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Investigation of Self-Regulated Online Learning According to Demographic Variables and Their Relationship to Learning Approaches

Işıl Sönmez [1]

[1] Necmettin Erbakan University, Ahmet Keleşoğlu Faculty of Education, Konya, Turkiye
isilektem@gmail.com

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ABSTRACT

Self-regulation in online learning environments is of great importance in terms of ensuring effective learning since it makes the learner autonomous. In this context, the research aims to compare the self-regulated online learning of education faculty students according to certain variables and to reveal the relationship between their self-regulated online learning and learning approaches. The research is conducted using a correlational research design. Firstly, the general view of students' self-regulated online learning and learning approaches was determined. After that, self-regulated online learning averages were compared according to their gender and academic averages, and finally, the relationship between self-regulated online learning and learning approaches was presented. The study group of the research, which continues their education through distance education due to the pandemic in the 2021-2022 academic year; consisted of a total of 376 students who studied in different departments of the education faculty of Necmettin Erbakan University in Konya. The research findings demonstrate the fact that students' self-regulated online learning corresponds to an above-average value and their self-regulated online learning differs according to their gender and academic achievement. Moreover, there is a moderately positive correlation between the deep learning approach and self-regulated online learning skills, and a low negative correlation between the superficial learning approach and self-regulated online learning skills.

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INTRODUCTION

The effects of radical and rapid technological developments in the 21st-century information age on social and institutional structures have begun to be felt in almost every field, including education systems (Uşun, 2000). For that matter, educational institutions have also started new searches to manage their resources effectively (Sultan, 2010). In this context, the limitations of time and space in education have disappeared with the "internet", which is the most important effect of these new fluctuations in the field of technology on education (Pardue, 2001). Online learning applications have become increasingly widespread with the developments in communication technologies and the emergence of the Internet (Moore & Kearsley, 2005). The fact that it provides flexible learning opportunities by removing geographical distances and time limitations, and producing fast and practical solutions that incorporate the basic features of the 21st century, has increased the popularity of online learning (Kesim, 2011).

In accordance with Morrison (2003), online learning is supported by Internet technology and managed by this technology, can be performed synchronously and asynchronously, and helps to gain knowledge and skills with these applications. Online learning environments are places where the internet is used to access learning materials; where the opportunity to interact with the content, the environment manager, and other students is provided; where technical support can be provided throughout the learning process; where individuals are enabled to construct and internalize knowledge to learn a certain knowledge and are environments which develop with learning experiences and become more effective as they evolve (Ally, 2004; cited in Pala, 2014). Online learning gives learners flexibility in terms of where and when to learn. From this point of view, it also provides benefits to students who do not attend traditional educational programs for a variety of reasons (Joosten & Cusatis, 2020).

In order to achieve the targeted success in online learning environments, learners must have some characteristics. These are features such as self-learning, and self-motivation, to be able to set a goal and persistence towards this goal (Berigel & Çetin, 2019). Self-regulation, which is directly related to these skills, plays an important role in achieving the determined goals and being successful in any learning environment process (Shea, et al. 2013; cited in Kilis & Yıldırım, 2018). Self-regulation is even more important, especially in distance education and online learning environments. Because in such learning environments, there are no real-time teachers as in traditional classroom environments, and the learning environment and process are more autonomous. (Artino & Stephens, 2009; Barnard et al., 2009; Dabbagh & Kitsantas, 2004; Schunk & Zimmerman, 1998; cited in Kilis & Yıldırım, 2018). Therefore, self-regulation skills become much more important, especially in distance education and online learning environments.

Self-regulation, first mentioned by Bandura, the founder of social cognitive theory, is defined as the individual's making judgments by observing his behavior, comparing it with his own criteria, and if necessary, adapting his behavior to the criteria, influencing, directing, and controlling his own behavior (Bandura, 1977; cited in Senemoğlu, 2013). Zimmerman (2001) defines self-regulation as the emotions, thoughts, and behaviors that a person develops in order to reach a goal. The self-regulation process is an active and constructive process in which students set their own goals in the learning process and regulate and observe their behaviors, motivations, and cognitions in line with these goals (Pintrich, 2000). While Pajares (2008) explains this concept as "the metacognitive process that enables students to understand and evaluate the behaviors they exhibit, and also to plan alternative paths for success"; Kauffman (2004) defines self-regulation as the learner's effort to observe, supervıse, and regulate the learnıng process. Hoyle (2010), on the other hand, discussed self-regulation, which he defined as psychology-based, as the reactions of individuals to the contradictions that arise when their expectations and the perceived reality do not match. Self-regulated learning includes the cognitive strategies that the individual uses to realize cognitive processes such as remembering and understanding, the

metacognitive strategies they use for planning, monitoring, and regulating these cognitive processes, the actions they take to control and manage their performance in academic tasks, and their motivations that act as catalysts in realizing all these processes (Pintrich & De Groot, 1990). Many different models of self-regulated learning have been developed based on theory. The most well-known of these models are those developed by Boekaerts (1992), Borkowski (1996), Winne & Hadwin (1998), Pintrich (2000), and Zimmerman (2000) (Uygun, 2012). All of these models share the assumption that the general structure of self-regulated learning is that learners set targets for their learning process; it's also an active, constructive process in which they regulate and control their cognition, motivation, and behavior (Pintrich, 2000).

