

The effect of university education on lifelong learning tendency

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Suggested Citation:

Tezer, M. & Aynas, N. (2018). The effect of university education on lifelong learning tendency. *Cypriot Journal of Educational Science*. 8(1), 066–080.

Received date August 12, 2017; revised date November 07, 2017; accepted date December 09, 2017

Selection and peer review under responsibility of Prof Dr. Huseyin Uzunboylu, Near East University.

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Abstract

In this study, the effects of university education on lifelong learning tendencies of teachers and preservice teachers by some variables were aimed to analyse. In this study, survey model was used. The population of the study consists of the teachers serving in Turkey and the preservice teachers having been studying at Faculty of Arts at a university in 2016–2017 academic year and its samples consist of the first and second grade teachers and 3rd—4th grade preservice teachers. The effect of university education on lifelong learning tendency scale developed by researchers was used in this study. The findings obtained at the end of the study indicate that teachers have better lifelong learning tendency level than those of preservice teachers; there is a significant difference on behalf of females by just sex variable among age, professional seniority, branch variables.

Keywords: Lifelong learning tendency, university education, teacher, preservice teacher.

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1. Introduction

In the twenty-first century which is regarded as Information Age, the continuous and rapid developments between information and technology have an impact upon every segments of society, introduce changes into lives of individuals. Individuals are to be involved in lifelong learning to follow the rapid developments in science and technology, should know where, when, how to use the information and which information they need and why they need it, how to get and use it. The information increase and updates taking place nowadays are bringing different dimensions to the ways of obtaining information for individuals' day by day. Obtaining information and learning have gone beyond an issue tried to be carried out in education institutions, become a sustainable phenomenon by bringing learning ability in individuals in current education programmes, the needs of lifelong learning can be characterised as a representation of keeping pace with innovations and changes, the influence of employment opportunities, meeting the information and skills needs (Gogunskii, Kolesnikov, Kolesnikova & Lukianov, 2016).

Just as lifelong learning has come into prominence recently, so the opinion of lifelong learning is not new. When analysed in the literature, the concept of lifelong learning was propounded and referred its importance in 1929 (Yeaxlee, 1929). After that year, especially after 1950, it can be seen that the studies on lifelong learning were accelerated by the research centres. In 1996, when lifelong learning peaked, European Year of Lifelong Learning was declared (Delors et al., 1996). Two organisations like UNESCO and OECD were interested in the concept of lifelong learning and stressed that the perception of schooling for only children and youth hinders the increase of lifelong learning (Delors, 2013). It is highly important that lifelong learning is a process by which individuals are able to improve their knowledge, skills without missing learning opportunities. Ranging from an elementary school to university and vocational out-of-school education or all trainings coming to mind is one of sub-branches of lifelong learning concept. Thus, lifelong learning provides an environment for education giving equality of opportunity independent to demographic variables (age, place, time, socioeconomic level etc.) (Borbely-Pecze & Hutchinson, 2016). Education does not only consist of education we receive between during elementary and secondary school years. Education and training are of importance in terms of life orientation. Lifelong education includes any education ranging from home, school to workplace and any place coming into mind along with communication and education technology tools (Bell & Bell, 2016).

Brandi and Iannone (2016) emphasise lifelong education requirement in a study they conduct. They mentioned that there are rapid developments in the world as social, economic and cultural. Due to the rate of change was slower than that of people's lifetime, those who live in nearly the same conditions had no difficulty. But nowadays, the rate of change is so increased that people have to stay in education-circle throughout their lives. With the context of the technology, in our rapidly developing world, information is increasing incrementally and leading to lifelong education that individuals should receive during their lives.

