# Self-regulated Learning Strategies Employed by Regular, Evening, and Distance Education English Language and Literature Students

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**ABSTRACT** The aim of this paper was to compare self-regulated learning skills employed by regular, distance and evening English Language and Literature (ELL) students. This paper investigated self-regulated learning in terms of *goal setting, environment structuring, time management, help seeking, self-evaluation,* and *metacognition.* In order to collect data, Online Self-Regulated Learning Scale (OSLQ) and Motivated Strategies for Learning Questionnaire (MSLQ) were used. These two scales were adapted according to the scope of the paper. The number of participants is 237. Participants of the study are English Language and Literature Department students at Karabuk University. In terms of status, they are from regular, evening, and distance education programs. The results indicate that the three groups have relatively high levels of self-regulation, but evening students have the highest level of self-regulation, and successful students employ more self-evaluation and metacognition strategies compared to other groups.

## INTRODUCTION

In recent years, there has been an increase in the attention paid to learner autonomy and self-regulation as a result of the emphasis on the learners as active participants and leaders in their learning processes. Self-regulation is suggested as a replacement for language learning strategies by some researchers (Banisaeid and Huang 2014). As a result of the rise of cognitivism in educational psychology, learners are supposed to have more responsibility on their own learning. This led to a proliferation of research studies on self-regulated learning in educational research. As we can understand today, learners are actively engaged in reorganizing and reconstructing their existing knowledge with new knowledge rather than being passive absorbers. To do so, they should also be metacognitively-oriented towards their own learning since it is an integral part of life-long learning. Moreover, self-regulated learners are metacognitively, motivationally, and behaviorally active participants in their own learning process (Zimmerman 1981a).

Self-regulatory learning has been studied in Turkish context in several studies. Usta (2011) worked on self-regulation in relation to Internet based learning and found that self-regulated learning skill levels of students in online learning environments were high. In another study, Yukselturk and Bulut (2009) worked on gender differences and self-regulated learning. They analyzed gender differences in self-regulated learning components, motivational beliefs and achievement in self-regulated online learning environment. The results of their study indicated that there were no differences between male and female students in terms of motivational beliefs, self-regulated learning variables and achievement. Demirel and Turan (2010) carried out a study on the medical students' self-regulated learning skills and differences between self-regulated learning skills and achievement. Results of the study suggested that there were statistically significant differences between students' self-regulated learning skills and their achievement levels. Successful students were found to have more self-regulated learning skills in all stages of learning.

Self-regulation has also been studied extensively on international context in relation to a number of different variables. In a cross-cultural

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paper, Aisha (2010) worked on Arab and American students and found that future orientation component of self-regulation was found to be significantly different between the Arab and American students. This difference was attributed to cultural differences. Al Khatib (2010) worked on meta-cognitive self-regulated learning and motivational beliefs as predictors of United Arab Emirates (UAE) college students' academic performance. Al Khatib's study found that intrinsic goal orientation, self-efficacy, test anxiety, and meta-cognitive self-regulated learning were significant predictors of college students' performance.

Puzziferro (2008) focused on performance as a function of grade and course satisfaction in online undergraduate level courses, but specifically on students' self-efficacy for online technologies and self-regulated learning strategies. The results of this study found that time, study environment and effort regulation were significantly related to performance. Students who scored higher on these subscales received higher final grades. In addition, rehearsal, elaboration, metacognitive self-regulation, time and study environment were positively correlated with levels of satisfaction. The relation between academic achievement and self-regulation was also studied by Cheng (2011). This paper investigated the relationship between students' self-regulation ability and their learning performance. The results showed that students' learning motivation, goal setting, action control and learning strategies played a significant role in their learning performance.

In another study, Barnard, Paton and Lan (2008) examined the role of self-regulatory learning behaviors as a mediating factor for the relationship between student perceptions of online course communication and collaboration with academic achievement as measured by grade point average (GPA). The results of their study indicate that although online self-regulatory learning behaviors are not strongly associated with academic achievement, they in fact bridge the gap of the positive relationship between student perceptions of online course communication and collaboration with academic achievement. Recently, Hu and Driscoll (2013) carried out a study to examine the effects of self-regulated learning strategy training on learners' achievement, motivation and strategy use in a web-enhanced College Success course at a community college in southeast US. Their study discovered that providing strategy training helped students their increase their overall course performance and accomplishment of long-term tasks, enhanced students' self-satisfaction, and persistence.

As we can understand, self-regulated learning is a central concept in educational contexts and it has been studied in relation to a number of different variables like motivational beliefs, academic achievement, online collaboration, satisfaction, and academic achievement. The results of the cited studies indicate that it has considerable influence on these variables.

## Self-regulated Learning

Self-regulation is defined as the process where learners take the initiative, with or without the guidance of others, in identifying their own needs, formulating goals, exploring resources, focusing on appropriate learning strategies, and evaluating learning outcomes. Self-regulation indicates initiation of action on the part of the learner and includes goal setting and regulating one's efforts to realize desired aims, self-monitoring (meta-cognition), time management, and management of physical and social environment (Zimmerman and Risemberg 1997). It is a central concept in social cognitive theory and refers to an individual's use of three cognitive processes toward goal attainment: self-monitoring, self-judgment and self-reaction (Bandura 1986). In Zimmerman's terms, self-regulated learning is a process in which students resort to self-regulatory skills like self-assessing, self-directing, controlling and adjusting in order to obtain knowledge (Zimmerman 1989).

