Relationship between lifelong learning tendencies and self-directed learning skills of teacher candidates[1]

Dilek Beypınar[1] iD **Doç. Dr. Sadık Yüksel Sıvacı**[2] iD

[1] Burdur Mehmet Akif Ersoy University / Educational Sciences Institute, Educational Programs and Teaching Department, Burdur, Turkey
ozerdilek@gmail.com

[2] Burdur Mehmet Akif Ersoy University / Education Faculty, Lifelong Learning and Adult Education Department, Burdur, Turkey
sysivaci@mehmetakif.edu.tr

Article Info	ABSTRACT
	The aim of the research is to investigate the relationship between teacher candidates' lifelong learning tendencies and self-directed learning skills. The research was conducted by the relational research method. The sample contains 529 teacher candidates who were selected by maximum diversity sampling method. In the research, "Personal Information Form" was used to obtain information about demographic characteristics of teacher candidates. "Lifelong Learning Tendencies (LLT)" scale developed by Diker-Coşkun (2009) was used to determine the lifelong learning tendencies of teacher candidates and "Self-Directed Learning Skills (SDLS)" scale developed by Aşkın Tekkol and Demirel (2018) was used to determine self-directed learning skills. Descriptive statistics, t-test, ANOVA and correlation analyzes were used to find answers to the research questions. As a result of the research, LLT and SDLS of teacher candidates are at high levels. Additionally, it was revealed that the LLT scores of teacher candidates differ significantly according to gender, CGPA (Cumulative Grade Points Average) of teacher candidates and their reasons for choosing departments. When the SDLS of teacher candidates examined, it is found that SDLS of teacher candidates did not differ significantly according to gender. Also, it was revealed that the SDLS scores of teacher candidates differ significantly according to CGPA of teacher candidates and their reasons for choosing departments. Furthermore, the relationships between the sub-dimensions of the variables are examined by Pearson correlation analysis and the analysis revealed generally positive and moderately to highly significant relationships between different dimentions of LLT and SDLS of prospective teachers.

[1]This study was presented at International 21st Century Educational Research (INER) Congress on 8-10 June 2023 in Burdur.

INTRODUCTION

Changes and developments in science and technology, and therefore in information, affect the lives of society and individuals in every aspect. The most important feature of this age is development, and knowledge is the basic element of this development (Akkoyunlu & Kurbanoğlu, 2003). The learning obtained through formal education is insufficient for individuals to adapt to these developments. Thus, it has revealed that it is necessary to raise individuals to meet the needs of society and that the education of individuals cannot be limited to a certain period. Therefore, it has become mandatory for individuals lifelong learning, which represents a continuous learning process (Fischer & Konomi, 2007).

Lifelong learning as a concept was first expressed by Grundtvig in the 1800s, and Commenius's works formed the basic extents of the concept of lifelong learning (Wain, 2000). John Dewey also expressed his views on education in his book *Democracy and Education*, published in 1916. He stated that "There is no end to education, just as there is no end to any development in real life. It is a fact accepted by everyone that education should continue after school ends." Dewey came to Turkey in 1924 and prepared a report to improve our education system. John Dewey and Eduard Lindeman were the first educators to emphasize that education cannot be limited to certain ages and schools (Miser, 2020). In Eduard Lindeman's book *The Meaning of Adult Education* (1926), one can said that he reconciles education and learning with life based on his expressions: "All life is learning, therefore there is no end to education... If education is life, then life is education." (Lindeman, 1969). In this context, the concept of lifelong learning, which corresponds to educational activities that continue from the cradle to the grave, corresponds to the understanding of education that requires continuity at all ages and everywhere. In this context, the concepts of adult education and public education come to the fore. The concept of lifelong learning, which was described as adult education in the early years, has been given different meanings over time.

The emphasis of continuous education was emphasized in the *Green Bulletin* prepared in 1993, a study called *Towards a Learning Society* was prepared in 1995, and the aims of lifelong learning were revealed in the committie report called *White Bulletin* (Ayaz, 2016). Year 1996 was accepted as the 'European Lifelong Learning Year' by the European Parliament and the European Council (Kılıç, 2015). The importance of lifelong learning was expressed and studies on lifelong learning were reported in the meetings held in Lisbon and Stockholm in the 2000s (Gencel, 2013). Moreover, the *Lifelong Learning Declaration* published in 2000 is an agreement on lifelong learning of the member countries and candidate countries of the European Economic Area (Kılıç, 2015). With the *Bologna Declaration* signed in 1999, lifelong learning was considered an integral part of higher education institutions. Higher education institutions are at an important point in developing individuals' knowledge and skills throughout life. The aim of the Bologna process is to ensure that university students have access to the information they need outside theirenvironment and to actively participate in the lifelong learning process (Güneş, 2012). However, it is considered that lifelong learning will be used to solve many problems in our education system by considering society as a whole. Lifelong learning contains the formal and non-formal learning activities executed by the individual in all areas of his life in order to achieve the greatest development in his personal, family, social and business life (State Planning Organization [DPT], 2001).

In order to popularize the Lifelong Learning approach, the concept of lifelong learning has been included in various development plans of Turkey, in the 1739 Numbered National Education Basic Law and in the document of Lifelong Learning Strategy along with the studies carried out in Turkey. In addition, the General Directorate of Lifelong Learning was established in 2009 in order to raise lifelong learners. The general directorate has contributed to many projects since its establishment (HBÖGM, 2014). Turkey gained the right to become a full member of the EU Education and Youth Programs in 2004. Many lifelong learning programs are carried out within the EU Education and Youth Programs Center, which is responsible for the execution of Education and Youth Programs in Turkey (Kıvrak, 2007).

It is thought that lifelong learning is one of the ways out to raise individuals researching, questioning, creativity, communicating, adapting to innovations and using developing technology who are needed in the

new world order, in order for individuals to cope with the ever-increasing mass of information (Epçaçan, 2013). In a way, lifelong learning is seen as a means of developing individuals' personal and professional knowledge, skills or competencies (Aspin & Chapman, 2000; Gu, Gu & Laffey, 2011). For this reason, Dinevski and Dinevski (2004) defined lifelong learning as learning that occurs outside the school boundaries, in other words, within the informal education process. So, the concept of "lifelong learning", which permits individuals to learn the information they need at any age and place, is gaining importance. Therefore, discovering one's own potential, making career plans for oneself, improving oneself and constantly renewing oneself require lifelong education in globalizing societies (Miser, 2002).

Self-management is the individual's ability to control his own learning, in other words, the learner's ability to manage his own learning (Aşkın Tekkol & Demirel, 2018). Self-directed learning gives an opportunity to individuals to take the initiative about in determining their learning needs, revealing their learning goals, determining the resources they need for learning, choosing/using appropriate learning strategies, and evaluating learning outcomes with or without the help of others (Knowles, 1975). According to Long (2001), self-directed learning is a process in which the student undertakes various stages of initiating, planning, implementing and monitoring his or her own learning.

Iwasiw (1987) suggests that there are five stages of self-directed learning. These stages; (a) students identify their own needs, (b) identify learning goals, (c) identify learning resources, (d) identify learning strategies, and (e) evaluate the learning product. Considering these processes, self-directed learning helps students continuously increase their knowledge and skills. Thus, students will be able to support their lifelong learning and raise awareness about their changing and developing personal-professional needs and opportunities (Loyens, Magda & Rikers, 2008). In our age, developments in the internet and information technologies have ushered in a new era in learning. Self-directed learning skills are supported by opportunities provided by the Internet such as increasing the learner's control, accessing information, storing information and communicating (Bulik & Honor, 2000; Long, 2001; Mathai, 2002). Thus, individuals with self-directed learning skills can carry out learning activities even in an intense work tempo, learn at their own pace, monitor their individual development, test their personal learning efforts, and compensate for the geographical boundaries and restrictions that create disadvantages in learning in rural areas (Candy, 2004; Draves, 2002; Hiemstra, 2006).

In the literature on the subject, there are many studies that aim to define the reality of lifelong learning in the process of globalization (Field, 2001; Kaya, 2014); determine the lifelong learning perceptions and views of teachers and teacher candidates (İzci & Koç, 2012; Kılıç, 2015), lifelong learning competencies (Gencel, 2013; Yıldız Durak & Tekin, 2020), lifelong learning tendencies (Bulaç & Kurt, 2019; Diker-Coşkun, 2009; Gökyer & Türkoğlu, 2018; Tunca, Alkın-Şahin & Aydın, 2015) examine the relationships between lifelong learning competencies and lifelong learning tendencies with different variables (Ayra & Kösterelioğlu, 2015; Demirel & Akkoyunlu, 2010; Karaduman, 2015). There are studies in the literature where the concepts of self-directed learning and lifelong learning are investigated together (Recepoğlu, 2021; Sarıtepeci & Orak, 2019). However, it could not be found that there are studies examining the relationship between lifelong learning tendencies and self-directed skills of education faculty students in different departments and at different grade levels.

