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The Effect of Self-Regulated Learning on Success During Distance Education

Research Article

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ABSTRACT

The aim of this study is to determine the self-regulated learning skills of primary school students in the distance education process of the Covid-19 pandemic, according to some variables. In this study, relational scanning, one of the quantitative research methods, was used. 240 students were randomly selected by cluster sampling method. It was observed that the students' academic success in distance education is mostly respectively by success of students in face-to-face education, level of self-regulated learning, adequacy of communication tools and infrastructure used in distance education. It was observed that attitudes of students towards the distance education process is affected respectively by adequacy of communication tools and infrastructure used in distance education, the participation of the family in the process, the number of daily lessons in distance education. In the study, it was observed that the most important factor predicting success in distance education was success in face-to-face education and then self-regulated learning, while the effect of other variables was quite low.

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Keywords:
Covid-19, distance education, pandemic, self-regulated learning

Introduction

The New Type of Corona Virus (2019-nCoV) with its widespread use, which emerged in the People's Republic of China at the end of 2019, spread all over the world in a short time. Therefore, a pandemic was declared by the World Health Organization (WHO) in March 2020. WHO has recommended that schools be suspended as part of the measures to be taken against the epidemic. Many countries have suspended their schools considering their own conditions. As of March 23, 2020, the Ministry of National Education (MoNE) in Turkey has closed schools at all levels to face-to-face education and switched to distance education. Since

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the Covid-19 pandemic has changed daily life very quickly and unexpectedly, almost all people and many institutions have experienced various difficulties. Educational institutions lead them. The reason of it is that the students suddenly found themselves listening to lessons in front of the computer or TV screens in the rooms of their homes while the children were studying at schools.

Although distance education does not differ in terms of gains, it is quite different from face-to-face training in terms of materials used in the process, planning the teaching process, physical environments in which students attend classes and classroom interaction, etc. It can be said that the source of the problems encountered in the distance education depends on the quality of the electronic devices used by the student, the internet infrastructure used, the educational and social support provided by the family to the student in the process, as well as the arrangement of the physical environment at home and the adaptation of teachers to distance education. One of the most important problems encountered in distance education and arising from the student is that the student must control his/her own educational environment and process instead of the teacher. It brings to mind self-regulation skill (Bakioğlu and Çevik, 2020; Dikmen and Bahçeci, 2020; Keskin and Özer Kaya, 2020).

Studies on self-regulation skills began in the mid-1980s in order to find an answer to the question of "How can students become managers of their own learning processes?". In the 1990s, studies on the concept spread to a wider area, and different aspects of self-regulation such as self-regulation, self-control, and self-management began to be addressed (Boekaerts et al. 1999).

Zimmerman and Schunk (1989) define self-regulation as the thoughts, feelings, and actions that students form systematically towards achieving their goals. According to Zimmerman (2001), self-regulation skill is determined by 3 main factors: Self, behaviour, and environment. Individuals with advanced self-regulation skills will emerge by their harmonious interaction. Winne (1995) defines self-regulation as a constructive and self-directed process by its nature. According to Zimmerman (2002), the model of self-regulation is based on a social cognitive perspective and becomes a performance as planning the individual's emotions, thoughts, and behaviours on learning.

Moving from what has been said so far, it can be said that the model of self-regulation is affected by the social-cognitive learning theory and is closely related to self-confidence, motivation, self-regulation, and self-evaluation of students. Naturally, it can be stated that immediate environment of students (parents, teachers, friends, etc.) are of importance in developing self-regulation skills. In this context, it can be said that self-regulation skill has the potential to have influence on the academic success of students who are locked out of their homes with the Covid-19 pandemic in the distance education process (Eker, 2014).

Purpose of the Study

The aim of this study is determine, at the level of primary school fourth grade, success in face-to-face education, level of self-regulation, the amount of communication they establish in lessons with their classmates in distance education, average number of lessons per day, adequacy of communication tools and infrastructure, the suitability of the physical environment where they listen to the lessons in the distance education process, involvement of the family in the process, classroom teacher's competence in distance education, and his/her prediction of students' academic success in distance education and their attitudes towards distance education.

