Investigating learner motivation in online education in terms of self-efficacy and self-regulation

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Article Info	Abstract
Keywords: Online Education Motivation Self-efficacy Self-regulation Review Article	As in many countries of the world, online education has been implemented in Turkey in recent years and related applications are becoming more widespread day by day. The fact that it can take place anytime and anywhere, eliminate the limitations of time and space, and provide lifelong learning can be described as the most basic factors in the spread of online education. In addition, the rapid increase in the number of students who have to take online education due to the Covid-19 global pandemic, which has affected the whole world recently, might be thought to have made the issue of learner motivation in relevant environments gain importance. This study is a narrative review study based on the literature review conducted to examine learner motivation in online education in terms of self-efficacy and self-regulation structures. As a result of the study, it was revealed that learners in online education should determine their own goals and motivate themselves in line with their own studying principles in this process. In addition, it is concluded that learners should take their own learning responsibilities in online environments in line with their own interests and abilities. It is also concluded that educators, educational institutions and instructional designers should obtain more information about learner perceptions, motivations and learning strategies, and they should use the information they have obtained in online learning environments to serve the learners to achieve their learning goals before an online course is started. It is thought that more research is needed on how learner motivation in online education environments is affected by self-efficacy and self-regulation. Furthermore, it is thought that the research will guide researchers working in the field of motivation in online learning in terms of improving and developing the motivation of learners in online education.

1. Introduction

Rapidly developing technologies create differences in people's lifestyles, and even these differentiations affect education life. Considering the reflections of developing new technologies on education, unlike traditional learning environments, learners are getting acquainted with learning environments supported by new technologies. Online learning environments, which are seen as an alternative to traditional learning environments, can be considered as one of the reflections of new technologies in education. Due to the fact that it can be said that academic motivation is important in increasing student success in online learning environments as well as in traditional learning environments, academic success, cognitive load and

motivation problems experienced in traditional learning environments should also be reviewed for online environments (Hoskins & Hooff, 2005). In addition, the Covid-19 pandemic, which has recently become a global crisis, has significantly affected many sectors including education. With this unpredictable global pandemic, face-to-face education in educational institutions had to be suspended. This situation has made online learning compulsory, which makes students who are passive recipients in the traditional learning method change into the learners who control their own learning process (Ünal, Şanlıer, & Şengil, 2021).

In this century, raising individuals who construct knowledge, take an active role in the learning process and who are aware of their learning ability has become one of the basic needs (Dede, Keskin, Öztürk, & Keskin, 2021). Students who are successful in organizing their own learning processes are also more successful in academic terms (Sakal, 2017). For this reason, self-regulated learning has come to the fore in recent years (Aydın & Atalay, 2015). Self-regulation, which is thought to be one of the most important factors of academic success, has been modeled and defined in many perspectives (Çiltaş, 2011). Self-regulation, first mentioned by Albert Bandura, the founder of social cognitive theory, emphasizes the importance of being aware of one's own abilities and capacities regarding the behaviors that will be exhibited. Self-regulation is a constructive and active process in which learners set their own learning goals and try to regulate their behavior and motivation (Pintrich, 2000). Students with self-regulation skills can plan the stages of their learning processes, organize their own learning processes, and create the most appropriate environment that will motivate them (Özmenteş, 2008). In the light of these definitions, self-regulated learning can be defined as all kinds of tactics, techniques and strategies used by the student for self-learning (Çiltaş, 2011). Self-regulated learning means that the student controls this process by playing an active role on the learning process without being dependent on others (Dede et al., 2021). Students with self-regulation skills can compare and evaluate their own learning with learning criteria (Senemoğlu, 2010). In summary, self-regulation is the student's being active and responsible in the learning process. Students who are aware of this responsibility are also aware of their learning deficiencies and how to overcome these deficiencies (Yüksel, 2003). Considering these features of self-regulation, student-related problems such as loss of motivation, leaving the course unfinished, and absenteeism in online education, where the responsibility of learning lies with the student, have an important place in the self-regulation of students (Dede et al., 2021).