Today's scientific and technological developments require change, development, obtaining and using up-to-date information. Pre-service teachers, as individuals who are aware of their own learning, should gain ways of accessing information, as well as being higher-order thinker, will support personal and professional improvement. It is important for teachers to have self-directed learning skills so that students can be aware of their own thoughts, draw a strategic path, be motivated, guide them in achieving goals, and ensure self-directed learning. As teachers serve as role models for their students, it is crucial for them to possess the ability to be self-directed learners. By examining the relationship between lifelong learning tendencies and self-directed learning skills, we can better equip future educators for their roles. In the context of teacher education, the need for lifelong learning and self-directed learning is paramount. This research aims to

explore how these two factors are interconnected, providing insights into how we can better prepare teacher candidates for the complexities of modern education. In this context, it is thought that examining the relationship between lifelong learning tendencies and self-directed learning skills of teacher candidates studying at the faculty of education will contribute to the personal and professional development of teacher candidates. For these reasons, it is aimed to reveal the relationship between teacher candidates' lifelong learning tendencies and self-directed learning skills in the research. The problem of this research is; "Is there a significant relationship between teacher candidates' lifelong learning tendencies and self-directed learning skills?" In this study, answers were sought to the following sub-problems:

1. What is the level of lifelong learning tendencies of teacher candidates?
2. Do teacher candidates' lifelong learning tendencies differ significantly according to gender, CGPA (Cumulative Grade Points Average) and department preference reason?
3. What is the level of self-directed learning skills of teacher candidates?
4. Do teacher candidates' self-directed learning skills differ significantly according to gender, CGPA and department preference reason?
5. Are there significant relationships between prospective teachers' lifelong learning tendencies and self-directed learning skills?

METHOD

This research is a descriptive research and quantitative research methods were used in the research.

Research Design

The research was conducted in accordance with the relational research model, one of the quantitative research methods. Relational research is a research model in which the relationships between two or more variables are examined without any intervention to the variables. More clearly, correlational studies are studies in which possible relationships between variables are revealed and the degree of these relationships is determined (Fraenkel & Wallen, 2006).

Research Sample

The sample of this research was selected with the maximum diversity sampling method (Fraenkel & Wallen, 2006), which is among the purposive sampling methods. Purposeful sampling allows the in-depth study of situations that are thought to have rich information (Patton, 1997). The main purpose of maximum diversity sampling is to reflect the diversity of individuals who may be party to the problem to the maximum extent. In other words, the purpose of creating a sample based on maximum diversity is to try to find out whether there are any common or shared facts among diverse situations and to reveal different dimensions of the problem according to this diversity (Yıldırım & Şimşek, 2011). In the research, maximum diversity was tried to be achieved by working with 529 volunteer teacher candidates who were studying in different departments, at different grade levels. The demographic characteristics of the teacher candidates participating in the research are presented in Table 1.

Table 1. *Demographic Characteristics of the Research Sample*

Variable		n	%
Gender	Female	406	76.7
	Male	123	23.3
Grade Level	1. Grade	149	28.2
	2. Grade	188	35.5
	3. Grade	115	21.7
	4. Grade	77	14.6

Branch			
Branch	Early Childhood Education	92	17.4
	Primary Education	56	10.6
	Elemantary Math. Ed.	44	8.3
	TurkishLang. Teaching	58	11.0
	Social Studies Education	140	26.5
	EnglishLang. Teaching	50	9.5
	Elementary Science Ed.	13	2.5
	Guidance and Psychological Counseling	76	14.4
Total		529	100

When Table 1 is examined, it is seen that 406 (76.7%) are female and 123 (23.3%) are male of the teacher candidates participating in the research. When we look at the grade levels of the teacher candidates, it is seen that 149 (28.2%) are 1st grade, 188 (35.5%) are 2nd grade, 115 (21.7) are 3rd grade, and 77 (14.6%) are 4th grade. In addition, it is seen that 92 (17.4%) are student of Early Childhood Education students, 56 (10.6%) are student of Primary Education, 44 (8.3%) are student of Elemantary Mathematics Education, 58 (11.0%) arestudent of Turkish Language Teaching, 140 (26.5%) are student of Social Studies Education, 50 (9.5%) arestudent of English Language Teaching, 13 (2.5%) are student of Elemantary Science Education and 76 (14.4%) are student of Guidance and Psychological Counseling Department.

Research Instruments and Processes

In the research, 'Personal Information Form' was used to get information about the demographic characteristics of teacher candidates. The 'Lifelong Learning Tendencies' scale developed by Diker Coşkun (2009) was used to determine the LLT of teacher candidates, and the 'Self-Managed Learning Skills' scale developed by Aşkın Tekkol and Demirel (2018) was used to determine the SDLS.

Lifelong Learning Tendencies Scale

One of the scales used as a data collection tool in this study is the four-dimensional "Lifelong Learning Tendencies (LLT) Scale" developed by Diker-Coşkun (2009). The scale contains 27 items regarding students' lifelong learning tendencies. The dimensions of the LLT scale and the distribution of the items are given below:
1. Dimension: Motivation; 1,2,3,4,5,6 all items are positive
2. Dimension: Perseverance; 7,8,9,10,11,12 all items are positive
3. Dimension: Lack of regulation of learning; 13,14,15, 16,17,18 all items are negative
4. Dimension: Lack of curiosity;19,20,21,22,23,24,25,26,27 all items are negative

The dimensions of the lifelong learning scale are determined as motivation (6 items), perseverance (6 items), lack of learning regulation (6 items) and lack of curiosity (9 items), respectively. There are a total of 27 items in the scale. In the overall average of the scale, the minimum score that can be obtained from the scale is 27(27x1) and the maximum score is 162(27x6). High scores get from the scale indicate positive attitudes towards lifelong learning tendencies, while low scores indicate negative attitudes towards lifelong learning tendencies (Diker-Coşkun, 2009).

Sample items for the dimensions in the scale are as follows: Motivation (Developing new knowledge and skills in different fields to improve myself is perfect for me. I can easily learn all kinds of information if I believe that it will provide my personal development. Even though I have sufficient financial potential, I continue to gain new knowledge and skills for my personal development.), perseverance (I like to spend most of my time doing research in order to learn. I strive to gain new knowledge and skills without any obligation. Even if the subject I learn is difficult and complex, I strive to learn it in the best way.), lack of learning regulation (Gaining new knowledge and skillsto ensure my personal development seems meaningless to me. I do not use knowledge sources related to my profession except for necessity. I think I will have difficulty in learning a new knowledge or skill related to my profession.) and lack of curiosity (I do not want to waste my time doing research if it is not necessary. I prefer to spend the time with my loved onesinstead of my personal development.

The concurrent validity of the scale is 0.89. The reliability coefficient of the scale in terms of score

stability is 0.93, and the internal reliability coefficient (Cronbach Alpha) is 0.86 (Diker-Coşkun, 2009). In this study, as a result of the Cronbach Alpha reliability analysis conducted to test the reliability of the LLT scale, the reliability of the scale was found as follows: α=0.915. These values show that the reliability of the scale is high (Büyüköztürk, 2011). Additionally, as a result of the confirmatory factor analysis conducted in this study for the LLT scale, the RMSEA value was found to be 0.05. This value indicates an "acceptable fit". Since the fit indices are between good and acceptable values (GFI: .89; AGFI: .87; CFI: .98; NFI: .96; NNFI: .97; SRMR: .04), four-factor structure consisting of 27 items of the "Lifelong Learning Tendencies Scale" was confirmed. It was determined that the scale had a perfect fit with a chi-square value of 2.76 (Byrne, 2013). The first two dimensions of the scale are positive items expressing incentive and perseverance for lifelong learning, and the last two dimensions of the scale are negative items expressing the inability to organize lifelong learning and the lack of curiosity. Taking this into consideration when analyzing the scale items, the items of the last two subscales were reversed and scored. Responses to the scale items are 1. "It fits a lot", 2. "It partially fits", 3. "It fits very little", 4. It does not fit very little", 5. "It partially fits", 6. "It does not fit at all"as 6-point Likert typerating scale.

Self-Managed Learning Skills Scale

The second scale used in the research is the "Self-Directed Learning Skills (SDLS) Scale" developed by Aşkın Tekkol and Demirel (2018). The scale consists of 21 items and four dimensions. SDLS scale dimensions and distribution of items are given below:

1. Dimensionincentive: 2,4,6,8,13,17,21 all items are positive
2. Dimensionself-monitoring: 1,3,7,10,18 all items are positive
3. Dimensionself-control: 9,12,14,16,20 all items are positive
4. Dimensionself-confidence: 5,11,15,19 all items are positive

When the distribution of the items regarding the dimensions is examined; it is seen that there are seven items in the incentive dimension, five items in the self-monitoring dimension, five items in the self-control dimension and four items in the self-confidence dimension. The answers to the scale items are 1. "Always", 2. "Usually", 3. "Sometimes", 4. "Rarely", 5. "Never". Sample items for the dimensions in the scale are as follows: İncentive (A new situation is an opportunity for learning. I think that learning is a need), self-monitoring (I clearly state my learning purpose. I evaluate my learning performance.), self-control (I systematically monitor my learning process. I benefit from different learning ways), self-confidence (Criticizing myself helps me learn better. I am responsible for my decisions regarding learning.)