Associated with the globalisation, due to changing working conditions in all countries, it continues to bring about some problems in both developed and developing countries. Rapid changes of working conditions and area, also with qualities that cannot be learned from formal and non-formal education induce annihilation of the current jobs. Employers are in need of proficient having more knowledge and skills to maintain and preserve their business. Therefore, individuals are to maintain their education and improve themselves after completing formal education as well. Subsequent to this, students mislead themselves by the opinion of 'I can perform any job'. Now, this motto has given its place to the qualified labour force. To have the qualified labour force requires lifelong learning skills in parallel (Harteis & Goller, 2014; Verbruggen, Dries, Milissen & Vansteenkiste, 2015).

In our globalisation world through modernisation, to maintain all countries' change and development continuously, the ones, especially the youth, should have the required qualifications to know how to reach the information, how to use information and technology and to produce them,

how to overcome the problems by researching, to make right decision, to think critical and creative (Knapper & Cropley, 2000). In formal and non-formal education, the training programmes should be designed according to the individuals for continuing education. So, the training programmes should also have the aims to improve required competences and skills. Lifelong learning skills and competences have arisen from this necessity (Karakus, 2013). These key competences for lifelong learning have been collected under eight basic competence titles by the Committee on Culture and Education. These are communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science and technology, digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship and Cultural awareness and expression (Figel, 2007). To raise individuals meeting the requirements, learning lifelong and renewing themselves and to improve their lifelong learning skills, education institutions should have done much work.

After graduation, universities should take on much of task and responsibility in order to widely carry out lifelong learning activities to orient individuals to changing working conditions. Universities provide lifelong learning activities through Internet-based education, virtual university, e-learning by supporting vocational development (Tamas, 2016). Goksan, Uzundurukan and Keskin (2009) have stated that universities have bigger roles of critical thinking, problem solving, independent decision making and lifelong learning in our current information society.

Studies on whether there is significant difference or not by different variables on lifelong learning tendencies of teachers, whereas Demirel, Sadi and Dagyar (2016), have deduced that competence levels vary by professional seniority period in comparison to the digital era, Ayra and Kosterelioglu (2015), in their study to determine the relationship between lifelong learning tendencies and professional self-efficacy perceptions, they have determined that there is an increasing low level significant relationship between lifelong tendencies and professional self-efficacy perceptions of teachers. Gunuc, Odabasi and Kuzu (2012), at the end of the study, while mentioning important factors on lifelong learning perception and development, 'teacher as a role model' which is one among these factors is an important sign for individuals' lifelong learning process.

It is the very fact that universities should not only be the institutions enabling people to specialise in their fields and enlightening them but also the institutions in which the individuals orient themselves to the real life, improve themselves and get the courage up to learn more about either their field or different ones like they received in the formal training institutions after education. With reference to the fact that mankind is capable of improvement multi-directionally, an education programme having the characteristics that people receive education they will need after their university education is over, improve their current knowledge and skills or discover their new talents, make them prompt to lifelong learning should be carried out. In accordance with this fact, the study conducted in an attempt to find out the effect of university education on lifelong learning tendency, determination of the competency of current education system in universities, revision of the programme and inclusion of innovations to make to the programme, overcoming the deficiencies if there is any which are of extremely importance.

The necessity of university education is always asked by students. Failure to find a job at the end of university education is a problem after graduation. For this reason, it is important that this research is carried out for developing countries too. Thereby, in this study, the effect of university education on lifelong learning tendency of teacher having completed the university education and preservice teachers having been continuing their university education will be researched and the effect of some variables (for teachers: sex, professional seniority and branch; for preservice teachers: sex, grade and department) on teachers lifelong learning tendencies will be tried to be determined.

1.1. The aim of the study

In this study, the effect of university education on lifelong learning tendencies of teachers and preservice teachers is aimed to be determined. Following, sub-problems is tried to be answered in the line of the main aim of the study.

1. Which level does effect of university education on lifelong learning tendencies vary by teachers and preservice teachers?
2. Do the levels of effect of university education on lifelong learning tendencies vary by being teacher and preservice teacher?
3. Is there a significant difference in the effect of university education on lifelong learning tendencies of teachers by sex, age and professional seniority and branch variables?
4. Is there a significant difference in effect of university education on lifelong learning tendencies of preservice teachers by sex, grade and department?

