and metacognitive strategies, the difference in their study habits and use of metacognitive skills and practices' contribution to learning. Moreover data to improve the strategies employed in different issues are needed as the studies in the field focus on certain issues like reading comprehension and problem solving. For this reason, this is an authentic and up to date quantitative study which examines having the basic knowledge and skills acquired from the perspective of self-regulated learning. Accordingly, the aim of this study is to investigate the perspectives of student-

teachers on the practices related to the use of cognitive and metacognitive strategy integrated into the course design. The research questions emerged out of this study are;

1. What are general satisfaction levels of student teachers related to practices?
2. What are student teachers' perspectives on their satisfied and dissatisfied points?
3. What are student teachers' perspectives on the difference in their studying habits in cognitive strategy use?
4. What are student teachers' perspectives on the change in the habits of planning, controlling and evaluating their studies?
5. What are student teachers' perspectives on the contribution of these practices into learning?

Method

Research Design

This is a qualitative case study with the aim of investigating student teachers' perspectives on the practices related to cognitive and metacognitive strategy use combined with course content. Case study is a research method which studies an updated issue in its own circle, the borders between concepts and content are vague, and involve more than one evidence and data sources (Yin, 1984).

Participants

Participants are 90 sophomore student teachers who are attending Instructional Design course from Gazi University Gazi Faculty of Education and Ahi Evran University Faculty of Education Computer and Instructional Technologies Departments. These participants are chosen randomly in accordance with an achievement pre-test in Instructional Design course, points taken as a result of motivated strategies for learning questionnaire and the universities they attend. In each of the study groups which 45 student teachers participate cognitive strategies and metacognitive strategies are conducted separately. In the group which cognitive strategies are used 62.2% participants are females while 37.8% of them are males. 51.1% of the participants in the metacognitive strategies group are females while 48.9% of them are males. Age range is 19 in both groups. 60% of the participants in the cognitive strategy group are from Gazi University whereas 40% of them are from Ahi Evran University. 62.2% of the participants in the metacognitive strategy group are from Gazi University while 37.8% are from Ahi Evran University. No meaningful difference is detected between the scores of student teachers' achievement pre-test [$t_{(88)}=-0.54, p>.05$], cognitive strategy [$t_{(88)}=0.04, p>.05$] and metacognitive strategy [$t_{(88)}=-0.28, p>.05$] average scores in Instructional Design course. Then it can be claimed that these groups are equal.

Strategy Practices and Application Process

Cognitive and metacognitive strategy practices are prepared with the aim of determining whether learners use cognitive and metacognitive strategies in the units of Instructional Design course, to have them use these strategies, and to improve the use of these strategies. Practices are prepared based on the course content and related strategies. While these practices are being prepared, outcomes in this course are primarily determined and cognitive and metacognitive strategies which help learners realize these outcomes are decided. Strategy practices are categorized under cognitive and metacognitive strategies and strategy types to be included in practices are determined and definitions related to strategies are made. Cognitive strategies are categorized under repetition, elaboration, regulating and critical thinking strategies while metacognitive strategies are classified as planning, monitoring and regulating. Cognitive and metacognitive strategies are prepared by using the definitions belonging to strategy categories, cognitive and metacognitive strategy samples in the literature and the outcomes. Items to be involved in strategy practices are grouped according to units and strategy types. Expert evaluation form is prepared to check the availability of the items. Four experts checked the form. Necessary changes are made based on their feedback.

In the fourteen-week process learners fulfil the practices in the classroom after the lecturing of topics in each unit. Another evaluation is made after the practices. Cognitive and metacognitive strategies are evaluated in terms of course content and strategy use separately through a rubric by the researcher himself and another researcher. Feedback related to practices (strategy use and course content) is given to learners via e-mails in the light of the data gathered at the end of the analysis.

Data Collection Tools

A structured interview form consisting of open-ended questions by the researcher is prepared to determine learners' perspectives on cognitive and metacognitive strategy practices. Necessary changes are made based on the feedback of an expert on testing and evaluation and three experts in the field as for the validity of the form. Through this form, the contribution of strategy practices into these course topics, how the changes in the studying, planning their studies, controlling and evaluation habits are perceived by the learners, the points student teachers are satisfied with and dissatisfied with the practices, and learners' perspectives related to practices are collected.

An achievement test which consists of 56 multiple choice questions and is developed by the researcher is used to determine learners' background knowledge in the field. Necessary changes are made based on feedback from one testing and evaluation expert and five field experts to check the content validity of the achievement test. Item analysis is conducted with 75 junior learners who have attended instructional design course at Gazi and Ahi Evran Universities in Computer and Instructional Technologies Departments. KR-20 reliability factor is found to be 0.85, while medium difficulty factor of the items in the test are found to be 0.47 in the achievement test.

Motivated Strategies for Learning Questionnaire prepared by Pintrich, Smith, Garcia and McKeachie (1991) to determine the level of cognitive and metacognitive strategy use, sub-categories of cognitive and metacognitive strategies in motivational and learning strategy rubric translated into Turkish by Büyüköztürk, Akgün, Özkahveci and Demirel (2004) are used before the practices. To determine learners' cognitive and metacognitive strategy use levels repetition (4 items), elaboration (6 items), regulation (4 items) and critical thinking (5 items) sub-categories are used while to determine metacognitive strategy use metacognitive self-regulation (12 items) sub category is used. Cronbach Alfa factors are calculated to be 0.65, 0.77, 0.75, 0.76, and 0.83 respectively.

