

The Relationships between the Academic Boredom and Lifelong Learning Tendency

Sultan Selen Kulaⁱ

Kirsehir Ahi Evran University

Abstract

In this study, the relationship between academic boredom and lifelong learning tendency among pre-service teachers was examined. The study also examined whether academic boredom level and lifelong learning tendency differ in terms of perceived academic success and the willingness to engage in lessons. The research group consisted of 448 pre-service teachers, studying at a state university in Turkey. The research was designed as a correlational survey model. In the research, one-dimensional "*Level of Boredom Scale*" and four-dimensional "*Lifelong Learning Tendency Scale*" were used as measurement tools. Research results suggested that statistically, while pre-service teachers' self-perception level of success did not significantly affect academic boredom, it affected motivation, perseverance, and lack of regulating learning; sub-dimensions of lifelong learning. Also, pre-service teachers' willingness to engage in the lesson significantly affected both academic boredom and lifelong learning tendencies. There was no significant relationship between pre-service teachers' academic boredom level and their lifelong learning tendency.

Keywords: Academic Boredom, Lifelong Learning, Perceived Success, Student Engagement, Self-Regulating Learning.

DOI: 10.29329/ijpe.2022.439.2

ⁱ **Sultan Selen Kula**, Assist. Prof. Dr., Educational Sciences, Kirsehir Ahi Evran University, ORCID: 0000-0002-1614-3431

Email: selenyazgunoglu@windowslive.com

INTRODUCTION

The emotions that students feel are one of the main factors that have an impact on academic achievement, learning processes, outcomes, and motivation (Pekrun, Goetz, Titz, & Perry, 2002; Pekrun, & Linnenbrink-Garcia, 2014; Wortha, Azevedo, Taub, & Narciss, 2019). Learning is a complex, multi-faceted process that requires students to use, monitor, and regulate cognitive, metacognitive, affective, and motivational processes (Azevedo et al., 2018). It is known that students feel many different emotions such as enjoyment, boredom, confusion, anxiety, or frustration during the learning process (D'Mello, 2013; Pekrun, 2006). Furthermore, emotions felt in the learning process have an important effect on students' performance. Positive emotions are positively, and negative emotions are negatively related to the learning process, outcomes, academic achievement, and motivation (Pekrun, Goetz, Titz, & Perry, 2002; Pekrun, & Linnenbrink-Garcia, 2014). Therefore, it is thought that individuals who can manage their emotions and develop methods in emotion management during the learning process will be able to achieve success in all areas of life. The main problem of this study is the possible relationship between academic boredom, one of the emotions known to affect the learning process negatively, and lifelong learning as a tendency that encourages the individual to learn "from cradle to grave". Therefore, it may be effective to learn the academic boredom literature first.

Academic Boredom among Pre-service Teachers

Academic boredom is explained by two theoretical approaches, arousal and cognitive. Arousal theories claim that boredom is caused by non-optimal cortical arousal (Csikszentmihalyi, 2000). There is no consensus among researchers about whether this arousal should be high or low (Elpidorou, 2018). Cognitive theories explain academic boredom with attention deficit (Eastwood et al., 2012). The cognitive theoretical framework of academic boredom is explained by Pekrun's (2006) control-value theory of achievement emotions. The control-value theory reveals that achievement emotions are important in terms of cognitive, motivational, and regulatory processes in students' learning. "*Achievement emotions are defined as emotions tied directly to achievement activities or achievement outcomes*" (Pekrun, 2006). Feelings of achievement reflect the temporary emotional state a student experiences while performing a learning task. Enjoyment arising from learning, boredom in education, or frustration and anger experienced while dealing with difficult tasks are a few examples of activity-related achievement emotions. Two types of accomplishments have been identified: activity emotions related to ongoing activities and outcome emotions related to the results of these activities (Pekrun, Elliot, & Maier, 2006). Boredom occurs when demands exceed individual competencies in the educational environment or vice versa when there is not enough difficulty (Titz, 2001 cited in Pekrun, 2006).

Academic boredom can be a feeling that can be ignored in educational settings. Because academic boredom is an invisible and 'silent' emotion compared to a more pronounced emotional state such as anger (Ozerk, 2020). A student with boredom may not behave in a way that disturbs other classmates and teachers, but the long-term negative effects of academic boredom should not be ignored. It is known that academic boredom is related to students' perception of time (Eren & Coskun, 2015), academic achievement (Robinson, 1975; Maroldo, 1986; Demirkasimoglu, 2017), curiosity level (Eren & Coskun, 2016), motivation (Busari, 2018), learning approaches (Sharp, Hemmings, Kay & Sharp, 2017) and school attendance or dropout (Altinkurt, 2008; Bridgeland, DiIulio & Morison, 2006; Ugurlu, Usta & Simsek, 2015; Demirkasimoglu, 2017). It is known that students experience academic boredom at all levels of education, including primary education (Fullan, 2014; Simsek, Kula, Ozcakir & Ceylan Celiker, 2020; Yenilmez & Ozbey, 2006; Yuksel-Sahin, 2008), secondary education (Eren & Coskun, 2016; Nett et. al., 2011) and higher education (Eren, 2013, 2016; Mann & Robinson, 2009; Sharp, Hemmings, Kay & Atkin, 2018; Sharp, Hemmings, Kay, Murphy, & Elliott, 2017; Sharp, Hemmings, Kay, & Sharp, 2019; Simsek, Kula & Baltaci, 2019; Tze, Klassen, & Daniels, 2014). The academic boredom experienced by students is associated with four basic personal and environmental sources: arousal-related, attention-related, psychodynamic, and existential (Eastwood, Frischen, Fenske & Smilek, 2012; Fahlman, Mercer-Lynn, Flora & Eastwood, 2013).