2. Method

2.1. Research method

The study, which is a descriptive research, has been implemented within the scope of the survey model with a questionnaire technique. Survey models are eligible for the research that aims to describe a current or former situation as it is (Karasar, 2013). In the study, quantitative data are collected over the effects of university education on lifelong learning tendencies of teachers and preservice teachers.

2.2. Population and sample

The population of the study consists of the teachers serving in Turkey and the preservice teachers having been studying at Faculty of Arts at a university in 2016–2017 academic year and its samples consist of the first and second grade teachers with all branch teachers having been serving in the city centre and 3rd–4th grade preservice teachers having been studying preschool teaching, science teaching, social science teaching and primary school teaching departments in Turkey. Teacher group, which is one of working group of the research, is the 1st and 2nd grade teachers and branch teachers from elementary schools in the city centre. These sample groups have been selected with typical case sampling within purposeful sampling methods of the random sampling model. The study conducted on 263 teachers and 285 preservice teachers. Demographic characteristics of participant teachers have been shown in Table 1.

As it can be seen in Table 1, 51% of the teachers participating in the research is male and 49% is female. As examined by age variable, it is seen that 43% of the teachers are in the age range of 20–30. It is also seen that the teachers participating in research whose rate of having 1–4-years professional experience is 64%. These situations result from the fact that very young teachers having been appointed in this region for the first time.

The other sample groups of the study consist of 285 preservice teachers from preschool, science, social science and primary school teaching departments at the Faculty of Arts.

Table 1. Demographic characteristics of the teachers

Variables		<i>f</i>	%	Total
Sex	Female	129	49	263
	Male	134	51	
Age	20–24	42	16.0	263
	25–29	127	48.3	
	30–34	56	21.3	
	35–39	24	9.1	
	+40	14	5.3	
Branch	Science teaching	33	12.5	263
	Social sciences teaching	18	6.8	
	Mathematics teaching	32	12.2	
	Primary school teaching	44	16.7	
	Turkish teaching	34	12.9	
	Psychological counselling and guidance	12	4.6	
	Religious culture teaching	13	4.9	
	Preschool teaching	9	3.4	
	English teaching	22	8.4	
	Painting teaching	7	2.7	
	Music teaching	8	3.0	
	Physical education teaching	14	5.3	
	Technology design teaching	8	3.0	
Seniority	Other	9	3.4	263
	1–4	169	64.3	
	5–9	55	20.9	
	10–14	20	7.6	
	+15	19	7.2	

Table 2. Demographic characteristics of the teachers

Variables		<i>f</i>	%	Total
Sex	Female	154	54.0	285
	Male	131	46.0	
Branch	Preschool teaching	87	30.5	285
	Science teaching	70	24.6	
	Primary school teaching	86	30.2	
Grade	Social science teaching	42	14.7	285
	3rd Grade	144	50.5	
	4rd Grade	141	49.5	

When the Table 2 is examined, 54% of the preservice teachers participating is male and the rest of 46% is female. The distribution of preschool and primary school teaching is very similar in the sample group, followed by science teaching, the fewest group consists of social science teaching with 14.7%. When examined grade, it is seen that the distribution is very similar.

2.3. Data collection tool

'The effect of the university education on lifelong learning tendency scale' developed by researchers as data collection tool for this study is implemented. Different tactics were tried in the development process of the scale. For problem identification and problem-oriented aims, the literature review on lifelong learning approach and lifelong learning tendencies was made in detail. Definitions and opinions about the concept of lifelong learning which is stated in former studies, besides, the scales implemented in some studies were examined. Besides this examination, an opinion letter (composition) about this field has been provided from teacher ($N = 15$) and preservice teachers ($N = 15$).