Method

In this study, relational scanning, one of the quantitative research methods, was used. Relational scanning is among the scanning patterns among quantitative study methods. In this design, the existence and

degree of the relationship between multiple situations are examined without external intervention (Creswell, 2002)

Study Group

In the study, fourth grade students attending private and public primary schools in Istanbul province in the spring semester of the 2019-2020 academic year were determined as the study population. The study group was determined using cluster sampling. In the random cluster sampling, the probability for selection of each group in the universe for sampling is the same. In other words, clusters are chosen by chance from the universe (Karasar, 2013). In the study, six schools were selected, three from each district. Four of these schools are public primary schools and two are private primary schools. Eight of a total of 30 fourth grade classes in these schools (six of which are from public schools and two from private schools) were chosen randomly. A total of 240 students having their education in the selected classes were included in the sample.

Measurement Tools

In the study, measurement tools, which were developed by the researchers, were used to determine to what extent and which factors affect academic success and attitude towards courses in the distance education process. The measurement tool applied to students consists of six parts:

In the first part, a Likert-type triple rating scale consisting of 12 items developed by the researchers was used to determine attitudes of the students towards the distance education process. Content validity of the scale was ensured by obtaining the opinions of three field experts who had their doctorate in classroom education. Factor analysis was made for structural validity. In this analysis, a single factor that explains 67.37% of the total variance emerged and it was observed that the factor loads of all 12 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.88.

In the second part, the measurement tool developed by Vandevelde et al. (2013) and adapted to Turkish by Doğan (2015) was used in order to determine self-regulation skills of students. The scale consists of 32 items. In the factor analysis made for structural validity, three factors that explain 77.00% of the total variance emerged and it was seen that the factor loads of all items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.97.

In the third part, Likert-type triple rating scale developed in order to determine the amount of communication students establish with their classmates during the distance education process was used. The scale consists of 8 items. Content validity of the scale was ensured by obtaining the opinions of three field experts who had their doctorate in classroom education. Factor analysis was made for structural validity. In this analysis, a single factor that explains 86.75% of the total variance emerged and it was observed that the factor loads of all 8 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.89.

In the fourth part, Likert-type triple rating scale developed in order to determine the adequacy of communication tools and infrastructure was used. The scale consists of 12 items. Content validity of the scale was ensured by obtaining the opinions of three field experts. Factor analysis was made for structural validity. In this analysis, a single factor that explains 76.75% of the total variance emerged and it was observed that the factor loads of all 12 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.91.

In the fifth part, the Likert-type triple rating scale developed in order to determine the suitability of the physical environment in which students listen to the lessons in the distance education process was used. The scale consists of 15 items. Content validity of the scale was ensured by obtaining the opinions of three field experts. Factor analysis was made for structural validity. In this analysis, a single factor that explains 56.17%

of the total variance emerged and it was observed that the factor loads of all 15 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.65.

In the sixth part, the Likert-type triple rating scale developed in order to determine the level of academic support that family of the students provide to the students in the distance education process, was used. The scale consists of 10 items. Content validity of the scale was ensured by obtaining the opinions of three field experts. Factor analysis was made for structural validity. In this analysis, a single factor that explains 86.47% of the total variance emerged and it was observed that the factor loads of all 10 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.85.

It was requested from the classroom teachers of the classes where the application was carried out to indicate the academic success of their students in their classes, both in face-to-face education and in distance education, excluding physical activities and games, visual arts, music, English, and religious culture and ethics lessons, and the average number of lessons the students in their classes teach in distance education. It was requested from these teachers also to answer a 19-item five-point Likert-type scale in order to developed by the researchers to determine to what extent they felt competent in using technological tools in distance education and in preparing and presenting course materials in distance education. Content validity of this scale was ensured by obtaining the opinions of three field experts, one with a doctorate in classroom education and two in the field of Computer Education and Instructional Technologies. Factor analysis was made for structural validity. In this analysis, two factors that explain 66.75% of the total variance (using technological tools efficiently in the distance education process and making presentations in distance education) emerged. In addition, it was seen that the factor loads of all 19 items were more than 0.30. In the test conducted to ensure the reliability of the scale, the Cronbach Alpha coefficient was found to be 0.61.

Procedure

All the processes of the study were conducted remotely and electronically under the control of the researchers. In the first stage of the study, classroom teachers filled the parts showing the academic status of their students by entering the numbers of the students in their class in the first part of the measurement tool prepared for them, and the scale developed for how much they felt competent in distance education in the second part. Afterwards, the students included in the sampling filled in the measurement tool prepared for them by entering their class numbers. No time limitation was applied for these applications. The data obtained after these applications were analysed using the SPSS 25.0 software.