The concept of learning approaches, on the other hand, refers to the differentiation in the purpose and activities chosen by the students to perform a particular learning task (Entwistle & McCune, 2004). Tang (1994) states that the concept of a learning approach includes a set of strategies for fulfilling the given task and motivation toward learning. The concept of learning approaches is used in the literature as a concept that includes both students' learning strategies and their motivation to use these strategies together (Prosser & Trigwell, 1999). In other words, the learning approach is the orientation that emerges depending on the intention of the learner when dealing with the subject of learning (searching for meaning, creating meaning, memorizing, being successful, etc.) (Ekinci, 2011). It is mentioned that many variables affect learning approaches. Examining the literature, it is seen that the learning-teaching environment and individual characteristics (self-efficacy, readiness level, etc.) are effective in learning approaches. Ekinci (2009) defined the characteristics that affect the preferences of learning approaches as personal characteristics (gender, class, age, etc.), personality characteristics (being introverted, extroverted, academic self-confidence, etc.), subject area, past experiences, and characteristics of the learning-teaching environment.

The concept of learning approaches first emerged in the 1970s as a result of the work of Marton and Saljo with a group of university students. Early researchers considered learning approaches at two levels: deep and superficial approaches (Canıdemir, 2013). In the superficial learning process, it has been observed that students aim to memorize the information and ideas they think are important in the text, rather than trying to understand the holistic meaning of the text. They try to memorize the details that they think will answer the questions that may be asked later and do not tend to seek meaning. In the in-depth learning process, it has been seen that students direct their attention to the semantic content of the learned material and understand what is meant to be told, rather than the factual information in the text (Marton & Saljo, 1976; cited in Kılıç, 2009). These two approaches point to two opposite poles. While students using the deep approach try to see the relationships related to the subject and create structures related to the learning task with an internal motivation; students using the superficial approach try to complete the learning task as soon as possible with external motivation sources such as fear of failure or getting high grades (Johnson, 1997).

Examining the literature on self-regulated learning, it is seen that although there are many studies, the research is mostly aimed at determining the effects on the academic achievement of the students. In addition, the number of studies investigating self-regulated online learning (SROL) for the distance education process is quite low. Various variables that may be related to SROL have been examined in studies in Turkey (Barut Tuğtekin, 2022; Çivril & Aruğaslan, 2022; Dönmez, 2021; Düzgün & Ünal, 2022; Koç, 2019; Meşe, 2021; Özdemir, 2018; Yetik, 2017; Taşçı, 2022; Tülübaş, 2022; Usta, 2011; Özdemir & Önal, 2021), and abroad (Hong, Lee & Ye, 2021; Broadbent & Poon, 2015; Barnard, Paton & Lan, 2008; Barnard-Brak, Paton & Lan, 2010; Ulfatun, Septiyani & Lesmana, 2021; He, Zhao & Su, 2022; Mahmud & German, 2021; Swafford, 2018; Sansato, Riyanti, Prostati, Triatmoko, Susanty & Yang, 2022). In these studies, SROL level and its relationship with some variables (such as length of stay online, gender, grade level, marital status, etc.), (Mahmud & German, 2021; Barut & Tuğtekin, 2022; Çivril & Arugaslan, 2022; Özdemir, 2018; Özdemir & Önal, 2021), SROL profiles (Barnard-

Brak et al., 2010), the effect of SROL on academic achievement (Broadbent & Poon, 2015; Tülübaş, 2022), SROL and online learning self-efficacy (Ulfatun et al., 2021; Sansato et al., 2022), motivation (Swafford, 2018), academic procrastination behavior (Hong et al., 2021), cognitive immersion (Koç, 2019), the relationship between academic achievement (Barnard et al., 2008; Düzgün & Ünal, 2022) and attitude towards the internet (Usta, 2011) and the effects of different learning environments (such as metacognitive judgment training, differentiated education, personalized feedback, metacognitive support training) on SROL (Meşe, 2021; Taşçı, 2022; Dönmez, 2021; Yetik, 2017) were examined. While a highly positive relationship was found between SROL and academic achievement, motivation, attitude towards the Internet, and online learning self-efficacy; a negative relationship was found between SROL and academic procrastination behavior.

Many studies are available in higher education to determine students' learning approaches and to provide effective learning in light of this information. Studies in this regard show that learning approaches are one of the determinants of learning (Senemoglu, 2011). Self-regulated learning, on the other hand, emphasizes autonomy and control in the sense that the individual monitors, directs, and regulates actions taken to acquire knowledge, develop experience, and improve oneself (Paris & Paris, 2001). In this context, it was decided to examine the relationship between the learning approaches of education faculty students and their online self-regulated learning, considering that it would be quite meaningful to examine these two variables, which are thought to affect each other in a meaningful way.

Although there are many studies on self-regulated learning both in Turkey and abroad, no study examining the relationship between students' SROL and learning approaches has been found. In this study, we plan to investigate the relationship between SROL learning and the learning strategies used by undergraduate education students. Therefore, we aim to answer the following research inquiries:

(1) What is the level of SROL among education faculty students learning in online environments?

(2) What is the level of preference for learning approaches (superficial or deep) among education faculty students who learn in online environments?

(3) Is there a significant difference between the SROL of education faculty students who learn in online environments in terms of gender?

(4) Is there a significant difference between the SROL of education faculty students who learn in online environments in terms of the academic achievement variable?

(5) What is the relationship between SROL and the learning approaches of university students learning in online environments?

METHOD

Research Design

The research is a study in the correlational research design. This model is aimed to determine the presence and/or level of change between two or more variables and to specify the relationships between the variables. In relational research, two different relational analyses can be made. These are the relationships obtained by correlation-type relationships and comparison (Karasar, 2006). Correlational models are research models that aim to determine the existence or degree of change between two or more variables (Cohen et al., 2003). In this study, the self-regulated online learning of education faculty students was examined; correlation calculations were made in order to determine the relationship between SROL and learning approaches.