Data Analysis

Descriptive analysis is used for qualitative data. Descriptive analysis allows data to be organized according to the emerging themes and to be presented with special reference to research questions or dimensions (Yıldırım and Şimşek, 2005). Perspectives are grouped by coding qualitative data gathered from open-ended questions, frequency and percentage factors are presented. Also, learners' perspectives are explained in detail.

Results

The perspectives on the contribution of the strategy practices on course content, studying, planning studies, how learners view the changes in controlling and evaluating, the points student teachers are satisfied and dissatisfied with, learners' satisfaction in terms of practices are analyzed and findings are presented.

Learners' Satisfaction and General Evaluation on the Practices

The Table 1 below clarifies learners' general satisfaction on the practices conducted in cognitive and metacognitive groups.

Table 1. Learners' General Satisfaction Level as for Practice Types

Satisfaction level	The group which cognitive strategy practices are conducted		The group which metacognitive strategy practices are conducted	
	f	%	f	%
Satisfied	32	71.1	32	71.1
Undecided	9	20.0	11	24.4
Dissatisfied	4	8.8	2	4.4
Total	45	100.0	45	100.0

According to Table 1, 71.1% of learners in both groups are satisfied with the practices. 8.8% of the learners working with cognitive strategies and 4.4% of the learners working with metacognitive strategies claim not to be dissatisfied with the practices. Also, it is seen that satisfaction levels are similar according to practice types.

Learners' Perspectives on the Practices They Are Satisfied With

Table 2 clarifies learners' perspectives on their satisfied points in the practices. Some of the learners express more than one point they are satisfied in both practices.

Table 2. Themes Learners are Satisfied with

The group which cognitive strategy practices are conducted			The group which metacognitive strategy practices are conducted		
Sub themes	f	%	Sub themes	f	%
Providing opportunities to review course themes	10	22.22	Providing opportunities to review course themes	11	24.44
Having them acquire studying habits	8	17.78	Having them acquire studying habits	9	20.00
Motivating to study and to attend the lesson	8	17.78	Conducting regularly after each unit and getting them to be prepared for the exam	8	17.78
Conducting regularly after each unit	5	11.11	Providing self-evaluation	6	13.33
Each practice covers all topics in a unit	3	6.67	Emphasizing important topic in the units	4	8.89
Preparing for the exam	3	6.67	Asking open ended questions (what do you think, why?, etc.)	4	8.89
Asking open ended questions (what do you think?, why?, etc.)	3	6.67	Motivating to study and to attend the lesson	3	6.67
Giving feedback	3	6.67	Giving feedback	3	6.67
Providing detailed thinking	2	4.44	Providing meaningful learning	2	4.44
Preparing for the new topics	2	4.44	Others	2	4.44
Others	4	8.88			

Learners in cognitive strategy practice group state that they are satisfied most with the fact that the practices increase revision and recalling (22.22%). Some of them explain their opinions as below:

'... In the past we used to forget what we studied after the exams. Thanks to these practices we learnt the topics by practicing better (13).', 'I only like repeating the course content (22).', 'I keep the previous learning permanent (27).', 'It makes me study regularly (35).'

17.78% of the learners in cognitive strategy group state that they are satisfied with the activity with the practices as practices make them study regularly. Some of the learners explain their views as below;

'Practices made us study regularly and effectively (13).'; 'I do not have regular studying habits. It helped me to gain this habit (16).', 'As an irregular student, the practices helped me study for the exam (36).'

17.78% of the learners state that learners in cognitive strategies group are satisfied with being motivated toward the lesson and studying. Some of the learners' explanations are given below;

'It increases my motivation to study. I start loving this course more when I start succeeding and I am happy to reflect this on my scores (19).', 'I am satisfied with getting the highest or one of the highest scores in the exam, which makes me more ready and motivated for the next week (33).'

Some of the perspectives on making learner strategies which learners are satisfied with used, highlighting important points, providing self-evaluation and meaningful learning are stated below;

'Drawing concept maps and encouraging us to write our samples are some of my favorite properties (27).', 'It was nice to spare room for comments in the practices (29).', 'I think it improves my thinking skills (31).', 'Practices cover the topics studied in detail (37).', 'It is also nice to give corrective feedback (37).', 'I enjoyed to brainstorm and evaluate this by getting prepared for the lesson (39).'

Table 2 explains the perspectives of learners in cognitive strategy group on their satisfied points in the practices. Learners in metacognitive strategy practice group state that they are satisfied most with practices in terms of the chance to revise and to increase permanent learning (24.44%). Some of the learners state their perspectives below:

'It made me revise the topics regularly (2).', 'I summarized and reinforce the topics immediately (37).', 'It provided me to revise each unit (45).'

20% of the learners in metacognitive strategy practice group state that they are glad with gaining regular studying habit provided by the practices. Some of the perspectives by the learners are;

'It showed me that I could be more relaxed and learn better when I study regularly in a period (9).', 'It gained me the habit of getting prepared for the lesson (20).', 'It developed my skill of studying more regularly and the way to control myself (44).'

17.78% of the learners in metacognitive group state that they are satisfied with the practices done after each unit. These practices also helped learners to get prepared for the exam.

'We made practices each week (19).', 'We are prepared for the exam as a result of these practices (20).', 'They helped me to study for the exams during the exam week (37).'