Content analysis has been conducted on literature reviews and composition implementation and the questions have been formed. Thereupon, an item repository consisting of 81 statements on the scale has been formed and it has been scrutinised by specialist lecturer in their field. A Turkish teacher's advices about spelling rules and three specialists' advice about all items have been asked. After their advices, the scale has been reconsidered by the research studies and a draft as 64-item form has been created. The first implementation of the 64-item form has been done on 136 teachers and 127 preservice teachers and validity and reliability analysis have been carried out. The items whose factor load is under 0.40 as a result of statistical analysis have been left out of the scale. As the analysis result, the scale has determined as 33-item and Cronbach alpha reliability coefficient has been calculated as 0.91.

Ultimate scale consisting of 33 items has been carried out with a total of 263 teachers and 285 preservice teachers by taking necessary permissions. The data obtained from the implementations have been analysed; exploratory factor analysis has been carried out in order to reveal factor structure of the scale. To carry out exploratory factor analysis, conformity of data to factor analysis has been evaluated by the help of Kaiser-Meyer-Olkin (KMO) test and Bartlett's Sphericity test. Calculated KMO; 0.91 and Bartlett's test at level $p < 0.05$ were found significant. The result of factor analysis, it has been seen that the scale has three sub-dimensions. These have been named as 'Individual Development', 'Education received' and 'Sparing time'. Alpha reliability coefficient of the first sub-dimension was calculated as 0.90, the second one as 0.87 and the third as 0.70. The result of all analysis indicated that the scale is valid and reliable.

2.4. Data analysis and interpretation

In this research, 'The effect of university education on lifelong learning tendency scale' developed by research studies has been used. The data collection tool is five-point Likert scale. The points of the scale are ranging from 5 to 1, 'Strongly Disagree' (1), Disagree (2), 'Undecided' (3), 'Agree' (4), 'Strongly Agree' (5). Accordingly, the lowest score that a teacher can get from five response categories is '33' and the highest is '165'. Level of measurement is 1–1.80 'Strongly Disagree', 1.81–2.60 'Disagree', 2.61–3.40 'Undecided', 3.41–4.20 'Agree', 4.21–5.00 'Strongly Agree'. Standard Deviations and total averages have been used as criterion in the scale used to determine the effect of university education on lifelong learning tendency. Independent t-test has been used to compare lifelong learning tendency of teachers to that of preservice teachers, to compare the score of teachers to that of preservice teachers by 'Sex' variable and 'Grade' variable of preservice teachers, because the data indicate normal distribution at the end of Kolmogorov Test ($p > 0.05$), analysis of variance (ANOVA) test has been used to analyse teachers by age, branch and professional seniority variables, preservice teachers related to department variable.

3. Findings and interpretation

In this section, findings were presented such as sub-problems of the study and interpreted according to the results.

- At which level does effect of university education on lifelong learning tendencies vary by teachers and preservice teachers?

Descriptive statistics on level of lifelong learning tendencies of teaches were shown in Table 3 below:

Table 3. Descriptive statistics on effects level of university education on lifelong learning tendencies of teachers

Sub dimensions	N	Min.	Max.	\bar{X}	Sd.
1. Individual development	263	1.00	5.00	3.23	0.72
2. Education received	263	2.85	5.00	4.21	0.43
3. Sparing time	263	1.00	5.00	3.46	0.71
Total	263	2.27	5.00	3.63	0.49

When the Table 3 is examined, 54% of the preservice teachers participating is male and the rest of 46% is female. The distribution of preschool and primary school teaching is very similar in the sample group, followed by science teaching, the fewest group consists of social science teaching with 14.7%. When examined grade, it is seen that the distribution is very similar.