The factors of the scale explain 52.906% of the total variance of the scale. The scale is in the form of a 5-point Likert type rating scale. The lowest score that can be obtained from the scale is 21 and the highest score is 105. A high score from the scale indicates that self-directed learning skills are high, and a low score indicates that self-directed learning skills are low (Aşkın Tekkol & Demirel, 2018). In this study, the RMSEA value was found to be 0.06 as a result of the confirmatory factor analysis conducted for the SDLS scale. This value indicates an "acceptable fit". Since the fit indices are between good fit and acceptable values (GFI: .91; AGFI: .89; CFI: .97; NFI: .96; NNFI: .97; SRMR: .06). The four-factor structure of the "Self-Directed Learning Skills Scale" consisting of 21 items has been validated as a model. It has been determined that the scale has a perfect fit with a chi-square value of 2.96 (Byrne, 2013). Cronbach Alpha reliability analysis was performed to test the reliability of the SDLS scale and the reliability of the scale was found to be α = 0.906. These values show that the reliability of the scale is high (Büyüköztürk, 2011).

Data Analysis

In this study, which was conducted to investigate the lifelong learning tendencies and self-directed learning skills of teacher candidates, the lifelong learning scale and the self-directed learning skills scale were applied to 541 teacher candidates. The acquireddata were transferred to SPSS 22 program and the data cleaning process started. For data cleaning purposes, z scores were first calculated for each item, and data with z scores greater than +4 or less than -4 (Mertler & Vannatta, 2005) were excluded from the analysis process; outlier values were deleted and the analysis process continued with 529 data. The normality of the distribution of the scale was examined with descriptive methods and it was seen that the statistical values of the distribution such as arithmetic mean, mode and median were close to each other. Additionally, it was determined that the skewness and kurtosis coefficients were between -2 and +2 values. In order for the distribution to not differ significantly from the normal distribution, it is considered sufficient for the skewness and kurtosis coefficients to be between -2 and +2 (George & Mallery, 2010). In addition, it was decided that the data showed normal distribution by means of histogram curve, box and Q-Q graphs.

After the normality assumption was met, whether the teacher candidates differed according to gender, which is a two-category variable, was investigated with the t-test for independent groups at the .05 significance level. In order to find answers to the research questions, descriptive statistics (arithmetic mean, standard deviation) were primarily used. Whether the candidates' LLT and SDLS differ according to gender, which is a two-category variable, was investigated with the t-test for independent groups at the .05 significance level. In this process, it was examined whether the equality of variances was achieved (p>.05) or not (p<.05) with the Levene test, and these results were taken into account in the interpretation process (Kuzu, 2022). Since the ANOVA test will be taken into account for variables with three or more categories, it was examined whether the lifelong learning tendencies and self-directed learning skills of the candidates differ according to the CGPA and the reason for choosing the department by ANOVA. In this process, Post-Hoc analysis techniques were used to determine which variables differ in statistically significant results. In cases where homogeneity of variances is ensured (p>.05) with the Levene test, Tukey HSD; in cases where it was not provided (p<0.05)with the Levene test, Games-Howell multiple comparison techniques were used (Kuzu, 2022). On the other hand, correlation analyzes were used in the relationship process between prospective teachers' lifelong learning tendencies and self-directed learning skills.

In interpreting correlation coefficients; correlation coefficients less than .25 are interpreted as insignificant, coefficients between .26 and .49 are weak, coefficients between .50 and .69 are interpreted as moderate, coefficients greater than .70 are strong, and coefficients greater than .90 are interpreted as very strong relationships (Kalaycı, 2009). On the other hand, in this study, the lowest score that can be obtained from the 6-point Likert-type lifelong learning skills scale is 27, while the highest score is 162. In evaluating the score ranges, the evaluation process specified by Kuzu (2021) was taken into account and $27 \leq$ score <49.5: Does not fit at all; $49.5 \leq$ points <72: Partially not applicable; $72 \leq$ score < 94.5: Very little does not fit; $94.5 \leq$ score < 117: Fits very little; $117 \leq$ points <139.5: Partially fits; $139.5 \leq$ score < 162: Too much fit. Additionally, in this study, the lowest score that can be obtained from the 5-point Likert-type self-directed learning skills scale is 21, while the highest score is 105. In evaluating the score ranges, the evaluation process specified by Kuzu (2021) was taken into account and scores rated as following:$21 \leq$ score <37.8: Never; $37.8 \leq$ points <54.6: Rarely; $54.6 \leq$ points <71.4: Sometimes; $71.4 \leq$ points <88.2: Usually; $88.2 \leq$ points <105: Always.

Ethic

"Personal Information Form", "Lifelong Learning Tendencies Scale" and "Self-Directed Learning Skills Scale" were used to obtain the data of the research. Before starting the data collection process, permission was obtained from the authors who carried out the scale adaptation studies and the data collection process was initiated by obtaining the necessary permissions from the Ethics Committee. Data were collected with the approval received from the ethics committee (07.12.2022, GO 2022/1000) in February in the Fall Term of the 2022-2023 academic year. Before the application, prospective teachers were informed about the research, and the application was administered to the prospective teachers who volunteered to participate in the research.

FINDINGS

This section includes the findings of the research and the comments made based on the findings. The findings and comments obtained from the research are presented in line with the sub-problems of the research.

3.1. Findings and Interpretation of the First Sub-Problem

The first sub-problem of the research is expressed as "At what level are teacher candidates' lifelong learning tendencies?" In order to answer this sub-question, descriptive statistics of the data were examined. The findings obtained are given in Table 2.

Table 2. *Lifelong Learning Tendency Levels of Teacher Candidates*

Dimensions	n	Min	Max	$\bar{x}$	Ss
Motivation	529	6	36	31,93	3,99
Perseverance	529	6	36	29,46	4,95
Lack of regulation of learning	529	6	36	25,95	8,46
Lack of curiosity	529	9	54	37,54	11,78
Total	529	27	162	124,88	21,90

As seen in Table 2, when the scores received by teacher candidates from the LLT scale are examined, it is seen that the lowest score (min = 27), the highest score (max = 162) and the scale mean is =124.88, SD=21.90. Considering the scale middle score (94.5) (Diker-Coşkun & Demirel, 2009) regarding the evaluation of the LLT scale and the rating made in this study, it is noteworthy that the lifelong learning tendencies of teacher candidates are at the 'partially fit' level. When the averages of the sub-dimensions of the LLT scale are examined, it is seen that the mean scores of the teacher candidates for the incentive sub-dimension $\bar{x}$ = 31.93, Sd = 3.99, the mean scores for the perseverance sub-dimension $\bar{x}$ = 29.46, Sd = 4.95, the mean scores for the lack of self-regulation sub-dimension $\bar{x}$ = 25.95, Sd = 8.46, and the mean scores for the lack of curiosity sub-dimension is $\bar{x}$ = 37.54, Sd = 11.78. Considering the sub-dimension middle scores of the LLT scale (21, 21, 21, 30) (Diker-Coşkun & Demirel, 2009), respectively, it can be seen the sub-dimension scores of the LLT scale ($\bar{x}$ =31.93, 29.46, 25.95, 37.54) of the teacher candidates are also at high levels. The data obtained shows that the teacher candidates individuals who are willing to continue formal and non-formal education in all areas of their lives and are open to development.

3.2. Findings and Interpretation of the Second Sub-Problem

The other aim of the research is to determine whether LLT of teacher candidatesdiffer according to various variables. The second sub-problem of the research is expressed as "Do teacher candidates' lifelong learning tendencies differ significantly according to gender, CGPA and department preference reason?". In order to determine whether LLT of teacher candidatesdiffer significantly according to gender, the data were analyzed using the t test for independent samples. Table 3 includes independent t-test results comparing the scores obtained from the scale by gender.

Table 3. *T-test Table for Comparison of Teacher Candidates' Lifelong Learning Tendency Dimensions by Gender*

Dimensions	Gender	n	$\bar{x}$	Ss	Sd	t	p
Motivation	Female	406	32.11	3.62	527	1.84	.06
	Male	123	31.35	4.99			
Perseverance	Female	406	29.66	4.54	527	1.75	.08
	Male	123	28.77	6.06			
Lack of regulation of learning	Female	406	26.39	8.31	527	2.22	.02
	Male	123	24.47	8.78			
Lack of curiosity	Female	406	38.57	11.41	527	3.70	.00
	Male	123	34.13	12.39			
Total	Female	406	126,74	21.16	527	3.60	.00
	Male	123	118,73	23.23			

*p<,05

Table 3 shows the level of LLT of prospective teachers in terms of gender, taking into account the sub-dimensions of the scale. When the average scores of the sub-dimensions of the scale are compared in terms of gender, it is seen that female teacher candidates are at higher levels than male teacher candidates in each sub-dimension. As a result of the analysis, it is determined that LLT scale scoresdid not show any significant difference according to gender in sub-dimensions of incentive [t(527)=1.84; p>0.05] and persistence [t(527)=1.75; p>0.05]. However, it is observed to show a significant difference in favor of women according to gender in sub-dimensions of lack of self-regulation [t(527)=2.22; p<0.05], lack of curiosity [t(527)=3.70; p<0.05] and total score [t(527)=3.60; p<0.05]. According to these findings, it can be said that female teacher candidates carry out learning activities more regularly than male teacher candidates and that female teacher candidates are more curious and willing about lifelong learning than male teacher candidates. In the rating made, the LLT of both male and female teacher candidates were evaluated to be at

the 'partially fit' level. This shows that the LLT of both male and female teacher candidates are quite high. In the second sub-problem of the research, single-factor analysis of variance was used for independent samples in order to determine whether the LLT of the teacher candidates differ according to the CGPA of the teacher candidates. The results of variance analysis of teacher candidates' lifelong learning tendencies scores according to CGPA are presented in Table 4.