The rest of the perspectives that learners in metacognitive strategy practice group are satisfied with on self-evaluation of learners, emphasis on important points, asking open ended questions, providing the chance to observe learning strategy practices, and covering all the topics in each unit are exemplified below;

'Different questions were asked instead of pure information. So, the primary practices were challenging for me. However, I got accustomed to such questions (6).', 'I learnt different learning strategies. Actually I did not use tables while studying but I learnt that studying by drawing tables is important and makes learning easier (16).', 'giving immediate feedback was good. It was very useful to see my lacking points in units (17).', 'I understood my lacking points and the parts I should study thanks to practices (44).'

Learners' Perspectives on the Practices They Are Dissatisfied With

Table 3 displays the perspectives of learners on their dissatisfied parts of the practices in cognitive and metacognitive groups. Some of the learners in both groups emphasize more than one points related to their dissatisfaction.

Table 3. The Points Learners are Dissatisfied with in Practices

The group which cognitive strategy practices are conducted			The group which metacognitive strategy practices are conducted		
Sub themes	f	%	Sub themes	f	%
The frequency of practices	20	44.44	The frequency of practices	16	35.56
The redundance of the questions in practices	8	17.78	Complex structures of questions	4	8.89
Being related to memorized information	4	8.89	The effect of practice scores on lesson grades	4	8.89
The time spared for each practice is long	3	6.67	Noise in the classroom, seating plan, narrowness of the classroom	2	4.44
Noise in the classroom and seating plan	3	6.67	Copying	2	4.44
Copying	3	6.67	Being conducted as an exam	2	4.44
Scope of the questions	3	6.67	Difficulty level of questions	2	4.44
Being conducted as an exam	2	4.44	Groups	2	4.44
Crowded classrooms	2	4.44	Scope of the questions	2	4.44
Shortening the lesson hour	2	4.44	Others	5	11.10
Others	3	6.66			

Learners in cognitive strategy practice group are dissatisfied mostly with frequency of the practices (44.44%). Some of the learners expressed their situations below;

'It's boring to have practices each week (8).', 'It was disturbing the frequency of practices (9, 43).', 'making practices each week was annoying (21, 22).', 'The frequency of practices disturbed me because of the assignments of other subjects (28, 31).'

8 learners in cognitive strategy practice group are annoyed with numerous number of questions (17.78%) and 4 learners are annoyed with memorization (8.89%). Their views are stated below:

'There were many questions (9).', 'There were many questions. There should have been fewer (19, 25).', 'The numerous questions and questions requiring long answers were boring (34).', 'there were many pieces of information asking memorization, which made us memorize the information rather than learn it (3, 13).', 'To me, most of the questions are based on memorization. There should have been more interpretation questions (19).'

Some of the perspectives of learners in cognitive strategy group on the complexity and the scope of the questions, large classes and groups are given below:

'Practices take too much time (9).', 'The scope of the questions were tiring (32).', 'the questions were challenging (28).', 'Individual achievement might have been higher if there had been fewer learners (11).', 'I answered quickly because the classroom was crowded (38).', 'I could not understand how to answer the questions even though I knew the answers during the first practices (15).', 'I would prefer to go on the process as a unique group rather two separate groups (5).'

Perspectives of learners in metacognitive strategy group on their dissatisfied points of the practices are given in Table 3. Learners in metacognitive strategy group state that they are dissatisfied mostly with the frequency of the practices (35.56%). Some of the learners state the situations below;

'I do not study regularly so it was difficult for me to adapt the process (14).', 'Making practices every week disturbs me (21).', 'I could not find time to study other subjects because of the practices (15).'

4 learners in metacognitive strategy group (8.89%) state they are dissatisfied with the structure of the questions in the practices and 4 learners acknowledge that they are dissatisfied with the fact that the scores given after the practices affected the course grade.

'I could not understand what they meant in the question because the questions were too complex (2).', 'I had difficulty to understand what some of these questions mean (27).', 'I was disturbed by being graded although they motivate me (9).', 'We should not have been graded (26).', 'I do not like being graded (40).'

Some of the perspectives of learners on the scope of the questions, groups, the excessive questions, and commentary questions are stated below:

'Physical atmosphere of the classrooms (lightening, being too narrow) (33)', 'It is partly disturbing to make practices in the form of exams although they are useful (41).', 'I used to have difficulty in choosing the appropriate sentence since the questions were mostly on commentary type (13).', 'There were too many questions. If the number of questions had been fewer, they would have been answered more easily (20).', 'The fact that questions were too extensive may be problematic in answering questions (30).', 'While the questions in my groups were mostly based on pure information, questions in other group were mainly based on comment (3).'

Perspectives of Learners Related to the Changes in Learners' Studying Habits

Table 4 presents the perspectives of learners in both groups on their studying habits.

Table 4. The Perspectives of Learners in both Groups on Their Studying Habits

	The group which cognitive strategy practices are conducted		The group which metacognitive strategy practices are conducted	
	f	%	f	%
Yes, it changed	28	62.22	33	73.33
No, it did not change	14	31.11	7	15.56
Undecided	3	6.67	5	11.11

According to Table 4, 62.22% of the learners working with cognitive strategy and 73.33% of the learners in metacognitive strategy state that their studying habits changed. Based on the learner perspectives it can be claimed that metacognitive strategy practices changed their studying habits more than cognitive strategy practices. Table 5 clarifies this change.

