



## SELF-REGULATION STRATEGIES USED IN A PRACTICUM COURSE: A STUDY OF MOTIVATION AND TEACHING SELF -EFFICACY

### ÖĞRETMENLİK UYGULAMASINDA ÖZ-DÜZENLEYİCİ ÖĞRENME STRATEJİLERİ - GÜDÜLENME VE ÖĞRETMENLİK ÖZ-YETERLİĞİ ÜZERİNE BİR ÇALIŞMA

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**ABSTRACT:** This study was designed to explore pre-service computer teachers' perception of motivation and response to an instruction based on self-regulated learning strategies. A pre-experimental method was used in this research. Data were collected through the Motivated Strategies for Learning Questionnaire developed by Pintrich and others (1993) and the Teacher Self-efficacy Scale developed by Akkoyunlu and others (2005). Frequency, percentage distribution, t- test analysis were used in analyzing data. During the semester, self-regulated strategies were integrated into the Teaching Practice Course. As a result of this study, after the one semester course, students perceive themselves as being more motivated on the course as well as perceiving a higher level of teacher self-efficacy as a computer teacher. This study was an initial step in encouraging students to develop self-regulatory strategies like planning, organizing, monitoring and evaluating their own work. The results provide a reference for instructors that they can embed self-regulatory strategies into their courses.

**Keywords:** self-regulation strategies, teaching self-efficacy, practicum course

**ÖZET:** Bu araştırmada, bilgisayar öğretmen adaylarının "Öğretmenlik Uygulaması" dersi boyunca kullandıkları öz-düzenleyici öğrenme stratejilerinin öğrencilerin derse karşı olan motivasyonları ve öğretmenlik öz-yeterliklerine etkisi araştırılmıştır. Araştırmada yarı deneme modeli kullanılmıştır. Veriler Pintrich ve diğerleri (1993) tarafından geliştirilen Öğrenmede Motive Edici Stratejiler Ölçeği ve Akkoyunlu, ve diğerleri (2005) tarafından geliştirilen Bilgisayar Öğretmenliği Öz-yeterlik ölçekleri aracılığı ile toplanmıştır. Verilerin analizinde frekans dağılımı, yüzde dağılımı ve t-testi kullanılmıştır. Analizler sonucunda, bilgisayar öğretmen adaylarının ders boyunca kullandıkları planlama, düzenleme, izleme ve değerlendirme öz-düzenleyici öğrenme stratejilerinin öğrencilerin derse karşı olan motivasyonlarını artırdığı ve öğretmenlik öz-yeterlik algılarını olumlu yönde geliştirdiği saptanmıştır. Bu sonuç, öğretim elemanlarının derslerinde öğrencilerine öz-düzenleyici öğrenme stratejilerini kullanmaları yönünde rehberlik etmelerinin önemini ortaya koymuştur.

**Anahtar Sözcükler:** öz-düzenleyici öğrenme stratejileri, öğretmenlik öz-yeterliliği, öğretmenlik Uygulaması dersi

## 1. INTRODUCTION

Self-efficacy is defined as an individual's confidence in succeeding in a task (Pajares, 2002), and judgments of the individual about carrying out or succeeding in a duty (Zimmerman, 1995). Self-efficacy is an important concept of Bandura's Social Cognitive Theory. When Bandura developed the Social Cognitive Theory, he first drew attention to the correlation between self-efficacy confidence and self-regulation skills (Pajares, 2002). Bandura (1986) defined self-efficacy as the judgments of an individual about organizing the necessary activities for displaying a performance and being successful in this performance.

Self-efficacy which is a necessity for success is affected by the individual's self-regulation skills (Zimmerman et al, 1992). Students having self-regulation skills tend to have higher degrees of self-efficacy confidence in themselves (Shrunk & Ertmer, 2000). Pajares (2002) emphasizes that individuals with high degrees of self-efficacy confidence use their self-regulation skills more effectively.

It is a fact that high degrees of self-efficacy confidence cannot be expected from individuals who are not able to use self-regulation skills effectively in a subject or a task. Individuals who have and who can use skills such as determining objectives related to the course, determining his or her own criteria, and being able to make a self-assessment are expected to display higher degrees of self-efficacy.

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From this point of view, the purpose of the study was to examine preservice computer teachers perception of self-regulation strategies used in the *Teaching Practice* course; as well as to investigate the effects of these strategies on the teacher self-efficacy.

