



Secondary School Students' Self-efficacy in Correlation with Their Perceived Self-regulation within a Turkish Setting

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Abstract

In the realm of education, emotional factors have been recognized to exert a substantial power on the learning process. Self-regulation and self-efficacy are among the most crucial emotional factors to have a positive impact on the learning process. However, upon an extensive review of the literature, not enough attention seems to be paid to concepts of self-regulation and self-efficacy with regard to secondary school learners in Türkiye. Thus, this quantitative study aims to examine secondary school learners' self-efficacy and self-regulation levels and to examine the interplay between these notions in a Turkish secondary school context. Utilizing two self-reported scales to measure these affective factors with 270 secondary school students, the descriptive analysis reveals that learners in this study attain moderate levels of both traits. Additionally, upon the Pearson Correlation Analysis, a positive correlation was found between these traits. In light of these findings, our study underscores the importance of these variables in educational settings and advocates for their integration into teaching practices and teacher training programs.

Keywords: Self-regulation, self-efficacy, secondary school learners, correlation analysis

Türkiye’de Ortaokul Öğrencilerinin Algılanan Öz Düzenlemeleri ve Öz Yeterlilikleri Arasındaki İlişki

Öz

Eğitim camiasında, duygusal faktörlerin öğrenme süreci üzerinde azımsanamayacak etkisi olduğu kabul görmüştür. Öz-düzenleme ve öz-yeterlilik, öğrenme sürecine pozitif etkisi olan en önemli duygusal faktörlerdendir. Ancak, yapılan detaylı literatür taraması sonucunda Türkiye’deki ortaokul öğrencilerinin öz-düzenleme ve öz-yeterlilikleri konusuna yeterli düzeyde önem verilmediği gözlemlenmiştir. Bu nedenle, bu nicel çalışma, Türkiye’deki bir ortaokul bağlamında, ortaokul öğrencilerinin öz yeterlilik ve öz düzenleme düzeylerini araştırmayı ve bu kavramlar arasındaki ilişkiyi incelemeyi amaçlamaktadır. 270 ortaokul öğrencisiyle bu duygusal faktörleri ölçmek için iki öz bildirim ölçeği kullanan betimsel analiz, bu çalışmadaki öğrencilerin her iki değişkende de orta düzeyde olduğunu ortaya koymaktadır. Ek olarak, uygulanan Pearson Korelasyon Analizi’nin sonucuna göre bu iki özellik arasında pozitif bir korelasyon mevcut olduğu saptanmıştır. Bu bulgular ışığında çalışmamız, bu değişkenlerin eğitim ortamları için önemini vurgulamaktadır ve öğretim uygulamaları ile öğretmen eğitim programlarına entegre edilmesini desteklemektedir.

Anahtar Kelimeler: Öz-düzenleme, öz-yeterlilik, ortaokul öğrencileri, korelasyon analizi

INTRODUCTION

Affective factors such as self-efficacy and self-regulation have been deemed vital for learning (Bai & Wang, 2023; Kim et al., 2015). The tenet of self-efficacy was first introduced by Bandura (Zimmerman, 1995) and can be conceptualized as a person's perception of themselves to be successful in certain cases (Bandura, 1977). Regarding educational contexts, highly self-efficacious learners tend to effectively judge their potential to perform a task, and self-efficacy levels of learners can differ depending on the lesson or topic (Zimmerman, 1995). Learners who excel at this competence are also persistent when facing a challenge, more hardworking, ready to fulfill a task, and succeed (Schunk & Zimmerman, 1997). On the contrary, a learner who is not confident in his abilities tends not to participate in difficult tasks and feels more anxious than an academically efficacious student (Klassen & Usher, 2010). All in all, research indicates that for learners, self-efficacy seems to be an essential metacognitive skill to attain.

Meanwhile, self-regulation can be explained as an individual's thought patterns, feelings, and behaviors to achieve a goal (Zimmerman, 2002). For learners, self-regulation seems to take place before the teaching process, not as a reaction to it (Zimmerman, 2002). Further, self-regulated learners are stated to be in control of their learning, determining learning objectives, arranging, observing, and assessing their own acquisition of information (Zimmerman, 1990). Academically self-regulated learners are competent at time management, focusing on instructions, organizing and coding information, and arranging their work environment efficaciously (Schunk & Zimmerman, 1997). Moreover, compared to those with low self-regulation, learners with high self-regulation skills are also more adaptive, highly self-efficacious, learning-oriented, and intrinsically interested (Schunk & Zimmerman, 1998). In summary, self-regulation is crucial in educational settings in many ways.

Research on these concepts mostly focuses on in higher education domains (Kim et al., 2015; Lee et al., 2021; Su et al., 2018; Wang et al., 2013). Studies in the Turkish context were conducted with either one of these variables (Gürol & Akti, 2010; Kaya & Bozdağ, 2016; Kiran-Esen, 2012; Topkaya, 2010) or in the context of English language learners (Kineş, 2018; Zorlu & Ünver, 2022). Given the effectiveness of these notions for the educational paradigms, more focus should be paid to them by the researchers. Nonetheless, little attention has been given to measuring these traits regarding secondary school students and probing into the feasible link between these affective factors. Therefore, this quantitative research is an attempt to elucidate this neglected issue in secondary school settings. Hence, the current study aims (i) to assess the self-efficacy levels of learners at secondary schools, (ii) to assess the self-regulation levels of learners at secondary schools, and (iii) to scrutinize the relationship between self-efficacy

and self-regulation levels of secondary school students in Türkiye.

LITERATURE REVIEW

Theoretical Background

Our study adopted social cognitive theory as theoretical framework which was introduced by Bandura (1991), discussing that human behavior cannot solely be explained by external factors, and forethought is the key to an intentional action of a person. By exerting forethought, individuals develop notions regarding their abilities, foresee possible outcomes of their eventual actions, set goals, and regulate their actions to reach those goals (Bandura, 1991). In short, forethought is essential to raise one's intrinsic motivation for an action and prepare an approach to perform the aforementioned action, which would essentially explain the term self-regulation. According to Bandura (1991), self-regulation can be achieved with the help of three psychological sub-functions: (i) self-monitoring sub-function, (ii) judgmental sub-function, and (iii) self-reactive sub-function. Self-monitoring sub-function involves the process of evaluating the occurrence of an action, the circumstances that lead to its taking place, and the consequences it brings about (Bandura, 1991). For self-monitoring to be effective, individuals are required to employ self-diagnosis and pay attention to their cognitive structures, which results in realizing recurring patterns regarding their actions. Self-monitoring also needs to be practiced regularly and accurately, thereby enhancing goal-setting and fostering a constructive approach (Bandura, 1991). Moreover, Bandura (1991) emphasizes that the emotional state one is in when utilizing self-monitoring also affects how it is regarded and remembered. However, Schunk and Zimmerman (1998) highlight that self-monitoring is gradually required less and less, as an individual begins to gain an ability, which can also be called automatization.