Academic boredom is a frustrating emotion that negatively affects learning. Therefore, there is a need for studies that reveal the relationships with psychological processes or personality traits that lead to the emergence and maintenance of academic boredom. Another variable of this research is the lifelong learning of the pre-service teachers.

Lifelong Learning among Pre-service Teachers

Unlike those who experience academic boredom, life-long learners are people who enjoy learning, have autonomous learning, self-regulation skills, and have high internal motivation, curiosity, and perseverance. Lifelong learning allows people to update their knowledge, understand important developments that affect and change their lives, broaden their horizons, and consciously expand their personal, professional, and intellectual levels. Lifelong learning is a continuous, voluntary, and self-motivated learning process for individual or professional purposes (Cliath et. al., 2000). The European Reference Framework of Key Competences for Lifelong Learning defined eight key competencies (European Commission, 2018):

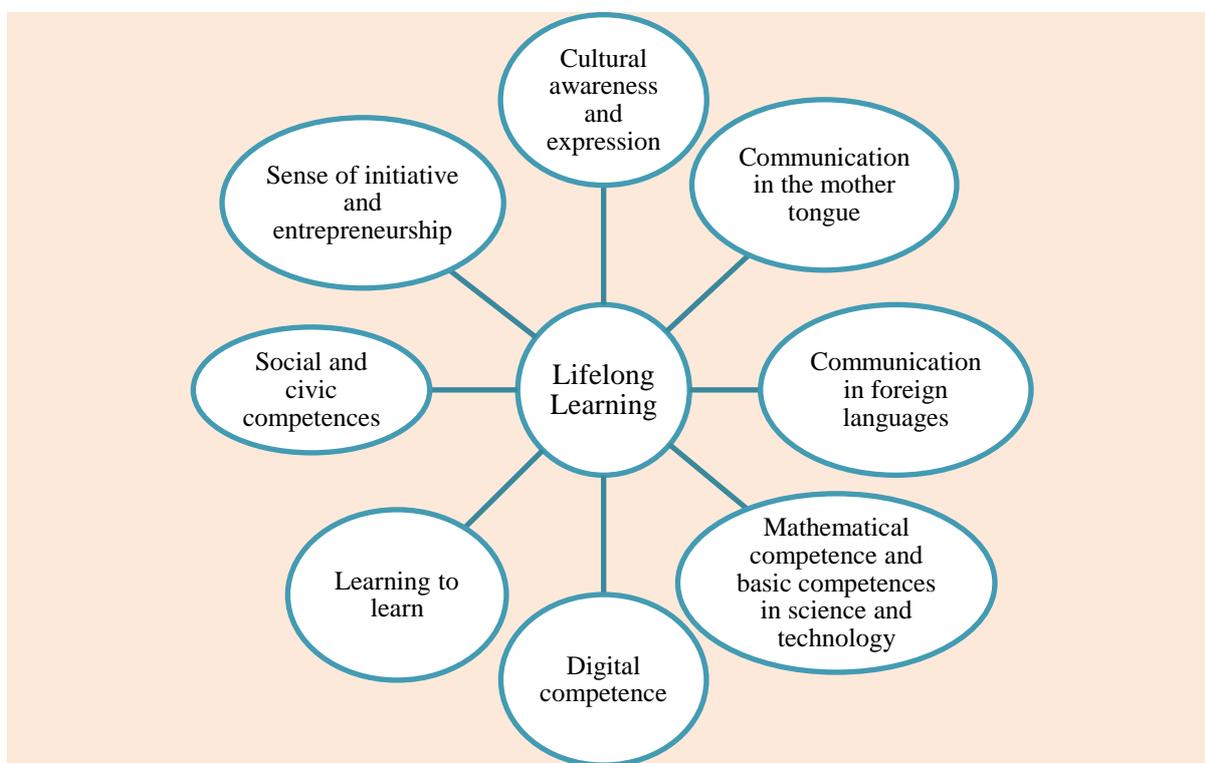


Figure 1. Key competencies for lifelong learning

The learning to learn competence includes effective management of time and knowledge, awareness of one's learning needs, identifying available opportunities, and sufficient positive motivation and confidence to overcome barriers to successful learning (European Commission, 2018). In other words, individuals who enjoy learning can be defined as lifelong learners. In the light of the studies carried out within the scope of lifelong learning, the competencies that should be found in teachers are determined as follows (Turkish Education Association [TEA], 2009):

- Teaching – a very good knowledge and understanding of the curriculum and content in the learning process,
- Ability to plan and apply teaching,
- Monitoring and evaluating the effectiveness of teaching and student development,

- Ability to manage the teaching process and student behavior,
- Adapting teaching according to student characteristics,
- Ability to use information technologies effectively,
- Ability to communicate effectively in the teaching-learning environment,
- Ability to plan and realize individual and professional development,
- Ability to work in collaboration with other teachers, parents, and school staff,
- Ability to act responsibly and critically within the framework of ethical rules.