### 1.1 Teacher Self-efficacy

A similar point is emphasized in the definitions of teacher self-efficacy. The teacher self-efficacy concept is explained as “their own judgments about their skills for motivating students even in difficult cases by making them be active during the course in order to come up with solutions” (Amor et al 1976; cited Tschannen-Moran & Hoy 2001) as well as “teachers’ confidence in their skills for affecting students’ performances” (Berman et al, 1977; cited Tschannen-Moran & Hoy, 2001). Teachers having an intense efficacy satisfaction tend to make powerful plans and exert more efforts spending more time on their work (Milner & Woolfolk, 2003). They may use initiatives while applying the teaching program by benefiting from new kinds of educational approaches (Gibbs, 2002). Nespor (1987) asserts that teacher self-efficacy perception plays an important role in determining many problems affecting the teaching media adversely as well as in developing and applying new strategies. As a result of many studies, a strong correlation was found between teacher self-efficacy perception and their skills for coming to and applying effective educational decisions (Pajares, 1992; Henson, 2001; Barnes, 2003).

### 1.2 Self-regulation Learning Strategies

Self-regulation learning has become an important topic in the educational field in the last decade. Self regulation is defined as an individual’s ability and motivation to implement, monitor and evaluate various learning strategies for the purpose of fascinating knowledge growth (Ertmer et al. 1996). Winne (1995) defined self-regulated learning as an inherently constructive and self-directed process.

Self-regulation learning strategies have been defined as a set of meta-cognitive, motivational and behavioral techniques a learner can use to control his or her own learning process (Zimmerman & Martines Pons, 1986; Zimmerman, 1990). According to Zimmerman (1990) in a given situation, self-regulated learners are aware of the information and the skills they must possess and they take the necessary steps to acquire these items. Pintrich and De Groot (1990) have also mentioned that self regulated learning strategies include learners’ meta-cognitive strategies and self management. One of the key issues in self-regulated learning is the learners’ ability to select, combine and coordinate cognitive strategies in an effective way (Boekaerts, 1999). In general self-regulated learners identify a goal to be accomplished and control their behavior, motivation, affect, and cognition in order to attain that goal (Pintrich, 1995).

Although there are number of different models of self-regulated learning, they share the same assumption that students can actively regulate their cognition and behavior and through these regulatory processes achieve their goals and perform better (Zimmerman, 1989). It is therefore desirable to study self-regulated learning to be able to improve these skills in learners. On the other hand, life-long learning is becoming increasingly important. It is to be expected that in the future non-academic learning environments will be much more prevalent and these environments are likely to be much more learner oriented, which means that learners will require self-regulatory skills to a greater extent (Hofer et al. 1998). However, it is acknowledged that self-regulation does not automatically develop as people become older, nor is it passively acquired from the environment (Schunk, 1989). Therefore, our vision of the developing learning environment is that it should be one that helps students to develop self-regulation skills. Self-regulation skills are:

1. Determining specific goals.
2. Establishing strong strategies for reaching the goals.
3. Displaying performance
4. Following the developmental process.
5. Restructuring the goals so that they are in accordance with physical and social contexts.

6. Making an effective time-management strategy
7. Self-evaluation and its outcomes.
8. Adjusting the current situation to predictions for the future (Zimmerman, 2002).

In formal learning environments, learning predominantly involves the acquisition of knowledge and skills; these are generally imposed on the students by their teachers. On the other hand, learning environments which aim to develop learners self-regulation skills should help learners develop an ability to select, and to combine and coordinate cognitive strategies in an effective way (Boekaerts, 1999). Efforts to apply instructional strategies for fascinating the development and growth of self-regulation skills such as active learning in an authentic context, collaborative effort and reflective thinking are recommended (Ertmer et al. 1996).

Self-regulated strategies which include setting goals, writing reflective summaries, working together in groups, self-reflection and keeping of diaries were used in this study to assist and enhance pre-service computer teachers in their motivation perception and their teacher self-efficacy perception. The motivation perception focused on in this study included the extrinsic goal orientation (a focus on grades and approval from others) , the perception of task value beliefs (judgments of how interesting, useful and important the course content is to the student), the monitoring of learning beliefs (student belief that their efforts to learn will result in positive outcomes), and the self-efficacy needed to be a technology teacher (a self-appraisal in teaching abilities, solving classroom problems, motivating students to learn and to face challenges) .

### 1.3 Research Questions

This study was designed to explore preservice computer teachers' perception of motivation and response to an instruction based on self-regulated learning strategies. The research questions were:

Do preservice computer teachers learning from an instruction based on application of self-regulated learning strategies

1. improve their perception of extrinsic goal orientation after finishing the course?
2. improve their perception of task value after finishing the course?
3. improve their control of learning beliefs after finishing the course?
4. improve their teacher self-efficacy after finishing the course?

## 2. METHOD

This study was intended to develop preservice computer teacher self-efficacy perception through the *Teaching Practice* course based on applying self-regulation learning strategies. A pre-experimental method was used in this research. The study incorporated self-regulation strategies which were designed to assist students to self-observe and evaluate their own teaching effectiveness, and to self-monitor the changes during the course

### 2.1 Participants

The participants in this study are 39 preservice computer teachers. The gender breakdown is 27 males and 12 females. Before the *Teaching Practice* course, the participants had already completed 2 courses named *School Experience 1-2*; these prepare the pre-service teachers for the school environment and teaching practice. These two courses mainly consist of observing the school, the pupils and a teacher while teaching. None of the students had previous experience in using self-regulated strategies or in teaching an actual class.