Study Ethics

Firstly, the classroom teachers who were included in the study were contacted and information was given about the conduct of the study. It was observed that the classroom teachers were voluntary to participate in the research. Through the classroom teachers, families of the students were informed and their consent was obtained. No personal data about the students participating in the study were requested, but a link was added at the end of the applications for the subjects who wanted to leave the study after answering the measurement tools. There were no students or classroom teachers who left the study. Yıldız Technical University Ethics Committee approved the research and the scale used in accordance with scientific ethical rules with its decision dated 19.06.2020 and numbered 73613421-604.01.02.E-2006190272. Permission was obtained from the relevant researchers via e-mail for the scales used in the study and not developed by the researchers.

Findings

The findings obtained as a result of the applications in this section are given in tables and interpreted.

Table 1. Normality tests

Score type	Tests	
	Skewness	**Kurtosis**
Academic Success of students in distance education (ASoSiDE)	-.149	-1.175
Attitudes of students towards the distance education process (AoSttDEP)	0.577	-.519
Success of students in face-to-face education (SoSiFtFE)	-.085	-.676
Students' level of self-regulation (SLoSR)	-.209	-.050
The amount of communication students establish with their classmates in lessons (tAoCSEwTCiL)	-.184	-.389
Adequacy of communication tools and infrastructure used in distance education (AoCTaIuiDE)	1.113	,929
The suitability of the physical environment in which students listen to the lessons in the distance education process (tSotPEiwSLttLitDEP)	,097	-.905
Involvement of families in the process (IoFitP)	1.218	,750
The level of teachers finding themselves competent in distance education (tLoTFtCiDE)	-.015	-.089

In Table 1 it is seen that the skewness and kurtosis coefficients for all score distributions vary between -1,175 and +1,218. Since the coefficient of skewness and kurtosis should be between +1.5 and -1.5 in order to decide that the scores obtained in social sciences show normal distribution characteristic (Tabachnick and Fidell, 2007), it can be said that the scores used in the study have normal distribution characteristics.

Table 2. The relationship between the factors affecting academic achievement and attitude towards the process in distance education process, success of students in the distance education process and their attitude towards the process

		ASoSiDE	**AoSttDEP**	**SoSiFtFE**	**SLoSR**	**tAoCSEwTCiL**	**AoCTaIuiDE**	**tSotPEiwSLttLitDEP**	**NoLPDiDE**	**IoFitP**	**tLoTFtCiDE**
ASoSiDE	R	1									
	P										
AoSttDEP	R	,237**	1								
	P	,000									
SoSiFtFE	R	,581**	,149*	1							
	P	,000	,020								
SLoSR	R	,527**	,341**	,247**	1						
	P	,000	,000	,000							
tAoCSEwTCiL	R	,166*	,181**	,045	,400**	1					
	P	,010	,005	,489	,000						
AoCTaIuiDE	R	,323**	,445**	,085	,479**	,278**	1				
	P	,000	,000	,187	,000	,000					
tSotPEiwSLttLitDEP	R	,131*	,279**	-.003	,323**	,327**	,250**	1			
	P	,043	,000	,962	,000	,000	,000				
NoLPDiDE	R	-,156*	-,162*	,038	-.109	-,167**	-.107	-.067			
	P	,384	,013	,556	,085	,010	,098	,302			
IoFitP	R	,148*	,214**	,097	,161*	,105	-.006	,063	-.057		
	P	.021	.001	,133	,013	,105	,932	,334	,377		
tLoTFtCiDE	R	,244**	,236**	,042	,268**	,199**	,191**	,563**	,006	,085	

	p	,000	,000	,521	,000	,002	,003	,000	,929	,191

*p>.05; **p>.01

According to the Table 2, there is a strong positive relationship between academic success of students in distance education and attitudes of students towards distance education, their success in face-to-face education, their level of self-regulation, the adequacy of communication tools and infrastructure used in distance education, and teachers' self-sufficiency in distance education. In addition, there is a positive and low-level significant relationship between the academic success of students in distance education and the amount of communication students establish with their classmates in distance education lessons, the convenience of the physical environment in which they listen to the lessons in the distance education process, and the family's participation in the process. However, it has been observed that the relationship between the number of daily lessons and academic achievement in distance education is not significant (p> .05).