There is a relationship between self-regulated learning and self-efficacy (Karademir, Deveci, & Çaylı, 2018). Self-regulation is a necessary element for self-efficacy (Karademir et al., 2018). Self-efficacy is closely related to the student's confidence in his ability to self-regulate about a subject (Israel, 2007). In studies that determined the relationship between academic achievement and self-efficacy of secondary school students, it was observed that students with high self-efficacy and self-regulation had also higher motivation and success (Arslan, 2017). The successes achieved by the students increase the desire to learn, and the failures they experience during learning decrease the desire to learn (Ergül, 2006). It is seen that these experiences of the students also give information about the academic success at school.

Motivation is thought to be one of the concepts as important as self-regulation and self-efficacy in education. Motivation can be defined as the beliefs, desires, needs and fears that drive the individual. Yıldırım (2007), on the other hand, defines motivation as an individual's acting with his own desires and wishes to achieve a certain goal. Motivation, which positively affects success, is an important factor that facilitates learning, and it is thought that all these features clearly reveal the importance of the motivation process for learners.

It has been seen that motivation is given a lot of attention in the field of education, and many definitions of motivation have been put forward in the theoretical approaches related to educational motivation. Motivation is the impulses and intentions that cause the individual to do something he/she wants (Orhan, 2006). In the educational environment, motivation is the impulses and desires to learn knowledge (Üredi & Üredi, 2005). Motivation is also an important part of the distance and online learning process (Khan, 2009). Since students must be in an individual learning process in online education, motivation is essential for effective learning to take place (Sakal, 2017).

When the studies in the literature on self-regulation and self-efficacy are examined, it has been observed that there are studies examining the relationship with many variables such as the relationship between self-regulation and class participation (Dede et al., 2021), examination of secondary school students' self-regulation and academic self-efficacy (Karademir et al., 2018), motivational structures that affect academic success (Ergül, 2006). However, there is a lack of studies in the literature examining learner motivation in online education in terms of self-efficacy and self-regulation structures. It is thought that this research will fill this gap in the literature and at the same time lead the studies on learner motivation in the online learning process, which has become a universal issue. It is thought that considering learner motivation in online education from a different perspective during the pandemic period may also guide future studies.

2. Theoretical Framework

2.1. Online Education

With the integration of information technology and recent developments in digital technologies, online education has deeply influenced traditional education delivery models. As institutions around the world adapt to these developments, online education has created a very dynamic educational environment, which has aroused great interest among researchers, educators, administrators, policy makers, publishers, and businesses (Dziuban & Picciano, 2015).

Online education has become a global phenomenon due to the emergence of new technologies, the widespread adoption of the Internet, and the demand for a skilled workforce for a digital economy. For this reason, many institutions are experimenting with the innovative online education method. For example, since the 1990s, organizations such as the World Bank, the United Nations Educational Scientific and Cultural Organization (UNESCO), the European Commission have advocated the use of online education to expand educational opportunities for the disadvantaged population (Kumar, Palvia, & Verma, 2017).

With the development of online education over time, its definition has also evolved, and different definitions have been made. Moore and Kearsley (2011, p. 2) define online education as "planned learning where teaching takes place in a different place than usual, requiring special institutional organization as well as communication with technologies". Online education is distance education in which the internet is used to create a learning environment in which a student interacts with content, teachers, and other students to gain knowledge and competence throughout the learning process (Moore and Kearsley, 2011). Online education is a flexible teaching delivery system that covers all kinds of learning and is carried out on the internet. Online education gives educators and students access to content that cannot be found in a traditional classroom setting, and students can learn on their own schedule and at their own pace (Jones, 2020).