### 2.2 Instruments

The Motivated Strategies for Learning Questionnaire (MSLQ), developed by Pintrich and others (1993) is a self-report, a Likert type (1= not true of me, to 7= very true of me) instrument was designed to measure university student motivational orientation and their use of different learning strategies. The motivation section of the MSLQ consists of six sub-scales with items designed to assess student goals and value beliefs in their course, their beliefs about their skills necessary to

succeed in the course, and their anxiety about tests on the course. The learning strategy section consists of nine sub-scales with items on cognitive and meta-cognitive strategies and the management of various resources. In this study, sub-scales with items designed to assess student extrinsic goal orientation, their perception of the task value and control of learning beliefs were used. Cronbach coefficient alpha reliabilities were 0.62 for extrinsic goal orientation, 0.90 perception of task value, 0.68 control of learning beliefs (Pintrich et al. 1993).

The Teacher Self-efficacy Scale (TSES) developed by Akkoyunlu, Orhan, Umay (2005) is self-reporting, a Likert type (1= not at all, to 5= always) instrument was designed to measure the computer teacher self-efficacy. The scale consists of 12 items focusing on measuring personal teaching efficacy of both pre- and in-service teacher beliefs about their teaching capabilities. The scale has one factor and the Cronbach coefficient alpha reliabilities was 0.93.

### 2.3 Course Content

The *Teaching Practice* core course is one part of the undergraduate curriculum at the Department of Computer Education and Instructional Technologies of the Yıldız Technical University which is an old deep seated university in Istanbul. In this eight-semester undergraduate program, students are trained to be educational technology experts who are expected to initiate computer use in learning environments, as well as computer teachers who are expected to train young students to be efficient computer literate persons. The students take the *Teaching Practice* course in their 8th academic semester. One academic semester consists of 14 weeks. Approximately 30-40 students are enrolled in the course each academic year. The course is taught for 8 hours per week (6+2) essentially by an instructor from the Department, who has, at least, a doctoral degree. For the first three weeks, for 3 hours, students attend lectures on the procedures and the organization of the course; these take place within the faculty. For 8 weeks students visit their schools (2 hours) and teach their classes for 4 hours each week, and attend lectures at the faculty for 2 hours to discuss any problems they might have met. The final two weeks are devoted to self-assessment and the sharing of their experiences with peers.

The content used of this course generally introduces an authentic teaching environment to pre-service teachers to practice their classroom performance. The content covers the organization of the classroom environment, developing lesson plans, using different teaching methods, developing materials and the teaching of computer literacy courses. By the planning of such content the course aims to help pre-service teachers to get acquainted with the school, its pupils and the teaching profession from a teacher perspective before graduating from the teacher training programme.

The course activity is divided into five parts. Part 1 covers observation, of the teacher and the class in which they are going to teach. Part 2 covers the development of lesson plans for the class they are going to teach.. Part 3 covers teaching an actual class for at least 15 hours. Part 4 covers self assessment for their classroom performance. Part 5 covers the mentor's and the instructor's assessment of their lesson preparation and classroom performance.

### 2.4 Procedure

Both at the beginning and at the end of the semester, the MSLQ and TSES were administrated. There were 25 items in total.

In recent years, researchers have shown that student learning can be enhanced if students are encouraged to employ self-regulated learning processes as they go about acquiring new skills (Zimmerman, 2000). Methods used to promote student self-regulation have included asking students to focus on process goals (Schunk & Schwartz, 1993) and encouraging students to evaluate their own work (Zimmerman, 2000; Zimmerman & Kitsantas, 1999). Ley and Young (2001) suggest four instructional principles that should assist less-expert learners to adapt to these self-regulation strategies, to “guide learners to prepare and structure an effective learning environment, organize instruction and activities to facilitate cognitive and meta-cognitive processes, use instructional goals and

feedback to present student monitoring opportunities and provide learners with continuous evaluation information and occasions to self evaluate”.

Therefore, in this study, goal setting and planning, organizing and transforming instructional material and self-evaluation strategies were integrated to help the pre-service teachers to develop their teacher self-efficacy skills.