Study Group

The study group of the research, who continued their education through distance education due to the pandemic in the 2021–2022 academic year, consisted of a total of 376 students who studied in

different departments of the education faculty of Necmettin Erbakan University in Konya.

The research group was selected through convenience sampling and included in the study based on their voluntary participation. The data obtained from 378 students were utilized in the study. The data were collected through forms created in online environments. After data set analysis, a total of 2 outlier data were excluded from the study, and the data set of 376 faculty of education students was included in the study.

Of the Faculty of Education students, 305 (81.1%) were female and 71 (18.9%) were male. 105 of the students were in the Department of Basic Education (27.9%); 90 of them were in the Department of Foreign Language Education (23.9%); 88 of them were in the Department of Mathematics and Science Education (23.4%); 47 of them were in the Department of Turkish and Social Sciences Education (12.5%); 25 of them were in the Department of Fine Arts Education (6.6%); 13 of them are studying at the Department of Educational Sciences (3.5%); and 8 of them are studying at the Department of Physical Education and Sports (2.1%). The academic average of 261 (69.4%) of the students was between 70 and 84; the academic average of 96 (25.5%) was between 85 and 100; and the academic average of 19 (5.1%) was in the range of 60 to 69. Since the number of students in the departments differs according to the number of students studying in the relevant department and the preference of the department, this has led to an increase in the difference between the percentages.

Research Instruments and Processes

Self-Regulated Online Learning Scale

In the study, the SROL scale developed by Yavuzalp & Özdemir (2020) was used to determine the SROL of education faculty students. The scale, whose original form was developed by Jansen et al. (2017), was adapted to Turkish by Yavuzalp & Özdemir (2020). As a result of the exploratory factor analysis, the 5-factor structure found in the original scale was formed in the same way. It was determined that the factor load distributions varied between .393 and .906, the total eigenvalue was 22.34 and the total variance explained was 62.06%. Cronbach Alpha value of the sub-dimensions of the scale ranged between .70 and .95.

Learning Approaches Inventory

In the study, the "Learning Approaches Inventory", developed by Kember, Bigss & Leung (2004) and adapted into Turkish by Çolak & Fer (2007), was used to determine the learning approaches adopted by the education faculty students. This 5-point Likert-type scale consists of 22 items in total. The measurement tool consists of two sub-dimensions: "Deep Learning" and "Superficial Learning". The Cronbach Alpha coefficient of the scale was .79 for the deep learning approach and was calculated as .72 for the superficial learning approach. In this study, the reliability coefficient was recalculated and found to be .806 for the “deep learning” and .684 for the superficial learning approach.

Data Analysis

In the study, descriptive statistics were used to determine the SROL levels and learning approaches of education faculty students. Before starting the analyses, it was checked whether the answers given by the faculty of education students to the scales met the assumptions of normality. In order to find out whether the data obtained from the scales meet the normality assumption, the Kolmogorov-Smirnov test and skewness and kurtosis values were calculated together. Since the normality assumptions were met, parametric tests were used in the analysis of the data. In the comparison of SROL levels and learning approaches of education faculty students by gender; an independent sample t-test was used. One-way analysis of variance (ANOVA) was used to compare SROL with students' academic averages and simple linear correlation was used to determine the relationship between SROL skills and preferences for learning approaches.

Ethic

The necessary ethics committee permissions for the research were obtained from the Social Sciences Ethics Committee of Necmettin Erbakan University with the decision dated 12.05.2023 and numbered 14236.

FINDINGS

1. What is the level of SROL among education faculty students learning in online environments?

Table 1. *Descriptive statistics on SROL skills of education faculty students*

	N	Min	Max	$\bar{X}$	S
Metacognitive Skills	376	1.06	7.00	4.4948	1.26756
Time management	376	1.00	7.00	4.3236	1.50895
Environmental Structuring	376	1.00	7.00	5.3362	1.39675
Persistence	376	1.00	7.00	4.7681	1.35065
Seeking for help	376	1.00	7.00	4.6064	1.51844
GENERAL	376	1.11	6.94	4.6509	1.10354

According to the table, the mean scores of the online SROL scale sub-dimensions of the Faculty of Education students, from the most used to the least used, are respectively environmental structuring ($\bar{X}$=5.3362), persistence ($\bar{X}$=4.7681), seeking for help ($\bar{X}$=4.6064), metacognitive skills ($\bar{X}$=4.4948), time management ($\bar{X}$=4.3236). It is seen that the average score of the students of the Faculty of Education regarding the general SROL scale is at the level of $\bar{X}$= 4.6509. The mean score corresponds to a value above the middle level on the response scale. This result shows us the students own self-regulation skills.

2. What is the level of preference for learning approaches (superficial or deep) among education faculty students who learn in online environments?

Table 2. *Descriptive statistics of education faculty students' preferred learning approaches*

	N	Min	Max	$\bar{X}$	S
Deep	376	1.45	5.00	3.5010	.56709
Superficial	376	1.36	4.55	2.9930	.57959

According to the table, it is seen that the average of the students' deep learning approaches is higher than the average of the superficial learning approach. According to this finding, it can be said that students prefer the deep learning approach more. While the deep learning approach point average corresponds to the "I agree" level on the response scale, the superficial learning approach corresponds to the "I agree moderately" level on the response scale.

3. Is there a significant difference between the SROL of education faculty students who learn in online environments in terms of gender?