Pre-service teachers with high lifelong learning tendencies have a curious mind with the motivation to learn. They are information literate individuals who are aware of their own learning processes. Information literate pre-service teachers follow their interests as independent learners. Learns the knowledge in-depth, not superficially (Candy, Crebert & O'Leary, 1994). Deep learning pre-service teachers are strong in learning, interested in work, and eager to do their best. These pre-service teachers have academic and career plans. When they attend the lesson, they already have preliminary learning and questions to be answered. These types of individuals, who generally learn autonomously and need little tutorial support, are individuals with a deep learning approach (Biggs & Tang, 2011). Pre-service teachers who learn superficially are those who do not have feelings of curiosity, determination to specialize, or perseverance about a lesson, but want to acquire the minimum qualifications required for a profession. These people do not have preliminary learning about new topics to learn. They only worry about passing the course. This kind of pre-service teacher perceives the information in lessons as small clues to remember other information instead of making sense of it in their minds (Ramsden, 2004). Two of the most prominent features of superficial learners are their unwillingness to engage in a lesson and boredom. Research reveals that boredom is a strong predictor of superficial learning (Sharp, Hemmings, Kay & Sharp, 2017). Pre-service teachers who are lifelong learners have a positive attitude towards learning and organizational skills (Candy, Crebert & O'Leary, 1994).

Emotions can trigger and change students' interest and motivation to learn. For example, it is known that activating positive emotions such as enjoyment of learning strengthens intrinsic and extrinsic motivation and eliminates negative emotions such as boredom and despair (Pekrun, 2006). Researchers have been interested in the relationship between emotion, motivation, learning, and self-regulation in recent years (Pekrun, Goetz, Titz, & Perry, 2002; Zheng & Li, 2016). It is also known that motivation is an important predictor of academic boredom (Busari, 2018) and an important variable affecting lifelong learning tendency (Crow, 2006). Similarly, self-regulating learning (Ifenthaler, 2012), which is considered as one of the most important competencies for lifelong learning, is also considered to be a phenomenon associated with academic boredom (Pekrun, Goetz, Titz, & Perry, 2002). Therefore, the relationship between academic boredom and lifelong learning tendency, which are under the interaction of the same variables, has been deemed worthy of investigation. There is no study investigating the relationship between academic boredom and lifelong learning tendency in the literature. It is thought that the results of this research will contribute to the improvement of teacher education programs and literature on the psychology of learning. This study aims to explore the relationship between academic boredom and lifelong learning tendency among pre-service teachers. Research sub-problems are as follows:

1. Does pre-service teachers' perception of academic success have a significant effect on their academic boredom and lifelong learning tendency levels?
2. Does pre-service teachers' willingness to engage in lessons have a significant effect on their academic boredom and lifelong learning tendency levels?

3. Is there a significant relationship between pre-service teachers' academic boredom and their lifelong learning tendency levels?
4. Does academic boredom predict lifelong learning tendency among pre-service teachers?

METHOD

Research Model

In this study, a correlational survey model was used to investigate the relationships between pre-service teachers' academic boredom and their lifelong learning tendency levels. The study also examined whether academic boredom level and lifelong learning tendency differ in terms of perceived academic success and the willingness to engage in lessons.

Participants

The voluntary participants of the research consisted of 448 pre-service teachers studying in the faculty of education at a state university in Turkey. The data were collected in the fall semester of 2020-2021. The demographic characteristics of the participants are given in Table 1.

Table 1. Pre-service Teachers' Demographic Information

Gender	n	%
Female	336	75
Male	112	25
Age	n	%
17-20	245	54.7
21-25	182	40.6
26-30	10	2.2
31-35	8	1.8
36+	3	.7
Department	n	%
Social Studies Education	158	35.3
Guidance and Psychological Counseling	101	22.5
Classroom Education	92	20.5
Preschool Education	61	13.6
Mathematics Education	31	6.9
Computer and Instructional Technology Education	2	.4
Science Education	2	.4
Turkish Education	1	.2
Perceived Success Level	n	%
Low	38	8.5
Moderate	374	83.5
High	36	8
<i>Perceived success level M(SD)</i>	1.99 (.41)	
Engagement willingness to lesson	n	%
Never	12	2.7
Rarely	32	7.1
Occasionally	203	45.3
Always	201	44.9
<i>Willingness to engagement M(SD)</i>	3.32 (.72)	
Total	448	100

Data Collection Tools

Data for research variables were collected using three different measurement tools. "Personal Information Form" developed by the researcher was used to determine the socio-demographic information of pre-service teachers. Other measurement tools are as follows:

Level of Boredom Scale (LBS): The one-dimensional Distinctive Experiences of State Boredom Scale (DESBS) original form consisting of seven items was developed by Van Tilburg and Igou (2012). The items in the DESBS were slightly modified by Eren (2016) to assess pre-service teachers' boredom experiences in a lesson-specific manner. On the other hand, pre-service teachers' levels of boredom were assessed with one item: "When you focus on your feelings in the class, how much do you feel bored?" (Van Tilburg & Igou, 2012). It has been stated that with such a single-item measure, determining the boredom levels of pre-service teachers would be more direct and clear than a multi-item measure (Van Tilburg & Igou, 2012). Single-item measures are effective in evaluating relevant variables as long as they accurately represent the essential properties of the variables (Fuchs & Diamantopoulos, 2009). In a previous study conducted by Eren and Coskun (2016), the relationship between the seven-item DESBS and the one-item level of boredom was examined. The results showed that this one-item measure was strongly correlated with the seven-item DESBS ($r = .78$). A principal component analysis was also conducted to examine whether the eight items could create a meaningful component. The results showed that the single component explained 47.86% of the total variance (eigenvalue D 3.83). Based on these results, the eight-item Level of Boredom Scale (LBS) was used in this study. LBS was a 5-point Likert scale with the extreme points labeled as "not at all" (1) and "very much" (5). In this study, the Cronbach's alpha reliability coefficient of the total scale was .632.

Lifelong Learning Tendency Scale (LLTS): Participants' lifelong learning was determined with LLTS (Diker Coşkun & Demirel, 2010) a four-dimensional, 6-point Likert scale with the extreme points labeled as "strongly disagree" (1) and "strongly agree" (6). The dimensions of the scale were specified as motivation (6 items), perseverance (6 items), lack of regulating learning (6 items), and lack of curiosity (9 items). The Cronbach's alpha reliability coefficient of the total scale was .650. The Cronbach's alpha reliability coefficient of the "motivation" sub-scale was .705, the "perseverance" sub-scale was .671, the "lack of regulating learning" sub-scale was .671 and the "lack of curiosity" sub-scale was .807.

Data Analysis

Before the data collection, pre-service teachers were informed about the purpose of the study. Data were collected in November and December 2020. The data was collected online from pre-service teachers due to the Covid 19 pandemic. Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 22), at a significance level of .05.

Skewness-kurtosis coefficients were used for normality testing. It was observed that LBS skewness varied between -1.078 and .108, kurtosis between 1.195 and .215; LLTS skewness between .613 and .115, kurtosis between 1.564 and .230. When kurtosis and skewness values are between -1.5 and +1.5, the data is considered to be normally distributed (Tabachnick & Fidell, 2013). For this reason, parametric tests were used in the analysis of the data. The mean and standard deviation of research variables were computed to obtain descriptive statistics. One-way analysis of variance was used to compare more than two means and the Pearson correlation test was used to investigate the relationship between variables.

FINDINGS

The level of academic boredom and lifelong learning tendency of pre-service teachers were examined according to perceived academic success level. The results are given in Table 2.

Table 2. Comparison of pre-service teachers' scores based on LBS and LLTS by perceived academic success level

Scales and Sub-dimensions	Perceived success level	<i>N</i>	\bar{x}	<i>SD</i>	<i>F</i>	<i>p</i>	Post-Hoc
LBS	1. Low	38	3.08	.53	.971	.379	
	2. Moderate	374	3.14	.57			
	3. High	36	3.25	.50			
LLTS-motivation	1. Low	38	3.92	1.11	7.508	.001	3>1
	2. Moderate	374	4.13	1.18			3>2
	3. High	36	4.86	1.01			
LLTS-perseverance	1. Low	38	3.50	.905	3.585	.029	3>1
	2. Moderate	374	3.71	1.06			
	3. High	36	4.14	1.28			
LLTS-lack of regulating learning	1. Low	38	2.07	.77	2.889	.057	1>2
	2. Moderate	374	1.76	.73			
	3. High	36	1.77	.97			
LLTS-lack of curiosity	1. Low	38	2.28	.93	2.547	.079	
	2. Moderate	374	2.04	.76			
	3. High	36	1.89	.70			

LBS: Level of Boredom Scale; LLTS: Lifelong learning tendency scale

It was observed that pre-service teachers' self-perception level of success did not significantly affect their academic boredom levels. Also, it is noteworthy that there were significant differences between perceived success and sub-dimensions of lifelong learning tendency. According to the Tukey test results, pre-service teachers with a high perception of success have higher motivation and perseverance than their peers with low and moderate perceptions of success. Multiple comparison results showed that pre-service teachers have higher self-regulation as they perceive themselves as successful. According to the analysis results, low perception of success increases the lack of self-regulation.

The level of academic boredom and lifelong learning tendency of pre-service teachers were examined according to the willingness to engage in lessons. The results are given in Table 3.