### **2.4.1 Goal Setting and Planning**

According to Zimmerman (2000), SRL begins in the pre-planning phase that includes goal setting and strategic planning, implemented largely on the basis of self-efficacy beliefs. Therefore at the beginning of the course pre-service teachers were asked to set and write their specific (not general) process goals for themselves for this course and the course. Students were encouraged to concentrate on methods and strategies that could help them master a particular skill rather than concentrating on attaining the desired outcome. For example, the need for careful time management was mentioned, and the pre-service teachers were advised to use calendars and organizers to plan the timing of teaching practice activities. Before developing 15 hours lesson plans to be able to see the whole students were asked to prepare a general plan for their each class. During the teaching practice period students were told that they were free to show their lesson plans to the course instructor if they had any questions, students were free to attend the 2 hour lectures which took place during their teaching practice period, students were also asked to keep a file, to collect all the plans and materials they had developed etc. These activities were intended to help to improve pre-service teacher goal setting and planning skills.

### **2.4.2 Organizing and transforming instructional material**

Zimmerman (2002) mentioned that in the performance phase of the self-regulation learning cycle, learners focus on the task and optimize their performance. They do so by initiating some kind of systematic management of their instructional materials to improve learning. Therefore, students were asked to take notes during the lecture hours, the observation period, and in teaching actual class, and they were asked to use some strategies to organize their notes such as underlining, highlighting etc. They were also asked to keep a diary of their teaching practice classes. In the diaries they were advised to reflect on their feelings about the class atmosphere, to say if the lesson plan had worked properly, to consider the teacher-student interaction and especially to write about how they felt about themselves as teacher candidates.

### **2.4.3 Self-evaluation**

Student self-evaluation involves having students compare their performance against a standard or norm and adjusting their learning activities depending on their informed perceptions of the quality of their work (Clearly & Zimmerman, 2001). Self-evaluative judgments are not only closely linked to achievement outcomes but also to individual self-satisfaction. Self-satisfaction, which involves satisfaction or dissatisfaction with performance outcomes, is critical because people who are satisfied with their performance will continue pursuing the task; on the other hand people will not pursue a task if outcomes lead to dissatisfaction or negative affect (Zimmerman, 2000). Therefore in this study pre-service teachers were asked to record themselves while teaching their classes, and through watching the video they evaluated their own teaching performance. Besides pre-service teachers also critique their friends according to a specific set of criteria. These features are designed to help them judge the effectiveness of their teaching practice. Schunk & Ertemer (1999) examined how goals and self-evaluation affected undergraduate student achievement, self-efficacy and perceived competence and self-regulation. Results showed that self-evaluation produced positive results on goal setting, whereas infrequent self-evaluation was not beneficial for the outcome goal condition.

## **2.5 Data Analysis**

T-test was conducted to answer research questions about pre-service teacher extrinsic goal orientation, perception of task value, control of learning beliefs and teacher self-efficacy.

The MSLQ sub-scale scores for each participant were conducted by taking the mean of the items that make up that scale. For example, extrinsic goal orientation has four items and taking the

average computed an individual's score for extrinsic goal orientation. In general, a higher score of 4,5,6,7 indicates a positive response to the items. Extrinsic goal orientation has 4 items, perception of task value has 6 items, control of learning beliefs has 4 items. All these sub-scales are on the motivation section of the scale. The Cronbach coefficient alpha reliabilities were .74 for extrinsic goal orientation, .83 for perception of task value and .78 for control of learning beliefs sub-scale in the present study.

The TSE scale has 12 items. In general, a higher score of 4 and 5 indicates a positive response to the items. The Cronbach coefficient alpha reliability was .86 for this scale in the present study.

### 3. RESULTS AND DISCUSSION

The overall distribution of the three sub-scales of MSLQ and Teacher Self-efficacy scale mean scores for pre and post-tests are provided in Table 1.

**Table 1: T-test of "Teacher Self-efficacy & Three Sub-scale Scores of MSLQ" for Pre-test and Post-test for All Subjects (N= 39)**

Teaching Self efficacy		Pre-test		Post-test		df	t	p
		$\bar{X}$	Sd	$\bar{X}$	Sd			
		3.73	.46	4.33	.36	38	- 7.74	.00*
Sub-scales of MSLQ	Extrinsic Goal Orientation	3.56	.92	3.64	.46	38	- .420	.67
	Perception of Task Value	3.55	.64	4.51	.78	38	- 5.96	.00*
	Control of Learning Belief	3.62	.76	4.01	.60	38	-2.74	.00*

\* p < .01

In this study, the *teaching practice* course for fourth year students was designed to improve pre-service computer teacher use of self-regulation learning strategies and teacher self-efficacy. For this, during the semester, self-regulation strategies were introduced - such as careful time management, keeping a file to collect all the plans and materials they had developed, taking notes during the class observation and teaching practice periods, using strategies to better organize their notes such as underlining, highlighting, the use of different colors etc. They were also asked to keep a journal of their teaching practice experience. For self-evaluation they videotaped themselves while teaching a class and they were able to evaluate their teaching performance by watching these videos. Table 1 presents the means and standard deviation for pre- and post-test scores and it is seen that there is a statistically significant difference between pre- and post-test scores. Results in Table 1 indicates that after the one semester course, students perceive themselves as being more motivated on the course as well as perceiving a higher level of self-efficacy perception as a computer teacher.