Another necessary sub-function for self-regulation is judgmental processes, which involve individual standards, societal norms, and self/other comparison (Bandura, 1991). Bandura (1991) claims that people judge their own performances based on their personal values and/or collective behavioral rules. Schunk and Zimmerman (1998) also argue that attributions appear to be impacted by a mixture of a person's own values and environmental notions. Yet, people generally tend to explain their achievements with personal effort, rather than contextual factors (Bandura, 1991; Schunk & Zimmerman, 1998).

Bandura (1991) accentuates the importance of the last sub-function of self-regulation, namely self-reaction. Self-reaction is achieved through the use of emotional reactions, including but not limited to pride and satisfaction, and self-incentives, which in turn promote motivation for a performance (Bandura, 1991; Zimmerman, 1989). Further, Zimmerman (1989) conceptualizes three types of

self-reaction: behavioral, environmental, and personal, all of which are driven by personal motivation and reinforced through self-evaluation.

In social cognitive theory, self-regulation is believed to be affected by social and environmental factors as well. Personal standards are influenced by societal norms, feedback, and social modelling, which can be explained as the observation of a model's or multiple models' behaviors and repeating a similar pattern (Bandura, 1991; Schunk & Zimmerman, 1997). Zimmerman (1989) also argues that social modelling can even boost deficient learners' performances since it naturally strengthens their self-efficacy. Further, feedback on performance, along with goal-setting, appears to be more influential on self-regulation, rather than either alone (Bandura, 1991). However, for goals to be effective, they must be specific, not too general or too remote in time (Zimmerman, 1989).

Social cognitive theorists of self-regulation also postulate that an individual's belief in their personal capacity, otherwise known as self-efficacy, is also influential on their self-regulation (Bandura, 1991; Schunk & Zimmerman, 1998; Zimmerman, 1989). Self-efficacy seems to affect the goal-setting aspect of self-regulation as well. That is, if a person is highly self-efficacious, they appear to set higher goals for themselves (Bandura, 1991). Self-efficacy also impacts the perceived causes of failure or success. People with higher self-efficacy levels relate their lack of achievement to not enough exertion, meanwhile people with low self-efficacy regard the cause as low individual ability (Bandura, 1991). Moreover, Bandura (1991) suggests that actions of a person are regulated by how self-efficacious they are, since self-efficacy has an impact on a person's self-monitoring skills. In line with this, learners with higher self-efficacy appear to have a stronger command of their self-monitoring (Zimmerman, 1989). All in all, according to social cognitive theory, self-efficacy appears to be strongly linked to self-regulation processes.

Accordingly, the current paper embodies the social cognitive theory of self-regulation and hypothesizes that self-efficacy levels of secondary school learners are in correlation with their self-regulation levels. It is widely acclaimed by social cognitive theorists that self-regulation is not only related to self-efficacy but also to other internal and external factors. However, this paper focuses on exploring its envisaged relation with self-efficacy in a secondary school setting. Founded on this theory, this paper posits that (i) highly self-efficacious learners in this study are also more skilled at regulating their behaviors, and (ii) learners who do not highly believe in their own capacity are also not competent enough at self-regulation.

Self-regulation in the education paradigm

The concept of self-regulation was initially introduced in the 1980s and Zimmermann (2002) postulates that it “refers to self-generated thoughts, feelings, and behaviors that are oriented to attaining goals” (p. 65). In educational contexts, self-regulation relates to the process learners go through to reconstruct their cognitive abilities to task-affiliated academic ones (Zimmerman & Schunk, 2001). Although various theories explaining this process exist in the literature, all the theories presume that: (i) learners are self-aware of the effectiveness of self-regulation; (ii) self-regulation itself is a cyclical process; and (iii) self-regulation is the explanation of how and for what purpose a learner chooses a particular self-regulation strategy (Zimmerman & Schunk, 2001).

Researchers have been exploring various facets of self-regulation, such as the effect of self-regulation interventions (Elhusseini et al., 2022; Yang & Kortecamp, 2020), the interplay between children’s media use and self-regulation (John et al., 2022), and the examination of learners’ self-regulation in different learning environments (Beik, 2024; Eggers et al., 2021). Self-regulation interventions appear to be a powerful booster of academic success, in both face-to-face (Elhusseini et al., 2022) and online or blended learning environments (Yang & Kortecamp, 2020). Additionally, Eggers et al. (2021) point out that learners in blended learning environments exploit various self-regulation strategies, particularly motivation, management, cognitive, and metacognitive strategies. Beik (2024) also reported that although both self-regulation and social presence can impact learning satisfaction, social presence has a relatively bigger effect on it than self-regulation. Further, children who use media around age 8 or younger were reported to have lesser degrees of self-regulation (John et al., 2022). Yet, it should be noted that the extent to which self-regulated learners are appears to be linked to how actively they participate in their learning (Zimmerman & Schunk, 2001). In conclusion, studies on self-regulation vary in contexts, yet they mostly draw attention to its importance for learners with different characteristics. Meanwhile, regarding teenage learners in Türkiye, this phenomenon seems to be overlooked. Given the crucialness of the matter, this paper intends to narrow this gap in the literature by employing a quantitative research design to disclose how competent learners are at regulating their learning.

Self-efficacy in the education paradigm

The term self-efficacy was coined by Bandura and is conceptualized as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2). Bandura (1977) postulates that those with a heightened belief in their capabilities are likely to exert themselves more in their endeavors. He also posits that people who possess increased levels of self-efficacy seem to envision that they can succeed, which in turn

boosts their performance (Bandura, 1993). Regarding educational contexts, these may lead to higher academic achievement for learners. Accordingly, self-efficacy is observed to have a remarkable power on academic performance by numerous studies (Hayat et al., 2020; Honicke & Broadbent, 2016; Komarraju & Nadler, 2013; Wu et al., 2020). However, a study with medical students suggests that self-efficacy levels of learners failed to predict their educational achievements (Wu et al., 2020).