Table 5. Learners' Perspectives on the Change of Learners' Studying Habits

The group which cognitive strategy practices are conducted			The group which metacognitive strategy practices are conducted		
Sub categories	f	%	Sub categories	f	%
Studying regularly	18	40.00	Studying regularly	29	64.44
Taking notes during the lesson	4	8.89	Taking notes during the lesson	4	8.89
Summarizing	3	6.67	Determining the key words	2	4.44
Organizing notes	2	4.44	Making tables	2	4.44
Underlining the main parts of the topic	2	4.44	Summarizing	1	2.22
Mnemonics	1	2.22	Organizing notes	1	2.22
Rewriting	1	2.22	Attention keeping	1	2.22
Choosing the key words	1	2.22	Developing self-strategies	1	2.22
Using signals	1	2.22	Using signals	1	2.22
Critical thinking	1	2.22	Underlining the main parts of the topic	1	2.22
			Making links between words	1	2.22
			Asking yourself questions	1	2.22
			Using topic specific strategies	1	2.22
			Finding the main idea	1	2.22

Learners in cognitive strategies group state that there is a change in their regular studying habits (40.00%). Some of the claims are as below:

'I do not study very much. Making regular practices helped me study systematically (1).', 'I get accustomed to planning and preparing for the lesson (4).', 'I think I get the habit of studying regularly and getting planned before the lesson (5).', 'These practices gained me studying habits (25).', 'This is the first lesson I ever studied this much (37).'

Some of the perspectives in cognitive strategy practice group on changes in their studying habits are given below;

'I used to study by reading the topic, taking notes in the lesson, and memorizing these notes before the practices. After the practices, I started to make use of mnemonic where necessary by taking notes through symbols in the course book (underlining, adding question mark) and by combining my notes with those I kept during the lesson (9).', *'I used to memorize the topic while studying. I tried to learn the topic with the help of the key words I chose to be successful (15).'*, *'I kept a notebook in this lesson and I wrote my notes on it. I did not have such a notebook before (33).'*

Perspectives of learners in metacognitive strategy practice group on the changes in studying habits are given in Table 5. Learners in metacognitive strategy practice group state that the major changes occurred in their regular studying habits (64.44%). Some of the learners state the situation as below:

'I used to study lessons just a week before the exam but now I study regularly every week. Therefore, I do not need to study for the exam exhaustively (3, 7).', *'My studying habit was generally to start studying for the exam just before the exam week. However, I have started to study regularly after these practices. I felt disturbed when I did not study (17).'*, *'I learnt to be planned. I learnt how important background knowledge is before the course (18).'*, *'I have had a systematic studying habit thanks to these practices (29, 37).'*, *'I gained the habit of studying regularly. I learnt what and how to study (44).'*

Perspectives of learners in metacognitive strategy practice group on the other changes in studying habits are given below.

'I used to study by reading in the past but now I study by writing key words, drawing tables and taking notes (1).', *'There are many subsections in a topic. I draw tables and infer the basic points (8).'*, *'I learnt how to study so many topics in a short time, so I developed my summarizing strategies (15).'*, *'Practices included questions evaluating our studying principles. To make such practices it was necessary to guide our studying habits in a different way. I have preferred to study by using specific strategies in certain days of the week (21).'*, *'I learnt studying by asking questions to myself thanks to these practices (28).'*

Learners' Perspectives on Changes in Their Habit of Planning, Controlling, and Evaluating

Perspectives of learners in both groups on their habits of planning, controlling, and evaluating are given in Table 6.

Table 6. Learners' Perspectives on Changes in Their Habit of Planning, Controlling, and Evaluating

	The group which cognitive strategy practices are conducted		The group which metacognitive strategy practices are conducted	
	f	%	f	%
Yes, it changed	33	73.33	33	73.33
No, it did not change	12	26.67	8	17.78
Undecided	0	0.00	4	8.89

According to Table 6, 73.33% of the learners in both groups state that there is a change in planning controlling and evaluating in their studying habits. Based on the data gathered, it can be claimed that practices in both types similarly change the habits of planning, controlling and evaluating. Perspectives of learners in both groups on the changes related to planning, controlling and evaluating their studying habits are given in Table 7.

Table 7. The Perspectives of Learners on the Changes in Their Studying, Planning and Evaluating Skills

The group which cognitive strategy practices are conducted			The group which metacognitive strategy practices are conducted		
Sub themes	f	%	Sub themes	f	%
Considering situations and events from a different perspective	10	22.22	Time management	18	40.00
Self-evaluation	8	17.78	Self-evaluation	10	22.22
Checking errors and shortcomings	7	15.56	Checking errors and shortcomings	10	22.22
Time management	6	13.33	Checking whether to realize the goal	7	15.56
Deciding appropriate strategy based on the topic	2	4.44	Revising important points	6	13.33
Realizing the important and unimportant	1	2.22	Summarizing what has been learnt	3	6.67
Forming sample cases	1	2.22	Deciding on the strategy based on the topic	3	6.67
			Developing different perspectives	2	4.44
			Realizing the importance of planning, controlling and evaluating	1	2.22

Learners in cognitive strategy group state that major change is in their habits of viewing from different perspectives (22.22%). Some of the learners state that:

'It enabled me to think in detail while looking for the sources of events or problems (2).', 'I started viewing problems or events from different angles. I think about the reason, situation, and result of the problems more often (7).', 'I realize I have adopted different perspectives (25).'