3.1. Data collection tool

'The effect of the university education on lifelong learning tendency scale' developed by researchers as data collection tool for this study is implemented. Different tacks were tried in the development process of the scale. For problem identification and problem-oriented aims, the literature review on lifelong learning approach and lifelong learning tendencies was made in detail. Definitions and opinions about the concept of lifelong learning which is stated in former studies, besides, the scales implemented in some studies were examined. Besides this examination, an opinion letter (composition) about this field has been provided from teacher ($N = 15$) and preservice teachers ($N = 15$).

Content analysis has been conducted on literature reviews and composition implementation and the questions have been formed. Thereupon, an item repository consisting of 81 statements on the scale has been formed and it has been scrutinised by specialist lecturer in their field. A Turkish Teacher's advices about spelling rules and three specialists' advice about all items have been asked. After their advices, the scale has been reconsidered by the researches and a draft as 64-item form has been created. The first implementation of the 64-item form has been done on 136 teachers and 127 preservice teachers and validity and reliability analysis have been carried out. The items whose factor load is under 0.40 as a result of statistical analysis have been left out of the scale. As the analysis result, the scale has determined as 33-item and Cronbach alpha reliability coefficient has been calculated as 0.91.

Ultimate scale consisting of 33 items has been carried out with a total of 263 teachers and 285 preservice teachers by taking necessary permissions. The data obtained from the implementations have been analysed; exploratory factor analysis has been carried out in order to reveal factor structure of the scale. To carry out exploratory factor analysis, conformity of data to factor analysis has been evaluated by the help of Kaiser-Meyer-Olkin (KMO) test and Bartlett's Sphericity test. Calculated KMO; 0.91 and Bartlett's test at level $p < 0.05$ were found significant. The result of factor analysis, it has been seen that the scale has three sub-dimensions. These have been named as 'Individual Development', 'Education received' and 'Sparing time'. Alpha reliability coefficient of the first sub-dimension was calculated as 0.90, the second one as 0.87 and the third as 0.70. The result of all analysis indicated that the scale is valid and reliable.

3.2. Data analysis and interpretation

In this research, 'The effect of University Education on Lifelong Learning Tendency' scale developed by researchers has been used. The data collection tool is five-point Likert scale. The points of the scale are ranging from 5 to 1, 'Strongly Disagree' (1), 'Disagree' (2), 'Undecided' (3), 'Agree' (4), 'Strongly Agree' (5). Accordingly, the lowest score that a teacher can get from five response categories is '33' and the highest is '165'. Level of measurement is 1–1.80 'Strongly Disagree', 1.81–2.60 'Disagree', 2.61–3.40 'Undecided', 3.41–4.20 'Agree', 4.21–5.00 'Strongly Agree'. Standard Deviations and total averages have been used as criterion in the scale used to determine the effect of university education on lifelong learning tendency. Independent t-test has been used to compare lifelong learning tendency of teachers to that of preservice teachers, to compare the score of teachers to that of preservice teachers by 'Sex' variable and 'Grade' variable of preservice teachers, because the data indicate normal distribution at the end of Kolmogorov Test ($p > 0.05$), ANOVA test has been used to analyse teachers by age, branch and professional seniority variables, preservice teachers related to department variable.

3.3. Findings and interpretation

As it can be seen in Table 3, effect of university education on lifelong learning tendencies of elementary school teachers is at level 'Agree' ($\bar{X} : 3.63$), as examined in terms of sub-dimensions; lifelong learning tendencies related to 'Individual development' is at level 'Undecided' ($\bar{X} : 3,23$), 'Education received' is at level 'Agree' and 'Sparing time' is at level 'Agree'.