Table 4. *ANOVA Results of Teacher Candidates' Lifelong Learning Tendency Scores According to CGPA*

		N	$\bar{X}$	Sd		Sum of Squares	df	Mean Square	F	p	Diffe-rence
CGPA	2.50 and below (1)	38	116.74	26.93	*Between Groups*	5146.779	3	1715.593	3.628	.013*	1-4
							525				
	2.51-3.00 (2)	117	121.64	19.32	*Within Groups*	248225.95	528	472.811			
	3.01-3.50 (3)	248	126.29	21.66	*Total*	253372.73					
	3.51-4.00 (4)	126	127.57	22.29							
	Total	529	124.88	21.90							

*p<,05

When Table 4 is examined, it is understood that the lifelong learning tendency averages of the teacher candidates show a significant difference according to the candidates' CGPA (F=3.628, p<.05). Tukey test is conducted to determine which CGPA ranges has a significant difference by the lifelong learning tendency scores of teacher candidates. According to the results of the Tukey test, it was found that the LLT scores of candidates with a CGPA of 3.51 and above ($\bar{x}$ =127.57) is higher than the LLT scores of candidates with a CGPA of 2.50 and below ($\bar{x}$ =116.74). In other words, it can be said that the LLT of teacher candidates whose CGPA is 3.51 and above are at a higher level than the LLT of teacher candidates whose CGPA is 2.50 and below, and that they are open to lifelong learning. The analysis results of the changes in teacher candidates' LLT scores according to their department preference reasons are presented in Table 5.

Table 5. *ANOVA Results of Teacher Candidates' Lifelong Learning Tendency Scores According to Department Preference Reasons*

		N	$\bar{X}$	Sd		Sum of Squares	df	Mean Square	F	p
Department Preference Reasons	Ideal profession	184	126.23	22.37	Between Groups	7553,14	7	1079,020	2.287	.027*
	Low Score	97	121.14	21.55	Within Groups	255819,59	521	471,823		
							528			
	Vacation Opportunity	20	117.35	23.25	Total	253372,73				
	Job Opportunity	40	119.35	24.26						
	Reputability	21	118.52	21.51						
	Encourage-ment in the family	33	126.69	18.41						
	Communica-tion with the child	58	127.63	19.46						
	Love of teaching	76	130.14	21.49						
	Total	529	124.88	21.90						

*p<,05

When Table 5 is examined, it is understood that the averages of prospective teachers' lifelong learning tendencies show a significant difference according to their reasons for department preference (F=2.287, p<.05). However, as a result of the Post-Hoc analysis, no significant difference was found between the two groups. This may be due to the fact that the averages of teacher candidates' reasons for choosing departments are close to each other, according to their lifelong learning tendencies.

3.3. Findings and Interpretation of the Third Sub-Problem

The third sub-problem of the research is stated as "What is the level of self-directed learning skills of teacher candidates?" In order to answer this sub-question, descriptive statistics of the data were examined. The findings obtained are given in Table 6.

Table 6. *Table of Self-Directed Learning Skill Levels of Teacher Candidates*

Dimensions	n	Min	Max	$\bar{x}$	Sd
Incentive	529	20	35	31,24	3,26
Self-monitoring	529	13	25	20,54	2,67
Self-control	529	8	25	19,22	3,30
Confidence	529	11	20	17,42	1,99
Total	529	61	105	88,43	9,51

As seen in Table 6, when the scores received by teacher candidates from the SDLS scale are examined, it is seen that the lowest score (min=61), the highest score (max=105) and the scale mean is $\bar{x}$ =88.43, SD=9.51. Considering the middle score of the scale (63) regarding the evaluation of self-directed learning skills scale, it is noteworthy that the self-directed learning skills of the teacher candidates participating in the research are at a high level. When the averages of the teacher candidates' mean scores related sub-dimensions of the SDLS scale are examined, it is seen that the mean scores for the incentive sub-dimension $\bar{x}$ =31.24, Sd=3.26, the mean scores for the self-monitoring sub-dimension $\bar{x}$ =20.54, Sd = 2.67, the mean scores for the self-control sub-dimension $\bar{x}$ = 19.22, Sd=3.30, the mean score for the self-confidence sub-dimension is $\bar{x}$ =17.42, Sd=1.99. Considering the middle scores of the SDLS scale sub-dimensions (21, 15, 15, 12), respectively, it is seen that the pre-service teachers' sub-dimension scores of the SDLS scale ($\bar{x}$ =31.24, 20.54, 19.22, 17.42) are at high levels. This shows that the teacher candidates who volunteered to participate in the study are individuals who can take responsibility for their own learning.

3.4. Findings and Interpretation of the Fourth Sub-Problem

The fourth sub-problem of the research is expressed as "Do teacher candidates' self-directed learning skills differ significantly according to gender, weighted grade point average (CGPA) and department preference reason?". In order to analyze whether the self-directed learning skills of teacher candidates showed a significant difference according to gender, the data were analyzed using the t test for independent samples. The findings obtained for the four factors in the scale are given in Table 7.

Table7. *T-test Table for Comparison of Self-Directed Learning Skills of Teacher Candidates by Gender*

Dimensions	Gender	n	$\bar{x}$	Sd	df	t	P
Incentive	Female	406	31.38	3.14	527	1.86	.06
	Male	123	30.76	3.61		1.72	
Self-monitoring	Female	406	20.64	2.69	527	1.47	.14
	Male	123	20.23	2.58		1.50	
Confidence	Female	406	17.50	1.91	527	1.63	.10

	Male	123	17.17	2.24			1.50	
Self-control	Female	406	19.22	3.23	527	.07		.94
	Male	123	19.20	3.54		.06		
Total	Female	406	88,75	9.22	527	1.41		.16
	Male	123	87,37	10.37		1.32		

*p<,05

When Table 7 is examined, it was determined that the self-directed learning skills of teacher candidates in the incentive, self-monitoring, self-confidence and self-control dimensions did not show a significant difference according to gender (p>.05). This finding shows that the self-directed learning skill levels of female teacher candidates and male teacher candidates participating in the study are close to each other.Single-factor analysis of variance was used for independent samples to determine whether teacher candidates' self-directed learning skills scores differ according to their CGPA and department preference reasons. The results of variance analysis of teacher candidates' self-directed learning skills scores according to CGPA are presented in Table 8.

Table 8. *ANOVA Results of Teacher Candidates' Self-Directed Learning Skills Scores According to CGPA*

		N	$\bar{X}$	Sd		Sum of Squares	df	Mean Square	F	p	Fark
CGPA	**2.50 and below (1)**	38	88.44	11.45	*Between Groups*	768.185	3	256.062	2.858	.037	4>2
	2.51-3.00 (2)	117	86.28	9.65	*Within Groups*	47041.944	525	89.604			
	3.01-3.50 (3)	248	88.83	9.48	*Total*	47810.129	528				
	3.51-4.00 (4)	126	89.55	8.54							
	Total	529	88.43	9.51							

*p<,05

It is determined that the self-directed learning skills of teacher candidates showed a significant difference according to their general grade point average (F=2.858, p<.05). Tukey test was applied to the data to understand which categories this difference emerged between. It is understood that there is a significant difference according to the GPA between scores of teacher candidates whose CGPA of 2.51-3.00 ($\bar{X}$=86.28) and scores of teacher candidates whose weighted 3.51-4.00 ($\bar{X}$=89.55) and this difference is in favor of the teacher candidates with a GPA of 3.51-4.00. In other words; it can be said that teacher candidates with a high GPA (3.51-4.00) take more responsibility for their own learning processes than teacher candidates with a low GPA (2.51-3.00). The analysis results of teacher candidates' self-directed learning skills scores according to their department preference reasons are given in Table 9.

Table 9. *ANOVA Results of Teacher Candidates' Self-Directed Learning Skills Scores According to Department Choice Reasons*

		N	$\bar{X}$	Sd		Sum of Squares	df	Mean Square	F	p	Fark
Department Preference	**Ideal profession**	184	90.46	9.22	*Between Groups*	2127,848	7	303,978	3.467	.001	1 >2
	Low Score	97	85.55	9.44	*Within Groups*	45682,281	521	87,682			

Vacation Opportunity	20	85.10	10.85	*Total*	47810,129	528
Job Opportunity	40	87.15	9.72			
Reputability	21	89.14	9.04			
Encourage-ment in the family	33	86.15	10.92			
Communication with the child	58	88.43	9.45			
Love of teaching	76	89.56	8.22			
Total	529	88.43	9.51			

* p<,05

As a result of the analyses, a significant difference emerged between the reasons why teacher candidates chose their departments (F=3.467, p<.05). According to the Tukey test results, this difference is between teacher candidates who choose teaching because they see it as the ideal profession $\bar{X} = 90.46$) and teacher candidates who choose teaching because of low scores ($\bar{X} = 85.55$), and it can be said that it is in favour of teacher candidates who choose teaching because it is the ideal profession. This shows that teacher candidates who choose teaching because they see it as the ideal profession have more knowledge about their own learning processes than teacher candidates who choose it because of low scores.