#### 3.1 Extrinsic Goal Orientation

Goal orientation refers to the "type of standard by which individuals will judge their performance or success" (Pintrich & Shunk 1996). Students operating with extrinsic goals set standards of success based on external judgments such as a test scores, rewards or performance relative to their peers (Hodges, 2005). Results indicate that after the one semester course, student extrinsic goal orientation showed no improvement. The difference between pre-test and post-test is statistically not significant ( $p > .01$ ; See Table 1). Driscoll (2000, cited by Hodges 2005) used a different terminology; for extrinsic goals he preferred performance goals and for intrinsic goals he preferred learning goals. He mentioned that "performance goals foster the belief that intelligence is fixed" (p.309), whereas "learning goals are associated with the belief that intelligence is malleable and can be developed. From these descriptions one can see the importance of learning goals for self-regulation. If a student believes that intelligence is fixed, then adapting or regulating his or her learning to improve achievement would not change academic outcomes. On the other hand, if a student believes that intelligence is malleable, then the student may believe it is possible to control or regulate his or her learning (Hodges 2005). From the point of this discussion the results in Table 1 indicates that pre-service teacher perception of having extrinsic goals was not high either at the

beginning of the semester or at the end of the semester. This result means that pre-service teachers did not believe that intelligence is fixed.

### 3.2 Pre-service Teachers Perception of Task Value

Task value refers to student evaluation of the importance of the task, the intrinsic interest in the task, and the usefulness of the task (Pintrich 1990). In this study, task value refers to the pre-service teachers' perception of the course content in terms of interest, importance and utility. There were 6 items in the scale. Table 2 shows that pre-service computer teachers positively viewed the importance of the *Teaching Practice* course especially after finishing the course. Table 2 shows that the difference between pre-test and post-test is statistically significant for all items except item 1. The difference for pre-test and post-test for item 1 is statistically not significant ( $p > .05$ ). This result shows that even after a one semester course. Students still have the perception that they are not able to apply what they learn in this course in other courses (Item 1). Teaching practice is the last semester course and students integrate all the skills and knowledge they have gained through other courses in this course and try to evidence this through teaching practices in actual teaching conditions. Therefore it is probable that students thought that, as graduate students, they would not take any more courses and therefore would not be able to transfer what they learnt on this course to other courses.

**Table 2: T-test of "Perception of Task Value" Items between Pre-test and Post-test (N=39)**

Item	Pre-test		Post-test		t	p
	$\bar{X}$	Sd	$\bar{X}$	Sd		
1. I think I will be able to use what I learn in this course in other courses.	3.84	1.06	3.69	1.30	.64	.52
2. It is important for me to learn the course material in this class.	3.10	1.31	4.17	0.91	-3.54	.00*
3. I am very interested in the content area of this course.	3.66	1.03	4.58	1.06	-4.89	.00*
4. I think the course material in this class is useful for me to learn.	3.56	1.25	4.58	.99	-4.56	.00*
5. I like the subject matter of this course.	3.51	1.02	4.66	1.19	-4.81	.00*
6. Understanding the subject matter of this course is very important to me.	3.61	.74	5.38	.87	-9.36	.00*

\*  $p < .01$

### 3.3 Control of Learning Belief

Control of learning refers to student belief that their efforts to learn will result in positive outcomes. It concerns the belief that outcomes are contingent on one's own effort, in contrast to external factors such as the teacher (Chang 2005). There were 4 items in this sub-scale.

**Table 3: T-test of "Control of Learning Beliefs" Items between Pre-test and Post-test (N=39)**

Item	Pre-test		Post-test		t	p
	$\bar{X}$	Sd	$\bar{X}$	Sd		
1. If I study in appropriate ways, then I will be able to learn the material in this course.	3.94	.75	4.07	.53	- .96	.34
2. It is my own fault if I don't learn the material in this course.	3.74	.96	3.56	0.91	2.02	.04**
3. If I try hard enough, then I will understand the course material.	3.58	1.44	4.28	.75	-2.51	.01*
4. If I don't understand the course material, it is because I didn't try hard enough.	3.02	1.42	4.15	.84	-4.72	.00*

\*  $p < .01$ ; \*\* $p < .05$

Results in Table 3 show that students believed that learning outcomes mainly depend on their own effort. After finishing the *Teaching Practice* course, student perception was that they could learn the course material only if they tried hard enough (item3). And their perceptions about their responsibilities to succeed in learning the course material improved as well (item 2 and 4). But on the other hand, the difference for pre-test and post-test for item 1 is statistically not significant ( $p > .05$ ).