Table 3. *Comparison of education faculty students' SROL by gender*

	N	$\bar{X}$	S	Sd	t	p
Female	305	4.7485	1.02943	374	3.614	0.00
Male	71	4.2312	1.30440			

The t-test for unrelated samples, conducted to determine whether there is a difference between the self-regulated online learning of students according to their gender; showed that there is a statistically significant difference at 0.05 significant level between the mean score of female students ($\bar{X}$= 4.7485) and male students ($\bar{X}$= 4.2312). This difference is in favor of female students. In other words, it can be said that female students use SROL skills more than male students.

4. Is there a significant difference between the SROL of education faculty students who learn in online environments in terms of the academic achievement variable?

Table 4. *Comparison of SROL of education faculty students according to students' academic averages*

Source of Variance	Sum of Squares	sd	Mean Squares	F	P	Significant Difference
Between groups	7.809	2	3.904	3.245	.040	Between 85-100 range to 75-84 range
Within groups	448.864	373	1.203			
Total	456.673	375				

In order to test whether there is a difference between the SROL of students with different academic averages in terms of their academic averages, the SROL averages of the groups formed according to their academic averages were compared with a one-way analysis of variance for unrelated samples. According to test result, a statistically significant difference was observed between at least two of the averages of the students whose academic average is between 85-100 ($\bar{X}$=4.8848), the average of the students whose academic average is between 70-84 ($\bar{X}$=4.5846), and the average of the students whose academic average is between 60-69 ($\bar{X}$=4.3787). the Dunnett's C multiple comparison test demonstrates that the significant difference was between the online SROL skill scores of the students whose academic average was between 85-100 and 70-84.

5. What is the relationship between SROL and the learning approaches of university students learning in online environments?

Table 5. *Simple linear correlation of SROL skills and learning approaches*

	Deep Learning	Superficial Learning
Self- Regulated Online Learning	.632	-.188

The simple linear correlation process performed to reveal whether there is a relationship between students' learning approaches and SROL skills shows that there is a relationship between SROL skills and learning approaches. It was determined that there was a moderate positive correlation ($r=.632$, $p<0.01$) between the deep learning approach and SROL skills, and a low negative correlation ($r=-.188$, $p<0.01$) between the superficial learning approach and SROL skills.

DISCUSSION, CONCLUSION, RECOMMENDATIONS

This study aimed to compare the SROL of education faculty students according to certain variables and to reveal the relationship between their SROL and learning approaches.

According to the research findings, the SROL skill level of education faculty students is above average. In Turkey, during the pandemic period, courses in higher education institutions were carried out through distance education, and the data from our research was obtained during the distance education process. Online courses, certificates, and diploma programs are currently conducted through distance education in many higher education institutions in Turkey. In this context, according to the results obtained, university students use self-regulation skills in online learning environments. This value is above the average. However, considering that the maximum value that can be taken on the response scale is 7, it shows that students' SROL skills need to be developed and supported. Evaluating the participation of the students at the level of sub-dimensions (time management, metacognitive skills, seeking help, persistence, environmental structuring), we encounter a situation similar to the scale in general. These averages reveal the areas in the sub-dimensions that need improvement. This result of the SROL of education faculty students is in line with similar research results in the literature. Koç (2019), Barut Tuğtekin (2022), Çivril & Aruğaslan (2022), and Düzgün & Ünal (2022) stated that the SROL scores of university students who learn online are above the average. Tümen Akyıldız (2020) stated that students' SROL scores are at a moderate level. This may be because the distance education process is compulsory throughout the country and students may not feel ready for this process.

According to another finding of the study, the SROL of education faculty students differs along with their gender. This difference is in favor of female students, which is probably because most of the students participating in the research are women and female students approach academic studies more meticulously. Meece & Painter (2008) found that women outperform men and acknowledge that cultural stereotypes regarding male and female abilities can have important consequences. For example, it has been argued that women are more often expected to conform to social norms; therefore, their experience and skills in regulating their emotions and behaviors tend to be superior to men (Davis, 1995; cited in Özdemir & Önal). There are similarities between the finding that female students have higher SROL averages than male students and the results of previous studies. Çivril & Aruğaslan (2022), Tülübaş (2022), Özdemir & Önal (2021), McSporran & Young (2001), Liu, He, Zhao & Hong (2021), Özsoy-Güneş, Güneş & Kırbaşlar (2014), Zimmerman & Martinez-Pons (1990) & Artsın (2018)'s finding that female students' SROL scores are higher, is in line with our research result. However, Özdemir (2018), Aslan Baysal & Çakır (2022), Çivril Aruğaslan (2022), and Düzgün & Ünal (2022) revealed that gender does not affect students' self-regulation skills in online environments; but Koç (2019) and Tümen Akyıldız (2020) stated that this result is in favor of men. These findings from current studies do not overlap with our research findings.

Examining the SROL averages of the education faculty students according to the general academic averages, it is observed that the students with an academic average between 85-100, had a significantly higher SROL level than students with an average of 75-84. According to this result, it is possible to say that students with higher academic achievement have higher SROL skills. It is supported by many studies that students with high SROL levels have high academic success (Atmojo et al., 2020; Sangsawang, 2020; Albelbisi & Yusob, 2019; Barnard-Brak et al., 2013; Denge & Başaran, 2021; Eker, 2014; Wang et al., 2013; cited in Düzgün& Ünal, 2022).