A vast body of studies has dealt with learners' capacity to perceive their accomplishments, particularly English learners (Anam & Stracke, 2016; Ramsin & Mayall, 2019; Zhang & Ardasheva, 2019; Zheng et al., 2017). Social persuasion is found to be an effective factor in explaining this ability of English learners (Zhang & Ardasheva, 2019; Zheng et al., 2017). Additionally, Ramsin and Mayall (2019) measured the online self-efficacy of English learners and reported that online self-efficacy is highly correlated with online learning experiences, feeling comfortable using the Internet, and students' self-reported levels of English proficiency. Adam and Stracke (2016) also point out that students who demonstrate a strong sense of self-efficacy seem to exploit learning strategies more commonly. The dynamic relationship between individual beliefs in themselves and their utilization of metacognitive strategies has also been an issue of concern among researchers. Several studies (Cai & Zhao, 2023; Fu et al., 2023; Hayat et al., 2020; Sun, 2017) found that a probable interdependence exists between these variables. Cai and Zhao (2023) also pointed out that both learners' self-efficacy levels and metacognitive strategy use can be seen as predictors of their English achievement. Further, self-efficacy appears to be related not only to metacognitive strategies but also to learning-related emotions, which consecutively contribute to the academic achievement of learners (Hayat et al., 2020). All in all, the self-efficacy of students tends to be a prominent area of inquiry among researchers. Yet, given this extensive literature review, not enough attention seems to be paid to this factor in the secondary school settings in Türkiye. Thus, this quantitative study dwells on revealing how self-efficacious secondary school learners are.

The correlation between self-regulation and self-efficacy

A corpus of research on the interrelation between self-regulation and self-efficacy in various contexts and sample groups exists in the literature. Researchers investigated the relationship between these concepts with students from different educational backgrounds (Bai & Wang, 2023; Bradley et al., 2017; Kim et al., 2015; Lee et al., 2021; Su et al., 2018; Wang et al., 2013). Although most of these studies report a strong link between self-efficacy and self-regulation, some studies tend to state a weak or insignificant relationship. Lee et al. (2021) discuss that the self-efficacy beliefs of tertiary-level students seem to predict numerous factors, namely self-regulation levels, organization, critical thinking, and time

management. Several studies (Bradley et al., 2017; Kim et al., 2015; Su et al., 2018; Wang et al., 2013) also reveal a likely link between these affective factors, regarding English language learners in college settings. However, Bai and Wang (2023) probed into the functions of different variables including self-efficacy and self-regulation on English language achievement and postulated that growth mindset appears to be a stronger predictor of self-regulation levels of primary school students. In short, there is no consensus among the researchers about the interplay between these notions regarding learners. Since both of these are pivotal traits for students, it is crucial to examine the possible link between them further. Nevertheless, to the best knowledge of the researcher, an attempt has yet to be made to explore the relationship between self-efficacy and self-regulation levels of secondary school learners in Türkiye. Thus, the current paper aims to narrow this gap in the literature. Accordingly, the research questions guiding this study are as follows:

- 1– What are the self-efficacy levels of secondary school learners in Türkiye?
- 2– What are the perceived self-regulation levels of secondary school learners in Türkiye?
- 3– Is there a correlation between self-efficacy and perceived self-regulation levels of secondary school students in Türkiye?

METHOD

This part of the study conveys a detailed portrayal of the research design and setting, demographic information related to the participants of the study, the data collection instruments, and data analysis.

Research Design and Setting

This study is of a descriptive correlational design, which can be defined as the type of research that allows a researcher to investigate a possibly existing relationship between two or more variables without aiming to alter either of them (Fraenkel et al., 2012). Since this study aims to explore a probable relationship between self-efficacy and self-regulation levels of secondary school students, a descriptive correlational design was deemed the best alternative. Additionally, the data gathered for the study is quantitative, which makes it possible to examine, and analyze data, and explore possible correlations between certain variables (Büyüköztürk et al., 2022). The study was conducted with 270 students at a public middle school in Türkiye during the spring term of the 2023-2024 academic year. After the research and ethical approvals were obtained, the scales were applied face-to-face in May 2024. However, some students did not attend school that day, thus, the participants' response rate to the scales was 270/326 (82.8%). Additionally, to eliminate the risk of confusion that may stem from a language barrier, the scales were preferred to be in the mother tongue of participants, Turk-

ish. Finally, regarding the ethical concerns, the details of the study were conveyed to participants and their parents, and they consented to take part in the study with written documents.

Participants

The target population of the present study consists of 32380 middle school students in a city in Türkiye in the 2022-2023 education year (Milli Eğitim Bakanlığı, 2024). The ideal sample size was determined as 380, yet a total of 270 learners participated in the present study, which raised the error margin to 5.94%. The participants of this research were selected by convenience sampling since it allows the researcher to compile data from an accessible group of people (Fraenkel et al, 2012). Table 1 depicts the demographic information of the participants.

Table 1.
Participants' Demographic Information

Characteristics	Category	<i>f</i>	%
Gender	Girl	149	55.2
	Boy	116	43.0
	Total	265*	98.1
Age	11	2	.7
	12	38	14.1
	13	142	52.6
	14	80	29.6
	15	3	1.1
	Total	265**	98.1
	7 th grade	125	46.3
Grade	8 th grade	144	53.3
	Total	269***	99.6

*Five students did not disclose their gender.

**Five students did not disclose their age.

***One student did not disclose his/her grade.

As evident in Table 1, 149 students (55.2%) were female, while 116 of them (43.0%) were male. The age of the students varies between 11 and 15 ($\bar{x}$ = 13.1, S = 0.7). 125 of the students (46.3%) are in grade 7. Meanwhile, 144 students (53.3%) are 8th graders. The inequality in the number of learners based on their grades stems from the classroom sizes. Also, it is crucial to emphasize that some students choose not to reveal their age, gender, or grade.

Data Collection Instruments

Two scales were used in alignment with the aims of this paper: (i) the Perceived Self-regulation Scale developed by Arslan and Gelişli (2015) and (ii) the Self-efficacy Scale for Children by Telef and Karaca (2012). Additionally, participants were requested to provide some demographic information about themselves, namely gender, age, and the grade they were in.

The Perceived Self-regulation Scale (PSS)

The perceived self-regulation scale developed by Arslan and Gelişli (2015) is structured with 16 items and two subdimensions: (i) open-mindedness and (ii) seeking. According to Arslan and Gelişli (2015), items 1 to 8 are named open-mindedness, while items 9 to 16 are called seeking. Some items on the scale are stated as follows: "Item 3. I can easily learn a new topic.", "Item 7. I can learn from my mistakes.", "Item 14. I try to use various strategies while learning a topic." and "Item 15. I mostly pay attention to what I do while learning a topic.". Each item in this self-report scale is scored using a 5-point Likert scale. As the score a student obtains from the scale increases, the self-regulation level of that student appears to rise as well (Arslan & Gelişli, 2015). The internal consistency of the general was determined as .90, .84 for the open-mindedness subdimension, and .82 for the seeking subdimension. As a result of the exploratory factor analysis, the total variance of the scale was found to be 54.3%. Findings illustrate that this is a reliable and valid instrument and serves the aims of the current study.