8 learners in metacognitive group (17.78%) state that their self-evaluating habits have changed. 7 learners (15.56%) state that their habits of checking their errors and shortcomings have changed while 6 learners (13.33%) claim that their studying habits have changed by managing time. Some of their statements are:

'I compare my answers with the ideal ones and make self-evaluations by realizing my shortcomings in topics and by considering my grades (3).', 'At the end of the practices, I realized that some topics I learnt are not unnecessary and that I could not learn some topics properly (5).', 'I tried to self-evaluate myself with the help of feedbacks (14).', 'I determine what to do, check what I do, and evaluate myself according to the criteria of what I did (27).', 'I think practices have changed my planning habits. The time table of the practices enabled me to plan my studies (16).', 'I arranged my timetable and other studies (26).'

Some of the perspectives of learners in cognitive strategy group on the other changes of their planning, controlling and evaluating habits are given below:

'I can say that I have gained positive habits of how to study and evaluate regularly (5).', 'I formed sample cases and evaluated them with my previous knowledge. I questioned the use and functions of the knowledge (39).'

Perspectives of learners in metacognitive strategy group on the changes in their planning, controlling and evaluating habits are given in Table 7. Learners in metacognitive strategy group state that the major change is related to time management habits (40%). Some of the learners state the situation as:

'I see that I study regularly every week (1).', 'I need to plan in daily situations (7).', 'I gained the habit of planning and studying time table (16).', 'I used to make plans to study every week so I think I learnt how to use time efficiently as I planned previously (19).'

10 learners (22.22%) in metacognitive strategy practice group state that their habit of checking errors and shortcomings has changed. 5 learners (11.11%) state that their habits of checking whether they have reached their goals have changed while 10 learners (22.22%) in the same group state that their habits of self-evaluation have changed. Some of the learners' perspectives are presented below:

'I check whether I learnt the topics by asking some questions to myself (8).', 'I think it contributed to my self-evaluation. They were helpful in checking my assignments I did. Especially, the part which requires us to ask some questions to indicate our comprehension was very useful (27).', 'I learnt what to do and what criteria to consider during my evaluation and checking. I was unaware of this (37).'

Some other perspectives of learners in metacognitive strategy practice group on changes in habits of planning, controlling and evaluating are given below:

'It gained me the habit of checking my lesson notes and determining important parts of the point (16).', 'I started using appropriate methods for the topics (17).', 'It helped me to observe my abilities and broadened my horizon in evaluation (12).', 'I learnt the importance of checking what I did and evaluating myself by doing and experiencing (5).'

Perspectives of Learners on the Contribution of Practices on Learning

In groups which cognitive and metacognitive strategy practices are made, learners' perspectives on the contribution of practices on learning are given in Table 8.

Table 8. Perspectives of Learners on the Contribution of Practices on Learning

	The group which cognitive strategy practices are conducted		The group which metacognitive strategy practices are conducted	
	f	%	f	%
It contributed	38	84.44	40	88.89
It did not contribute	4	8.89	4	8.89
Undecided	3	6.67	1	2.22

According to Table 8, 84.44% of the learners in cognitive strategy group and 88.89% of the learners in metacognitive strategy group state that the practices made contribution to their learning. The perspectives of the learners in both groups on the contribution of practices on learning are given in Table 9. 12 of the learners (26.67 %) state that the practices made a contribution to their learning by making them get prepared for the classes. Some of the learners state that:

'The practices made me get prepared for the lessons, which enabled me to understand the topics studied in the lesson (1).', 'Thanks to the practices I get prepared for the lessons, which provides permanent learning (34).', 'Not only did I revise the topic studied in previous week, but also I studied the topic of the next week in advance (39).'

Table 9. The Perspectives of Learners on the Contribution of Cognitive and Metacognitive Strategies Practices on Learning

The group which cognitive strategy practices are conducted			The group which metacognitive strategy practices are conducted		
Sub themes	f	%	Sub themes	f	%
Getting prepared for the lesson	12	26.67	Getting prepared for the lessons	17	37.78
Revising the topics	12	26.67	Revising the topics	15	33.33
Getting background knowledge	4	8.89	Getting background knowledge	3	6.67
Developing studying strategies	4	8.89	Thinking in detail on topics	3	6.67
Realizing the shortcomings	3	6.67	Checking comprehension and shortcomings	3	6.67
Enabling motivation	3	6.67	Developing studying strategies	2	4.44
Enabling meaningful learning	2	4.44	Developing different perspectives	1	2.22
Making associations between topics	2	4.44	Making associations between topics	1	2.22
			Enabling motivation	1	2.22

12 learners (26.67%) in cognitive strategy group state that these practices contributing to their learning by enabling the revision of topics taught:

'As I make weekly revisions, it is difficult to forget topics (3).', 'It enables us to revise (22).', 'It made the knowledge learnt be permanent and was different from other subjects (45).', 'The practices enable us to revise previous learning (40).'

Learners in cognitive strategy practice group state the contribution of these practices on their learning as below:

'I studied before the lesson because of the practices so I gained background knowledge (15).', 'I corrected errors and my shortcomings when we answered the questions together every week (39).', 'The feedback helped me to analyze my deficiencies (4).', 'I think it contributed as it motivated us to study (22).', 'Whereas I used to study by taking notes and revising these notes I started to study by developing different strategies after the practices started. This enabled me to learn not to memorize (9).'