According to the last finding of our research, it was seen that there is a positive and significant relationship between the deep learning approach and SROL skills. Self-regulated learning includes the cognitive strategies that the individual uses to realize cognitive processes such as remembering and understanding, the metacognitive strategies they use to plan, monitor, and regulate these cognitive processes, the actions they take to control and manage their performance in academic tasks, and their motivations that act as catalysts in realizing all these processes (Pintrich & De Groot, 1990). The deep learning approach, on the other hand, is expressed as the tendency to be willing to learn, to interact intensively with the content, to link previous information with newly learned information, to associate concepts with daily experiences, and to examine the logic of the subject (Byrne, Flood & Willis, 2001).

The fact that students adopt the deep learning approach reveals that they aim to understand the learning material in depth and show an interest in and active participation in their studies (Senemoğlu, 2011). In addition, Marshal & Case (2005; cited in Karataş, 2021) state that there is a clear relationship between deep learning approaches and metacognitive activities. The deep learning approach requires employing metacognitive features such as self-assessment, self-questioning, identifying mistakes, and considering options and limitations of ideas. The deep learning approach focuses on high-level cognitive activities such as questioning, connecting, detecting, and problem-solving, as well as understanding in learning. Inevitably, the quality of learning for students who perform these activities in the learning process will increase (Durdukoca, 2013).

As is known, the main factors that determine self-regulated learning and learning approaches consist of motivation and strategies. Motivation refers to why students want to learn, and strategy refers to how they learn (Ellez & Sezgin, 2002). How students plan their study process and the tactics they use while working are seen as part of learning strategies (Çolak, 2006). It is expected that the qualities of the deep learning approach in terms of motivation and strategies will affect self-regulated learning. Both the deep learning approach and self-regulated learning require the active participation of the learner in the learning process. Examining the variables related to the deep learning approach in the literature, the deep learning approach and self-efficacy beliefs (Ekinci 2015), academic success (Ekinci, 2009), teaching-learning environment perception (Ekinci, 2009); intelligence scores (Premuzic & Furnham, 2008); self-esteem (Abouserie, 1995); intrinsic motivations (Entwistle, Mccune & Hounsel, 2002) are found to have positive and significant relationships. Therefore, due to the consistency of the results of this study with the mentioned studies, it is thought that the variables related to self-regulated learning are also related to the deep learning approach.

According to the findings obtained from the research, the following suggestions can be made.

SROL environments are important in ensuring effective learning, as they make the learner autonomous. Based on the research findings, it is important to take measures to develop online self-regulated learning skills in higher education programs. In particular, opportunities should be created for students to set goals for themselves in their learning processes and to evaluate their progress in the process and at the end. It is thought that the use of methods that will enable students to adopt self-regulation and deep approach in learning environments for online or distance learning students will increase the quality of learning outcomes. In terms of future research, it is thought that experimental testing of the effects of SROL by making interactive applications that support the deep learning approach will contribute to the literature.

REFERENCES

Abouserie, R. (1995). Self-esteem and achievement motivation as determinants of students' approaches to studying. *Studies in Higher Education*, 20(1), 19-27. doi: 10.1080/03075079512331381770

Artsın, M. (2018). *Kitlesel açık çevrimiçi derslerde öğrenenlerin öz-yönelimli öğrenme becerilerinin incelenmesi [Examination of self-regulated learning skills of learners in massive open online course]* (Unpublished master's thesis). Anadolu University, Eskişehir

Aslan Baysal, T., & Çakır, R. (2022). *Çevrimiçi öğrenme ortamlarında öğrencilerin öz düzenleme becerilerine yönelik algıları [Students' perceptions of self-regulation skills in online learning environments]*. Book of Proceeding 4th International Conference on Distance Education and Innovative Education Technologies, (pp.259-272), Başkent University, Ankara

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Barnard, L., Paton, V., & Lan, W. (2008). Online self-regulatory learning behaviors as a mediator

in the relationship between online course perceptions with achievement. *The International Review of Research in Open and Distributed Learning*, 9(2), 1-11. doi :10.19173/irrodl.v9i2.516

Barnard-Brak, L., Lan, W. Y., & Paton, W. O. (2010). Profiles in self-regulated learning in the online learning environment. *International Review of Research in Open and Distance Learning*, 11(1), 61-80. doi :10.19173/irrodl.v11i1.769

Barut Tuğtekin, E. (2022). Çevrimiçi öğrenme ortamlarında üniversite öğrencilerinin öz düzenleme düzeylerinin incelenmesi [Investigation of college students' self-regulation levels in online learning environments]. *The Journal of Educational Reflections*, 6(1), 10-23. Retrieved from https://dergipark.org.tr/tr/pub/eduref/issue/69172/1064517

Berigel, M., & Çetin, I. (2019). Açık ve uzaktan öğretimde öğreten ve öğrenen rolleri [Roles of teachers and learners in open and distance education]. In E. Tekinarslan, & M. D. Gürer (Ed.), *Açık ve Uzaktan Öğrenme [Open and distance education]* (pp, 125–144). Ankara: Pegem A Press.

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, 27, 1-13. doi: 10.1016/j.iheduc.2015.04.007

Byrne, M., Flood, B., & Willis, P. (2001). The relationship between learning approaches and learning outcomes: a study of Irish accounting students. *Accounting Education*, 11(1), 27-42. doi: 10.1080/09639280210153254

Canıdemir, A. (2013). *Ortaöğretim öğrencilerinin öğrenme yaklaşımları ve başarı amaç yönelimlerinin akademik başarı ile ilişkisinin incelenmesi [Examination of relationship of college students' learning approaches and achievement goal orientations with academic achievement]* (Unpublished master's thesis). Ankara University, Ankara

Cohen, J., Cohen, P., West, S. G., & Alken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioural sciences* (3rd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.