Online education refers to a form of learning in which learning-teaching activities and services are offered to learners with the support of computer networks. Online education allows learners to take courses at various levels when they have a computer and internet connection (Çalışkan, 2002). Anadolu University defines online learning as a learning environment where the individual learns by himself using information technologies, there is no time and place limit in accessing information, synchronous or asynchronous communication or interaction is realized with other learners and teachers thanks to visual and auditory opportunities provided by computer technology, interaction removes socio-economic status barriers, and provides individuals with the opportunity to benefit from the superiority of lifelong education (Anadolu University Internet Supported Education System, 2006).

2.2. Learner Motivation

Motivation is defined as the process of engaging in behaviors that will provide satisfaction or lead to a goal for individuals to meet their various needs (Vatansever Bayraktar, 2015). In this process, an individual's

needs may change and there may be behavioral differences. Therefore, it is seen that motivation has a dynamic structure. In addition, motivation is the first condition of undertaking the learning task and the engine that powers the process (Meşe & Sevilen, 2021).

Brophy (2010, p. 3) defines motivation as "a theoretical construct to explain the initiation, direction, intensity, persistence, and quality of behaviour, especially goal-directed behaviour". Motivation involves goals that provide the impetus for purposeful action with an intended direction. Whether physical or mental, activity is an essential part of motivation. Inherent in this definition is the notion that motivation is a process rather than an end result. This has implications in terms of measurement of motivation. That is, because it cannot be observed directly it must be inferred from actions such as choice of tasks, persistence, effort and achievement, or from what individuals say about themselves (Schunk, et al., 2014). Contemporary views link motivation to individuals' cognitive and affective processes such as thoughts, beliefs, goals and emotions and emphasise the situated, interactive relationship between the learner and the learning environment that is facilitated or constrained by various social and contextual factors (Schunk, et al., 2014)

Kullmann & Seidel (2000) state that motivation initially provides the power and energy required for the learner and that no learning process without motivation can reach the expected goal (cited in İşigüzel, 2013). There is a cyclical relationship between motivation and learning performance. Schumann (2004, p. 264) explains the cycle between a strong motivation and the learning process as follows: "Positive emotions (motivation) affect the cognitive process positively; cognitive process leads to new knowledge; learned new knowledge also strengthens positive emotions (motivation)".

In this context, learner motivation has an important quality that affects all online learning activities. The reason for this is that motivation is important both in the acquisition of new achievements and in the fact that previously learned gains can be effective in the performance of the learner. Learning and performance are interrelated with motivation. When one of them is acquired, it affects the next (Pintrich, 1996; cited in Ceylan, 2003). The increase in learner motivation reduces the problems related to learning and participation in online environments. In addition, it allows teachers and learners to enjoy their learning environments more. In addition, comprehensive reviews of the motivation literature have resulted in the development of several motivation design models. These include Keller's (2010) ARCS model and Ginsberg and Wlodkowski's (2000) motivational framework for culturally responsive teaching. Keller's model, in particular, has been frequently used as a conceptual framework for the development of online learning environments that enhance learner motivation.

2.3. Self-Efficacy

Self-efficacy is the learner's confidence in his abilities in any subject area (Karademir et al., 2018). It is seen that learners with self-efficacy can determine how much effort they will spend and their own solutions for the difficulties they encounter.

Self-efficacy is an extremely important concept in education for both the learner and the teacher. Because a learner who does not see himself as sufficient will not be able to learn, and a teacher who does not feel competent will not be able to teach effectively (Karakuyu & Karakuyu, 2016). Having high self-efficacy skills is important for regulating learning, motivation, decision making and good interaction (Gürlen, 2011). Bandura (1995)'s self-efficacy theory points out that learners' self-efficacy skills are closely related to their motivation. It is stated that learners with low self-efficacy avoid doing difficult tasks and tend to give up immediately.

Self-efficacy is the learner's capacity to successfully perform the activities determined to achieve the goals (Yıldız & Kardaş, 2021). This belief has an important place in the learner's motivation process. The learner with high efficacy belief makes more effort to cope with the difficulties and shows longer endurance against the problems (Bandura, 1995). In this respect, self-efficacy belief enables learners to regulate them

emotionally in a positive way by reducing worry and negative thinking about the obstacles and difficulties they experience (Carr, 2013).