Knowles (1975: 18) defines self-regulated learning (SRL) as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating goals, identifying human and material re-sources, choosing and implementing appropriate learning strategies, and evaluating learn-ing outcomes." This definition is highly comprehensive and indicates a complex learning process that makes high demands on students for choices (Boekaerts 1999; Winne and Perry 2000). Paris and Paris (2001: 89) stated that self-regulated learning "emphasizes autonomy and control by the individual who monitors, directs, and regulates actions toward goals of in-

formation acquisition, expanding expertise and self-improvement."

According to Barnard et al. (2008: 1), "the importance of self-regulation in improving learning outcomes in online and face-to-face formats cannot be overstated." Research indicates that students who are more able to regulate their learning perform better than those students who are less able to regulate their learning (Schunk and Zimmerman 1998; Zimmerman and Schunk 2001). Therefore, it can be viewed as an essential mainstay for the learning process of individuals both in online and face-to-face education settings.

Self-regulatory behaviors include goal setting, environment structuring, task strategies, time management, help seeking, and self-evaluation. Some of these self-regulatory behaviors, like goal setting, may be more explicit, while others, like environment structuring are more implicit (Barnard et al. 2008). However, they are all equally important behaviors on the achievement and performance of learners (Barnard et al. 2008).

## Goal Orientation

Goal orientation or goal setting, an important component of self-regulatory learning, is defined as learners' general goals or orientation towards a course (Pintrich et al. 1991). Research indicates that goal orientation is significant in the completion of courses. Beatty-Guenter (2001), for example, identified goal orientation as a significant attribute of those learners who completed their courses. Thompson (1998) stated that setting clear goals is an important element of academic performance. In addition, a number of research studies found that effective goal setting by distance learners contributes to performance (Curry et al. 1999; Schrum and Hong 2002).

## Physical and Social Environment Management

Regulating the physical and social study environment includes effective environment management and help seeking (Zimmerman and Risemberg 1997). In literature, high achievement is reported to involve a greater use of environment management skills (Zimmerman and Martinez-Pons 1986). As Lynch and Dembo (2004: 4) also point out, "since distance education stu-

dents do not study in a structured and controlled classroom context, they must be able to structure their own physical learning environment, whether at home or elsewhere."

## Time Management

Another feature of self-regulated learning is time management. Time management includes "scheduling, planning, and managing one's study time." (Chen 2002: 14). Literature indicates that training in time planning and management help students to use their study time more effectively (Zimmerman, et al. 1994). Interaction in a Web-based course can require two to three times the amount of time investment than in a face-to-face course (Palloff and Pratt 1999). Self-regulated learners know how to manage their time and they can order their learning activities. Just recently, Nonis et al. (2006) found that organizational and time-management strategies are strong predictors of academic achievement.

## Help Seeking

Another important distinguishing characteristic of self-regulated learners is the ability to pursue academic help in an "adaptive manner" (Lynch and Dembo 2004: 4) and to promote learning. The importance of help seeking in distance education has been reported by several authors (Holmberg 1995; Hara and Kling 2000; Wang and Newlin 2002). In addition, Karabenick (1998) found help seeking to be a valuable strategy for higher achievement. Self-regulated distance education students should seek for assistance from others because distance education students are isolated from classmates and instructors. In this case, they need to use technology and other means effectively in order to reduce the social distance.

## Self-evaluation

Self-evaluation is one of the crucial phases in which individuals evaluate their personal effectiveness in relation to a specific learning tasks. It has been declared long ago that when students can evalute their own learning, they become more self-regulated learners (Winne and Hadwin 1998). Self-evaluation is essential in guiding the learning process on the part of distance education students based on the fact that

they are isolated from other classmates, and have to direct their own learning themselves. According to Zimmerman (2004), teachers can boost students' self-evaluation by guiding them on how to monitor their learning objectives and strategy well, and then make the necessary modifications in these objectives.

## Metacognitive Self-regulation

A fundamental component of self-regulated learning is metacognition. As is known, metacognition includes awareness, knowledge, and control of cognition. Metacognitive self-regulatory learning is composed of activities like planning, monitoring, and regulation. (Pintrich et al. 1991). Planning embodies goal setting and task analysis. Effective self-regulated learners can set relevant goals and then monitor the effectiveness of their learning methods or strategies and respond to their evaluations (Zimmerman 1989). Therefore, self-monitoring can be viewed as an essential factor in improving learning. In addition, learners with high metacognitive awareness can concentrate on their work more effectively and eliminate inadequate learning strategies.

## Aim of the Paper

This paper aims at investigating the self-regulation and metacognition strategies in higher education. The investigation firstly focuses on measuring the general level of self-regulation. The paper compares male and female students in terms of the sub-dimensions of self-regulation by focusing on distance, regular, and evening students in terms of the sub-dimensions of self-regulation. In order to find out whether self-regulation plays a role in academic achievement, low-achieving, moderate-achieving and high-achieving students were also compared in terms of their use of self-regulated learning skills. In addition, the metacognition strategies employed by the participants were also scrutinized. Therefore, for the purpose of the current paper, the following research questions were formulated:

## Research Questions

1. What are the perceptions of the participants about self-regulated learning in terms of;
   (a) goal setting,
   (b) environment structuring,
   (c) time management,
   (d) help seeking,
   (e) self-evaluation, and
   (f) metacognition strategies?