The Self-efficacy Scale for Children (SSC)

This scale was an adaptation of the original version of the scale in English and can be utilized for measuring the self-efficacy levels of adolescents (Telef & Karaca, 2012). The scale includes 21 items and three subscales. The participants' responses to the questions in the scale are assessed using a 5-point Likert scale from none (1) to very good (5), and the scores they can receive from the scale vary between 21 and 105. Telef and Karaca (2012) note that an overall high score on the scale means high levels of self-efficacy for the participant. The language equivalency studies imply positive high correlation levels between the Turkish version of the scale and the original one ($r = .95$). The internal consistency of the general scale is .86 and alternates between .64 and .84 for subscales. The results of the test-retest method indicate that the first and second applications of the scales appear to be highly correlated. ($r = .75-.89$). The total variance of the scale is 43.74%. Overall measurements of the scale indicate that it is a valid and reliable measuring tool.

Data Analysis

The collected data was analyzed with SPSS Version 20. To respond to the first and second research questions, the means of their overall scores on the data collection instruments were analyzed. With regard to the third research question, after the normality of data distribution was checked, a Pearson Correlation Analysis was

conducted to probe into the likely connection between the variables. It should also be noted that missing values in the data were replaced with series means. Further, data obtained from students who did not disclose some demographic information were not removed from the data set, since these factors do not interfere with the aims of the study.

Limitations of the Study

It is crucial to point out that the current study itself has several limitations. Initially, this research is quantitative in nature, which portrays the situation as it is, without providing any further information on the reason behind it. Thus, this study does not explain the factors that affect the participants' self-efficacy and self-regulation levels. Also, two self-reported scales were utilized to collect data, and self-reported scales tend to introduce response bias. Further, since this study was conducted with a relatively small group of participants in a province in Türkiye, its data is possibly restricted to participants with similar backgrounds, which limits the data's applicability to broader populations. Lastly, the research was conducted with learners from a particular institution, which may mean the results might depend on the policies or the conditions of the studied institution.

RESULTS

In this particular section, the findings of the study were presented within the framework of research questions. Quantitative data about the variables were visualized with several tables, and related findings were disclosed in an organized manner.

RQ.1- What are the self-efficacy levels of secondary school learners in Türkiye?

This research question aimed to assess how self-efficacious the participants of the current study are. To evaluate this trait of learners, their scores on the SSC were analyzed. Descriptive statistics of the subdimensions and the whole scale are displayed in Table 2.

Table 2.

Descriptive Statistics of the SSC

Variable	N	Minimum	Maximum	$\bar{x}$	S
Self-efficacy (the whole scale)	270	21	105	68.47	14.66
Academic self-efficacy	270	7	35	23.79	5.83
Social self-efficacy	270	7	35	24.16	5.73
Emotional self-efficacy	270	7	35	20.24	6.70

Students were categorized into three groups based on their scores from the related scale. The highest score one can attain from the SSC is stated to be 105, whereas the lowest is 21. The difference between the highest and the lowest possible scores was determined as 84, and then, this score was divided by three, which added up to 28. Accordingly, learners' self-efficacy levels were determined to increase by 28 points in each category: (a) low (21 to 49 points), (b) moderate (50 to 78 points), and (c) high (79 points and over). To that end, analyses of the scores that students obtained from the SSC revealed that the self-efficacy levels of middle school learners were mostly moderate ($\bar{x}=68.47$). As for the distribution of learners based on their self-efficacy levels, 25 learners (9.26%) were detected to have low levels of self-efficacy. Meanwhile, 174 students (64.4%) seemed to attain a moderate degree of it. 71 students (26.30%) were found to be highly self-efficacious. The number of moderately self-efficacious learners clearly surpassed the others.

Sub-scores on the scale alternate between 7 and 35 points for every subdimension. The mean scores varied between every sub-scale: =23.79 for academic self-efficacy, =24,16 for social self-efficacy, and =20.24 for emotional self-efficacy. Although the overall scores for each subdimension are the same, students' average scores tended to vary. Upon examining the arithmetical averages of sub-scales, it can be inferred that most of the students seemed to be more confident regarding their social self-efficacy, rather than the academic and emotional aspects of it.

RQ.2- What are the perceived self-regulation levels of secondary school learners in Türkiye?

The second research question was proposed to measure the self-regulation degrees of the participants. In line with this, this question was answered with the analysis of the scores that students attained from the related scale. Descriptive statistics of the data regarding the questionnaire and its subscales are presented in Table 3.

Table 3.
Descriptive Statistics of the PSS

Variable	N	Minimum	Maximum	$\bar{x}$	S
Perceived self-regulation (overall scores)	270	32	80	57.89	10.21
Open-mindedness	270	13	40	29.69	4.94
Seeking	270	10	40	28.21	6.42

A similar approach was followed in response to this research question. However, the overall highest score on the PSS is 80, while the lowest possible score is 16. The difference between these scores added up to 64, which was then divided by three. The result was calculated to be 21.3, which rounds to 21. Thus, grouping differed for this measurement, increasing by 21 points for each group: (a) low (16 to 37 points), (b) moderate (38 to 59 points), and (c) high (60 and over). In line with this, the arithmetical average of the participants' self-regulation levels indicated that they were moderately self-regulated ($\bar{x}=57.89$), yet their self-regulation levels were considerably close to high. The fact that the number of students with moderate and high perceptions of self-regulation is nearly balanced also supports this claim. 124 learners (45.93%) appeared to perceive their self-regulation levels as high, while 139 of them (51.48%) were moderate. Only 7 of them (2.59%) lowly regarded their self-regulation capabilities.

For each subdimension of the scale, the scores may alternate between 8 and 40 points. The arithmetical average for the open-mindedness subdimension was found to be =29.69. Meanwhile, it was =28.21 for the seeking subdimension. Based on these findings, it can be argued that students seem to have nearly even scores in both subdimensions, which suggests that they are almost equally self-assured about their own readiness for seeking and open-mindedness.

RQ.3- Is there a correlation between self-efficacy and perceived self-regulation levels of secondary school students in Türkiye?

This final research question sought to answer whether there is a meaningful correlation between these two traits of learners. A correlation analysis was utilized for this purpose. The results of the correlation analysis are shown in Table 4.

Table 4.

The Correlation Between Self-efficacy and Perceived Self-regulation

		Self-efficacy	Perceived self-regulation
Self-efficacy	Pearson Correlation		.577
	Sig. (2-tailed)		.000
	N	270	270
Variables		1	2
1.Self-efficacy		1	
2.Perceived self-regulation		.577**	1

$N = 270$. $p < .001$.