3.5. Findings and Interpretation of the Fifth Sub-Problem

The fifth sub-problem of the research is expressed as "Are there significant relationships between prospective teachers' lifelong learning tendencies and self-directed learning skills?". In order to answer this sub-problem, Pearson correlation analysis is used. While interpreting the correlation coefficients, correlation coefficients less than .25 are considered as insignificant, coefficients between .26 and .49 are considered as weak, coefficients between .50 and .69 areconsidered as medium, coefficients greater than .70 are considered as strong and coefficients greater than 90 are interpreted as very strong relationships (Kalaycı, 2009). The findings obtained for the dimensions included in the scales are given in Table 10.

Table10. *Relationships between teacher candidates' lifelong learning tendencies and self-directed learning skills.*

	Incentive	Self-monitoring	Confidence	Self-control	Motivation	Perseverance	Lack of regulation of learning	Lack of curiocity
Incentive	1							
Self-monitoring	.62*	1						
Confidence	.62*	.61*	1					
Self-control	.52*	.77*	.57*	1				
Motivation	.56*	.50*	.46*	.45*	1			
Perseverance	.51*	.54*	.44*	.57*	.76*	1		
Lack of regulation of learning	.23*	.07	.13*	-.08	.07	-.02	1	
Lack of curiosity	.39*	.25*	.25*	.13*	.27*	.26*	.70*	1

*p<.05

According to the results of the Pearson correlation analysis, when the relationships between the sub-dimensions of the variables are examined; it was revealed that there was a positive and moderately significant relationship (.69> r >.50, p<.01) between incentive and self-monitoring (r=.62), self-confidence (r=62), self-control (r=52), motivation (r=56), perseverance (r=51). And it was found that there was a weak and positive relationship (.49> r >.25, p<.01) between incentive and lack of curiosity (r=39). Also, it was determined that there was a positive and highly significant relationship (r >.70, p<.01) between the self-monitoring dimension and self-control (r=77); a positive and moderately significant relationship (.69> r >.50, p<.01) between self-monitoring and self-confidence (r=61), motivation (r=50), perseverance (r=54) and a weak and positive relationship (.49> r >.25, p<.01) between self-monitoring and lack of curiosity (r=25).

It was determined that there was a positive and moderate level significant relationship (.69> r >.50, p<.01) between the confidence dimension and self-control (r=57); a positive and weak level significant relationship (.49 > r >.25, p <.01) between the confidence dimension and motivation (r=46), perseverance (r=44), and a lack of curiosity (r=25). It was found that there was a positive and moderately significant relationship (.69> r >.50, p<.01) between the self-control dimension and perseverance (r=57) and a weak and positive relationship (.49 > r >.25, p <.01) between self-control and motivation (r=45). It was turned out that there was a positive and highly significant relationship (r >.70, p<.01) between motivation and perseverance dimensions (r=76) and also, between lack of self-regulation and lack of curiosity (r=77). Moreover, it was determined that there was a positive and weak level significant relationship (.49 > r >.25, p <.01) between lack of curiosity and motivation (r=27) and also, perseverance (r=26).

CONCLUSION

In the research, the relationship between the lifelong learning skills and self-directed learning skills of the prospective teachers was examined. According to the findings of the research, the LLT total scores and sub-dimension scores of the prospective teachers participating in the research were at a high level than the middle score of the scale (94.5) determined by Diker-Coşkun and Demirel (2009) and according to the rating made for this study, it was determined to be at the 'partially applicable' level. In the relevant literature, Ayra& Kösterelioğlu (2015), Bayram (2023), Bulaç & Kurt (2019), Demirel & Akkoyunlu (2010), Erdoğan (2014), Ergün & Cömert Özata (2016), Kılıç (2015), Recepoğlu (2021) revealed that prospective teachers have high LLTin their studies. This shows that the teacher candidates who volunteered to participate in the study have high LLT, therefore they are in a lifelong learning tendency and lifelong learning is a priority among their individual goals. In addition, it can be said that teacher candidates will be open to learning in the later stages of their lives, and they see learning new knowledge and skills as an indispensable feature of their lives. The first two dimensions of the LLT scale (incentive, perseverance) determine the emotional organization related to the desire and effort to learn in life, and the last two dimensions (lack of regulation of learning, lack of curiosity) determine the tendency to regulate the reasons and situations for lifelong learning (Diker-Coşkun & Demirel, 2012). Since the scores received by teacher candidates from the sub-dimensions of the scale are higher than the middle score values, it can be said that their motivation to learn is high, they make an effort and show continuity to participate in relevant learning activities and they show determination in completing optional learning situations. The teaching profession determined by the Ministry of Education (2017), it is stated that teachers should self-evaluate their general competencies and participate in activities aimed at their personal and professional development. It is predicted that teacher candidates are going tocarry the general competencies of the profession since their high LLT scoresare an indication thatthey are open to personal and professional development. In fact, as emphasized by Usta (2023), lifelong learning is a feature that all students should develop throughout their educational lives, and university education is not sufficient to acquire this feature. Furthermore, if it is aimed to raise lifelong learners throughout the education process, teachers must have the knowledge and experience to guide the society, make research and questioning as a duty, improve themselves and have lifelong learning qualities (Kılıç, 2015). Usta (2023) explains the

practices that need to be done in this regard as follows:

> The lifelong philosophy should be based on learning at all levels of education, starting from pre-school education, and 'learning to learn' should be very important. Educational experiences such as 'learning to learn', 'using learning resources effectively', 'adjusting and achieving', 'learning objectives', 'valuing knowledge and personal development' should be part of the basic practices of national education rather than slogans. Lifelong learning should not be perceived as a new teaching method, but should be adopted as the philosophy of all educational environments where learning takes place.

When studies conducted in domestic and abroad were examined in terms of the gender variable of LLT, it was seen that there were different results. It has been noticed that comparisons were mostly made based on the total score without examining the sub-dimensions of the scale in the studies conducted. For this reason, while exemplifying the studies supporting the results obtained in each dimension of the scale, studies conducted on the total score of the scale were also used. In this research, it was observed that there was no significant difference in the incentive and perseverance sub-dimensions of the LLT scale according to gender. Studies have shown that there was no significant difference in the LLT of teacher candidates according to the gender variable (Bayram, 2023; Gödeneli & Aksoy, 2023; Karaduman, 2015; Kılıç, 2015; Oral & Yazar, 2013; Tunca, Alkın-Şahin & Aydın, 2015) supports this finding. The fact that no significant difference was detected in terms of gender in the study can be interpreted as the incentive levels and the level of perseverance they show in learning activities of male and female teachers are at a similar level. However, there is a significant difference in favor of women in terms of the lack of self-regulation, the lack of curiosity sub-dimensions and the total score of the teacher candidates in their lifelong learning levels according to gender. Besides; there are also studies (Bulaç & Kurt, 2019; Çam, 2017; Diker-Coşkun & Demirel, 2012; Orhan, 2023; Yaman & Yazar, 2015) that find thatLLTof teachers are affected by the gender variable and create a significant difference in favor of female teacher candidates. Also, it is found that the average scores of female teachers' LLT were significantly higher than the average scores of male teachers in the perseverance dimension(Tanatar, 2017); in the incentive and perseverance dimensions (Kabal, 2019); and in the incentive, perseverance and deprivation in regulating learning dimensions(Aydın, 2020). According to these findings, it can be said that female teacher candidates do learning activities more regularly than male teacher candidates and that female teacher candidates are more curious about lifelong learning than male teacher candidates.

When the scores they received from the LLT scale were examined according to the CGPA variable, it was determined that score of the LLT of the teacher candidates whose CGPA was 3.51 and above had significantly higher averages than the scores of LLT of the teacher candidates whose CGPA was 2.50 and belowin the research. A lifelong learner is expected to have methodological skills such as learning to learn, learning to create knowledge, and coping with risks and problems, as well as technical skills such as mathematics, science, information and communication technologies, problem solving, analytical skills, and foreign language knowledge (Günüç, Odabaşı & Kuzu, 2012). In this context, it is an expected result that teacher candidates with high academic success have higher LLT. Contrary to this finding; it was revealed that the LLT, incentive and perseverancescores of teacher candidates whose academic success average was between 2.00 and 2.99 were higher than the teacher candidates whose academic success average was between 3.00 and 4.00 in another study conducted with teacher candidates (Tunca, Alkın-Şahin & Aydin, 2015). This situation may have arisen as a result of the fact that achievements aimed at gaining lifelong learner characteristics were not included in undergraduate programs.