2. Are there any statistical differences between male and female students in terms of the sub-dimensions of self-regulation?

3. Are there statistical differences among regular, distance, and evening education students in terms of the dimensions of self-regulation?

4. Are there statistical differences among low-achievers, moderate-achievers, and high-achievers in terms of self-regulation?

## METHODOLOGY

### Participants

The participants of this paper include 237 students who were enrolled at Karabük University English Language and Literature Department in the 2012-2013 academic year. The sample is composed of regular, evening and distance education students. The number of regular students is 76 (32.1%), evening students 75 (31.6%), and distance education students 86 (36.3%). The sample includes 172 females (72.6%) and 65 males (27.4%). The number of preparatory level students is 66 (27.8%), 1st year students is 42 (17.7%), 2nd year students is 66 (27,8%), and 3rd year students is 63 (26.5%). Table 1 gives the details of participants.

**Table 1: Demographic characteristics of the participants**

|  | N | % |
|---|---|---|
| *Gender* |  |  |
| Female | 172 | 72.5 |
| Male | 65 | 27.4 |
| *Class level* |  |  |
| Prep | 66 | 27.8 |
| 1st year | 42 | 17.7 |
| 2nd year | 66 | 27.8 |
| 3rd year | 63 | 26.5 |
| *Status* |  |  |
| Regular | 76 | 32.1 |
| Distance | 75 | 31.6 |
| Evening | 86 | 36.2 |
| Total | 237 | 100 |

### Data Collection and Analysis

The data were collected during the fall term of 2012 academic year. After the necessary per-

missions were obtained, the 31-item 5-likert type instrument was administered. The participants were given written instructions that explained the purpose of the paper and the procedure they were to follow. Descriptive and correlation tests were conducted to analyze the data.

First of all, descriptive statistics were run in order to see the self-regulation and metacognition strategy level of the participants. Secondly, t-tests were used in order to compare male and female students in terms of their use of self-regulation skills. Later, one-way analysis of variance tests (ANOVA) were run in order to compare regular, distance and evening students in terms of the strategies employed by low achieving, moderate achieving, and high achieving students.

## The Instrument

The data were collected through an adapted version of *Online Self-Regulated Learning Scale* (OSLQ) and *Motivated Strategies for Learning Questionnaire (MSLQ)*. The five variables of self-regulated learning, g*oal setting, environment structuring, help seeking, time management,* and *self-evaluation* were adapted from *Online Self-Regulated Learning Scale* (OSLQ). The scale was developed by Barnard et al. (2009). It consists of six factors and 24 items in total. Since the research tool was administered to both regular and distance students, the necessary adaptations were carried out in the first scale. The phrases "..for my online courses" were changed into "…for my courses" for regular and evening education students.

The metacognition dimension of self-regulation was measured by means of *Motivated Strategies for Learning Questionnaire (MSLQ).* This tool was developed by Pintrich and his colleagues in the 1990s at the University of Michigan (Pintrich et al. 1994). It consists of 81 self-report items in two broad categories: (1) a motivation section and (2) a learning strategies section. The tool was used in English. The MSLQ is totally modular, and thus the scales can be used together or individually, depending on the needs of the researcher. The *metacognition* subscale of MSLQ was adapted for this paper. Originally, the metacognition subscale includes 12 items, but it was reduced to 9 in the present paper since the three items were found to be irrelevant.

The reliability analysis of the research tool is given in Table 2. Internal reliability coefficients (Cronbach's Alpha) for all dimensions range from .60 to .83 and the total internal reliability coefficient is .89, which depicts a reasonable level of reliability.

**Table 2: Reliability analysis**

| | *á* | *Number of items* |
|---|---|---|
| Goal setting | .80 | 5 |
| Environment structuring | .76 | 4 |
| Time management | .71 | 5 |
| Help seeking | .67 | 4 |
| Self-evaluation | .60 | 4 |
| Meta-cognition | .83 | 9 |
| Total | .89 | 31 |

## RESULTS

### Research Question 1: What are the Perceptions of the Participants about Self-regulated Learning in Terms of (a) Goal Setting, (b) Environment Structuring, (c) Time Management, (d) Help Seeking, (e) Self-Evaluation, and (f) Metacognition Strategies?

A complete picture of the participants' self-regulation levels was obtained from the descriptive statistical tests. These are presented in Table 3. The results show that the sample has relatively high levels in terms of goal setting (m=16.85, sd=4.19), environment structuring

**Table 3: Descriptive statistics for the components of self-regulation**

| Sub-dimensions of self-regulation | N | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| Goal setting | 237 | 6.00 | 25.00 | 16.85 | 4.19 |
| Environment structuring | 237 | 4.00 | 20.00 | 14.32 | 3.51 |
| Time management | 237 | 4.00 | 20.00 | 13.04 | 3.93 |
| Help seeking | 237 | 4.00 | 20.00 | 13.26 | 3.48 |
| Self-evaluation | 237 | 5.00 | 20.00 | 13.26 | 2.99 |
| Metacognition | 237 | 12.00 | 45.00 | 31.60 | 6.53 |

(m=14.32, sd=3.51), time management (m=13.04, sd=3.93), help seeking (m=13.26, sd=3.48), self-evaluation (m=13.26, sd=2.99), and metacognition (m=31.60, sd=6.53). The mean scores pertaining to the sub-scales revealed high levels of self-regulation.