The perspectives of metacognitive strategy practice group on the contribution of practices to their learning are given in Table 9. 17 of the learners in this group (37.78%) state that the practices contributed to their attendance while 15 of the learners (33.33 %) state that the practices contributed to their learning through revisions. Some of the learners express these contributions as below:

'It enabled us to understand better as they promote me to study before the lesson (3).', 'I always studied the topics before the lessons (19).', 'As I came to the class with preparation more knowledge stored in my mind (6).', 'I needed to make weekly preparations thanks to the practices (27).', 'It helps me to come prepared and to revise topics (34).', 'I learnt about the topics by studying before the lessons. I had my own ideas on the content while the topic was being taught in the lesson. In this way I learnt the topic better (24).'

Learners in metacognitive strategy practice group state the other contributions of these practices on their learning as below:

'I think they enabled me to learn through a different method from different perspectives (1).', 'I think they contributed to my learning as they provide the opportunity to revise each topic and to make self-evaluations of my learning (4).', 'The properties of the questions in practices helped me to analyze the unit better (5).', 'I listen to lessons more attentively thanks to the practices (9).'

Discussion, Conclusion and Suggestions

It is found that the perspectives of learners in cognitive and metacognitive strategy practices groups are similar in terms of satisfaction levels. The learners in both groups state that their most satisfactory points are to gain the habit of studying regularly and of enabling permanent learning through revisions. This result indicates that learners in metacognitive strategy group are glad with the satisfactory points in using cognitive strategy practices. This shows the fact that the use of metacognitive strategy practices is more comprehensive than the strategies which require the use of cognitive strategies (Kumlu, 2012). Learners in metacognitive strategy practice group are found to be satisfied with the properties of monitoring strategies that help important point and self-evaluation to be considered, which provides the use of metacognitive strategies. In his study, Sarıbaşı (2009) states that the variety of metacognitive skills they used and metacognitive awareness increase based on the findings gathered from the participants through the qualitative analysis of reflective interview forms. It is seen that learners in general are glad with the practices conducted in the lessons to develop cognitive and metacognitive strategies. This result is in line with the study by Uygun (2012) on the improvement of self-regulation strategy in teaching Turkish. It is seen that the perspectives of participating teachers and learners on the practices related to self-regulation strategies are positive. The frequent repetition and complex structure of metacognitive strategies, and the practices requiring revision strategy in cognitive strategy are considered to be disturbing points. This finding may appear as a result of the fact that the repetition strategy is not appropriate for university learners and that the heavy work load during learners practices. Both individual performance assignments and weekly conducted strategy practices increased the work load of learners. Long lasting and heavy strategy teaching programs may affect the perspectives of learners towards the practices and their use of strategies negatively (Ragosta, 2010).

Learners in both groups are claimed to have similar perspectives on change in their studying habits. Based on the findings the practices can be claimed to change their habits of planning and note taking. Moreover while learners in cognitive strategy group put forward their perspectives mostly on the changes related to cognitive strategies such as summarizing, noting, key point of topics, using memory supporters, rewriting, determining key words, using special signs, learners in metacognitive practice strategy group put forward their perspectives mostly on the use of cognitive (making tables, summarizing, using special signs) and metacognitive strategies (developing self-strategies, using topic specific strategies, asking yourself questions. From these point of view perspectives of learners are varied according to practice types in changes in their planning studying, controlling (monitoring) and evaluating habits. The perspectives of learners in metacognitive strategy group are varied according to the changes in their use of metacognitive strategies compared to perspectives of learners in cognitive strategy group in terms of managing time, monitoring errors and deficiencies, and controlling. These results from the fact that learners in metacognitive strategy practice group mentioned more than learners in cognitive strategy practice group. These findings indicate that the strategy practices contribute to learners' strategy use and awareness: in other words, meet the needs of learners. This result is parallel to various researches in the field (Çalışkan and Sünbül, 2011; Başbay, 2008; Sönmez Ektem, 2007). Başbay (2008) in his study about the investigation of the effects of project based teaching in instructional design course revealed that learners found the opportunity of taking their own decisions and considering these decisions through learners reflection in metacognitive strategy use, and that they were encouraged to self-evaluate and reflect and to realize the important points in learning and studying strategies. Sönmez Ektem (2007) stated that the problem solving process in metacognitive strategies are useful in terms of developing attitudes towards math and importance of problem solving as well as learners success based on the observations made during the practices and learners' perspectives on the practices to encourage the use of metacognitive strategies during problem solving process in math. Furthermore learners' perspectives and observations showed that they gained the skills of understanding the importance of problem solving, understanding the problem, studying regularly, controlling the process and awareness.

The perspectives of learners in both groups on the change of using these strategies indicate that the metacognitive strategy practices change the use of cognitive strategies as well as metacognitive strategies. Similar results are found in the field (Ningfeng, Wardeska, McGuire and Cook, 2014; Kim, 2013; Künsting, Kempf and Wirth, 2013; Thompson, 2007).

The findings gathered as a result of the analysis of learners' perspectives on the contribution of practices to learners' learning indicate that the practices contribute to learning in terms of getting prepared for the lesson, revising the topics and activating the previous knowledge. The research results in the field support this finding (Çakıroğlu, 2007; Demircioğlu, 2008; Pilten, 2008; Çalışkan and Sünbül, 2011; Özkaya, 2013). Moreover the perspectives of the learners in both groups can be claimed to be similar on the contribution of the practices to their learning.