Self-efficacy skill is also related to cognitive processes. Self-efficacy plays a key role in the self-regulation role of motivation (Gömleksiz & Serhatlıoğlu, 2013). Thus, it enables learners to set goals for themselves. It also determines how much they will struggle in the face of difficulties, how much effort they will put in, and their resilience in the face of failure (Bandura, 1995).

According to Bandura (1997), the expectation of self-efficacy in the learner consists of four sources: (1) the learner's achievements including previous success or failure experiences; (2) conclusions drawn from the experiences of other learners; (3) the learner is convinced of the activities s/he can do; (4) states of emotional arousal such as stress, anxiety, and fatigue. When these sources of self-efficacy expectation are examined, it is seen that the learner's success and self-efficacy depend on his own experiences. Other learners' experiences are thought to be beneficial for self-efficacy, although not as much as their own learning experiences. In addition, when self-efficacy is defended convincingly, self-efficacy expectation can also increase (Ergül, 2006). Finally, the learner's emotional reactions and results can also give clues about self-efficacy.

Learners with high self-efficacy skills approach learning environments willingly, strive for learning opportunities, and show high performance on the subjects they will learn by making long-term efforts in the difficulties they encounter (Eggen & Kauchak, 1999). Accordingly, it can be said that self-efficacy expectation is an important determinant of the learner's success level and plays a key role in learner behavior. High self-efficacy of learners also affects their success and motivation (Bandura, 1997). It can be said that it is very easy for learners who are aware of their own learning process to motivate themselves.

2.4. Self-Regulation

The concept of self-regulation, which has been defined and modeled from many theoretical perspectives, emerged in the mid-1980s in the light of the question of how learners can manage their own learning processes (Zimmerman 2013). Starting from this point, self-regulation; It is based on Bandura's social cognitive theory, which includes the assumptions that an individual sets learning goals, monitors and controls the learning process, and changes or regulates it when appropriate. In social cognitive theory, it is stated that the learner observes his environment and manages his cognitive processes as a result of his observations.(Eker, 2014). Similar to this situation, in self-regulation, it is seen that the focus is on the individual's regulating his behavior according to the learning environment and choosing and using appropriate strategies.

Self-regulation is the learners' arranging their feelings, thoughts and actions in a way that will reach their goals and making an effort (Ergül, 2006). It is seen that learners with self-regulation skills determine their learning goals and choose appropriate strategies for this purpose. When the studies in this field are examined, it is seen that there is a positive relationship between the academic achievement and motivation of learners with self-regulation skills.

Self-regulated learning is the process in which learners actively regulate their motivation and learning after going through various processes (Çiltaş, 2011). The learners who organize this process are expected to organize their own learning processes and provide their own motivation. When we look at the definitions of self-regulation, it can be said that it is all kinds of tactics that the learners use to learn by themselves.

Every learner has a self-regulation skill that s/he uses to reach his/her goal (Karademir et al., 2018). For this reason, it would be wrong to say that there is or is not self-regulation skill. It can be said that it is a more appropriate expression to say that the use of self-regulation skills in the learner is active or inactive. Self-regulation is the learners' full command of their own learning styles and being able to manage them (Zimmerman, 1996). In this respect, it can be concluded that self-regulation causes the learner to develop a sense of responsibility.

Online education is a model in which the responsibility of learning is largely given to the learner (Dede et al., 2021). In the education system of this age, it is the most basic need to raise learners who are aware of their own abilities, can structure knowledge, and evaluate their own learning feedback. It is seen that learners with these qualities are successful in these learning processes. For this reason, the importance of self-regulated learning comes to the fore in online education.