Initially, the normality of the data distribution was ensured based on the assumption that the ratio of skewness and kurtosis to their standard errors should be ± 1.96 (Can, 2023). Then, Pearson-Correlation Analysis was applied to look into the probable link between self-efficacy ($\bar{x}=68.47$, $S=14.66$) and self-regulation ($\bar{x}=57.89$, $S=10.21$). The analysis revealed a moderately significant positive relationship between self-efficacy and perceived self-regulation variables ($r(268)=0.577$, $p<0.01$). Based on the findings, it can be interpreted that these two variables seem to have a reciprocal relationship. That is, positively learners who are more self-regulated tend to be more self-efficacious.

DISCUSSION

The necessity to develop learners' affective factors has been regarded as crucial on the grounds that they are concerned with the cognitive, emotional, and internal demeanors of learners. Based on this premise, this quantitative paper was conducted in pursuit of examining to what degree learners are self-efficacious and self-regulated, as well as illuminating a plausible connection between these beliefs. Upon the data analysis, the findings of this paper demonstrate that learners in this study are quite self-efficacious, particularly in their social skills. Additionally, they seem to be moderately self-regulated, scoring nearly equally on the seeking and open-mindedness sub-dimensions. Further, the results were in agreement with the assumption that these two concepts are indeed affiliated with each other.

Although previous studies on the issue conclude various degrees of learners' ability to be in control of their learning, participants of this study were moderately competent self-regulated learners. Kurt and Tomak (2022) discussed that students in a tertiary-level setting in Türkiye also tend to attain an average degree of self-regulation, which supports the findings of the present study. However, it should be noted that their results were related to online education environments. Conversely, another study reported that their participants appear to be highly self-regulated learners (Kırkıç & Demir, 2020). As Bandura (1991) put forward, what affects learners' perception of their self-regulation abilities can be attributed to their capabilities to be critical regarding their actions, the conditions related to those actions and the outcomes of them, as well as the capacity to realize patterns of behavior, attitude, view, and circumstance. That is, one should master certain cognitive processes to be more adept at self-regulation. However, this cognitive ability could be enhanced by interferences or external manipulations, as acknowledged by numerous studies on the matter (Elhusseini et al., 2022; Yang & Kortecamp, 2020). Goal orientation (Cellar et al. 2011), concept mapping (Chularut & DeBacker, 2004), and the utilization of self-assessment scripts (Panadero et al., 2013) are among the other variables that enhance self-regulation as well. Given the role of external factors in this belief, it is urgent for educators to be knowl-

edgeable on how to reinforce self-regulation among learners and take necessary actions for the issue.

The findings suggest that the self-efficacy degree of learners in this study is at a moderate level as well. Regarding the self-efficacy level of students, Schunk and Zimmerman (1997) also claim that it should be slightly lower and not dangerously low for optimal outcomes. However, in a study with tertiary-level students in Türkiye, their self-efficacy beliefs were determined to be high, which runs counter to the results of this study. (Zengin Aydın & Doğan, 2023). The variance in the degree could simply be linked to the age variable since learners' capacity to perceive their skills seems to require a certain cognitive development and experience (Usher & Pajares, 2008). Notwithstanding, an Indonesian study with primary school learners (Anam & Stracke, 2016) reported that their participants are highly capable of regarding their abilities in language learning. Although age seems to be an antecedent of self-efficacy, many other internal and external elements were found to influence it, such as self-set learning goals (Cellar et al., 2011), collaboration (Santos & Alliprandini, 2023), and concept-mapping (Chularut & DeBacker, 2004). In summary, what makes a person more proficient in their ability to apprehend their achievements is ambiguous, since self-efficacy appears to be under the influence of numerous variables. In line with this, it could be argued that self-efficacy appears to be an inconstant trait among learners. Further, based on the claim of previous studies, learners, starting from an early age, should be encouraged to be more efficient in perceiving their achievements regarding educational settings as well as other concepts related to it.

As foreseen, the study at hand hinted that a moderate interrelation exists between self-efficacy and self-regulation. Prior research on the issue mostly aligns with this finding, although it varies based on the methodology. A preliminary study (Luszczynska et al., 2005) acquired similar results with learners from several countries, including Türkiye. A more recent article (Özer & İşpınar Akçayoğlu, 2021) also stated a positive but low relationship between these two affective factors in a Turkish university setting. Although the magnitude of correlation tends to be diverse in these studies, these traits seem to have a reciprocal relationship, regardless of the country of origin or the education level of the participants. Further, as suggested by Bandura (1991), self-efficacy alters the goal-setting aspect of self-regulation. When the degree of an individual's self-efficacy beliefs increases, their aspirations also appear to elevate (Bandura, 1991). Therefore, concerning educational settings, more attention should be drawn to enhancing learners' sense of self-efficacy, which in turn presumably facilitates the action of establishing their own learning objectives.

CONCLUSION AND RECOMMENDATIONS

This quantitative study was conducted in a secondary school context in Türkiye to provide insights into some affective factors, particularly self-efficacy and self-regulation. Two scales were utilized to measure these concepts and ponder the link between them. Data analysis suggests that learners are moderately self-efficacious and self-regulated. Moreover, the relation between the two variables is observed to be fairly positive. In light of this information, this current study supplies supplementary data to establish the properties and value of these concepts in the education milieu.

Given the significance of self-regulation and self-efficacy for learners, instructors and future teachers should be made aware of the fruitfulness of these notions to enhance the learning process and outcomes. Further, they should be encouraged to execute diverse strategies to develop these traits in learners. Universities should pay attention to covering the affective factors of learners in the curricula of certain lectures designed for future teachers as well. Also, in-service teacher training on the topic can be developed by the authorities. Current syllabi and coursebooks developed by the National Ministry of Education could also be designed by recognizing the power of such affective factors.

Still, it is essential to acknowledge that this research also has some possible drawbacks. Since quantitative studies can only provide a portrait of the situation at hand, it is not possible to explain the reason why participants of this study are moderately self-efficacious and self-regulated. That is, the nature of this study does not allow the researcher to observe the internal or external factors influencing self-efficacy and self-regulation levels of the participants. Thus, future studies can employ a mixed-methods research design to analyze these notions profoundly, based on the premise that qualitative data could supplement in-depth information on the perceptions or views of participants. Alternatively, an experimental procedure can be followed to observe the effect of these variables on learners. Additionally, the acquired data in this study is probably limited to learners with a similar age range or characteristics, hence not generalizable. To overcome this issue regarding the findings, participants can be diversified to investigate the probable influence of various demographic factors on the issue. Setting aside all other considerations, the present study sought to shed light on this issue, yet further research is required to improve a profound grasp of these abstract notions.