In order to further analyze the level of self-regulation, the results of 237 participants were grouped as *low*, *moderate*, and *high*. In order to achieve this, the maximum values were divided into three so that the cut-off points can be determined. The cut-off points for the variables are as follows: goal setting (low=1-8, moderate=9-16, high=17-25), environment structuring (low=1-7, moderate=8-15, high=16-20), time management (low=1-7, moderate=8-15, high=16-20), help seeking (low=1-7, moderate=8-15, high=16-20), self-evaluation (low=1-7, moderate=8-15, high=16-20), and metacognition (low=1-15, mod-erate=16-30, high=31-45). The results are presented in Table 4.According to the results, the sample had high levels of goal setting (54.1%), environment structuring (50.6%), and metacognition (60.3%) while they had a moderate level of time management (52.7%, moderate), help seeking (56.1%, moderate), and self-evaluation (65.0%, moderate).

From Table 5, we understand that 48.1 percent of the participants reported that they could achieve the goals they set for themselves (48.1%), within the study time (48.1%). They also stated that they kept a high standard of their learning (45.2%), set short-term and long-term goals (45.2%), and set standards for the assignments (41.7%). Therefore, it can be said that the participants have a high level of goal setting skills.

Table 6 presents frequencies and percentages about environment structuring. The partici-

**Table 4: Distribution of the sub-dimensions of self-regulation**

| Sub-dimensions of self-regulation | Low | | Moderate | | High | |
|---|---|---|---|---|---|---|
| | f | % | f | % | f | % |
| Goal setting | 7 | 3.0 | 102 | 43.0 | 128 | 54.0 |
| Environment structuring | 7 | 3.0 | 110 | 46.4 | 120 | 50.6 |
| Time management | 14 | 5.9 | 125 | 52.7 | 98 | 41.4 |
| Help seeking | 18 | 7.6 | 133 | 56.1 | 86 | 36.3 |
| Self-evaluation | 4 | 1.7 | 154 | 65.0 | 79 | 33.3 |
| Metacognition | 3 | 1.3 | 91 | 38.4 | 143 | 60.3 |

**Table 5: Frequencies and percentages as regards goal setting**

| Goal setting | | Disagree | Undecided | Agree |
|---|---|---|---|---|
| 1. I set standards for my assignments in online courses. | N | 50 | 88 | 99 |
| | % | 21.1 | 37.1 | 41.7 |
| 2. I set short-term (daily or weekly) goals as well as long- | N | 57 | 78 | 102 |
| term goals (monthly or for the semester). | % | 24.0 | 32.9 | 45.2 |
| 3. I keep a high standard for my learning in my online courses. | N | 52 | 78 | 106 |
| | % | 21.9 | 32.9 | 45.2 |
| 4. I set goals to help me manage study time for my online courses. | N | 49 | 74 | 114.1 |
| | % | 20.6 | 31.2 | 48.1 |
| 5. I achieve goals I set for myself. | N | 46 | 64 | 127 |
| | % | 19.4 | 27.0 | 53.5 |

**Table 6: Frequencies and percentages as regards environment structuring**

| Environment structuring | | Disagree | Undecided | Agree |
|---|---|---|---|---|
| 1. I choose the location where I study to avoid too | N | 45 | 59 | 133 |
| much distraction. | % | 19 | 24.9 | 56.1 |
| 2. I find a comfortable place to study. | N | 41 | 46 | 150 |
| | % | 17.3 | 19.4 | 63.3 |
| 3. I know where I can study most efficiently for online courses. | N | 41 | 53 | 143 |
| | % | 17.3 | 22.4 | 60.3 |
| 4. I choose a time with few distractions for studying for my | N | 53 | 69 | 115 |
| online courses. | % | 22.4 | 29.1 | 48.5 |

pants of the study can easily find convenient places for study (63.3%), know where they are most comfortable to study (60.3%), can choose a location far from distraction (56.1%) and finally decide on the correct time with few distractions for study (48.5%). We can understand that the level of the environment structuring skills of the participants is satisfactory since the level of agreements is above 50 percent.

Table 7 presents the results about time management. A careful analysis of the table indicates that the participants allocate extra study time for courses (49.8%), and organize their time to complete course requirements (41.0%). A moderate number of students stated that they scheduled the same day every week to study (38.0%), and tried to distribute their study time evenly across the days of the week (38.0%). However, a majority of the participants stated that they did not prepare their questions before the exam (45,2%). This indicates that they do not speculate on the course content that is to be worked on every week.

Another major component of self-regulated learning is help seeking. Table 8 presents the results of help seeking. Our data reveal that half of the participants' state that they can find someone knowledgeable so that such a person will tell them about course content (49.4%), meet their classmates when needed (49.4%), and share their problems with their classmates (47.7%). A moderate number of the participants stated that they are persistent in getting help through e-mail from their instructors (38.0%). In short, there is a moderate level of help seeking in the participants of the study.

Another major component of self-regulated learning is self-evaluation. Table 9 includes the results about self-evaluation. As we can understand from the table, a considerable number of students stated that they can ask themselves questions about course material for a course (49.0%), communicate with their classmates in order to see their progress (46.4%), summarize their learning to examine what they have learned (44.7%), and finally communicate with their classmates in order to see whether what they learn is different from their classmates (43.9%). With these figures, it is clear that the participants have a considerable level of self-evaluation.