Self-regulation skill, which emerges as a state of being able to control the behaviors to achieve the desired results and to be motivated in this direction, is defined as the student's taking responsibility for the execution of the curriculum and directing his own learning in distance education. In online distance education environments where the learning responsibility is mostly on the learner, it is expected that the individual has a locus of control and can use his/her self-regulation skills more in order to reach the goal. In this context, it can be said that the motivation and self-efficacy levels of the perceptive learners with locus of control are related to self-regulation skills in online distance education environments. It is also assumed that self-efficacy leads to self-regulation that affects academic outcome. The self-efficacy mechanism is a mediator that affects self-regulation and leads to academic outcomes (Ros, 2014).
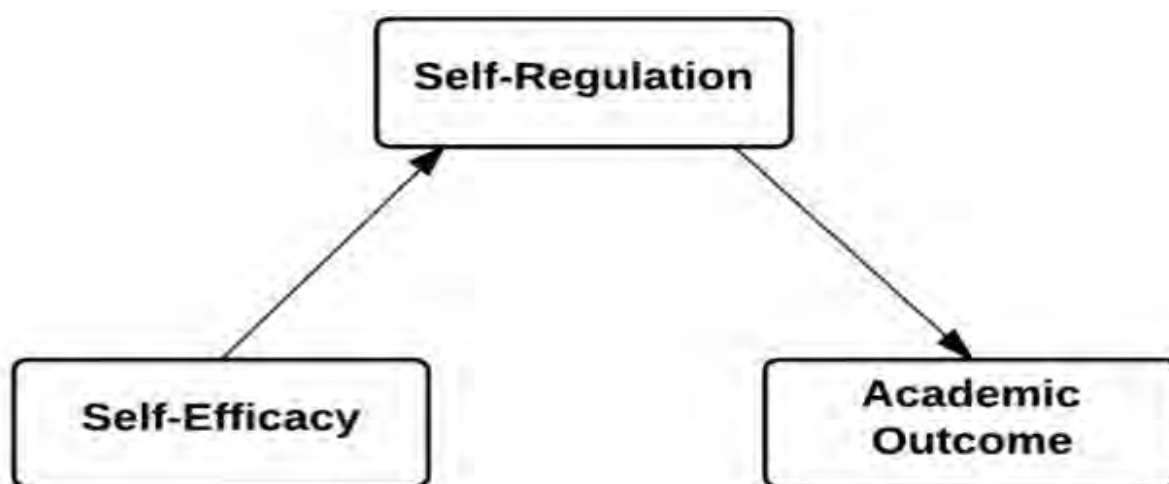

Fig. 1. Mediational model of primary self-efficacy, self-regulation and academic outcome (adapted from Ros, 2014)

3. Literature

The common point emphasized in the definitions of self-efficacy and self-regulation is that learners take a cognitive and motivational role in learning processes (Çiltaş, 2011). The effect of self-efficacy and self-regulation on learner motivation is seen in the online environment as well as in the classroom environment. Studies show that learner motivation in the online environment is positively related to self-efficacy and self-regulation (Kuloğlu, 2020). There is a relationship between self-regulated learning and self-efficacy in academic subjects (Pintrich, 2000). Self-regulation also includes self-efficacy (OECD, 2013). Self-regulated learning is necessary for self-efficacy. Similarly, self-efficacy is necessary for self-regulation. It can be thought that self-regulation will positively affect self-efficacy belief (Los, 2010). According to Bandura's "Social Learning Theory", self-efficacy, which is one of the basic key concepts, is the individual's self-judgment about his capacity to organize the activities necessary for a certain performance and to do it successfully (Bandura, 1997). Self-efficacy is related to an individual's confidence in his own abilities in a particular subject area (Israel, 2007). We can think that self-efficacy has a strong positive effect on self-regulation. This is important in the formation and realization of academic goals (Zimmerman & Bandura, 1994). Self-efficacy is an important construct for success (Klassen & Usher, 2010). In this context, it can be said that there is a relationship between self-efficacy, academic achievement and self-regulation.