Based on the research findings the use of metacognitive strategy practices combined with course content to change the learners' habits of studying, planning studies, monitoring and evaluating, and the use of these strategies can be suggested. This situation results from the fact that learners in metacognitive strategies practice group are glad with the properties related to cognitive strategy use. However the frequency of these practices can be claimed to be determined based on the perspectives and work load of learners during learning and teaching process in terms of learners' satisfaction levels and the development of strategy use.

References

- Başbay, M. (2008). *Yenilenmiş taksonomiye göre düzenlenmiş öğretim tasarımı dersinde projeye dayalı öğretimin öğrenme ürünlerine etkisi* (Unpublished doctoral dissertation). Hacettepe University, Institute of Social Sciences, Ankara.
- Birenbaum, M., & Rosenau, S. (2006). Assessment preferences, learning orientations, and learning strategies of pre-service and in-service teachers. *Journal of Education for Teaching*, 32(2), 213-225.
- Boekaerts, M. (1992). The adaptable learning process: initiating and maintaining behavioural change. *Applied Psychology: An International Review*, 41, 377-397.
- Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teacher and students. *Learning and Instruction*, 7(2), 161-186.
- Boekaerts, M., & Corno, L. (2005). Self-regulation in the classroom: A perspective on assessment and intervention. *Applied Psychology: An International Review*, 54(2), 199-231.
- Butler, D., & Winne, P. (1995). Feedback and self-regulated learning: A theoretical synthesis. *Review of Educational Research*, 65, 245-281.
- Büyüköztürk, Ş., Akgün, Ö. E., Özkahveci, Ö., & Demirel, F. (2004). Güdülenme ve öğrenme stratejileri ölçeğinin Türkçe formunun geçerlik ve güvenirlik çalışması. *Kuram ve Uygulamada Eğitim Bilimleri*, 4(2), 208-239.
- Çakıroğlu, A. (2007). *Üstbilişsel strateji kullanımının okuduğunu anlama başarı düzeyi düşük öğrencilerde erişimi artırımına etkisi* (Unpublished doctoral dissertation). Gazi University, Institute of Educational Sciences, Ankara.
- Canca, D. (2005). *Cinsiyete göre üniversite öğrencilerinin kullandıkları bilişsel ve bilişüstü öz düzenleme stratejileri ile akademik başarıları arasındaki ilişkinin incelenmesi* (Unpublished master's thesis). University of Yıldız Teknik, Institute of Social Sciences, İstanbul.
- Cekolin, C. H. (2001). *The effect of self-regulated learning strategy instruction on strategy use and academic achievement* (Unpublished doctor of philosophy thesis). University of South Alabama.
- Chung, M. (2000). The development of self-regulated learning. *Asia Pacific Education Review*, 1(1), 55-66.
- Çalışkan, M., & Sünbül, A. M. (2011). Öğrenme Stratejileri Öğretiminin Yürütücü Biliş Bilgisine, Yürütücü Biliş Becerilerini Kullanmaya ve Başarıya Etkisi (İlköğretim 6. Sınıf Türkçe Dersi Örneği). *Kuram ve Uygulamada Eğitim Bilimleri*, 11(1), 133-153.
- Dembo, M. H. (2001). Learning to teach is not enough - Future teachers also need to learn how to learn. *Teacher Education Quarterly*, 28(4), 28-35.
- Demircioğlu, H. (2008). *Matematik öğretmen adaylarının üstbilişsel davranışlarının gelişimine yönelik tasarlanan eğitim durumlarının etkililiği* (Unpublished doctoral dissertation). Gazi University, Institute of Educational Sciences, Ankara.
- Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist*, 40(2), 117-128.
- Hall, K., Myers, J., & Bowman, H. (1999). Tasks, texts and contexts: A study of reading and metacognition in English and Irish primary classrooms. *Educational Studies*, 25(3), 311-325.
- Hofer, B. K., Yu, S. L., & Pintrich, P. R. (1998). Teaching college students to be self-regulated learners. In D. H. Schunk, & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice*, (pp. 57-85). New York, NY: The Guilford Press.
- Kim, Y. R. (2013). *Building a theoretical model of metacognitive processes in complex modeling activities: A window into the development of students' metacognitive abilities* (Doctor of philosophy thesis). University of Minnesota.