Another finding of the research is that the averages of prospective teachers' LLT do not differ significantly according to their reasons for choosing a department. This may be due to the fact that the averages of teacher candidates' reasons for choosing departments are close to each other, according to their LLT. No other research has been found examining the reasons why teacher candidates choose a department (ideal profession, holiday opportunity, love of teaching, etc.). However, Bulaç & Kurt (2019) found in their study that there was a significant difference in the total scores received from the LLT scaleof teacher

candidates, depending on the reasons why teacher candidates chose the program they studied (willingly or unwillingly). As a result of the analysis, the difference was found between the teacher candidates who voluntarily or unwillingly chose the program they studied and it was found that the difference was in favor of the teacher candidates who chose the program they studied willingly. Individuals with lifelong learning skills are defined as people who can solve problems, able to self-regulate and evaluate, see the relationship between events and concepts, collaborate and work in harmony with people from all backgrounds and have developed thinking skills (critical, creative, reflective, etc.) (Billing, 2007; Voogt, & Roblin, 2012). Therefore, they could make logical decisions throughout their life.

When self-directed learning skills were investigated, it was found that SDLS of teacher candidates were at a high level. In support of the research finding, it can be explained that teacher candidates see themselves as competent in terms of being learners with self-directed learning skills, which are a prerequisite for lifelong learning, and that they are individuals who can take responsibility for their own learning. Additionally, it was determined that the sub-dimensions of the scale were at high levels. Accordingly, it can be said that the participating teacher candidates are individuals who have the necessary motivation for learning, can clearly state their learning goals and evaluate their performance, are aware of their learning processes and take responsibility for the learning process. Aşkın (2015), Yılmazsoy & Kahraman (2019) stated that the SDLS of university students and Bayram (2023) stated that the SDLSof Primary teacher candidates were above the middle score of the scale. Self-directed learning includes the individual's ability to manage his/her own learning process, to be willing during the course and education process, to be self-confident, and to supervise and control the learning processes themselves. It will be beneficial for prospective teachers to acquire and develop these skills both for their own learning processes and for their ability to support the learning processes of their students, thus contributing positively to their professional development.

Another research result regarding SDLS is that there is no significant difference between male and female teachers in terms of gender variable in any of the sub-dimensions of the SDLS scale. The results of the research in terms of gender are consistent with many studies. In their studies, Bayram (2023) and Şahin &Küçük Süleymanoğlu (2015) did not find a significant difference between the average scores of the participants on the SDLS scale according to gender. This shows that the self-directed learning skill levels of female teacher candidates and male teacher candidates participating in the study are close to each other. Karagülle and Berkant (2022) found that the scores of university students participating in their study did not differ significantly according to gender in self-monitoring and self-control subscales; however, they concluded that motivation, self-confidence and overall scale scores ofmale students were significantly higher than female students. Artsın, Koçdar & Bozkurt (2020) found that women's self-directed learning skills were higher than men's self-directed learning skills. Yılmazsoy and Kahraman (2019) concluded in their study that there was a significant difference in students' self-directed learning levels in favor of women in the motivation sub-dimension, and that there was no significant difference in the other sub-dimensions and the entire scale. Although there was no significant difference, they found that the self-directed learning levels of female students were higher than the self-directed learning levels of male students, and they thought that the difference in mean scores related to the fact that female students worked more meticulously and disciplined in the course processes and had higher course motivation.

One of the research results is that when SDLS are examined according to their GPA, the SDLS scores of the teacher candidates with a CGPA of 3.51-4.00 are significantly higher than the teacher candidates with a CGPA of 2.51-3.00. Other studies conducted with university students also support this finding. Similarly, Alkan (2012), Aydede & Kesercioğlu (2012), Yılmazsoy & Kahraman (2019), working with university students, found in their studies that the self-directed learning skills scores of students with high GPA were significantly higher than those of students with low GPA. This shows that teacher candidates with high academic success manage their self-directed learning processes better and take more responsibility for their own learning processes.

Another result obtained regarding self-directed learning skill is whether teacher candidates' self-directed learning skill scores differ significantly according to their reasons for department choice. As a result of the analysis, it was revealed that the SDLS scores of the teacher candidates who chose Education Faculty because they saw teaching as the ideal profession were higher than the SDLS scores of the teacher candidates who chose Education Faculty because of their low scores. This situation shows that teacher candidates who choose teaching because they see it as the ideal profession have more knowledge about their own learning processes than teacher candidates who choose it because of low scores. No other studies on the subject could be found in the literature.

The last finding of the research is on the relationship between teachers' lifelong learning skills and self-management learning skills. According to the results, there is a positive and moderate relationship between teachers' lifelong learning tendencies and their self-directed learning skill levels. Within the scope of the research, it was revealed that there are different levels, mostly positive relationships, between the sub-dimensions of the LLT scale and the SDLS scales. According to the analysis results, examining the relationships, especially at medium and high levels, will help to make healthier decisions. It has been turned out that there is a positive and moderately significant relationship between incentive, one of the SDLS sub-dimensions, and motivation and perseverance, the sub-dimensions of the LLT scale. It was determined that there was a positive and moderately significant relationship between the self-monitoring dimension of the SDLS scale and the motivation and perseverance of the LLT scale. It was determined that there was a positive and moderately significant relationship between the self-control dimension of the SDLS scale and the perseverance of the LLT scale. In addition, positive medium and high level relationships were determined among the sub-dimensions of the LLT and SDLS scales. According to these results, it can be said that teacher candidates with self-directed learning skills are also individuals who tend to be lifelong learners. When the literature is examined, it can be said that there is a strong relationship between lifelong learning and self-directed learning. Ay (2023) found that there is a positive, moderate relationship between lifelong learning competencies and self-directed learning skills and stated that lifelong learning competencies and self-directed learning skills interact with each other. He emphasized that they are concepts that effects eachother. Similarly, Arslan (2019) and Teke (2020) argued in their research that self-directed learning is one of the prerequisites for lifelong learning and that students must be raised as self-directed individuals. In his study where Recepoğlu (2021) examined the relationship between teacher candidates' LLT and SDLS, he concluded that as the self-directed learning levels of teacher candidates increase, their LLT also increase. Candy (1990) in his study emphasized that "self-directed learning is the means and endof lifelong education." In their research, Mocker and Spear (1982) stated that self-directed learning is a dimension of lifelong learning. Greveson and Spencer (2005) also state that self-directed learning is a prerequisite for lifelong learning. Lifelong learners are individuals who learn to learn, ask questions, and are open to collaborative learning (Demirel & Akkoyunlu, 2010). Knapper and Kropley (2000) expressed that lifelong learners use different learning methods for possible situations by collecting information from different fields in educational environments or outside educational environments. These statements embody the relationship between lifelong learning and self-directed learning.

RECOMMENDATIONS

Recommendations for Practitioners

The following suggestions have been developed to support teacher candidates in developing their LLT and self-directed learning skills:

1. During the education process, teacher candidates should be provided with an environment and time that will allow them to learn on their own and develop themselves in line with their fields of interest.

2. Assignments can be made to ensure that teacher candidates have knowledge about self-directedlearning and lifelong learning.

3. During the education process, the skills of teacher candidates can be discovered and directed to courses suitable for their skills in order to contribute to their lifelong learning and self-directed learning skills.

4. Activities that prospective teachers can participate in in line with their interests and needs can be increased at universities.

5. Teacher candidates can be directed to lifelong learning by supporting the social responsibility projects they carry out within the scope of the 'Community service' course they take during their undergraduate education.

6. Teacher candidates can be informed and encouraged about postgraduate education during their undergraduate education.

Recommendations for Researchers

1. Lifelong learning tendencies and self-directed learning skills of university students in different branches or levels can be examined regarding the educational process.

2. Lifelong learning tendencies and self-directed learning skills of students at different levels (primary school, secondary school, high school) regarding the educational process can be examined.

3. Qualitative and mixed research can be conducted to determine the lifelong learning tendencies and self-directed learning skills of teachers and students at different education levels.

4. By preparing a distance education program that will enable teacher candidates to take responsibility in determining their learning needs and to increase their interest in personal and professional development, these skills of teacher candidates can be examined through experimental studies.

Acknowledgements

REFERENCES

Akkoyunlu, B.,& Kurbanoğlu, S. (2003). A study on teacher candidates'perceived information literacy self-efficacy and perceived computer self-efficacy. *Hacettepe University Journal of Education, 24*, 1-10. https://dergipark.org.tr/tr/download/article-file/87822

Alkan, F. (2012). *Kendi kendine öğrenmenin kimya laboratuvarında öğrenci başarısına, öğrenme hazırbulunuşluğuna, laboratuvar becerilerine yönelik tutumuna ve endişesine etkisi*[Unpublished Doctoral Dissertation]. University of Hacettepe.

Arslan, F. (2019). *Öğretmenlerin yaşam boyu öğrenme düzeyleri ve öz-yönetimli öğrenme düzeyleri arasındaki ilişkinin incelenmesi: Karma yöntem*[Unpublished Master's Dissertation].University of Sakarya.