Table 3. Comparison of pre-service teachers' scores based on LBS and LLTS by engagement willingness to lesson

Scales and Sub-dimensions	Engagement willingness to lesson	<i>N</i>	\bar{x}	<i>SD</i>	<i>F</i>	<i>p</i>	Post-Hoc
LBS	1. Never	12	3.29	.78	5.783	.001	2>3
	2. Rarely	32	3.48	.51			2>4
	3. Occasionally	203	3.16	.54			
	4. Always	201	3.06	.55			
LLTS-motivation	1. Never	12	3.63	.84	11.730	.000	3>2
	2. Rarely	32	3.40	1.10			4>2
	3. Occasionally	203	4.03	1.20			4>3
	4. Always	201	4.48	1.09			
LLTS-perseverance	1. Never	12	3.71	.67	6.379	.000	4>2
	2. Rarely	32	3.27	1.01			4>3
	3. Occasionally	203	3.58	1.07			
	4. Always	201	3.95	1.06			
LLTS-lack of regulating learning	1. Never	12	2.53	.92	5,240	.001	1>3
	2. Rarely	32	2.00	.58			1>4
	3. Occasionally	203	1.77	.74			
	4. Always	201	1.73	.77			
LLTS-lack of curiosity	1. Never	12	2.80	1.15	8.624	.000	1>3
	2. Rarely	32	2.37	.83			1>4
	3. Occasionally	203	2.10	.78			2>4
	4. Always	201	1.91	.70			3>4

LBS: Level of Boredom Scale; LLTS: Lifelong learning tendency scale

The findings suggested that levels of willingness to engage in lessons created a difference in levels of academic boredom ($p < 0.05$) and lifelong learning ($p < 0.05$) of pre-service teachers. There was a significant difference between pre-service teachers being rarely, occasionally, and always willing to engage in lessons. The results suggested that the more willingly pre-service teachers engaged in lessons the less academic boredom they experienced. Similar results were also seen in the sub-dimensions of LLTS. As pre-service teachers' willingness to engage in lessons increased, their motivation, perseverance, self-regulation, and curiosity increased as well. According to the results obtained from all these sub-dimensions, willingness to engage in lessons is an important variable that significantly affects lifelong learning disposition.

Pearson correlation coefficients among the academic boredom level and lifelong learning tendency are presented in Table 4.

Table 4. Pearson correlation coefficient between scales and sub-dimensions

Variables	1	2	3	4	5
1. Academic boredom	1				
2. Motivation	.012	1			
3. Perseverance	-.029	.602**	1		
4. Lack of regulating learning	.087	-.147**	-.085	1	
5. Lack of curiosity	.079	-.379**	-.342	.503**	1

** $p < 0.01$; LBS: Level of Boredom Scale; LLTS: Lifelong learning tendency scale

According to the correlation analysis findings given in Table 4, there is no significant relationship between sub-dimensions of pre-service teachers' academic boredom level and lifelong learning; motivation ($r = .012$), perseverance ($r = -.029$), lack of regulating learning ($r = .087$) and lack of curiosity ($r = .079$).

Predictive analyzes were not performed since there was no significant relationship between the variables of the study. Therefore, it was not possible to mention that the variables were predictive of each other, as no relationship was observed between academic boredom and lifelong learning.

CONCLUSION AND DISCUSSION

It was observed that pre-service teachers' self-perception level of success did not affect academic boredom levels, but lifelong learning tendency was effective in sub-dimensions; motivation, perseverance, and regulating learning. Pre-service teachers with a high perception of success have higher motivation and perseverance than their peers with low and moderate perceptions of success. It was also concluded that they have high self-regulation as long as they perceive themselves as successful. Similar research results are found in the literature regarding the perception of success and lifelong learning tendency (Demirel & Akkoyunlu, 2017). Important components of academic success are students' motivation, ability to take responsibility for their own learning, and persistence in the face of failure (Dembo, & Eaton, 2000). Research indicates that self-regulation skills can lead to greater academic achievement (Zimmerman & Risemberg, 1997). Individuals' self-perception of success plays an important role in shaping their own learning processes. When given a learning task, successful students monitor and regulate their behavior by setting goals, using their prior knowledge, considering alternative strategies, and considering contingency plans. On the contrary, less successful students are unaware of the factors that affect learning and are less likely to take responsibility for their own learning (Zimmerman, 1989). Students who do not take responsibility for learning often see their parents or teachers be responsible for motivational problems. They are not aware that they can manage their own motivation. Students who suffer from boredom in class should learn how to motivate themselves (Dembo, & Eaton, 2000). The main difference between successful and unsuccessful people is that successful people know how to motivate themselves when they have trouble performing a task. This enables them to take responsibility for their own learning in difficult situations, not give up immediately and persevere.

According to the results of the research, as pre-service teachers are willing to engage in lessons, their academic boredom levels decrease and their lifelong learning tendencies increase. The results of this research revealing that there are negative relationships between student engagement and boredom coincide with the results of the previous studies (Bennett-Clarke, 2005; Eren, 2016; Sharp et al., 2020). This result can be explained by the control-value theory given in the introduction part of the study (Pekrun, 2006). According to this theory, students' positive emotions affect cognitive resources positively, while negative emotions such as boredom affect cognitive resources negatively (Pekrun et al., 2006). Willingness to learn is seen as the first condition of learning. Especially in adult education, a person must have an interest and need to learn for learning to take place. Student's willing engagement in the lesson is associated with academic achievement, perceived quality of the curriculum, teacher-student relations, student goals, values, and motivation (Lee, 2012; Skinner et al., 2009; Tabachnick et al., 2008; Walker & Greene, 2009). The motivation level and learning tendency increase for an individual who is willing to learn, and the possibility of experiencing academic boredom decreases. Boredom has negative effects on student engagement in lessons (Mann & Robinson, 2009). For this reason, it is among the important responsibilities of educators to ensure that pre-service teachers willingly engage in lessons with high motivation and keep their interest in the course sustainable. Therefore, it is necessary to give pre-service teachers the ability to manage their own learning processes and responsibility for learning.