- Kitsantas, A., & Baylor, A. L. (2001). The impact of the instructional planning self-reflective tool on preservice teacher performance, disposition, and self-efficacy beliefs regarding systematic instructional planning. *Educational Technology Research and Development*, 49(4), 97-106.
- Kremer-Hayon, L., & Tillema, H. H. (1999). Self-regulated learning in the context of teacher education. *Teaching and Teacher Education*, 15(5), 507-522.
- Kumlu, G. (2012). *Alternatif kavramlara sahip fen ve teknoloji öğretmen adaylarında fen metinlerini okurlarken aktif hale gelen bilişsel ve üstbilişsel stratejiler* (Unpublished master's thesis). Gazi University, Institute of Educational Sciences, Ankara.
- Künsting, J., Kempf, J., & Wirth, J. (2013). Enhancing scientific discovery learning through metacognitive support. *Contemporary Educational Psychology*, 38(4), 349-360.
- Ley, K., & Young, D. B. (1998). Self-regulation behaviors in underprepared (developmental) and regular admission college students. *Contemporary Educational Psychology*, 23, 42-64.
- Ley, K., & Young, D. B. (2001). Instructional principles for self-regulation. *Educational Technology, Research and Development*, 49(2), 93-103.
- Ningfeng, Z., Wardeska, J. G., McGuire, S. Y., & Cook, E. (2014). Metacognition: An Effective Tool to Promote Success in College Science Learning. *Journal of College Science Teaching*, 43(4), 48-54.
- Osman, M. E., & Hannafin, M. J. (1992). Metacognitive research and theory: Analysis and implications for instructional design. *Educational Technology Research and Development*, 40(2), 83-99.
- Özkaya, A. (2013). *Üstbilişsel ve internet tabanlı üstbilişsel öğretim yöntemlerinin öğrencilerin hücre bölünmesi ve kalıtım konusundaki başarılarına, tutumlarına ve üstbilişsel düşünme düzeylerine etkisi* (Unpublished doctoral dissertation). Gazi University, Institute of Educational Sciences, Ankara.
- Özturan Sağırlı, M., & Azapağası, E. (2009). Üniversite öğrencilerinin öğrenmede öz-düzenlemeyi öğrenme becerilerinin incelenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 42(2), 129-161.
- Paris, S. G., & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89-101.
- Perry, N. E., Hutchinson, L. & Thauberger, C. (2008). Talking about teaching self-regulated learning: Scaffolding student teachers' development and use of practices that promote self-regulated learning. *International Journal of Educational Research*, 47, 97-108.
- Pilten, P. (2008). *Üstbiliş stratejileri öğretiminin ilköğretim beşinci sınıf öğrencilerinin matematiksel muhakeme becerilerine etkisi* (Unpublished doctoral dissertation). Gazi University, Institute of Educational Sciences, Ankara.
- Pintrich, P. R. (1995). Understanding self-regulated learning. *New Directions for Teaching and Learning*, 63, 3-12.
- Pintrich, P. R., & Groot, E. V. D. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33-40.
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the motivated strategies for learning*. Michigan: School of Education Building, The University of Michigan. Retrieved from ERIC (ED338122).
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement*, 53(3), 801-813.
- Pressley, M., & Harris, K. R. (2006). Cognitive strategy instruction: From basic research to classroom instruction. In P. A. Alexander, & P. H. Winne (Eds.), *Handbook of educational psychology* (2nd ed.), (pp. 265-286). Mahwah, NJ: Erlbaum.
- Ragosta, P. (2010). *The effectiveness of intervention programs to help college students acquire self-regulated learning strategies: A meta-analysis* (Doctor of philosophy thesis). The City University of New York, New York.

- Randi, J. (2004). Teachers as self-regulated learners. *Teachers College Record*, 106(9), 1825-1853.
- Randi, J., & Corno, L. (2000). Teacher innovations in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner, (Eds.), *Handbook of self-regulation* (pp. 651-685). San Diego, CA: Academic Press.
- Sarıbaş, D. (2009). *Öz-düzenlemeye dayalı öğrenme stratejilerini geliştirmeye yönelik laboratuvar ortamının kavramsal anlama, bilimsel işlem becerisi ve kimyaya karşı tutum üzerindeki etkisi*. (Unpublished doctoral dissertation). Marmara University, Institute of Educational Sciences, İstanbul.
- Şimşek, A. (2006). Bilişsel stratejilerin öğretimi. In A. Şimşek (Ed). *İçerik türlerine dayalı öğretim* (pp. 181-208). Ankara: Nobel Yayın Dağıtım.
- Smith, P. L., & Ragan, T. J. (2005). *Instructional design* (3rd ed.). Hoboken, New Jersey: Wiley-Jossey Education.
- Sönmez Ektem, I. (2007). *İlköğretim 5. sınıf matematik dersinde uygulanan yürütücü biliş stratejilerinin öğrenci erişimi ve tutumlarına etkisi* (Unpublished doctoral dissertation). Selçuk University, Institute of Social Sciences, Konya.
- Tillema, H. H., & Kremer-Hayon, L. (2002). "Practising what we preach" - Teacher educators' dilemmas in promoting self-regulated learning: A cross case comparison. *Teaching and Teacher Education*, 18, 593-607.
- Thompson, R. (2007). *Metacognition: An intervention for academically unprepared college students* (Unpublished doctoral dissertation). Capella University.
- Uygun, M. (2012). *Öz düzenleme stratejisi gelişimi öğretiminin yazılı anlatıma, yazmaya yönelik öz düzenleme becerisine, kalıcılığa ve tutuma etkisi* (Unpublished doctoral dissertation). Hacettepe University, Institute of Social Sciences, Ankara.
- Van Eekelen, I., Boshuizen, H., & Vermunt, J. (2005). Self-regulation in higher education teacher learning. *Higher Education*, 50, 447-471.
- Weinstein, C. E., Husman, J., & Dierking, D. R. (2000). Self-regulation interventions with a focus on learning strategies. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulated learning* (pp. 728-749). San Diego: Academic.
- Winne, P. H., & Hadwin, A. F. (1998). Studying as self-regulated learning. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 277-304). Mahwah, NJ: Lawrence Erlbaum Associates.
- Yıldırım, A., & Şimşek, H. (2005). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (5th ed.). Ankara, Seçkin Yayıncılık.
- Yin, R. K. (1984). *Case study research: Design and methods*. Newbury Park, CA: Sage.
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339.
- Zimmerman, B. J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex and giftedness to self-efficacy and strategy-use. *Journal of Educational Psychology*, 82(1), 51-59.
- Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal*, 31, 845-862.