According to Table 2, there is a strong positive relationship between the attitude of students and the success of students in distance education, the level of self-regulation, the amount of communication they establish with their classmates in distance education lessons, the adequacy of the communication tools and infrastructure used in distance education, the suitability of the physical environment in which they listen to the lessons in distance education, the participation of the family in the process, and the teachers' self-sufficiency in distance education. In addition, there is a positive low-level significant relationship between the attitude of students towards distance education and the success of students in face-to-face education, and a negative and low-level significant relationship between distance education and the number of lessons taught daily (p> .05).

These findings can be interpreted that the success of students in face-to-face education, the level of self-regulation, the amount of communication they establish in lessons, the adequacy of the communication tools and infrastructure, the suitability of the physical environment in which they listen to the lessons in the distance education process, the participation of the family in the process and the proficiency of the classroom teacher in distance education are effective on academic of students' success in distance education and attitude of students towards the distance education process. In addition, it can be said that the average number of lessons per day in distance education has a negative effect on attitudes of students towards distance education.

When the table is examined, it is seen that all of the correlation coefficients of independent variables among themselves are lower than .70. When these findings are evaluated in terms of multiple regression analysis, it can be interpreted that there is no multi-linearity problem among independent variables.

Table 3. The prediction of the factors affecting academic achievement and attitude towards the process in distance education

Dependent Variable	**Independent Variables**	**B**	**Stan. Fault**	**β**	**t**	**p**	**Binary R**	**Partial r**
Success in the distance education process	Constant	-5.190	,874		5.936	,000		
	AoSttDEP	.001	,018	,003	,048	,962	,237	,003
	SoSiFtFE	,623	,062	,477	10.05	,000	,581	,552
	SLoSR	,064	,011	,343	5.871	,000	,527	,361
	tAoCSEwTCiL	-.017	,025	-.035	,679	,498	,166	-.045
	AoCTaIuiDE	,029	,014	,118	2.091	,038	,323	,137
	tSotPEiwSLttLitDEP	-.012	,007	-.093	1.606	,110	,131	-.105
	NoLPDiDE	-.013	,042	-.015	,313	,754	-.056	-.021
	IoFitP	,012	,014	,042	,875	,382	,148	,058
	tLoTFtCiDE	,022	,007	,165	2.965	,003	,244	,192

Success in distance education process = -5,190 constant + students' attitudes towards distance education process, 001 + students' success in face-to-face education, 623 + students' level of self-regulation, 064 + amount of communication students establish with their classmates in lessons -, 017 + the adequacy of the communication tools and infrastructure used in distance education, 029 + the suitability of the physical environment where the students listen to the lessons in the distance education process -, 012 + the number of daily lessons in distance education -013 + the participation of the family in the process, 012 + the teachers finding themselves competent in distance education, 022

When binary correlation results in Table 3 are examined, it is seen that there is a significant positive relationship between academic success of students in distance education and attitudes of students towards the distance education process, their success in face-to-face education, the level of self-regulation, the amount of communication they establish with their classmates in lessons, The suitability of the physical environment in which they listen to the lessons in the distance education process, the adequacy of the communication tools and infrastructure, the participation of the family in the process and the level of teachers' finding themselves sufficient in distance education. There is no significant relationship between the number of daily lessons taught in distance education and academic achievement. When standardized regression coefficients are examined, the relative importance of them are the students' academic success in distance education is affected respectively by success of students in face-to-face education, level of self-regulation, adequacy of communication tools and infrastructure used in distance education, the status of teachers in finding themselves competent in distance education, the amount of communication students establish with their classmates in lessons, the number of daily lessons in distance education, the participation of the family in the process, the suitability of the physical environment in which students listen to the lessons in the distance education process, and attitudes of students towards the distance education process. Together, these factors explain 50% of the academic success of students in distance education (R =, 725 and R^2 =, 507).

Table 4. The prediction of the factors affecting academic achievement and attitude towards the process in distance education

Dependent Variable	Independent Variables	B	Stan. Fault	β	t	p	Binary r	Partial r
Attitude towards the distance education process	Constant	13.482	3.25		4.146	,000		
	ASoSiDE	,011	,237	,004	,048	,962	,237	,003
	SoSiFtFE	,123	,267	,032	,461	,645	,149	,030
	SLoSR	,039	,042	,072	,935	,351	,341	,062
	tAoCSEwTCiL	,047	,089	,034	-.531	,596	,181	-.035
	AoCTaIuiDE	,268	,048	,369	5.645	,000	,445	,349
	tSotPEiwSLttLitDEP	,045	,027	,121	1.687	,093	,279	,111
	NoLPDiDE	-.129	,152	-.049	-.848	,397	-.162	-.056
	IoFitP	,157	,048	,188	3.291	.001	,214	,212
	tLoTFtCiDE	,026	,027	,068	,973	,332	,236	,064