This result shows that there is no improvement on the student perception of learning the material better only if they study appropriately. Even after a one semester course, students still show no change in their perception on this matter.

### 3.4 Teaching Self efficacy

The 12 items of this scale refers to a self-appraisal of the computer teacher's ability to complete a task and the computer teacher's confidence in his or her skill in performing that task. Results show that after finishing the *Teaching Practice* course, which is based on using self-regulation learning strategies, pre-service computer teachers were more confident that they could master the skills gained through teaching practice course (see Table 4). In other words, using some self-regulated strategies during the course affected student teacher self-efficacy perception positively.

**Table 4: T-test of "Teacher Self-efficacy" Items between Pre-test and Post-test (N=39)**

Item	Pre-test		Post-test		t	p
	$\bar{X}$	Sd	$\bar{X}$	Sd		
1. I'm confident that I would be able to create the necessary physical conditions (such as arrangement of computer placement, student seat arrangement) in a computer lab.	3.94	.72	4.30	.69	-2.48	.018*
2. I'm confident at setting up and using the equipment (overhead projector, video player, data projector, scanner, internet, network, etc) that is available in a computer lab.	3.79	.83	4.38	.67	-4.50	.00*
3. I'm confident at developing special materials (work sheets, transparencies, power point presentations, etc) that is suitable for the student achievement in computer literacy course.	3.89	.71	4.53	.64	-4.43	.00*
4. I believe that I can develop computer literacy activities that are appropriate for students' levels, age, and experiences	3.71	.68	4.64	.48	-6.62	.00*
5. I'm certain I can develop different computer literacy course plans for different levels of classes.	3.74	.71	4.51	.55	-5.70	.00*
6. I'm confident at using different teaching methods (discovery, pair work, cooperative learning, etc.) while making students gain computer literacy skills.	3.94	.68	4.38	.59	-4.00	.00*
7. I'm certain I can deal with undesired student behaviors that cause disorder in the classroom.	2.82	.79	4.00	.72	-7.20	.00*
8. I'm confident at developing classroom discipline rules for creating an effective learning environment	3.48	.72	4.17	.55	-4.84	.00*
9. I'm confident at developing project works for students in which they can apply their computer literacy skills they gained	3.84	.70	4.12	.61	-2.43	.020*
10. I'm certain I can motivate the students who are showing indifferent attitudes towards the course.	3.71	.72	4.02	.70	-2.15	.038*
11. I'm confident at giving assistance to the subject teachers (Math, Music, etc.) to access information through the computer during their search.	4.10	.71	4.69	.46	-4.50	.00*
12. I'm certain I can help subject teachers to solve problems which they encounter during the integration of related courseware, presentation materials, etc into their teaching processes.	3.74	.81	4.28	.60	-3.93	.00*

\*  $p < .01$ ; \*\* $p < .05$

When we examined the items it is clearly seen that students were more confident that they could develop effective learning environment (items 1, 2, 3, 4, 5, 6), they could manage the students (items 7, 8, 10) and they could help subject teachers to use computers in their courses (items 11,12).

### 4. CONCLUSION

The purpose of this study is to examine how the integration of self-regulation strategies, including setting goals, writing reflective summaries, journal keeping, conducting collaborative group work and self reflection improve pre-service teachers' motivation perception and teacher self-efficacy



perception. These activities were intended to assist pre-service teachers to set goals, use learning strategies, self-observe and self-evaluate and to improve their teaching performance.

Results of the study indicate that after the one semester course, students' extrinsic goal orientation did not show any improvement. In another words, pre-service teachers' perception about having extrinsic goals were not high either at the beginning of the semester or at the end of the semester. This result means that pre-service teachers did not believe that intelligence is fixed.

The findings of the present study also revealed that pre-service teacher perception of the course content in terms of interest, importance and utility had improved. After finishing the course, students were more interested in the *Teaching Practice* course content.

In this study pre-service teachers were asked to record their teaching practice performance and were asked to review their record and evaluate their teaching performance. Students also evaluated each other in small groups. This process helped students monitor their own teaching process and adjust their teaching strategies when necessary. The findings of the study show that self-evaluation enhanced pre-service teacher self-efficacy perception. The positive effects of the self-evaluation conditions are most likely due to the fact that students who self-evaluated their own teaching behaviors as they proceeded through the teaching practice program were able to identify and correct any misguided teaching behavior. Besides, the reflective summary strategy helped the pre-service teachers to evaluate their teaching experience on a day to day basis and helped the trainees to organize their plans.

It is encouraging to see that after a one semester course students became more confident that they could develop an effective teaching environment and manage the technical and disciplinary problems that emerge in the classroom.