Finally, the last component of self-regulated learning is metacognition. Table 10 presents the results about meta-cognition. As we can understand from the table, a majority of the participants stated that they are responsible for their own learning and what they learn is their re-

**Table 7: Frequencies and percentages as regards time management**

| Time management | | Disagree | Undecided | Agree |
|---|---|---|---|---|
| 1. I allocate extra studying time for my (online) courses because | N | 60 | 59 | 118 |
| I know it is time-demanding. | % | 25.3 | 24.9 | 49.8 |
| 2. I try to schedule the same time every day or every week to | N | 72 | 75 | 90 |
| study for my online courses. and I observe the schedule. | % | 30.4 | 31.6 | 38.0 |
| 3. Although we don't have to attend daily classes. I still try | N | 63 | 84 | 90 |
| to distribute my studying time evenly across days. | % | 26.5 | 35.4 | 38.0 |
| 4. I prepare my questions before joining in the chat room | N | 107 | 73 | 57 |
| and discussion. | % | 45.2 | 30.8 | 24.1 |
| 5. I organize my time to complete course requirements in | N | 76 | 64 | 97 |
| a timely manner. | % | 32.1 | 27.0 | 41.0 |

**Table 8: Frequencies and percentages as regards help seeking**

| Help seeking | | Disagree | Undecided | Agree |
|---|---|---|---|---|
| 1. I find someone who is knowledgeable in course content so that | N | 51 | 69 | 117 |
| I can consult with him or her when I need help. | % | 21.5 | 29.1 | 49.4 |
| 2. I share my problems with my classmates (online) so we know | N | 68 | 56 | 113 |
| what we are struggling with and how to solve our problems. | % | 28.7 | 23.6 | 47.7 |
| 3. If needed, I try to meet my classmates face-to-face. | N | 72 | 48 | 117 |
| | % | 30.4 | 20.3 | 49.4 |
| 4. I am persistent in getting help from the instructor | N | 78 | 69 | 90 |
| through e-mail. | % | 32.9 | 29.1 | 38.0 |

**Table 10: Frequencies and percentages as regards meta-cognition**

| Metacognition | | Disagree | Undecided | Agree |
|---|---|---|---|---|
| 1. I am responsible for my own education; what I learn is | N | 26 | 54 | 157 |
| ultimately my responsibility. | % | 11.0 | 22.8 | 66.3 |
| 2. During class time, I'm highly concentrated on what is being done. | N | 52 | 57 | 128 |
| | % | 22.0 | 24.1 | 54.0 |
| 3. If course readings are difficult to understand, I change the | N | 49 | 60 | 128 |
| way I study. | % | 20.7 | 25.3 | 54.0 |
| 4. I ask myself questions to make sure that I understand the | N | 36 | 80 | 121 |
| course materials. | % | 15.2 | 33.8 | 51.1 |
| 1. I try to change the way I study in order to fit the course | N | 41 | 81 | 115 |
| requirements | % | 17.3 | 34.2 | 48.5 |
| 2. I try to think through a topic and decide what I am supposed | N | 32 | 76 | 129 |
| to learn from it rather than just reading it over when studying. | % | 13.5 | 32.1 | 54.4 |
| 3. When I study for this class, I set goals for myself in order to | N | 52 | 74 | 111 |
| direct my activities in each study period. | % | 21.9 | 31.2 | 46.8 |
| 4. I regulate and adjust my behavior to complete course | N | 40 | 74 | 123 |
| requirements. | % | 16.9 | 31.2 | 51.9 |
| 5. I understand the main ideas and important issues of readings | N | 43 | 73 | 121 |
| without guidance from the instructor. | % | 18.1 | 30.8 | 51.0 |

sponsibility (66.3%). Majority of the participants pointed out that they are highly focused on what is being done in the class (54.0%), change the way they study if course readings are difficult (54.0%), and try to think through a topic and decide what they are supposed to learn from the readings of the course (54.0%). A considerable number of participants stated that they inquire whether they understand the course materials (51.1%), regulate and adjust their behavior to complete course requirement (51.1%), and understand the main ideas and important issues of readings without guidance from the instructor (51.1%). Finally, a moderate number of the participants stated that they try to change the way they study in order to fit the course requirements (48.5%) and set goals for themselves in order to direct their activities in each study peri-

od (46.8%). Overall, depending on the figures, it is possible to speculate that the participants have a considerable level of meta-cognition.

### Research Question 2. Are There Statistical Differences between Male and Female Students in Terms of the Dimensions of Self-regulation?

Table 11 presents the results of the t-test, which was conducted in order to compare female and male students in terms of self-regulation. The values of both female and male students are close to each other for all of the sub-scales. There are no statistically significant differences between female and male students in terms of the four sub-scales of self-regulation. (goal setting $p=.107 > .05$, time management $p=.291 > .05$, help seeking $p=.835 > .05$, self-eval-

**Table 11: Descriptive statistics and t-test result for gender and self-regulation**

| Variables | Group statistics | | | t-test | |
|---|---|---|---|---|---|
| | Gender | N | Mean | t | p |
| Goal setting | Female | 172 | 17.1221 | 1.617 | .107 |
| | Male | 65 | 16.1385 | | |
| Environment structuring | Female | 172 | 14.6221 | 2.163 | .032 |
| | Male | 65 | 13.5231 | | |
| Time management | Female | 172 | 15.5291 | 1.058 | .291 |
| | Male | 65 | 14.9231 | | |
| Help seeking | Female | 172 | 13.1628 | .835 | .404 |
| | Male | 65 | 12.7385 | | |
| Self-evaluation | Female | 172 | 13.4942 | 1.957 | .052 |
| | Male | 65 | 12.6462 | | |
| Metacognition | Female | 172 | 32.1047 | 1.972 | **.050** |
| | Male | 65 | 30.2923 | | |

uation p=.052 >.05,). There are, however, statistically significant differences between male and female students in terms of environment structuring (p= .032 >.05) and (metacognition p=.050 >.05). Female students rated themselves higher than male students in terms of environment structuring and metacognition.