Students' attitude towards the distance education process = 13,482 constant + students' academic success in the distance education process, 011 + students' success in face-to-face education ,123 + the level of self-regulation of the students, the amount of communication that 039 + students establish with their classmates in the lessons, 047 + The adequacy of the communication tools and infrastructure used in distance education, 268 + The suitability of the physical environment where the students listen to the lessons in the distance education process, 045 + the number of lessons per day in distance education -129 + family participation in the process, 157 + the situation of teachers finding themselves sufficient in distance education, 026.

When binary correlation results in Table 4 are examined, it is seen that there is a significant positive relationship between attitudes regarding the education process and attitudes of students towards the distance

education process, their success in face-to-face education, the level of self-regulation, the amount of communication they establish with their classmates in lessons, The suitability of the physical environment in which they listen to the lessons in the distance education process, the adequacy of the communication tools and infrastructure, the participation of the family in the process and the level of teachers' finding themselves sufficient in distance education and there is a significant negative relationship from average lessons per day in distant education. According to the standardized regression coefficients, the relative importance are respectively attitudes of students towards the distance education process is affected respectively by adequacy of communication tools and infrastructure used in distance education, the participation of the family in the process, the number of daily lessons in distance education, the amount of communication students establish with their classmates in the lessons, the appropriateness of the physical environment in which students listen to the lessons during the distance education process, students' level of self-regulation, the status of teachers in finding themselves competent in distance education, and academic success of students in distance education. Together, these factors explain 26% (R=,531 ve R^2=,265) of the attitude developed by students towards distance education.

Discussion and Conclusion

According to the results of regression analysis conducted in the study, the relative importance of them are the academic success of students in distance education is affected respectively by success of students in face-to-face education, level of self-regulation, adequacy of communication tools and infrastructure used in distance education, the status of teachers in finding themselves competent in distance education, the amount of communication students establish with their classmates in lessons, the number of daily lessons in distance education, the participation of the family in the process, the suitability of the physical environment in which students listen to the lessons in the distance education process, and attitudes of students towards the distance education process. Together, these factors explain 50% of the academic success of students in distance education (R =, 725 and R^2 =, 507).

In the study, it was observed that the most important factor predicting success in distance education was success in face-to-face education and then self-regulation, while the effect of other variables was quite low. In other words, students who are already successful in face-to-face education are also successful in distance education. The predicting power of attitudes of students towards distance education is quite low. This result coincides with the results of many studies in this field (Baş and Şahin, 2012; Garrett, 2002; Gür-Erdoğan and Demir, 2016; İşeri, 2010; Özdemir and Şerbetçi, 2018; Yılmaz and Benli, 2010). However, it was observed that the positive attitudes of the students participating in the study towards distance education were generally low. One reason for the occurrence of this result may be this finding. Higher relations can be found between attitude and academic achievement in studies to be conducted with groups with a high number of students with a high positive attitude towards distance education.

In the regression analysis, it was seen that the other variable that predicted success in distance education after academic success in face-to-face education was self-regulation skills of students. Accordingly, students who have high self-regulation skills, in other words, who can control themselves in line with the purpose of learning in the learning process, are more successful in distance education. This finding coincides with the results of many studies in the field (Effeney et al. 2013; Hee et al. 2019; Pei-Ching et al. 2011; Rahimi and Katal, 2012). The fact that teachers' controlling, motivating, and feedback-providing effect on distance education decreases significantly compared to the classroom environment (Clark, 2020; Ferdousi, 2010; Gelli, 2015) may be effective in the emergence of this result.

In distance education, it becomes much more important for the student to control himself/herself in the education process, to motivate himself/herself and to maintain his/her learning motivation. According to the results of the research (Ellis, 2014), even if a student has high academic abilities and knowledge, academic

success will not be optimal when he/she cannot control himself in the learning process. In other words, time and effort will not be worth the academic success achieved. Especially at primary school level, the effect of self-regulation in distance education on academic achievement is quite high (Wijaya et al. 2020). In this case, it can be said that self-regulation is the easiest skill that will predict academic success and is relatively easy to control and develop in distance education, where the effort and responsibility to be spent for learning by the student increases (Klein, et al. 2020; Kayalı et al. 2020; Harahap, 2020).