The findings of this study reveal that the application of self-regulatory strategies within *Teaching Practice* course instruction does help students to improve their motivational perception, which includes perception of task value, beliefs in achieving the learning outcomes and teacher self-efficacy. The pre-service teachers who participated in this study became more organized, able to plan effectively, more objective, more confident in teaching and they valued more what they had learnt after experiencing the *Teaching Practice* instruction with self-regulatory strategies.

This study was an initial step in encouraging students to develop self-regulatory strategies like planning, organizing, monitoring and evaluating their own work. The results provide a reference for instructors that they can embed self-regulatory strategies into their courses. Thus, instructors may be able to spend less time on teaching and more time in guiding students on how to use self-regulation strategies. It is hoped that more studies will follow that can help students become more self-directed. Repeating the study with a control group is also recommended.

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## GENİŞLETİLMİŞ ÖZET

Öz-yeterlik, bireyin bir işi gerçekleştirebilme, başarabilme yeteneği konusundaki yargılarını ifade etmektedir (Pajares, 2002; Zimmerman, 1995), Bireyin bir işte başarılı olabilmesi için önemli bir etkiye sahip olan öz-yeterlik algısı, bireyin öz-düzenleme becerilerinden etkilenmektedir (Zimmerman et al, 1992). Öz-düzenlemeye sahip olan öğrencilerin öz-yeterlik becerilerine yönelik yüksek bir algıya sahip oldukları görülmektedir (Shrunk and Ertmer, 2000). Öğretmenliğe ilişkin öz-yeterlik kavramı “Zor ve motivasyonu düşük öğrenciler de dahil olmak üzere öğrencilerin, öğrenme kapasitelerini etkileyebilme inancı veya kanısı” olarak tanımlanmaktadır (Amor et al, 1976; cited Tschannen-Moran and Hoy, 2001). Güçlü bir yeterlik algısına sahip öğretmenlerin, güçlü bir planlama, organizasyon ve gayret gösterme eğiliminde oldukları vurgulanmaktadır (Milner, Woolfolk, 2003). Öz-düzenleme ise bireyin öğrenme kapasitesini artırmak için çeşitli öğrenme stratejilerini uygulayabilme, gözlemleyebilme ve değerlendirebilme becerisi ve motivasyonu olarak tanımlanmaktadır (Ertmer et al., 1996). Öz-düzenlemeye yönelik öğrenme stratejileri, öğrencinin kendi öğrenme sürecini kontrol altına almak için kullanabileceği bilişüstü, motivasyonel ve davranışsal teknikler olarak belirtilmektedir (Zimmerman &Martines Pons, 1986, Zimmerman, 1990). Zimmerman’a (1990) göre öz-düzenlemeye sahip olan bireyler, buldukları bir durumda sahip olmaları gereken bilginin ve becerilerin farkında olmakta ve bunlara sahip olmak için gerekli adımları atabilmektedirler.

Bu araştırma dışsal hedefe yönelme, konuya değer verme algısı, öğrenme inançları ve bilgisayar öğretmenliği öz-yeterliğine yönelik stratejilerin kullanımını içermiştir. Söz konusu araştırmada bilgisayar öğretmen adaylarının “Öğretmenlik Uygulaması” dersi boyunca kullandıkları öz-düzenleyici öğrenme stratejilerinin öğrencilerin derse karşı olan motivasyonları ve bilgisayar öğretmenliği öz-yeterliklerine etkisi araştırılmıştır.

Araştırmada deneme öncesi model altında yer alan tek gruplu ön test son test deseni kullanılmıştır. Veriler Pintrich, Smith, Garcia ve McKeachie (1993) ve diğerleri (1993) tarafından geliştirilen Öğrenmede Motive Edici Stratejiler Ölçeği (ÖMSÖ) ve Akkoyunlu, Orhan, Umay (2005) tarafından geliştirilen Bilgisayar Öğretmenliği Öz-yeterlik ölçekleri aracılığı ile toplanmıştır.

ÖMSÖ üniversite öğrencilerinin güdülenme ve kullandıkları öğrenme stratejilerini belirlemek amacıyla geliştirilmiş olan yedili Likert tipi (1= bana hiç uymuyor, 7= bana tam uyuyor) bir ölçektir. Bilgisayar öğretmenliği öz-yeterli ölçeği bilgisayar öğretmenlerinin öğretmenlik öz-yeterlik algılarını belirlemek amacıyla hazırlanmış beşli Likert tipi (1= hiçbir zaman, 5=her zaman) bir ölçektir. Araştırmanın çalışma grubunu 4. sınıfta olan ve söz konusu dersi alan 39 bilgisayar öğretmen adayları oluşturmaktadır. Verilerin analizinde frekans dağılımı, yüzde dağılımı ve t-testi kullanılmıştır.