### Research Question 3. Are There Statistical Differences among Regular, Evening, and Distance Education Students in terms of Self-regulation?

A one-way analysis of variance test (ANOVA) was done in order to compare regular, distance and evening students' self-perceptions of self-regulation and metacognition strategies. The results are given in Table 12. The results revealed that the self-regulation levels of the sample exhibit variance in terms of goal setting (p=.000 <.05) and environment structuring dimensions (p= .001 <.05). In terms of other sub-dimensions, the statistical analysis did not display any significant differences. For the goal setting dimension, the highest mean score is that of evening students (m=18.1977), the second highest scores is that of distance education students (m=16.2800) and the lowest mean score is that of regular students (m=15.8947). Similarly, for environment structuring dimension, the mean of evening students' is the highest (m=15.4651), distance education students mean score is the second highest (m=13.3067, and the mean score of regular students is the lowest (m=14.0263). The results indicate that evening students are better at goal setting and environment structuring compared to distance and regular students.

**Table 12: Descriptive statistics and ANOVA results for status and self-regulation**

| Variables | Status | N | M | Sig. |
|---|---|---|---|---|
| Goal setting | Regular | 76 | 15.8947 | |
| | Distance | 75 | 16.2800 | .001 |
| | Evening | 86 | 18.1977 | |
| Environment structuring | Regular | 76 | 14.0263 | |
| | Distance | 75 | 13.3067 | .000 |
| | Evening | 86 | 15.4651 | |
| Time management | Regular | 76 | 15.7105 | |
| | Distance | 75 | 15.3467 | .587 |
| | Evening | 86 | 15.0698 | |
| Help seeking | Regular | 76 | 13.5395 | |
| | Distance | 75 | 12.7200 | .312 |
| | Evening | 86 | 12.8953 | |
| Self-evaluation | Regular | 76 | 13.9737 | |
| | Distance | 75 | 12.8800 | .410 |
| | Evening | 86 | 12.9651 | |
| Metacognition | Regular | 76 | 32.0658 | |
| | Distance | 75 | 30.1600 | .053 |
| | Evening | 86 | 32.4651 | |

As a result of ANOVA, we saw that there are significant differences between participants groups (regular, distant, and evening) in terms of goal setting and environment structuring components of self-directed learning. In order to see the differences in more detail, we included the percentages and frequencies for all the items under *goal setting* and *environment structuring* dimensions. The results of goal setting are presented in Table 13. We can understand from the table that the evening students have the highest percentage (58.1%) in terms of setting standards for their assignments in their courses. Regular students have the lowest level for the same item (30.3%). As for the second item, we can see that evening students have the biggest percentage (57.0%). Regular and distance

**Table 13: Descriptive statistics for goal setting**

| Goal setting | | Regular | | | Evening | | | Distance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Dis | Un | Agr | Dis | Un | Agr | Dis | Un | Agr |
| 1. I set standards for my | N | 24 | 29 | 23 | 11 | 25 | 50 | 15 | 34 | 25 |
| assignments in courses. | % | 31.6 | 38.2 | 30.3 | 12.7 | 29.1 | 58.1 | 20.0 | 45.3 | 43.7 |
| 2. I set short-term (daily or | N | 20 | 31 | 25 | 16 | 21 | 49 | 21 | 26 | 28 |
| weekly) goals as well as long-term goals (monthly or for the semester). | % | 26.3 | 40.8 | 32.9 | 18.6 | 24.4 | 57.0 | 28.0 | 34.7 | 37.0 |
| 3. I keep a high standard for | N | 20 | 27 | 39 | 17 | 22 | 47 | 16 | 20 | 39 |
| my learning in my courses. | % | 26.3 | 35.9 | 38.2 | 19.8 | 25.6 | 54.7 | 21.3 | 26.7 | 52.0 |
| 4. I set goals to help me | N | 16 | 32 | 28 | 16 | 20 | 39 | 17 | 22 | 47 |
| manage study time for my courses. | % | 21.1 | 42.1 | 36.8 | 21.3 | 26.7 | 52.0 | 19.8 | 25.6 | 54.7 |
| 5. I achieve goals I set for | N | 16 | 27 | 33 | 16 | 22 | 37 | 14 | 15 | 57 |
| myself. | % | 21.0 | 35.5 | 43.4 | 21.3 | 29.3 | 49.3 | 16.3 | 17.4 | 66.3 |

education students have a moderate level of percentages for the second item (32i9%, 37.0%, respectively). As for the third item, evening students have the highest percentage (54.7%), followed by distance education students (52.0%), and regular students (38.2%). Based on these figures, we can say that evening students are better than the other two groups in terms of keeping a high standard of their own learning. When it comes to the fourth item, the table indicates that distance education students have the biggest percentage (54.7%), followed by evening students (52.0%), and regular students (36.8). With these results, it is obvious that distance education students are better than the other two groups in terms of setting goals to help them manage their study time. As for the last item, distance education students have the highest number of participants (66.3%), followed by evening students (49.3%), and regular students (43.4%).