There was no significant relationship between pre-service teachers' academic boredom level and their lifelong learning tendency. This result is thought to be explained by the fact that academic boredom is a transient phenomenon (Elpidorou, 2018b). Academic boredom can be seen as a momentary sensation experienced in class. Emotions such as academic boredom are very fluid. These feelings can appear and change suddenly. The variable measured in the study, the academic boredom, is a transitory and aversive state (Eastwood, Frischen, Fenske, & Smilek, 2012). This state is a feeling experienced in every culture and by all genders (Musharbash, 2007; Ng, Liu, Chen, & Eastwood, 2015). It is not a trait characteristic (Elpidorou, 2018). However, lifelong learning tendency is related to the individual's point of view on learning. An individual internalizing lifelong learning as a permanent approach, and perceiving academic boredom as a temporary, motivational, physiological, emotional, and cognitive phenomenon may cause these two concepts to differ and seem unrelated. In other words, pre-service teachers with high lifelong learning tendencies may also experience academic boredom from time to time. This temporary change of emotions may prevent a linear relationship between lifelong learning tendency and academic boredom. It is thought that more research is needed to examine the relationships between academic boredom and lifelong learning tendency. Because there is not enough research to discuss the results of these two cases.

LIMITATIONS AND SUGGESTIONS

In this study, no relationship was found between lifelong learning tendency and academic boredom. Apart from this study which was carried out with pre-service teachers from a single university in the Central Anatolia region of Turkey; the relationship between these two variables can be tested in future research with different participants from different regions and supported by qualitative data. Although the sample size was adequate to examine the relationships between the research variables, further studies in which the relationships between level of boredom, and lifelong learning tendency are investigated based on larger samples may provide more reliable results.

The relationships between pre-service teachers' self-perceptions of success, motivation, lifelong learning tendencies, and academic boredom were discussed in this study. Increasing pre-service teachers' lifelong learning tendencies and ensuring that they experience less academic boredom will support their learning and increase their academic and professional success. In this context, it may be necessary to design learning processes for pre-service teachers in which they will take responsibility for their own learning and learn to persevere by tackling difficulties. They need to develop awareness that they also have the power to control this situation in case they experience academic boredom. Because academic boredom is an obstacle to success. As this obstacle is removed, the learning barriers for pre-service teachers will be reduced.

REFERENCES

- Altinkurt, Y. (2008). The reasons for students irregular attendance and the effect on this students irregular attendance on their academic achievement. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi [Dumlupınar University Journal of Social Sciences]*, 20, 129-142.
- Azevedo, R., Taub, M., & Mudrick, N. V. (2018). Using multi-channel trace data to infer and foster self-regulated learning between humans and advanced learning Technologies. in *Handbook of Self-Regulation of Learning and Performance*, Eds D. Schunk, & J. A. Greene, (New York, NY: Routledge).
- Bennett-Clarke, C. B. (2005). *The impact of self-generated analogy instruction on at-risk students' interest and motivation to learn*. Unpublished Doctoral Dissertation, Florida State University.
- Biggs, J. & Tang, C. (2011). *Teaching for quality learning at university*. 4th Edition, Open University Press: England.
- Bridgeland, J. M., DiIulio Jr, J. J., & Morison, K. B. (2006). *The silent epidemic: Perspectives of high school dropouts*. Civic Enterprises. <https://eric.ed.gov/?id=ED513444>
- Candy, P., Crebert, G., & O'Leary, J. (1994). *Developing lifelong learners through undergraduate education*. Commissioned Report No. 28, National Board of Employment Education and Training. Canberra: Australian Government Publishing Service.
- Cliath, B. A., Rialtais, O. D. F., Alliance, T. S., Laighean, S. T., Rialtais, F., & Post-tráchtá, A. R. (2000). *Learning for life: White paper on adult education*. Stationery Office. http://www.onestepup.ie/as-sets/files/pdf/fe_adulted_wp.pdf
- Crow, S. R. (2006). What motivates a lifelong learner?. *School Libraries Worldwide*, 12(1), 22-34.
- Csikszentmihalyi, M. (2000). *Beyond Boredom and anxiety*. San Francisco: Jossey-Bass Publishers.
- Dembo, M. H., & Eaton, M. J. (2000). Self-regulation of academic learning in middle-level schools. *The Elementary School Journal*, 100(5), 473-490. <https://doi.org/10.1086/499651>
- D'Mello, S. (2013). A selective meta-analysis on the relative incidence of discrete affective states during learning with technology. *Journal of Educational Psychology*, 105(4), 1082. <http://dx.doi.org/10.1037/a0032674>
- Demirel, M., & Akkoyunlu, B. (2017). Prospective teachers' lifelong learning tendencies and information literacy self-efficacy. *Educational Research and Reviews*, 12(6), 329-337. <http://dx.doi.org/10.5897/ERR2016.3119>
- Demirkasımoğlu, N. (2017). University students' opinions related to boredom at class: A research on prospective teachers. *Journal of Higher Education*, 7(1), 10-27. <https://doi.org/10.2399/yod.17.002>
- Diker Coşkun, Y., & Demirel, M. (2010). Lifelong learning tendency scale: the study of validity and reliability. *Procedia-Social and Behavioral Sciences*, 5, 2343-2350.
- Eastwood, J. D., Frischen, A., Fenske, M. & Smilek, D. (2012). The unengaged mind: defining boredom in terms of attention. *Perspectives on Psychological Science*, 7(5), 482-495. <https://doi.org/10.1177/1745691612456044>