Parents and teachers have a great responsibility in gaining self-regulation skills. Social support that families will provide to their children during the distance education process can affect students' self-regulation and learning achievements (Perry et al. 2018). Social support can be an interpersonal relationship where individuals provide assistance to other individuals and assistance can take the form of active participation in the process, emancipation, motivation, providing and liking information or evaluating the process. Social support in distance education can also be obtained from teachers and peers. The quality of the interaction between teachers and students can increase self-regulation (Jarvela and Jarvenoja, 2011).

The development of self-regulation skills of students in distance education depends largely on the efforts of teachers. Teachers should be aware that distance education is an effective tool not only to specialize in specific learning areas, but also to develop self-regulation skills (Sulisworo et al. 2020). In addition, students need guidance from teachers in order to control their own learning in the learning process. For this reason, when planning the learning process, teachers should consider strengthening students' self-regulation skills and clearly emphasize self-regulation skills while managing learning (Cho and Cho 2017). It should not be forgotten that especially in cases where students do not have the willpower and skills in the distance education process (İnan et al. 2017), their academic success will depend on their contribution to self-regulation without neglecting any of the metacognitive, behavioral and motivational dimensions (Dunn and Rakes, 2015; Boekaerts, 1999; Zimmerman, 1990).

Regression analysis was also conducted in the study to determine the relative importance order of the independent variables considered on *the attitude developed by the students towards distance education*. It was observed as the result of this study that attitudes of students towards the distance education process is affected respectively by adequacy of communication tools and infrastructure used in distance education, the participation of the family in the process, the number of daily lessons in distance education, the amount of communication students establish with their classmates in the lessons, the appropriateness of the physical environment in which students listen to the lessons during the distance education process, students' level of self-regulation, the status of teachers in finding themselves competent in distance education, and academic success of students in distance education. Together, these factors explain 26% (R=,531 ve R^2=,265) of the attitude developed by students towards distance education. As a result of this analysis, it was seen that the attitude of the students towards the distance education process was largely affected by the communication tools and infrastructure used in distance education, and then the family's participation in the process and the number of daily lessons taught in distance education were effective on the attitude. Other variables whose effects were examined in the study were found to be quite low in predicting student attitudes.

In the emergence of this result, it may be that the infrastructure and technological devices used in distance education are the leading factors that facilitate learning (Broadbent and Poon, 2015; Lim and Richardson, 2016; Todhunter, 2013). When students learn more easily, their positive attitudes towards the learning process also increase. This finding can be interpreted as that as the sound and image quality of the lessons in distance education increases, their learning and therefore their positive attitude towards the process will also increase.

According to the results of the study, it is seen that as the daily hours of the lessons increase, the positive attitudes of students towards distance education decrease. Given that the majority of the students in the study

universe of the research teach as much as the daily lessons in face-to-face education and their attitudes are generally at a medium-low level, it can be said that in distance education, lessons should not be taught as much as in face-to-face education. It can be said that reducing both the number of daily lessons and the duration of the lessons can increase the positive attitudes of the students.

It has been observed that the academic and social support families provide to students in the distance education process have a significant influence on attitudes of students. The study results emphasizing how important it is for the family to participate in the system at all levels of the education process and support students support the conclusion reached in this study (Lesneskie and Block, 2017; Li et al. 2020; Meyer and Mann, 2006; Mo and Singh, 2008; Ünüvar, 2010; Yeoh and Woo, 2013).

One of the interesting results obtained in the study is that the relationship between the amount of communication students establish with their classmates in distance education and their attitudes towards the distance education process is quite low. In fact, distance education not only carries the learning process beyond the physical boundaries of the classroom, but also enables simultaneous and asynchronous online communication between student-student and student-teacher (Wang, 2008). The reason for this result in the study may be the lack of experience of the students and teachers due to the fact that teachers and students are forced to go to distance education due to the pandemic and suddenly. In addition, the physical, social and psychological distance and interfaces used with online environments prevent a sense of community in lessons. Students may then not see themselves as part of a community.

Limitation and future research

Teachers may be advised not to focus only on teaching and organizing the digital environment in the distance education environment, but to take measures such as doing group work, providing effective feedback, organizing the number of participants, enabling student-student interaction, etc as if they are a part of a community. It should not be forgotten that students' feeling as part of a community has the potential to affect success, interaction and positive attitude in these learning environments (Haar, 2018; Randolph and Crawford, 2013).

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