In his research titled motivational structures affecting academic success in online education Ergül (2006) concluded that self-efficacy and self-regulation skills are necessary to be successful in online education as well as in face-to-face education. It has been revealed that the self-regulation and self-efficacy skills of a learner participating in online courses also positively affect their situations such as good use of time and decision-making. This research shows how effective the learner's motivation is in achieving success.

Aldan Karademir, Deveci, and Çaylı (2018) examined the relationship between secondary school students' self-regulation and academic self-efficacy. As a result of the application of the "Perceived Self-Regulation Scale" and the "Academic Self-Efficacy Scale" to 797 secondary school students, it has been shown that the self-efficacy skills of the learners who have self-regulation skills are also high. In addition, in terms of some variables, self-efficacy and self-regulation skills were examined in the study. As a result of the gender variable, it was seen that female students had higher academic self-efficacy and self-regulation skills than male students. According to the findings obtained in line with the parent attitude variable, it was seen that both academic self-efficacy and self-regulation skills of students whose parents were democratic were high. It is thought that these findings will guide the trainings that support parental attitudes.

Tekin (2020), in his study titled The Effect of COVID-19 Anxiety on Motivation: A Study on Generation Z, found that the motivation of the Z generation decreased due to their limitations in this process. In the study, it was stated that intrinsic motivation was lower than extrinsic motivation. It has been mentioned that this is an extremely normal result. It has been mentioned that although the Z generation uses technology very well, it is difficult to find elements such as belonging, love and respect in the technology environment. As a result of the study, it was stated that the social environment should be taken into consideration as much as the technological environment in the studies to be carried out in order to understand and motivate the youth of the Z generation.

Saltürk and Güngör (2020), in their study of the experience of transition to distance education during the COVID-19 pandemic period, from the eyes of university students, aimed to evaluate the motivation that occurs during the transition to distance education, which is an urgent solution during the pandemic period. For this purpose, a questionnaire about the factors affecting academic motivation was applied to 325 students. According to the data, it has been shown that 48.6% of the students participating in the research follow other content voluntarily other than the courses provided by the university. In addition, they stated that online education also gave them the opportunity to manage their own learning processes. It has been concluded that the inability to meet the socialization needs of the students also has an effect on academic motivation. It has been suggested that conducting studies in which the autonomy provided to the learner in online education is related to academic motivation, self-regulation and self-efficacy can contribute to the literatüre.

In Kuloğlu's (2020) study of the relationship between academic achievement, success motivation and boredom of distance education students, it was concluded that there is a positive and significant relationship between the academic success of distance education students and their motivation for success. According to this study, it is seen that learner motivation in distance education is a significant predictor of academic success. In this study, it was also stated that there may be a connection in terms of motivation in cases such as not attending the lesson, leaving the lesson early.

Dede et al. (2021) examined whether there is a relationship between self-regulation and class participation among secondary school students in distance education that started with the Covid-19 process. For this purpose, the perceived self-regulation scale was applied to a total of 1104 students, 584 girls and 520 boys, studying at secondary schools in Trabzon in the 2020-2021 academic year. It has been concluded that the self-regulation skills of the students who regularly attend the courses during the distance education period are higher. The findings showed that there is a positive relationship between students' participation in the course and their self-regulation skills in the distance education process.

In the study of evaluating university students' readiness for online learning and their experiences with distance education during the pandemic period Ünal et al. (2021) conducted an online questionnaire and an Online Learning Readiness Scale to 435 students. The collected data revealed that there is a positive relationship between students' self-regulation skills and motivation. In the study, it was determined that the readiness of the students who have a problem-free internet infrastructure and who regularly attend online classes is high. In order for online training to be successful, it has been suggested that trainings should be planned considering the motivation and readiness of the students.