Çelik, P. (2013). *Probleme dayalı öğrenmenin öğretmen adaylarının fizik dersi başarısı, öğrenme yaklaşımları ve bilimsel süreç becerileri üzerindeki etkisi [The effect of problem-based learning on pre-service teachers' success in physics course, learning approaches and scientific process skills]* (Unpublished doctoral dissertation). Dokuz Eylül University, İzmir

Çivril, H. & Aruğaslan, E. (2022). Uzaktan eğitim öğrencilerinin öz-düzenleme becerilerinin incelenmesi: ISUBÜ uzaktan eğitim meslek yüksekokulu örneği [Investigation of self-regulated learning skills of distance education students: A case of ISUBU Distance Education Vocational School]. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi*, 8(2), 55-73. doi: 10.51948/auad.1076895

Çolak, E. (2006). *İşbirliğine dayalı öğretim tasarımının öğrencilerin öğrenme yaklaşımlarına, akademik başarılarına ve öğrenmenin kalıcılığına etkisi [The effect of collaborative instructional design on students' learning approaches, academic achievement and permanence of learning]* (Unpublished doctoral dissertation). Yıldız Teknik University, İstanbul

Çolak, E. & Fer, S. (2007). Öğrenme yaklaşımları envanterinin dilsel eşdeğerlik, güvenirlik ve geçerlik çalışması [The bilingual equivalence, validity and and reliability of the learning process questionnaire]. *Journal of Çukurova University Institude of Social Sciences*, 16(1), 197-211. Retrieved from https://dergipark.org.tr/tr/pub/cusosbil/issue/4376/59944

Dönmez, F.Ç. (2021). *Çevrimiçi öz düzenlemeli öğrenme süreci ve üstbilişsel yargı eğitiminin performans ve üstbilişsel yargılara etkisi [The effect of online self-regulated learning process and metacognitive judgment training on performance and metacognitive judgments]* (Unpublished master's thesis). Hacettepe University, Ankara

Durdukoca, F. (2013). *Dizgeli eğitim ve düz anlatım yöntemleriyle işlenen öğretim uygulamalarının öğretmen adaylarının epistemolojik inanç, öğrenme yaklaşımları, üstbilişsel farkındalık ve akademik başarılarına etkisi [The effect of teaching practices performed by using systematic training and lecture methods on teacher candidates' epistemological belief, learning approaches, metacognitive awareness and academic achievement]* (Unpublished doctoral dissertation). Inonu University, Malatya

Düzgün, S. & Ünal, F. (2022). Acil uzaktan öğrenimde öğrencilerin öz düzenlemeli öğrenmeye yönelik görüşlerinin akademik başarı ile ilişkisi [Exploring the Association Between Students' Views on Self-Regulated Learning and Academic Achievement in Emergency Remote Learning]. *Erzincan University Journal of Education Faculty*, 24(3), 531-544. doi: 10.17556/erziefd.1053867

Ekinci, N. (2009). Üniversite Öğrencilerinin Öğrenme Yaklaşımları [Learning Approaches of University Students]. *Education and Science*, 34(151), 74-88. Retrieved from http://egitimvebilim.ted.org.tr/index.php/EB/article/view/609/88

Ekinci, N. (2015). Öğretmen adaylarının öğrenme yaklaşımları ve öz yeterlilik inançları arasındaki ilişki [The relationships between approaches to learning and self-efficacy beliefs of candidate teachers]. *H.U. Journal of Education*, 30(1), 62-76. Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/http://efdergi.hacettepe.edu.tr/yonetim/icerik/makaleler/21-published.pdf

Ellez, A. M., & Sezgin, G. (2002). Öğretmen adaylarının öğrenme yaklaşımları [Teacher candidates' approaches to learning]. *Book of Proceeding 5 th National Science and Mathmatics Education Congress* (pp.1261-1266). ODTÜ, Ankara

Entwistle, N., & McCune, V. (2004). The conceptual bases of study strategy inventories. *Educational Psychology Review*, 16(4), 325-345.

Entwistle, N., McCune, V., & Hounsell, J. (2002). Approaches to studying and perceptions of university teaching-learning environments: Concepts, measures and preliminary findings. *Enhancing Teaching-Learning Environments in Undergraduate Courses Project, Occasional Report*, 1, 1-19. doi:10.13140/RG.2.2.33594.80329

He, W., Zhao, L., & Su, Y.-S. (2022). Effects of Online Self-Regulated Learning on Learning Ineffectiveness in the Context of COVID-19. *The International Review of Research in Open and Distributed Learning*, 23(2), 25-43. https://doi.org/10.19173/irrodl.v23i2.5775

Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, 174, 110673. doi: https://doi.org/10.1016/j.paid.2021.110673

Hoyle, R. H. (2010). Personality and Self-Regulation. In R. H. Hoyle (Ed.), *Handbook of Personality and Self-Regulation* (pp.1-18). West Sussex: Blackwell Publishing.

Jansen, R. S., Van Leeuwen, A., Janssen, J., Kester, L., & Kalz, M. (2017). Validation of the self-regulated online learning questionnaire. *Journal of Computing in Higher Education*, 29(1), 6–27. doi: https://doi.org/10.1007/s12528-016-9125-x

Johnson, C., (1997). Fostering deeper learning teaching and learning. In R. Blunden (Ed.), *Vocational Education and Training*. Social Science Press, Katoomba http://tlu.ecom.unimelb.edu.au/academic_resources/publications.html

Joosten, T. & Cusatis, R. (2020). Online Learning Readiness. *American Journal of Distance Education*, 34(3), 180-193, doi: 10.1080/08923647.2020.1726167.