Descriptive statistics on level of effect of university education on lifelong tendency of preservice teachers were shown in Table 4 below:

Table 4. Descriptive statistics on the level of effects of university education on lifelong learning tendencies of preservice teachers

Sub dimensions	N	Min.	Max.	\bar{X}	SS
1. Individual development	285	1.00	4.75	3.01	0.73
2. Education received	285	1.08	5.00	3.95	0.65
3. Sparing time	285	1.00	5.00	3.33	0.77
Total	285	1.97	4.73	3.42	0.52

When examined Table 4, it can be seen that effect of university education on lifelong learning tendencies of preservice teachers is Agree at level ($\bar{X} : 3.42$), as examined in terms of sub-dimensions, 'Individual development' is 'Undecided' at level ($\bar{X} : 3.01$), 'Education received' is 'Agree' at level ($\bar{X} : 3.95$) and finally 'Sparing time' is 'Undecided' at level ($\bar{X} : 3.33$).

Do the levels of effect of university education on lifelong learning tendencies vary by being teacher and preservice teacher?

Independent t-test has been performed to determine whether there is significant difference between teachers and preservice teachers for level of effect of university education on lifelong learning tendencies of them. The findings can be seen in Table 5 below.

Table 5. Independent t-test results on level of effect of university education on lifelong learning tendencies according to being teacher and preservice teacher

Lifelong learning tendency		N	\bar{X}	Sd.	df	t	p
1. Individual development	Teacher	263	3.23	0.72	546	3.459	0.001
	Preservice teacher	285	3.01	0.73			
2. Education received	Teacher	263	4.21	0.43	546	4.796	0.000
	Preservice teacher	285	3.95	0.65			
3. Sparing time	Teacher	263	3.46	0.71	546	1.967	0.050
	Preservice teacher	285	3.33	0.77			
Total	Teacher	263	3.63	0.49	546	4.826	0.000
	Preservice teacher	285	3.42	0.52			

$p > 0.05$

According to the findings from Table 5, when scrutinised the effect of university education on lifelong learning tendencies of teachers and preservice teachers on the basis of total, it can be seen that there is significant difference at level 'Agree' (\bar{X} : 3.63) in favour of teachers. As examined in terms of sub-dimensions, it can be seen that there is significant difference on behalf of teachers in 'Individual development' and 'education received' sub-dimensions and it can be seen that there is no significant difference in 'sparing time' sub-dimension.

- Is there a significant difference in the effect of university education on lifelong learning of teachers by sex, age, seniority and branch variables of them?

Analysis result to determine if the effects of university education on lifelong learning tendencies of teachers vary by sex, age and professional seniority and branch variables is below:

Table 6. Independent t-test results on comparison of the effect of university education on lifelong learning tendency by sex variable

Sub dimensions	Sex	N	\bar{X}	Sd	df	t	P
1. Individual development	Female	129	3.32	0.75	260	2.166	0.031
	Male	133	3.13	0.68			
2. Education received	Female	129	4.23	0.43	260	1.801	0.073
	Male	133	4.13	0.42			
3. Sparing time	Female	129	3.42	0.71	260	-0.816	0.415
	Male	133	3.49	0.72			
Total	Female	129	3.69	0.51	260	2.028	0.044
	Male	133	3.57	0.46			

$p > 0.05$

According to the findings in Table 6, when scrutinised the effect of university education on lifelong learning of elementary school teachers by 'sex' variable, it is determined that there is significant difference at level 'Agree' (\bar{X} : 3.69) on behalf of female. It is seen that there is significant difference between 'Individual development' sub-dimension and 'sex' variable on behalf of female and there is no significant difference in 'education received' and 'sparing time' sub-dimensions.

Analysis of variance for effect of university education on lifelong learning tendency by age, professional seniority and branch variables results can be seen in Table 7 below:

Table 7. Results of arithmetic mean, standard deviation and one-way ANOVA for the effect of university education on lifelong learning tendency of teachers by age variable

Sub dimensions	Age	N	\bar{X}	Sd
Total	20–24	42	3.70	0.45
	25–29	127	3.64	0.44
	30–34	56	3.55	0.54
	35–39	24	3.63	0.59
	+40	14	3.62	0.60
Total		263	3.62	0.48

Source	Sum of squares	Sd	Mean square	f	p
Between-Groups	0.619	4	0.155	0.648	0.629
Within-Groups	61.612	258	0.239		
Total	62.231	262			

$p > 0.05$

As it seen in Table 7, it is observed that effect of university education on lifelong learning tendency by age variable is not having statistically significant difference.