Alanoğlu and Atalan (2021), in their study, examined students' independent research and self-regulation skills during the Covid-19 process from the perspective of teachers. As a result of the research, it was stated that trying to solve the technical problems experienced by the students during the distance education process on their own contributed to their self-regulation skills. It has been stated that the skills of questioning, researching and accessing information will contribute to self-regulation skills while the student is trying to solve the problem. However, it has been stated that since the teacher cannot control the information obtained by the students in the distance education process, information pollution can also be caused. In the same study, it was stated that factors such as technological impossibility, low motivation, and lack of a role model would negatively affect self-regulation skills.

Ak et al. (2021) in their study titled "Education of educators in distance education: Its effect on the perception of self-efficacy and benefit towards distance education", used 'self-efficacy perception towards distance education' and 'perception of benefit towards distance education' scales for 139 instructors. . As a result of the research, a significant relationship was found on the self-efficacy and benefit perceptions of the instructors in distance education. In addition, this study dealt with the self-efficacy perceptions of the instructors under the sub-title of technology, learning methods and virtual classroom creation methods. It was emphasized that in terms of the effectiveness of distance education, training should be given for these sub-titles. It has been stated that it is of great importance for the future of distance education to learn from the shortcomings of distance education, which started unprepared during the pandemic period, and to develop distance education strategies related to the lessons.

Hasgören (2021), in his study titled Experiences of university students in terms of self-directed learning skills during the pandemic period, stated that students with low self-regulation skills have difficulties in online learning. It has been concluded that having skills such as time management, goal setting, and choosing the appropriate strategy for self-regulation will greatly contribute to online learning. It has been concluded that the motivation of learners with high self-management in online education depends on internal resources, not external resources. Findings show that emotion management is effective in learner motivation and self-regulation in the online education process. Based on this finding, it was suggested that psychological counselors could conduct studies on learners' emotion management.

In their study titled "Examination of Virtual Learning on the Learning Outcomes of Urban and Rural Students" Hariyati et al. (2021) investigated the comparison of online learning on the motivations of students living in urban and rural areas. A questionnaire was applied to 362 students, and the data were collected under 3 headings: online learning activity, learning products and motivation. The result of the research showed that motivation has a positive effect on students living in both urban and rural areas in online learning. In addition, it was determined in the study that students living in urban areas were more motivated than students living in rural areas. This study stated that the areas where the students live affect their motivation and it has been concluded that this situation affects online learning.

4. Methodology

This study is narrative review of selected articles on motivation, self-efficacy and self-regulation in online educational context. Narrative literature review articles are publications that describe and discuss the state of the science of a specific topic or theme from a theoretical and contextual point of view. These types of

review articles do not list the types of databases and methodological approaches used to conduct the review nor the evaluation criteria for inclusion of retrieved articles during databases search (Bernardo et al. 2007). Narrative review consists of critical analysis of the literature published in books and electronic or paper-based journal articles. Narrative literature review articles have an important role in continuing education because they provide readers with up-to-date knowledge about a specific topic or theme. However, this type of review does not describe the methodological approach that would permit reproduction of data nor answer to specific quantitative research questions. These review articles normally use a qualitative approach using the following headings: Introduction, Development (using necessary sub-headings to divide and discuss appropriately the topic), Discussion, and References (Ferrari, 2015). In this context, studies related to the key concepts of self-regulation and self-efficacy, which affect learner motivation, are examined in the study, and the relationships of learner motivation in online education in the context of self-efficacy and self-regulation are evaluated. In this context, the review of the publications examined within the scope of the study is presented in Table 1.

Table 1.

The number and distribution of the articles examined within the scope of the study

Literature	Field of study	(n)
in English	Motivation	6
	Self- Efficacy	5
	Self- Regulation	4
	Total	15
in Turkish	Motivation	5
	Self-Efficacy	6
	Self-Regulation	6
	Total	17
TOTAL		32

5. Conclusion, Discussion and Suggestions

According to the studies, self-efficacy and self-regulation are important concepts that have been put forward to examine the motivation process in education (Çiltaş, 2011). Studies show that learners manage their own learning process, organize their learning plans, keep their motivation high in the learning processes in which they give their feedback to themselves, and they are academically successful. It is also very important for learners to be aware of their own potentials and to be able to regulate these potentials in terms of providing their own motivation. When the concept of motivation is examined in terms of the learner, it can be said that self-regulation and self-efficacy skills are the two basic steps that are effective in the academic success of the learner.