- Elpidorou, A. (2018). The good of boredom. *Philosophical Psychology*, 31(3), 323-351. <https://doi.org/10.1080/09515089.2017.1346240>
- Elpidorou, A. (2018b). The bored mind is a guiding mind: Toward a regulatory theory of boredom. *Phenomenology and the Cognitive Sciences*, 17(3), 455-484. <https://doi.org/10.1007/s11097-017-9515-1>
- Eren, A. (2013). Profiles of prospective teachers' boredom coping strategies. *Ankara University, Journal of Faculty of Educational Sciences*, 46(2), 69-90.
- Eren, A. (2016). Unidirectional cycles of boredom, boredom coping strategies, and engagement among prospective teachers. *Social Psychology of Education*, 19(4), 895-924. <https://doi.org/10.1007/s11218-016-9348-8>
- Eren, A., & Coşkun, H. (2015). Time perspectives and boredom coping strategies of undergraduate students from Turkey. *Educational Research for Policy and Practice*, 14(1), 53-75.
- Eren, A. & Coskun, H. (2016). Students' level of boredom, boredom coping strategies, epistemic curiosity, and graded performance, *The Journal of Educational Research*, 109(6), 574-588. <https://dx.doi.org/10.1080/00220671.2014.999364>
- European Commission. (2018). *Proposal for a council recommendation on key competences for lifelong learning*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018SC0014&from=EN>
- Fahlman, S. A., Mercer-Lynn, K. B., Flora, D. B. & Eastwood, J. D. (2013). Development and validation of the multidimensional state boredom scale. *Assessment*, 20(1), 68–85.
- Fuchs, C., & Diamantopoulos, A. (2009). Using single-item measures for construct measurement in management research. *Die Betriebswirtschaft: DBW*, 69(2), 195-210. https://temme.wiwi.uni-wuppertal.de/fileadmin/_migrated/content_uploads/fuchs_diamantopoulos_2009.pdf
- Fullan, M. (2014). *The principal: Three keys to maximizing impact*. Jossey-Bass
- Ifenthaler, D. (2012). Determining the effectiveness of prompts for self-regulated learning in problem-solving scenarios. *Journal of Educational Technology & Society*, 15(1), 38-52. <https://www.jstor.org/stable/10.2307/jeductechsoci.15.1.38>
- Lee, J. S. (2012). The effects of the teacher-student relationship and academic press on student engagement and academic performance. *International Journal of Educational Research*, 53, 330–340. <https://doi.org/10.1016/j.ijer.2012.04.006>
- Mann, S. & Robinson, A. (2009). Boredom in the lecture theatre: An investigation into the contributors, moderators and outcomes of boredom amongst university students. *British Educational Research Journal*, 35(2), 243-258. <https://doi.org/10.1080/01411920802042911>
- Maroldo, G. K. (1986). Shyness, boredom, and grade point average among college students. *Psychological Reports*, 59, 395–398. <https://doi.org/10.2466/pr0.1986.59.2.395>
- Musharbash, Y. (2007). Boredom, time, and modernity: An example from Aboriginal Australia. *American Anthropologist*, 109, 307–317. <https://doi.org/10.1525/aa.2007.109.2.307>
- Nett, U. E., Goetz, T. & Hall, N. C. (2011). Coping with boredom in school: An experience sampling perspective. *Contemporary Educational Psychology*, 36(1), 49-59. <https://doi.org/10.1016/j.cedpsych.2010.10.003>