Table 14 presents the frequencies and percentages about environment structuring. As we can understand from the table for the first item evening students have the highest percentage (72.1%), followed by regular students (55.2%), and distance education students (38.7%). It is clear that evening students are the most successful ones in terms of finding the location where they can avoid distractions. As for the second item, the table indicates that a huge number of evening students can find a comfortable place to study (76.8%), followed by regular students (63.1%), and distance education students (48.0%). Finally, evening students have the biggest percentages as for the fourth item (62.8%), followed by (40.8%), and distance education students (40.0%). In short, evening students are better than the other two groups in terms of environment structuring.

### Research Question 4. Are There Statistical Differences among Low-achievers, Moderate-achievers, and High-achievers in Terms of Self-regulation?

Finally, in order to understand whether there is a correlation between academic success and self-regulation, a one-way analysis of variance test (ANOVA) was run. The general point averages (GPA) of the participants were obtained during the administration of the questionnaire. Students were grouped into three based on the GPA. The results are given in Table 15. In grouping students, GPAs were used. Those who are below 2.00 were considered "low achievers", those who are between 2.00-2.99 were considered as "moderate achievers", and those who are above 3.00 were considered "high achievers". Table 15 shows that there are no statistically significant differences between the three groups in terms of *goal setting, environment structuring, time management, and help seeking.* However, there is statistically a strong significance in terms of self-evaluation and metacognition between the three groups (self-evaluation, p= .000 <.05, metacognition, p= .000 <.05). The mean scores of low achievers are relatively lower compared to moderate and high achieving groups. Based on these results, it is possible to speculate that there is a positive correlation between academic success and self-evaluation and metacognition.

### DISCUSSION

The purpose of the present study was to investigate the self-regulation levels of regular, distance and evening education students in order to identify whether these levels exhibit variance according to gender and status of students.

**Table 14: Descriptive statistics for environment structuring**

| Environment structuring | | Regular | | | Evening | | | Distance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Dis | Un | Agr | Dis | Un | Agr | Dis | Un | Agr |
| 1. I choose the location where I study to avoid too much distraction. | N | 17 | 17 | 42 | 11 | 13 | 62 | 17 | 29 | 29 |
| | % | 22.4 | 22.4 | 55.2 | 12.8 | 15.1 | 72.1 | 22.7 | 38.7 | 38.7 |
| 2. I find a comfortable place to study. | N | 16 | 12 | 48 | 8 | 12 | 66 | 17 | 22 | 36 |
| | % | 21.1 | 15.8 | 63.1 | 9.3 | 14.0 | 76.8 | 22.7 | 29.3 | 48.0 |
| 3. I know where I can study most efficiently for courses. | N | 17 | 17 | 42 | 11 | 17 | 58 | 13 | 19 | 43 |
| | % | 22.3 | 22.3 | 55.2 | 12.8 | 19.8 | 67.4 | 17.4 | 25.3 | 57.3 |
| 4. I choose a time with few distractions for studying for my courses. | N | 20 | 25 | 31 | 11 | 21 | 54 | 22 | 23 | 30 |
| | % | 26.3 | 32.9 | 40.8 | 12.8 | 24.4 | 62.8 | 29.4 | 30.7 | 40.0 |

**Table 15: Descriptive statistics and ANOVA results for academic success and self-regulation**

| Variables | Status | N | M | F | Sig. |
|---|---|---|---|---|---|
| Goal setting | Low achievers | 74 | 17.1757 | | |
| | Moderate achievers | 96 | 17.1042 | 1.381 | .253 |
| | High achievers | 67 | 16.1343 | | |
| Environment structuring | Low achievers | 74 | 13.7297 | | |
| | Moderate achievers | 96 | 14.6354 | | |
| | High achievers | 67 | 14.5224 | 1.547 | .215 |
| Time management | Low achievers | 74 | 15.9324 | | |
| | Moderate achievers | 96 | 14.9479 | 1.315 | .270 |
| | High achievers | 67 | 15.3284 | | |
| Help seeking | Low achievers | 74 | 12.6351 | | |
| | Moderate achievers | 96 | 12.9271 | 1.658 | .193 |
| | High achievers | 67 | 13.6716 | | |
| Self-evaluation | Low achievers | 74 | 10.3784 | | |
| | Moderate achievers | 96 | 13.0208 | 11.399 | .000 |
| | High achievers | 67 | 13.6866 | | |
| Metacognition | Low achievers | 74 | 27.9189 | | |
| | Moderate achievers | 96 | 32.3438 | 26.161 | .000 |
| | High achievers | 67 | 31.6119 | | |

The second aim of the study was to investigate whether self-regulation is a predictor of success in higher education. In the study, self-regulation was conceptualized as comprising of six sub-dimensions: *goal setting, environment structuring, time management, help seeking, self-evaluation* and *metacognition.* In order to be able to research these sub-dimensions, two research tools were used: (1) *Online Self-regulated Learning Scale* (OSLQ), (2) *Motivated Strategies for Learning Questionnaire (MSLQ).*

The analysis of the data indicated that the great majority of the participants had high levels of *goal setting*, *environment structuring*, and *metacognition* dimensions (54.0% for goal setting, 50.6% for environment structuring, and 60.3% for metacognition). The participants were found to have a moderate level of *time management (52.7%), help seeking (56.1%),* and *self-evaluation (65.0%)* dimensions of self-regulation. In general, we can say that the participant group had a satisfactory level of self-regulation.