There are many variables that will affect the success of learners in online education (Kuloğlu, 2020). One of them is learner motivation. It has been stated in the studies that the motivation elements have changed with the differentiation of online education environments from the traditional classroom environment. Finding a significant relationship between the academic achievement and motivation of the learners based on the literature review confirms this result. In online education, since the learners leave without completing the course on time and encounter technical problems, it will be possible to compare the motivation of the classroom environment with the online environment in the context of self-efficacy and self-regulation.

The high self-beliefs of the learners and the motivation they have depending on these beliefs are not enough to be successful alone (Viau, 2015). It is an important component of motivation for learners to be aware of their own learning potential, that is, to have self-efficacy and to organize their own learning processes. It is often not possible to achieve success only by being motivated. However, it is seen that activating the learner's motivation in this process by providing self-efficacy and self-regulation has an important place in academic success. In addition to being talented and motivated about a subject, it has been stated in the studies that the learner should have self-regulation and self-efficacy skills because if the learner is aware of his own potential and has the ability to regulate this potential, it is easier to be motivated.

The literature review shows that learners set a goal for their own learning processes and organize their learning processes to achieve these goals (Dede et al., 2021). They do not see problems arising from the environment and teachers, working environment and lack of technical support as obstacles for them (Sarı & Akınoğlu, 2009). Learners know that they are responsible for their own learning processes. In online education, the control is largely in the learner's participation and attendance. This requires the learner to have self-regulation skills. Learners with self-regulation skills use motivational strategies to continue their learning when faced with barriers to participating in an online course. Therefore, a good motivational belief and self-regulation skill in the learner brings academic success. In other words, it is a necessity for the learner to be self-motivated and self-regulated in order to be successful in online courses. In this context, it can be reached that it is necessary for learners to regulate themselves, that is, to self-regulate, both academically and socially because self-regulation skill is thought to be effective in the students' development of strategies, making plans to be successful, establishing a competence link between the effort and success and giving feedback to themselves. Self-regulation can help learners think and evaluate their own competencies and potentials.

Awareness-raising programs can be developed for trainers on what strategies and approaches may be needed in order to support learner motivation, self-regulation and self-efficacy learning skills in online education. A training program that aims to increase self-regulated learning skills and motivation for a certain period of time can be applied to a study group consisting of learners with low self-regulation and self-efficacy learning skills, and the effectiveness of this program on the learner can be examined. When the studies were examined, it was seen that the learners felt alone and unable to connect, regardless of their self-efficacy level. Based on these results, researchers can study how to improve the sense of community in the online learning process.

When the studies carried out in the year the pandemic emerged, it was seen that the motivation of the learners was low. After the effects of the pandemic wear off, they can re-examine whether their online education experiences differ. They can organize various psychoeducations for learners in order to raise awareness about emotional states such as pessimism and future anxiety caused by the pandemic.

The effect of self-regulation and self-efficacy skills on learner motivation in the online education process is supported by studies in the literature. For this reason, they can organize informative studies/seminars for learners through psychological counselors and guidance teachers. They can help learners understand which aspects of self-regulation and self-efficacy skills need improvement.

Educators can structure training plans to improve learners' self-regulation and self-efficacy skills. E.g; Instead of the classical test exam, various project assignments can be defined in which learners play an active role in the learning process and learn by themselves.

In addition, experimental research designed by considering many variables that affect the academic success of learners in online education can contribute to the literature and researchers who are interested in this field. Since the design and implementation of educational applications that provide learner motivation in online education environments contribute to the development of self-regulation and self-efficacy skills and learner motivation, it can be recommended that educators give due importance to this issue.

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