REFERENCES

- Anam, S., & Stracke, E. (2016). Language learning strategies of Indonesian primary school students: In relation to self-efficacy beliefs. *System*, 60, 1-10. <https://doi.org/10.1016/j.system.2016.05.001>
- Arslan, S., & Gelişli, Y. (2015). Algılanan öz-düzenleme ölçeği'nin geliştirilmesi: Geçerlik ve güvenirlik çalışması. *Sakarya University Journal of Education*, 5(3), 67-74.
- Bai, B., & Wang, J. (2023). The role of growth mindset, self-efficacy and intrinsic value in self-regulated learning and English language learning achievements. *Language Teaching Research*, 27(1), 207-228. <https://doi.org/10.1177/1362168820933190>
- 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>
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248-287. [https://doi.org/10.1016/0749-5978\(91\)90022-1](https://doi.org/10.1016/0749-5978(91)90022-1)
- Bandura, A. (1993). Perceived Self-Efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148. https://doi.org/10.1207/s15326985ep2802_3
- Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511527692>
- Beik, A. (2024). A comparison study on self-regulation and sense of presence in online learning: A meta-analytic review. *Asia Pacific Education Review*. <https://doi.org/10.1007/s12564-024-09937-6>
- Bradley, R. L., Browne, B. L., & Kelley, H. M. (2017). Examining the influence of Self-Efficacy and Self-Regulation in online learning. *College Student Journal*, 51(4), 518-530. <https://eric.ed.gov/?id=EJ1162424>
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2022). *Eğitimde bilimsel araştırma yöntemleri* (33rd ed.). Ankara: Pegem Akademi.
- Cai, Y., & Zhao, C. (2023). Metacognitive strategies and self-efficacy co-shape L2 achievement: A multilevel structural equation modeling approach. *System*, 117. <https://doi.org/10.1016/j.system.2023.103099>
- Can, A. (2023). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi* (11th ed.). Ankara: Pegem Akademi.

Cellar, D. F., Stuhlmacher, A. F., Young, S. K., Fisher, D. M., Adair, C. K., Haynes, S., Twichell, E., Arnold, K. A., Royer, K., Denning, B. L., & Riester, D. (2011). Trait goal orientation, self-regulation, and performance: A meta-analysis. *Journal of Business and Psychology*, 26, 467–483. <https://doi.org/10.1007/s10869-010-9201-6>

Chularut, P., & DeBacker, T. K. (2003). The influence of concept mapping on achievement, self-regulation, and self-efficacy in students of English as a second language. *Contemporary Educational Psychology*, 29(3), 248–263. <https://doi.org/10.1016/j.cedpsych.2003.09.001>

Eggers, J. H., Oostdam, R., & Voogt, J. (2021). Self-regulation strategies in blended learning environments in higher education: A systematic review. *Australasian Journal of Educational Technology*, 175–192. <https://doi.org/10.14742/ajet.6453>

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.

Fu, J., Ding, Y., Nie, K., & Zaigham, G. H. K. (2023). How does self-efficacy, learner personality, and learner anxiety affect critical thinking of students? *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1289594>

Gürol, A., & Aktı, S. (2010). The relationship between pre-service teachers' self efficacy and their internet self-efficacy. *Procedia-Social and Behavioral Sciences*, 2(2), 3252–3257. <https://doi.org/10.1016/j.sbspro.2010.03.497>

Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: a structural equation model. *BMC Medical Education*, 20(1). <https://doi.org/10.1186/s12909-020-01995-9>

Honick, T., & Broadbent, J. (2016). The relation of academic self-efficacy to university student academic performance: A systematic review. *Educational Research Review*, 17, 63–84. <http://dx.doi.org/10.1016/j.edurev.2015.11.002>

John, A., Bates, S., & Zimmermann, N. (2023). Media use and children's self-regulation: a narrative review. *Early Child Development and Care*, 193(1), 18–32. <https://doi.org/10.1080/03004430.2022.2047036>

Kaya, D., & Bozdağ, H. C. (2016). Resources of mathematics self-efficacy and perception of science self-efficacy as predictors of academic achievement. *European Journal of Contemporary Education*, 18(4), 438–451. <https://doi.org/10.13187/ejced.2016.18.438>

Kırkıç, K. A., & Demir, B. (2020). Examination of pre-school students' self-regulation skills. *Problems of Education in the 21st Century*, 78(6), 967–982. <https://doi.org/10.33225/pec/20.78.967>

- Kim, D., Wang, C., Ahn, H. S., & Bong, M. (2015). English language learners' self-efficacy profiles and relationship with self-regulated learning strategies. *Learning and Individual Differences*, 38, 136-142. <https://doi.org/10.1016/j.lindif.2015.01.016>
- Kineş, M. (2018). *The correlation between EFL high school students' language learning strategies and their self-efficacy beliefs about English* [Unpublished master's thesis]. Çağ University.
- Kiran-Esen, B. (2012). Analyzing peer pressure and self-efficacy expectations among adolescents. *Social Behavior and Personality: An International Journal*, 40(8), 1301–1309. <https://doi.org/10.2224/sbp.2012.40.8.1301>
- Klassen, R. M., & Usher, E. L. (2010). Self-efficacy in educational settings: Recent research and emerging directions. In T. C. Urdan & S. A. Karabenick (Eds.), *the Decade Ahead: Theoretical Perspectives on Motivation and Achievement* (1-33). United Kingdom: Emerald.
- Komarraju, M., & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter? *Learning and Individual Differences*, 25, 67–72. <https://doi.org/10.1016/j.lindif.2013.01.005>
- Kurt, G., & Tomak, B. (2022). Exploring university students' self-regulation in online foreign language education. *Research in Pedagogy*, 12(2), 433–446. <https://doi.org/10.5937/istrped2202433k>
- Lee, D., Allen, M., Cheng, L., Watson, S., & Watson, W. (2021). Exploring relationships between self-efficacy and self-regulated learning strategies of English language learners in a college setting. *Journal of International Students*, 11(3), 567-585. <https://doi.org/10.32674/jis.v11i3.2145>
- Luszczynska, A., Gutiérrez-Doña, B., & Schwarzer, R. (2005). General self-efficacy in various domains of human functioning: Evidence from five countries. *International Journal of Psychology*, 40(2), 80–89. <https://doi.org/10.1080/00207590444000041>
- Milli Eğitim Bakanlığı. (2024). *Milli Eğitim Bakanlığı istatistikleri – öğrenci sayısı*. <https://istatistik.meb.gov.tr/OgrenciSayisi/Index>
- Panadero, E., Alonso-Tapia, J., & Reche, E. (2013). Rubrics vs. self-assessment scripts effect on self-regulation, performance and self-efficacy in pre-service teachers. *Studies in Educational Evaluation*, 39(3), 125–132. <https://doi.org/10.1016/j.stueduc.2013.04.001>
- Ramsin, A., & J Mayall, H. (2019). Assessing ESL learners' online learning self-efficacy in Thailand: Are they ready? *Journal of Information Technology Education: Research*, 18, 467–479. <https://doi.org/10.28945/4452>