Karasar, N. (2006). *Bilimsel Araştırma Yöntemi [Scientific Research Method]*. Nobel Publishing,

Ankara

Karataş, H. (2011). *Üniversite öğrencilerinin epistemolojik inançları, öğrenme yaklaşımları ve problem çözme becerilerinin akademik motivasyonu yordama gücü [The prediction of academic motivation using university students' epistemological beliefs, learning strategies and problem solving]* (Unpublished doctoral dissertation). Yıldız Teknik University, İstanbul

Kauffman, D. F. (2004). Self-regulated learning in web-based environments: Instructional tools designed to facilitate cognitive strategy use, metacognitive processing, and motivational beliefs. *J. Educational Computing Research*. 30(1&2), 139-161. doi:10.2190/AX2D-Y9VM-V7PX-0TAD

Kesim, E. (2011). Uzaktan eğitimde meydana gelen değerler dizisi (paradigma) değişimlerinin e-öğrenme ekonomisi alanına yansımaları [Reflections of the paradigm changes that occur in distance education in the field of e-learning economy]. In G. T. Yamamoto, U. Demiray & M. Kesim. (Ed.). *Türkiye'de E-Öğrenme Gelişmeler ve Uygulamalar* (2nd press.), (pp. 2-19). Efil Publishing.

Kılıç, D. (2009). *Öğrencilerin genetik kavramları anlama düzeyleri ile mantıksal düşünme yetenekleri ve öğrenme yaklaşımları arasındaki ilişki [The relationship among students' understanding of genetics concepts, reasoning ability and meaningful learning orientation]* (Unpublished doctoral dissertation). Hacettepe University, Ankara

Kilis, S. ve Yıldırım, Z. (2018). Online self-regulation questionnaire: Validity and reliability study of turkish translation. *Çukurova University Faculty of Education Journal*, 47(1), 233-245 https://doi.org/10.14812/cuefd.298791

Koç, A. (2019). *Karma öğrenme ortamındaki öğrencilerin bilişsel kapılma ve çevrimiçi öz-düzenleme düzeyleri arasındaki ilişki [Relationship between cognitive absorption and online self-regulation of students in blended learning environment]* (Unpublished master's thesis). Sakarya University, Sakarya

Liu, X., He, W., Zhao, L. & Hong, J.C. (2021). Gender Differences in Self-Regulated Online Learning During the COVID-19 Lockdown. *Frontiers in Psychology*, 12:752131, 1-8. doi: 10.3389/fpsyg.2021.752131

Mahmud, Y. S., & German, E. (2021). Online self-regulated learning strategies amid a global pandemic: Insights from Indonesian university students. *Malaysian Journal of Learning and Instruction*, 18(2), 45-68. doi: 10.32890/mjli2021.18.2.2

McSporran, M. & Young, S. (2001). Does Gender Matter in Online Learning?. *Research in Learning Technology*, 9(2), 3-15. doi: 10.3402/rlt.v9i2.12024

Meece, J. L., & Painter, J. (2008). Gender, self-regulation, and motivation. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and Self-Regulated Learning: Theory, Research, and Applications* (pp. 339–367). Lawrence Erlbaum Associates Publishers.

Meşe, E. (2021). *Farklılaştırılmış öğretimin uzaktan eğitimde konuşma yeterliliği, çevrimiçi öz düzenleme becerileri ile öğrenci algılarına etkisinin incelenmesi [The impact of differentiated instruction on tertiary efl students' speaking proficiency and online self-regulation, and student perceptions in distance education]* (Unpublished master's thesis). Bahçeşehir University, İstanbul

Moore, M. G., & Kearsley, G. (2005). *Distance Education: A Systems View of Online Learning*. Canada: Thomson Wadsworth.

Morrison, D. (2003). *E-Learning Strategies: How to Get Implementation and Delivery Right First Time*. Chichester, UK: John Wiley & Sons.

Özdemir, A. & Önal, A. (2021). An Investigation into pre-service teachers' self-regulated online learning perceptions. *International Journal of Contemporary Educational Research*, 8(2), 143-159. doi:

10.33200/ijcer.865189

Özdemir, Y. (2018). *Öz düzenlemeli çevrimiçi öğrenme ölçeğinin Türkçeye uyarlanması ve öz-düzenlemenin çeşitli değişkenler açısından incelenmesi [Adaptation of self-regulated online learning scale into Turkish and investigation of self-regulation in terms of defferent variables]* (Unpublished master's thesis). Bolu Abant Baysal University, Bolu

Özsoy-Güneş, Z., Güneş, İ, & Kırbaşlar, M. (2014). Investigation of the relationships between educational internet use self-efficacy beliefs and self-regulated learning skills. *Procedia Social and Behavioral Sciences*, 152, 708–713. doi: 10.1016/j.sbspro.2014.09.308

Paris, S.G. & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89–101.