Artsın, M., Koçdar, S. & Bozkurt, A. (2020). Öğrenenlerin öz-yönetimli öğrenme becerilerinin kitlesel açık çevrimiçi dersler bağlamında incelenmesi.*Anadolu Journal of Educational Sciences International, 10*(1),1-30.http://doi.org/10.18039/ajesi.681905

Aspin, D. N.,& Chapman, J. D. (2000). Lifelong learning: concepts and conceptions. *International Journal of Lifelong Education, 19*(1), 2-19. https://doi.org/10.1080/026013700293421

Aşkın Tekkol, İ. & Demirel, M. (2018). Öz-yönetimli öğrenme becerileri ölçeği: Geçerlik ve güvenirlik çalışması. *Journal of Measurement and Evaluation in Education and Psychology, 9*(2), 85-100.https://doi.org/10.21031/epod.389208

Ay, D. (2023). *Çocuk gelişimi bölümü üniversite öğrencilerinin yaşam boyu öğrenme yeterlikleri ve öz-yönetimli öğrenme becerileri arasındaki ilişkinin incelenmesi*[Unpublished Master's Dissertation]. University of Bartın.

Ayaz, C. (2016). *Öğretmenlerin yaşam boyu öğrenme eğilimlerinin bazı değişkenler açısından incelenmesi.*[Unpublished Master's Dissertation]. University of Bartın.

Aydede, M. N.,& Kesercioğlu, T. (2012). Aktif öğrenme uygulamalarının öğrencilerin kendi kendine öğrenme becerilerine etkisi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 43*(43), 37-49. http://efdergi.hacettepe.edu.tr/yonetim/icerik/makaleler/349-published.pdf

Aydın, Ş. (2020). *Öğretmenlerin yaşam boyu öğrenme eğilimleri ile kültürel sermayeleri ve aralarındaki ilişkinin incelenmesi*[Unpublished Master's Dissertation]. University of Çukurova.

Ayra, M.,& Kösterelioğlu, İ. (2015). Öğretmenlerin yaşam boyu öğrenme eğilimlerinin mesleki öz yeterlik algıları ile ilişkisi. *Education Sciences, 10*(1), 17-28.https://dergipark.org.tr/en/pub/nwsaedu/issue/19839/212535

Aşkın, İ. (2015). *Üniversite öğrencilerinin öz-yönetimli öğrenme becerilerinin incelenmesi.*[Unpublished Doctoral Dissertation]. University of Hacettepe.

Bayram, T. (2023).*Sınıf öğretmeni adaylarının acil uzaktan eğitim sürecindeki yaşam boyu öğrenme eğilimleri ve öz-yönetimli öğrenme becerilerinin incelenmesi*. [Unpublished Master's Dissertation]. University of Kastamonu.

Bulaç, E.,& Kurt, M. (2019). Öğretmen adaylarının yaşam boyu öğrenme eğilimlerinin incelenmesi. *Amasya Üniversitesi Eğitim Fakültesi Dergisi, 8*(1), 125-161. https://dergipark.org.tr/en/pub/amauefd/issue/45794/532829

Billing, D. (2007). Teaching transfer of core/key skills in higher education: Cognitive skills. *Springer Science Business Media B. V., 53*, 483-516.https://doi.org/10.1007/s10734-005-5628-5

Bulik, R. J.,& Honor, J. (2000). Self-directed learning ina digital age: Where next to browse is informed by reflection.H. B. Long (Ed.), *Associatespractice and theory in self-directed learning* (pp. 265-276). Motorola University Press.

Büyüköztürk, Ş. (2011). *Sosyal bilimler için veri analizi el kitabı*. Pegem Akademi. (pp. 141).

Byrne, B. M. (2011). *Structural equation modeling with AMOS Basic concepts, applications, and programming*. Routledge Press.

Candy, P. C. (1990). The transition from the learner-control to autodidaxy: More than meets the eye. Long, H & Associates (Eds.),*Advances research and practice in self-directed learning*(pp. 9-46). Oklahoma Research Center.

Candy, P. C. (2004). Linking thinking self-directed learning in a digital age. Retrieved September 9, 2022 from http://www.dest.gov.au/sectors/ training_skills/publications_resources/summaries_brochures/linking_

Çam, E. (2017). *İlköğretim öğretmenlerinin teknolojik pedagojik alan bilgisi (TPAB) düzeylerinin yaşam boyu öğrenme, özyeterlik düzeyleri ve hizmet içi eğitim gereksinimleri açısından incelenmesi:* Muş/Bulanık örneği. [Unpublished Master's Dissertation]. University of Amasya.

Demirel, M.,& Akkoyunlu, B. (2010).*Öğretmen adaylarının yaşam boyu öğrenme eğilimleri ve bilgi okuryazarlığı özyeterlik algıları.*[Conference presentation].10th International Educational TechnologyConference,Boğaziçi Üniversitesi, İstanbul, Turkey.

Erdoğan, D. (2014). Öğretmen adaylarının yaşam boyu öğrenme eğilimlerine etki eden faktörler.[Unpublished Doctoral Dissertation]. University of Abant İzzet Baysal.

Ergün, S., & Cömert Özata, S. (2016). Okul öncesi öğretmenliği bölümüne devam eden öğrencilerin yaşam boyu öğrenme eğilimleri. *International Journal of Human Sciences, 13*(1), 1851-1861.https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/3568

Devlet Planlama Teşkilatı [DPT], (2001).*Hayatboyu Eğitim veya Örgün Olmayan Eğitim Özel İhtisas Komisyonu Raporu.* Sekizinci Beş Yıllık Kalkınma Planı: Ankara

Diker-Coşkun, Y.,& Demirel, M. (2012). Üniversite Öğrencilerinin Yaşam Boyu Öğrenme Eğilimleri [Lifelong learning tendencies of university students]. *Hacettepe University Journal of Education, 42*(42). http://efdergi.hacettepe.edu.tr/yonetim/icerik/makaleler/345-published.pdf

Diker-Coşkun Y. (2009). Üniversite öğrencilerinin yaşam boyu öğrenme eğilimlerinin bazı değişkenler açısından incelenmesi[Unpublished Doctoral Dissertation]. University of Hacettepe.

Dinevski, D.,& Dinevski, I. V. (2004). The concepts of university lifelong learning provision in Europe. *Transition Studies Review, 11*(3), 227-235. https://doi.org/10.1007/s11300-004-0014-z

Doğan, S.,& Varank, İ. (2014). *Türkiye yetişkin öğrenme profilinin politika analizi kapsamında değerlendirilmesi.* TC MEB Hayat Boyu Öğrenme Genel Müdürlüğü, Ankara.

Draves, W. (2002). *How internet is changing how we learn* [Online Conference].7th Annual Teaching on the Community Colleges.

Gencel, İ. E. (2013). Öğretmen adaylarının yaşam boyu öğrenme yeterliklerine yönelik algıları. *Eğitim ve Bilim, 38*(170), 237-252. http://egitimvebilim.ted.org.tr/index.php/EB/article/view/1847/558

Gökyer, N.,& Türkoğlu, İ. (2018). Üniversite öğrencilerinin yaşam boyu öğrenme eğilimleri. *Fırat Üniversitesi Sosyal Bilimler Dergisi, 28* (2), 125-136. http://doi.org/10.18069/firatsbed.460929

Epçaçan, C. (2013). Yaşam boyu öğrenme becerilerinin ders kitaplarında yer alma düzeyineörnek bir inceleme. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* (11),354-379.https://doi.org/10.14520/adyusbd.482

Field, J. (2001). Lifelong education. *International Journal of Lifelong Education, 20*(1-2), 3–15. http://doi.org/10.1080/09638280010008291

Fischer, G.,& Konomi, S. i. (2007). Innovative socio-technical environments in support of distributed intelligence and lifelong learning. *Journal of Computer Assisted Learning, 23*(4), 338-350. https://doi.org/10.1111/j.1365-2729.2007.00238.x

Fraenkel R.J., & Wallen E.N. (2006). *How to Design and Evaluate Research in Education.* McGraw-Hill.

Gu, X., Gu, F., & Laffey, J. M. (2011). Designing a mobile system for lifelong learning on the move. *Journal of Computer Assisted Learning, 27*(3), 204-215. https://doi.org/10.1111/j.1365-2729.2010.00391.x

Gödeneli, İ.,& Aksoy, Y. (2023). Müzik öğretmeni adaylarının yaşam boyu öğrenme eğilimleri [Lifelong learning tendencies of music teacher candidates]. *Bilim, Eğitim, Sanat ve Teknoloji Dergisi, 7*(2), 126-142. https://doi.org/10.46328/bestdergi.97

Greveson, G.C.,& Spencer J. A. (2005). Self-directed learning: the importance of concepts and contexts. *Medical Education, 39,* 348-349.http://doi.org/10.1111/j.1365-2929.2005.02115.x

Güneş, F. (2012). Skills and competencies set forth by bologna process in higher education. *Journal of Higher Education and Science, 2*(1). http://doi.org/10.5961/jhes.2012.026

Günüç, S., Odabaşı, H. F., & Kuzu, A. (2012). Yaşam boyu öğrenmeyi etkileyen faktörler. *Gaziantep Üniversitesi Sosyal Bilimler Dergisi, 11* (2), 309-325. https://earsiv.anadolu.edu.tr/xmlui/bitstream/handle/11421/14715/14715.pdf?sequence=1&isAllowed=y

Hiemstra, R. (2006). Is the internet changing self-directed learning? Rural users provide some answers. *International Journal of Self-Directed Learning, 3*(2), 45-60.