- Özer, Ö., & İspınar Akçayoğlu, D. (2021). Examining the roles of self-efficacy beliefs, self-regulated learning and foreign language anxiety in the academic achievement of tertiary EFL learners. *Participatory Educational Research*, 8(2), 357–372. <https://doi.org/10.17275/per.21.43.8.2>
- Santos, A. G. M., & Alliprandini, P. M. Z. (2023). Effectiveness of a collaborative intervention in Self-Regulation and Self-Efficacy of higher education students. *International Journal of Instruction*, 16(2), 179–194. <https://doi.org/10.29333/iji.2023.16211a>
- Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist*, 32(4), 195–208. https://doi.org/10.1207/s15326985ep3204_1
- Schunk, D. H., & Zimmerman, B. J. (Eds.). (1998). *Self-regulated learning: From teaching to self-reflective practice*. Guilford Publications.
- Su, Y., Zheng, C., Liang, J., & Tsai, C. (2017). Examining the relationship between English language learners' online self-regulation and their self-efficacy. *Australasian Journal of Educational Technology*, 34(3). <https://doi.org/10.14742/ajet.3548>
- Sun, T. (2017). EFL learners' writing self-efficacy and relationship with metacognitive strategies. In *3rd International Conference on Arts, Design and Contemporary Education (ICADCE 2017)* (pp. 918-921). Atlantis Press.
- Telef, B. B., & Karaca, R. (2012). Çocuklar için öz-yeterlik ölçeği; Geçerlik ve güvenirlik çalışması. *Buca Eğitim Fakültesi Dergisi*, 32, 169-187.
- Topkaya, E. Z. (2010). Pre-Service English Language Teachers' perceptions of Computer Self-Efficacy and General Self-Efficacy. *the Turkish Online Journal of Educational Technology*, 9(1), 143–156. <http://files.eric.ed.gov/fulltext/EJ875778.pdf>
- Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research*, 78(4), 751-796. <https://doi.org/10.3102/0034654308321456>
- Wang, C., Schwab, G., Fenn, P., & Chang, M. (2013). Self-Efficacy and Self-Regulated Learning Strategies for English Language Learners: Comparison between Chinese and German College Students. *Journal of Educational and Developmental Psychology*, 3(1). <https://doi.org/10.5539/jedp.v3n1p173>
- Wu, H. B., Li, S., Zheng, J., & Guo, J. R. (2020). Medical students' motivation and academic performance: The mediating roles of self-efficacy and learning engagement. *Medical Education Online*, 25(1). <https://doi.org/10.1080/10872981.2020.1742964>

Yang, B., & Kortecamp, K. (2020). Interventions to enhance postsecondary students' self-regulation in online contexts: A review of the literature 2000-2020. *Quarterly Review of Distance Education*, 21(1), 23-43.

Zengin Aydın, L., & Doğan, A. (2023). The relationship between nursing students' fear of covid-19 and general self-efficacy and clinical stress levels. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi*, 10(3), 214-220. <https://doi.org/10.31125/hunhemsire.1180390>

Zhang, X., & Ardasheva, Y. (2019). Sources of college EFL learners' self-efficacy in the English public speaking domain. *English for Specific Purposes*, 53, 47-59. <https://doi.org/10.1016/j.esp.2018.09.004>

Zheng, C., Liang, J., & Tsai, C. (2017). Validating an instrument for EFL learners' sources of self-efficacy, academic self-efficacy and the relation to English proficiency. *Asia-Pacific Education Researcher*, 26, 329-340. <https://doi.org/10.1007/s40299-017-0352-3>

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339. <https://doi.org/10.1037/0022-0663.81.3.329>

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25(1), 3-17.

Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. *Springer Series in Cognitive Development*, 1-25, 3-17. https://doi.org/10.1007/978-1-4612-3618-4_1

Zimmerman, B. J. (1995). Self-efficacy and educational development. *Self-Efficacy in Changing Societies*, 202-231. <https://doi.org/10.1017/cbo9780511527692.009>

Zimmerman, B. J., & Schunk, D. H. (2001). *Self-regulated learning and academic achievement: Theoretical perspectives* (2nd ed.). Routledge.

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice*, 41(2), 64-70. https://doi.org/10.1207/s15430421tip4102_2

Zorlu, S., & Ünver, G. (2022). Predictive roles of self-regulatory learning strategies and self-efficacy beliefs on English language learning achievement. *Turkish Journal of Education*, 11(2), 74-92. <https://doi.org/10.19128/turje.841709>

Genişletilmiş Özet

Giriş

Eğitim alanında duyuşsal faktörlerin öğrenme süreci üzerinde yadsınamayacak bir etkiye sahip olduğu uzun süredir kabul edilmektedir. Bireylerin öğrenme ortamında nasıl davrandıkları, motivasyonlarını nasıl sürdürdükleri ve karşılaştıkları zorluklarla nasıl başa çıktıkları, bilişsel yeterlilikleri kadar duyuşsal özellikleriyle de

yakından ilişkilidir. Bu bağlamda öne çıkan iki önemli duyuşsal unsur öz-düzenleme ve öz-yeterliktir. Öz-düzenleme, öğrencilerin öğrenme süreçlerini planlama, izleme ve değerlendirme becerilerini kapsayan bir kavramdır. Öz-yeterlik ise bireylerin belirli bir görevi başarıyla yerine getirebilme kapasitelerine duydukları inancı ifade etmektedir. Alanyazında bu iki terimle ilgili olarak yapılan çalışmaların sonuçları, her iki kavramın da öğrencilerin akademik başarıları, motivasyonları ve öğrenmeye yönelik tutumları üzerinde doğrudan etkili olduğu sıkça vurgulanmaktadır.

Ancak alanyazına yönelik kapsamlı bir inceleme, Türkiye'deki ortaokul öğrencileri özelinde öz-düzenleme ve öz-yeterlik kavramlarının yeterince araştırılmadığını göstermektedir. Mevcut çalışmaların çoğu, üniversite öğrencileri veya öğretmen adayları üzerinde yoğunlaşmakta; ortaokul düzeyinde ise bu kavramlar görece ihmal edilmektedir. Oysa bu yaş grubu, öğrencilerin öğrenme alışkanlıklarını ve duyuşsal becerilerini şekillendirmeleri açısından kritik bir dönemi temsil etmektedir. Bu nedenle, ortaokul bağlamında yürütülecek çalışmalar hem eğitim politikaları hem de öğretim uygulamaları için önemli ipuçları sunabilir.