Araştırmanın uygulama sürecinde, dönem boyunca öğrencilerin ders esnasında ve dersle ilgili çalışmalar yaparken zamanın dikkatli planlanması ve düzenlenmesi, geliştirdikleri planların, materyallerin toparlanabilmesi amacıyla dikkatli bir dosyalama çalışması ile çalışma çevresinin düzenlenmesi, gerçek sınıf ortamında yaptıkları ders gözlemlerinde ve kendi anlattıkları derslerde not tutma, tuttukları notları daha iyi organize edebilmek amacıyla başlıklandırma, renklendirme, altını çizme vb. stratejileri öğrencilere tanıtılmış ve kullanmaları yönünde rehberlik sağlanmıştır. Ayrıca, öğrenciler, gerçek sınıf ortamında ders anlattıkları günlere yönelik deneyimlerini, duygularını aktarmak üzere günlük tutma konusunda yönlendirilmişlerdir. Öz-değerlendirme için kendilerini gerçek sınıf ortamında ders anlatma esnasında videoya kayıt etmişler böylece kendilerini izleyerek öğretme performanslarını değerlendirme olanağı bulmuşlardır. Dönem boyunca devam eden bu çalışmaların sonucunda bilgisayar öğretmen adaylarının ders boyunca kullandıkları planlama, düzenleme, izleme ve değerlendirme öz-düzenleyici öğrenme stratejilerinin öğrencilerin derse karşı olan motivasyonlarını artırdığı ve öğretmenlik öz-yeterlik algılarını olumlu yönde geliştirdiği saptanmıştır. Ulaşılan sonuçlar aşağıda maddeler halinde özetlenmiştir.

1. Sonuçlar, bir dönemlik ders sonunda öğretmen adaylarının kendilerini derse daha fazla güdülenmiş olarak bulduklarını ve bilgisayar öğretmenliği öz-yeterlik algılarının arttığını göstermiştir

2. Konuya değer verme, öğrencilerin yaptıkları işi ne kadar değerli bulduklarını, yaptıkları işe yönelik içsel meraklarını ve yaptıkları işin ne kadar işe yarar olduğuna yönelik değerlendirmelerini içermektedir (Pintrich, 1990). Bu çalışmada, konuya değer verme öğretmen adaylarının ilgi çekicilik, önemli olma ve yararlı olma açılarından derse değer verme algılarını işaret etmektedir. Araştırma sonuçları, dönem sonunda öğretmen adaylarının Öğretmenlik Uygulaması dersini değerli bulduklarını göstermiştir.
3. Öğrenme inançlarını yönetme, öğrencilerin öğrenme için gösterdikleri çabanın olumlu sonuçlar vereceğine inanmaları ile ilgilidir. Öğrenme inançlarını yönetme inancı, sonuçların kişinin çabalarına bağlı olduğu inancına dayanırken, tam tersi inançta öğrenmeye yönelik olumlu sonuçların öğretmen gibi dışsal faktörlere bağlı olduğuna inanılır (Chang, 2005). Araştırma sonuçları, öğretmen adaylarının belirgin olarak öğrenme sonuçlarının kendi çabalarına dayalı olduğuna inandıklarını göstermektedir. Öğretmenlik Uygulaması dersini bitirdikten sonra öğretmen adaylarının, ders ile ilgili materyalleri ancak kendileri gerekli çabayı gösterirlerse öğrenebilecekleri ve öğrenme sürecinde başarılı olabilmek için sorumlulukları olduğu ile ilgili algıları olumlu yönde değişmiştir.
4. Öğretmenlik öz-yeterlik ölçeği, bilgisayar öğretmenlerinin bir işi tamamlama kabiliyetleri ve bir işe yönelik performans sergileyebilme becerilerini kendilerinin değerlendirebilmesine dayalıdır. Araştırma sonuçları, bilgisayar öğretmen adaylarının öz-düzenleyici stratejileri kullanmaya dayalı Öğretmenlik Uygulaması dersi bitiminde, öğretmenlik uygulaması dersi boyunca geliştirdikleri becerileri kullanabilme konusunda kendilerine olan güvendiklerinin arttığını göstermiştir.

Bu araştırma, öğrencilerin kendi çalışmalarını planlama, organize etme, gözleme ve değerlendirmeye yönelik öz-düzenleyici stratejileri kullanmaları konusunda atılmış küçük bir adımdır. Bu sonuç, öğretim elemanlarının derslerinde öğrencilerine öz-düzenleyici öğrenme stratejilerini kullanmaları yönünde rehberlik etmelerinin önemini ortaya koymuştur. Araştırma desenin, öğretim elemanlarına söz konusu vb. öz-düzenleyici stratejileri derslerine entegre etme konusunda yol gösterici olacağı umulmaktadır. Böylece, öğretim elemanları ders anlatmaya daha az zaman ayırarak, öğrencilerin öz-düzenleyici stratejileri kullanmalarını planlama ve yönlendirme çalışmalarına daha fazla zaman ayırabilirler.