Iwasiw, C. (1987). The role of the teacher in self-directed learning. *Nurse Education Today, 7*(5), 222-227.https://doi.org/10.1016/0260-6917(87)90005-0

İzci, E.,& Koç, S., (2012). Öğretmen Adaylarının Yaşam Boyu Öğrenmeye İlişkin Görüşlerinin Değerlendirilmesi. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 5*(9), 101- 112.https://doi.org/10.14520/adyusbd.267

Kabal, D. (2019). *Öğretmenlerin yaşam boyu öğrenme eğilimleri ve mutluluk düzeyleri üzerine bir çalışma: Kocaeli örneği.*[Unpublished Master's Dissertation]. University of Sakarya.

Kalaycı, N. (2009). Yüksek öğretim kurumlarında akademisyenlerin öğretim performansını değerlendirme sürecinde kullanılan yöntemler. *Kuram ve Uygulamada Eğitim Yönetimi, 60*(60), 625-656. https://dergipark.org.tr/tr/pub/kuey/issue/10337/126671

Karaduman, A. (2015). *Üniversite öğrencilerinin yaşam boyu öğrenme eğilimleri ile özyeterlik algıları arasındaki ilişki.*[Unpublished Master's Dissertation]. University of Bartın.

Karagülle, S. & Berkant, H. G. (2022). Üniversite öğrencilerinin öz yönetimli öğrenme becerilerinin ve düşünme stillerinin incelenmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 42*(1), 669-710.https://doi.org/10.17152/gefad.1005908

Kaya, H. (2014). Küreselleşme sürecinde yaşam boyu öğrenme ve yetişkin eğitimi gerçeği. *Akademik İncelemeler Dergisi, 9*(2), 91-111.https://doi.org/10.17550/aid.94961

Kılıç, H. (2015). *İlköğretim branş öğretmenlerinin bireysel yenilikçilik düzeyleri ve hayat boyu öğrenme eğilimleri (Denizli ili örneği).*[Unpublished Master's Dissertation]. University of Pamukkale.

Kıvrak, E. (2007). *Avrupa Birliği ve Türkiye'de yaşam boyu öğrenme politikaları ve istihdam ilişkisinin değerlendirilmesi.*[Unpublished Master's Dissertation]. University of Ankara.

Knowles, M. S. (1975). *Self-Directed Learning: A Guide for Learners and Teachers*. Association Press.

Kuzu, O. (2021). Matematik ve Fen Bilgisi öğretmeni adaylarının integral konusundaki yeterliklerinin tanısal değerlendirilmesi. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi, 18*(1), 249–283.https://doi.org/10.33711/yyuefd.859592

Kuzu, Y. (2022). Ortalamalar arası farkın test edilmesi. S. Göçer-Şahin & M. Buluş (Eds.), *Adım adım uygulamalı istatistik* (pp. 105-156). Pegem Akademi Yayıncılık.

Lindeman E. C. (1969). *Halk Eğitiminin Anlamı* (C. Şentürk, Trans.). Halk Eğitimi Genel Müdürlüğü Yayınları, (Original work published, 1926).

Long, H. B. (2001). A new era in teaching and learning. H. B. Long et al. (Ed.),*Self-directed learning and the information age* (pp. 1-16). Boynton Beach: Motorola University.

Loyens, S. M. M., Magda J.,& Rikers, R. M. J. P. (2008). Self-directed learning in problembased learning and its relationships with self-regulated learning. *Educational Psychology Review, 20* (4), 411-427. https://doi.org/10.1007/s10648-008-9082-7

741

Mathai, R. B. (2002). The use of the internet to foster self-directed learning in community adn techincal college math and natural science classes. H. B. Long et al. (Ed.), *Twenty-first century advances in self-directed learning* (pp. 127-153). Boynton Beach: Motorola University.

Mertler, C.A.,& Vannatta, R.A. (2005). *Advanced multi variate statistical methods: Practical application and inter pretation*(3rd ed.). Glendale: Pyrczak Publish.

Milli Eğitim Bakanlığı (Eylül, 2019). *MEB Eğitim Kurumları Sosyal Etkinlikler Yönetmeliği*.

Miser, R. (2002). Küreselleşen Dünyada Yetişkin Eğitimi.*Ankara University Journal of Faculty of Educational Sciences (JFES), 35*(1), 55-60. http://doi.org/10.1501/Egifak_0000000054

Miser, R. (2020). Türkiye'de yetişkin eğitimi.(R. Miser, Ed.),*Yaşamboyu Öğrenme ve Yetişkin Eğitimi*. Nobel Yayıncılık.

Mocker, D. W.,& Spear G. E. (1982). *Lifelong learning: formal, nonformal, informal and self-directed.*Retrieved September 15, 2022 from https://files.eric.ed.gov/fulltext/ED220723.

Oral, B.,& Yazar, T. (2015). Öğretmen adaylarının yaşam boyu öğrenmeye ilişkin algılarının çeşitli değişkenlere göre incelenmesi. *Elektronik Sosyal Bilimler Dergisi, 14*(52), 1-11.https://doi.org/10.17755/esosder.72011

Patton, M. Q. (1997). *How to use qualitative methods in evaluation.*SAGE.

Recepoğlu, S. (2021). Sosyal bilgiler öğretmen adaylarının yaşam boyu öğrenme eğilimleri ile öz-yönetimli öğrenme becerileri arasındaki ilişkinin incelenmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 41*(1), 551-569.https://dergipark.org.tr/en/pub/gefad/issue/62024/867117

Sarıtepeci, M.,& Orak, C. (2019). Lifelong learning tendencies of prospective teachers: Investigation of self-directed learning, thinking styles, ICT usage status and demographic variables as predictors. *Bartın Üniversitesi Eğitim Fakültesi Dergisi 8*(3), 904-927.https://doi.org/10.14686/buefad.555478

Sert Orhan, M. (2023). *Öğretmen adaylarının yaşam boyu öğrenme eğilimleri, bilişsel esneklikleri ve bilgisayarca düşünme becerilerinin incelenmesi.*[Unpublished Master's Dissertation]. University of Adnan Menderes.

Şahin, E.,& Küçüksüleymanoğlu, R. (2015). Öğretmen adaylarının özyönetimli öğrenmeye hazırbulunuşlulukları, biliş ötesi farkındalıkları ve denetim odakları arasındaki ilişkiler.*Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 15*(2), 317-334. https://doi.org/10.17240/aibuefd.2015.15.2-5000161326

Tanatar, E. (2017). *Öğretmenlerin iş değerleri ile yaşam boyu öğrenme eğilimleri arasındaki ilişkinin incelenmesi.*[Unpublished Master's Dissertation]. University of Marmara.

Tas, S., Koc, M., Ozkan, H., & Yilmaz, E. (2009). *An undergraduate program proposal for adult and lifelong education in Turkey.*[Conference presentation].Ist International Congress of Educational Research.

Teke, A. (2020). *Yetişkin bireylerin özyönetimli öğrenme yaşantılarının incelenmesi: Bir anlatı araştırması.*[Unpublished Doctoral Dissertation]. University of Necmettin Erbakan Üniversitesi.

Tunca N.,Alkın Şahin, S.,&Aydın, Ö. (August, 2015). Öğretmen adaylarının yaşam boyu öğrenme eğilimleri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 11*(2). http://doi.org/10.17860/efd.92694

Usta, E. (2023). Lifelong Learning Motivation Scale (LLMS): Validity and Reliability Study. *Journal of Teacher Education and Lifelong Learning, 5*(1), 429-438.https://doi.org/10.51535/tell.1309487

Voogt, J.,& Roblin, N. P. (2012). A comparative analysis of international frameworksfor 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies, 44*(3), 299–321.https://doi.org/10.1080/00220272.2012.668938

Wain, K. (2000). The learning society: postmodern politics. *International Journal of Lifelong Education, 19*(1), 36-53.https://doi.org/10.1080/026013700293449

Yaman, F.,& Yazar, T. (2015). Öğretmenlerin yaşam boyu öğrenme eğilimlerinin incelenmesi (Diyarbakır ili örneği). *Kastamonu Eğitim Dergisi, 23*(4), 1553-1566. https://dergipark.org.tr/tr/download/article-file/209790

Yıldız Durak, H.,& Tekin, S. (2020). Öğretmenlerin hayat boyu öğrenme yeterliliklerinin kişisel ve mesleki değişkenlere göre incelenmesi. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 20* (1), 221-235. https://dx.doi.org/10.17240/aibuefd.2020.20.52925-547041

Yılmazsoy, B.,& Kahraman, M. (2019). Uzaktan eğitim öğrencilerinin öz-yönetimli öğrenme becerilerinin incelenmesi. *Kuramsal Eğitimbilim Dergisi [Journal of Theoretical Educational Science], 12*(2), 783-818.https://doi.org/10.30831/akukeg.429362

Yıldırım, A. & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (8th Ed.). Seçkin Yayıncılık.