As a next step, gender differences were investigated in relation to self-regulation. A t-test was used in order to compare male and female students in terms of the six dimensions of self-regulation. The results indicated that although the mean scores for male students are relatively lower than that of female students, there are statistical differences between male and female students in environment structuring and metacognition. It was found that for metacognition there is a slight statistical difference between male and

female students. The findings of this study are in line with the study of Ting and Chao (2013), who worked on vocational college students' self-regulated strategies for blended learning in relation to gender and achievement and found no statistically significant difference between male and female students in terms of self-regulation.

The next statistical analysis (ANOVA) was carried out in order to compare regular, distance, and evening students in terms of the six sub-dimensions of self-regulation. The results of t-test indicates that there are statistical differences between the groups in terms of goal setting and environment structuring (for goal setting p=.001 p> .05 and for environment structuring p=.000, P> .05). Interestingly, the highest mean scores belonged to evening students (for goal setting m=18.1977, and for environment structuring m=15.4651) while the lowest mean scores belonged to regular students for goal setting (m= 15.8947) and distance education students for environment structuring (m=13.3067). It can be said that evening group had better results for goal setting and environment structuring dimensions of self-regulation compared to regular and distance education students.

As a last step, students were categorized into three groups based on their general point average (GPA) as low achievers, moderate achievers, and high achievers for the purpose of investigating whether self-regulation acts as a determinant on academic success. The results of the statistical analysis compared the three

groups in terms of the six sub-dimensions. The results indicated that there are significant differences between the three groups in terms of self-evaluation and metacognition. The mean scores of high achieving group were significantly higher than the other two groups. Therefore, we can say that the two sub-dimensions of self-regulation, self-evaluation and metacognition, can predict academic success at higher education.

The relationship between academic achievement and self-regulation was also studied by Barnard-Brak et al. (2010). They investigated the relation between self-regulated learning and academic achievement by suggesting five different profiles of students. These profiles are super self-regulators, competent self-regulators, forethought-endorsing self-regulators, performance/reflection self-regulators, and non- or minimal self-regulators. They found associations between academic achievement levels and self-regulated learning profiles. Minimal and disorganized profiles of self-regulated learning were found to have poorer academic outcomes. The findings of this study also suggest that moderate and high achievers tend to have higher levels of self evaluation and metacognition. In another paper on the relation between self-regulation and academic success, Cheng (2011) investigated the relationship between students' self-regulation ability and their learning performance. The results showed that students' learning motivation, goal setting, action control and learning strategies played a significant role in their learning performance.

The findings of this study indicate that although the overall level of self-regulation in higher education students is relatively high, yet it can be improved in terms of self-evaluation, which is one of the most important sub-dimensions of self-regulation. In this study, gender did not account as a factor in terms of the self-regulatory skills of the participants except for environment structuring and metacognition sub-dimensions. Female students were found to be slightly better than their male counterparts in terms of metacognition. When it comes to the status of students, the study found that there are statistically significant differences between regular, distance and evening students in terms of goal setting and environment structuring. Evening students were better at the two dimensions compared to regular and distance education students. Finally, the findings of the study

reveal that high achieving students had higher levels of self-evaluation and metacognition dimensions compared to moderate achieving and low achieving students. Therefore, self-evaluation and meta-cognition can be put forward as predictors of academic achievement at higher education.

In Turkish context, Usta (2011) worked on self-regulation in relation to Internet based learning. Usta's (2011) paper found that self-regulated learning skill levels of students in online learning environments were high. The highest skills of students was "Organizing Environment" in terms of their online self-regulated learning levels, while their lowest skill was "Time Management". Similarly, the present paper also found "time management" as the least rated skill by the participants. Students' inability in managing time is a frequently cited problem in literature. On the other hand, the highest rated skill in the present study was found to be "metacognition".

In another study, Yukselturk and Bulut (2009) worked on gender differences and self-regulated learning. They analyzed gender differences in self-regulated learning components, motivational beliefs and achievement in self-regulated online learning environment. The results of their study indicated that there were no differences between male and female students in terms of motivational beliefs, self-regulated learning variables and achievement. The present paper found that female students were better than male students in terms of environment structuring and metacognition.

## CONCLUSION

This study indicated that distance education students have a relatively high level of self-regulation based on their own perceptions. In terms of meta-cognition, a slight difference was found between male and female students. Female students are slightly higher than male counterparts in terms of meta-cognition. Within the scope of the study, regular, evening, distance education students were compared in terms of their self-regulating skills. Evening students reported to highest level of self-regulating skills. It can be speculated that now evening students have to pay extra education fees, and they have higher levels of self-regulation. The study also found differences in self-regulation skills based on academic achievement. Students with higher

academic achievement were found to report themselves higher in terms of self-evaluation and metacognition sub-dimensions. Therefore, it can be stated that self-evaluation and metacognition are important predictors of academic success at higher education.

## RECOMMENDATIONS

This study focused on one department at higher education level. In other studies, different students from different departments can be compared in terms of their self-regulating skills and different results may be obtained. This study aimed at getting a general overview of self-regulating skills of higher education students. In another study, researchers can focus on the factors that contribute to the development of self-regulating skills of students.

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