- Ng, A. H., Liu, Y., Chen, J. Z., & Eastwood, J. D. (2015). Culture and state boredom: A comparison between European Canadians and Chinese. *Personality and Individual Differences*, 75, 13–18. <https://doi.org/10.1016/j.paid.2014.10.052>
- Ozerk, G. (2020). Academic boredom: An underestimated challenge in schools. *International Electronic Journal of Elementary Education*, 13(1), 117-125. <https://iejee.com/index.php/IEJEE/article/view/1339>
- Pekrun, R. (2006). The control-value theory of achievement emotions: assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, 18(4), 315-341. <https://doi.org/10.1007/s10648-006-9029-9>
- Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology*, 98, 583–597. <https://doi.org/10.1037/0022-0663.98.3.583>
- Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist*, 37, 91–105.
- Pekrun, R., & Linnenbrink-Garcia, L. (2014). *International handbook of emotions in education*. New York, NY: Routledge.
- Ramsden, P. (2004). *Learning to teach in higher education*. 2. Baskı, Routledge Falmer, London.
- Robinson, W. P. (1975). Boredom at school. *British Journal of Educational Psychology*, 45, 141–152. <https://doi.org/10.1111/j.2044-8279.1975.tb03239.x>
- Sharp, J. G., Hemmings, B., Kay, R. & Atkin, C. (2018). Academic boredom, approaches to learning and the final-year degree outcomes of undergraduate students. *Journal of Further and Higher Education*, 42 (8), 1055–1077. <https://doi.org/10.1080/0309877X.2017.1349883>
- Sharp, J. G., Hemmings, B., Kay, R., Murphy, B. & Elliott, S. (2017). Academic boredom among students in higher education: A mixed-methods exploration of characteristics, contributors and consequences. *Journal of Further and Higher Education*, 41(5), 657-677. <https://doi.org/10.1080/0309877X.2016.1159292>
- Sharp, J. G., Hemmings, B., Kay, R. & Sharp, J. C. (2019). Academic boredom and the perceived course experiences of final year Education Studies students at university, *Journal of Further and Higher Education*, 1-28. <https://doi.org/10.1080/0309877X.2017.1386287>
- Sharp, J. G., Sharp, J. C., & Young, E. (2020). Academic boredom, engagement and the achievement of undergraduate students at university: A review and synthesis of relevant literature, *Research Papers in Education*, 35(2), 144-184. <https://doi.org/10.1080/02671522.2018.1536891>
- Simsek, H., Kula, S. S. & Baltacı, Ö. (2019). Examination of university students' boredom experiences in lessons. *Inonu University Journal of the Faculty of Education*, 20(1), 178-190. <http://dx.doi.org/10.17679/inuefd.422551>
- Simsek, H., Kula, S. S., Ozcakir, B., & Ceylan Celiker, T. (2020). The relation between academic boredom of students with mathematics self-efficacy and mathematics anxiety. *Acta Didactica Napocensia*, 13(2), 30-42. <http://dx.doi.org/10.24193/adn.13.2.2>

- Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection. *Educational and Psychological Measurement*, 69(3), 493–525. <https://doi.org/10.1177/0013164408323233>
- Tabachnick, B. G. & Fidell, L. S. (2013). *Using multivariate statistics*. Boston, Pearson. <https://www.pearsonhighered.com/assets/preface/0/1/3/4/0134790545.pdf>
- Tabachnick, S. E., Miller, R. B., & Relyea, G. E. (2008). The relationships among students' future-oriented goals and subgoals, perceived task instrumentality, and task-oriented self-regulation strategies in an academic environment. *Journal of Educational Psychology*, 100(3), 629–642. <https://doi.org/10.1037/0022-0663.100.3.629>
- TEA (2009). *Öğretmen yeterlikleri raporu [Teacher competency report]*, Ankara: TEA.
- Uğurlu, C. T.; Usta, H. G. & Simsek, A. S. (2015). Views of university academic members and students on the absenteeism case and causes. *Turkish Studies International Periodical For The Languages, Literature and History of Turkish or Turkic*. 10(3), 1009-1030. <http://dx.doi.org/10.7827/TurkishStudies.7915>
- Van Tilburg, W. A. P., & Igou, E. R. (2012). On boredom: Lack of challenge and meaning as distinct boredom experiences. *Motivation and Emotion*, 36, 181-194. <https://doi.org/10.1007/s11031-011-9234-9>
- Walker, C. O., & Greene, B. A. (2009). The relations between student motivational beliefs and cognitive engagement in high school. *Journal of Educational Research*, 102(6), 463–472. <https://doi.org/10.3200/JOER.102.6.463-472>
- Wortha, F., Azevedo, R., Taub, M., & Narciss, S. (2019). Multiple negative emotions during learning with digital learning environments—Evidence on their detrimental effect on learning from two methodological approaches. *Frontiers in psychology*, 10, 2678. <https://doi.org/10.3389/fpsyg.2019.02678>
- Yenilmez, K. & Ozbey, N. (2006). Özel okul ve devlet okulu öğrencilerinin matematik kaygı düzeyleri üzerine bir araştırma [A study on the math anxiety levels of private and public school students]. *Journal of Uludag University Education Faculty*, 19(2), 431-448.
- Yuksel-Sahin, F. (2008). Mathematics anxiety among 4th and 5th grade Turkish elementary school students. *International Electronic Journal of Mathematics Education*, 3(3), 179-192.
- Zheng, L., & Li, X. (2016). *The effects of motivation, academic emotions, and self-regulated learning strategies on academic achievements in technology enhanced learning environment*. In 2016 July IEEE 16th International Conference on Advanced Learning Technologies (ICALT) (pp. 376-380). IEEE.
- Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 1-25). New York: Springer-Verlag.
- Zimmerman, B. J., & Risemberg, R. (1997). Selfregulatory dimensions of academic learning and motivation. In G. D. Pyle (Ed.), *Handbook of academic learning: Construction of knowledge* (pp. 105-125). San Diego, CA: Academic Press.