Pajares, F. (2008). Motivational role of self-efficacy beliefs in self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Ed.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 111–139). New York: Erlbaum Lawrence Publishers. Retreived from http://books.google.com.tr/books?id=MDQLfOg0jX0C&printsec=frontcover&d#v=onepage&q&f=false

Pala, F. K. (2014). *Çoklu ortam tabanlı tartışmalarla desteklenmiş çevrimiçi öğrenme ortamının geliştirilmesi ve etkililiğinin sınanması [Development and investigation of effects of multimedia based discussions supported online learning environment]* (Unpublished doctoral dissertation). Hacettepe University, Ankara

Pardue, S.L. (2001). The virtual revolution: Implications for academe. *Poultry Science*, 80(5), 553-561. doi: 10.1093/ps/80.5.553

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Ed.), *Handbook of Self-Regulation* (pp. 451–502). Academic Press. https://doi.org/10.1016/B978-012109890-2/50043-3

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33–40. https://doi.org/10.1037/0022-0663.82.1.33

Premuzic, C. T. & Furnham, A. (2008). Personality, Intelligence and Approachesto Learning as Predictors of Academic Performance. *Personality and Individual Differences*, 44(7), 1596-1603. doi:10.1016/J.PAID.2008.01.003

Prosser, M. & Trigwell, K., (1999) . Relational Perspectives on Higher Education Teaching and Learning ın The Sciences. *Studies in Science Education*, 33, 31-60.

Santoso, H.B., Riyanti, R.D., Prastati, T., Triatmoko H.S.,FA, Susanty, A., & Yang, M. (2022). Learners' online self-regulated learning skills in ındonesia open university: implications for policies and practice. *Education. Science*. 12(469), 1-17. doi:10.3390/educsci12070469

Senemoğlu, N. (2011). College of education students' approaches to learning and study skills, *Education and Science*, 36(160), 65-80.

Sultan, N. 2010. Cloud computing for education: A new dawn?. *International Journal of Information Management*, 30(2), 109-116. https://doi.org/10.1016/j.ijinfomgt.2009.09.004

Swafford, M. (2018). The relationship between motivation and online self-regulated learning. *Journal of Human Sciences and Extension*, 6(3), 92-106. doi: 10.54718/AWIJ9321

Tang, C., (1994) . Effects of models of assessment on students' preparation strategies. In G. Gibbs (Ed.), *Improving Student Learning - Theory and Practice*. Oxford: Oxford Centre for Staff

Development.

Taşçı, M.E. (2022). *Öğrenme analitiklerine dayalı kişiselleştirilmiş geri bildirimlerin öğrencilerin çevrimiçi öz düzenleme becerileri ve çevrimiçi öğrenme motivasyonuna etkisinin karşılaştırılması [Personalized feedback based on learning analytics allows students to self-comparison of the effect of editing skills and online learning motivation]* (Unpublished master's thesis). Kocaeli University, Kocaeli

Tülübaş, T. (2022). Çevrim içi öğrenmede öz-düzenleme becerisinin akademik başarıya etkisi [The effect of self-regulated online learning skills on academic achievement]. *Anadolu Journal of Educational Sciences International*, 12(2), 389-416. doi: 10.18039/ajesi.1021613

Tümen Akyıldız, S. (2020). Covid-19 sürecinde uygulanan çevrimiçi derslerde üniversite öğrencilerinin özdüzenlemeli öğrenme düzeyinin incelenmesi [Examining the self-regulated learning level of university students in online courses applied during the Covid-19 process]. In E. Yeşilyurt (Ed.), *Eğitim Sosyal ve Beşeri Bilimlerine Multidisipliner Bakış [Multidisciplinary Perspective on Education, Social Sciences and Humanities]*, (pp.135- 156). Güven Plus Publishing

Ulfatun, T., Septiyanti, F., & Lesmana, A. G. (2021). University students' online learning self-efficacy and self-regulated learning during the COVID-19 pandemic. *International Journal of Information and Education Technology*, 11(12), 597-602. doi: 10.18178/ijiet.2021

Usta, E. (2011). The examination of online self-regulated learning skills in web-based learning environments in terms of different variables. *TOJET: The Turkish Online Journal of Educational Technology*, 10(3), 278-286. Retrieved from https://eric.ed.gov/?id=EJ944994

Uşun, S. (2000). *Dünyada ve Türkiye'de Bilgisayar Destekli Öğretim [Computer aided education in the world and Turkey]*. Pegem A Publishing, Ankara

Uygun, M. (2012). *Öz düzenleme stratejisi gelişimi öğretiminin yazılı anlatıma, yazmaya yönelik öz düzenleme becerisine, kalıcılığa ve tutuma etkisi [The effects of self-regulated strategy development on writing expression, self-regulation of writing, retention and writing attitude]* (Unpublished doctoral dissertation). Hacettepe University, Ankara

Yavuzalp, N., & Özdemir, Y. (2020). Öz-Düzenlemeli çevrimiçi öğrenme ölçeğini Türkçe'ye uyarlama çalışması [Adaptation of the Self-Regulated Online Learning Questionnaire (SOL-Q)]. *Journal of Higher Education*, 10(3), 269-278. doi:10.2399/yod.19.512415

Yetik, S. S. (2017). Çevrimiçi öz düzenleyici öğrenme ortamında metabilişsel desteğin öz düzenleme becerisine etkisi [The effect of metacognitive support on self-regulation skills in an online self-regulatory learning environment]. *Cumhuriyet International Journal of Education-CIJE*, 6(1), 107-122 . doi: 10.30703/cije.321444

Zimmerman, B. J. (2001). Theories of Self-Regulated Learning and Academic Achievement: An Overview and Anaysis. In B. J. Zimmerman & D. H. Schunk (Ed.), *Self-Regulated Learning and Academic Achievement* (2nd ed.) (pp. 1-39). New York: Lawrence Erlbaum Associates.

Zimmerman, B. J., & Martinez-Pons, M. (1990). Student Differences in Self-Regulated Learning: Relating Grade, Sex, and Giftedness to Self-Efficacy and Strategy Use. *Journal of Educational Psychology*, 82(1), 51–59. doi: 10.1037/0022-0663.82.1.51