Yöntem

Bu bağlamda bu nicel araştırmanın temel amacı, Türkiye'deki ortaokul öğrencilerinin öz-düzenleme ve öz-yeterlik düzeylerini değerlendirmek ve bu iki kavram arasındaki ilişkiyi incelemektir. Çalışmanın amaçları üç boyutta incelenebilir: (1) ortaokul öğrencilerinin öz-yeterlik düzeylerini ortaya koymak, (2) öğrencilerin öz-düzenleme becerilerini belirlemek ve (3) bu iki kavram arasındaki etkileşimi incelemek. Araştırma, bir devlet ortaokulunda öğrenim görmekte olan öğrencilerden elde edilen verilerle gerçekleştirilmiştir. Veri toplama aracı olarak, daha önce geçerlilik ve güvenilirliği kanıtlanmış iki ölçek kullanılmıştır. Ölçeklerden biri öğrencilerin öz-düzenleme becerilerini ölçerken, diğeri öz-yeterlik düzeylerini değerlendirmeye yönelik olarak uygulanmıştır.

Bulgular

Araştırmanın bulguları ise tanımlayıcı istatistikler aracılığıyla analiz edilmiştir. Elde edilen sonuçlara göre, öğrencilerin hem öz-düzenleme hem de öz-yeterlik düzeyleri orta seviyede bulunmuştur. Bu bulgu, öğrencilerin öğrenme sürecinde bu becerilere sahip olduklarını ancak bu becerilerin en üst düzeyde gelişmediğini göstermektedir. Dolayısıyla, öğrencilerin öğrenme sorumluluklarını üstlenme, kendi öğrenmelerini kontrol etme ve öğrenmeye yönelik inançlarını güçlendirme noktasında desteklenmeleri gerektiği söylenebilir. Araştırmada ayrıca Pearson Korelasyon Analizi uygulanarak, öz-düzenleme ve öz-yeterlik arasındaki ilişkinin istatistiksel boyutu da incelenmiştir. Analiz sonuçları, bu iki kavram arasında pozitif yönde anlamlı bir ilişki olduğunu ortaya koymuştur. Başka bir deyişle, öğrencilerin öz-yeterlik inançları yükseldikçe öz-düzenleme becerilerinin de art-

tığı belirlenmiştir. Bu bulgu, literatürdeki çalışmalarla da örtüşmekte ve öz-yeterlik ile öz-düzenlemenin birbirini besleyen iki temel duyuşsal unsur olduğunu göstermektedir.

Sonuç, Tartışma ve Öneriler

Bu nicel çalışma, araştırmanın yapıldığı devlete bağlı ortaokuldaki öğrencilerin hem öz-yeterlik hem de öz-düzenleme düzeylerinin orta seviyede olduğunu ortaya koymuştur. Ek olarak, bu iki kavram arasında pozitif yönde anlamlı bir ilişki bulunduğu sonucuna da ulaşılmıştır. Bu bulgular, öğrencilerin öğrenme süreçlerinde öz-yeterlik inançlarını güçlendirdiklerinde öz-düzenleme becerilerinin de buna paralel olarak geliştiğini göstermektedir. Bu nedenle eğitim ortamlarında öğrencilerin yalnızca bilişsel becerilerinin değil, aynı zamanda duyuşsal özelliklerinin de desteklenmesi kritik öneme sahip olduğu ifade edilebilir. Öğretim stratejilerinin öğrencilerin sorumluluk alma, hedef belirleme, zamanı yönetme ve öğrenme sürecini izleme gibi öz-düzenleme becerilerini geliştirmeye odaklanması, öğrenme çıktılarının niteliğini artırabilir. Benzer şekilde, öğrencilerin kendilerine olan güvenlerinin pekiştirilmesi de öğrenmeye yönelik tutumlarını olumlu yönde etkileyecektir. Nitekim alan yazında farklı örneklem gruplarıyla yapılan çalışmalarda çeşitli bulgular da elde edilmiştir. Literatürde bu konuda bir fikir birliği oluşmaması örneklem gruplarının cinsiyet ve yaş gibi çeşitli demografik özellikleri açıklanabilir. Bunun yanı sıra öz-düzenleme ve öz-yeterlik kavramları arasındaki ilişkiyi inceleyen araştırmaların çoğu bu iki kavram arasında pozitif bir ilişki olduğuna dikkat çekmekle beraber bu ilişkinin seviyesi konusunda farklı bulgular elde etmişlerdir. Diğer bir deyişle, öğrencilerin eğitim ortamlarında kendilerine güveninin sağlamlaştırılması ile çeşitli öz-düzenleme becerilerinin de güçleneceği çoğu araştırmacı tarafından kabul görmüştür.

Bununla beraber, bu araştırmanın bulguları değerlendirilirken araştırmanın bazı sınırlılıklara sahip olduğu da göz ardı edilmemelidir. İlk olarak, araştırmanın örneklemini yalnızca bir devlet ortaokulunda öğrenim görmekte olan öğrencilerle sınırlıdır. Dolayısıyla elde edilen bulguların Türkiye genelindeki tüm ortaokul öğrencilerine genellenmesi mümkün değildir. İkinci olarak, veri toplama sürecinde yalnızca öğrenci bildirimlerine dayanan ölçekler kullanılmıştır, ki bu verilerin öznel değerlendirmelerden kaynaklı yanlılık riski taşıdığı göz ardı edilmemelidir. Üçüncü olarak, çalışmada kullanılan araştırma deseni kesitsel niteliktedir; bu nedenle elde edilen sonuçlar nedensellik ilişkisini ortaya koymak yerine yalnızca mevcut durumu betimlemektedir. Son olarak, araştırmada kullanılan ölçme araçlarının kültürel bağlama uygunluğu daha geniş örneklemeler üzerinde tekrar sınanabilir.

Gelecekte bu konuda yapılması planlanan araştırmalarda daha geniş örneklemeler üzerinde benzer çalışmalar yürütülmesi önerilmektedir. Türkiye'nin farklı

bölgelerindeki sosyo-ekonomik çeşitlilik göz önünde bulundurularak yapılacak karşılaştırmalı çalışmalar, öz-düzenleme ve öz-yeterlik arasındaki ilişkinin kültürel ve çevresel faktörlerle nasıl farklılaştığını ortaya koyabilir. Ayrıca, boylamalı araştırma desenleri kullanılarak öğrencilerin bu iki becerideki gelişimlerinin zaman içerisindeki değişimi incelenebilir. Nitel yöntemlerin dâhil edildiği karma desenli çalışmalar ise öğrencilerin öz-düzenleme ve öz-yeterlik süreçlerini daha derinlemesine anlamaya katkı sağlayabilir. Son olarak, öğretmen eğitimi programlarına yönelik müdahale çalışmalarının etkisi test edilerek, öğretmenlerin bu becerileri geliştirme noktasında öğrencilere ne ölçüde katkı sağladıkları araştırılabilir.