When scrutinised the Table 8, university education on lifelong learning tendencies of teachers by professional seniority variable doesn't show significant difference.

Table 8. Results of arithmetic mean, standard deviation and one-way ANOVA for effect of university education on lifelong learning tendencies of teachers by Professional seniority variable

Sub dimensions	Professional seniority	N	\bar{X}	Sd
Total	1–4 year	169	3.66	0.45
	5–9	55	3.57	0.54
	10–14	20	3.50	0.35
	+15	19	3.63	0.70
Total		263	3.63	0.49

Source	Sum of squares	Sd	Mean square	f	P
Between-Groups	5.451	21	0.260		
Within-Groups	56.780	241	0.236	1.102	0.347
Total	62.231	262			

$p > 0.05$

Results of variance analysis conducted to determine for if university education on lifelong learning tendencies of teachers varies by branch variable can be seen in Table 9 below:

Table 9. Results of arithmetic mean, standard deviation and one-way ANOVA for lifelong learning tendencies of teachers by branch variable

Sub dimensions	Branch	N	\bar{X}	SS
Total	Science teaching	33	3.73	0.44
	Social science teaching	18	3.64	0.58
	Mathematics teaching	32	3.53	0.38
	Primary school teaching	44	3.61	0.40
	Turkish teaching	34	3.51	0.54
	Psychological counselling and guidance	12	3.59	0.62
	Religious culture teaching	13	3.77	0.42
	Preschool teaching	9	3.81	0.47

English teaching	22	3.66	0.57
Painting teaching	7	3.89	0.54
Music teaching	8	3.86	0.40
Physical education teaching	14	3.25	0.49
Technology design teaching	8	3.72	0.56
Other	9	3.80	0.41
Total	263	3.63	0.49

Source	Sum of squares	df	Mean square	f	P
Between-Groups	4.898	13	0.377		
Within-Groups	57.334	249	0.230	1.636	0.076
Total	62.231	262			

$p > 0.05$

According to the findings in Table 9, it is observed that levels of university education on lifelong learning tendency by 'branch' variable don't show significant difference.

Is there a significant difference in effect of university education on lifelong learning tendencies by sex, grade and department of preservice teachers?

Result of analysis on if lifelong learning tendencies of preservice teachers vary by sex, department and grade variable can be seen in Table 10 below:

Table 10. Independent t-test results for levels of lifelong learning tendencies of preservice teachers by sex variable

Sub dimensions	Sex	N	\bar{X}	Sd	df	t	p
1. Individual development	Female	154	2.98	0.71	283	-0.770	0.442
	Male	131	3.05	0.76			
2. Education received	Female	154	4.02	0.57	283	2.040	0.042
	Male	131	3.87	0.73			
3. Sparing time	Female	154	3.33	0.73	283	0.163	0.871
	Male	131	3.32	0.82			
Total	Female	154	3.44	0.47	283	2.028	0.617
	Male	131	3.40	0.58			

$p > 0.05$

In Table 10, levels of effect of university education on lifelong learning tendencies of preservice teachers do not vary statistically significant difference by 'sex' variable, when sub dimensions are observed, there is significant difference at level 'Agree' (\bar{X} : 4.02) on behalf of female in sub dimension on 'education received' but there is no significant difference in 'individual development' and 'sparing time'.

Results of variance analysis on level of effect of university education on lifelong learning tendencies of preservice teachers by 'department' variable can be seen in Table 11 below:

Table 11. Results of ANOVA on levels of effect of university education on lifelong learning tendencies of preservice teachers by 'department' variable

Sub dimensions	Branch	N	\bar{X}	SS
Total	Preschool teaching	87	3.46	0.53
	Science teaching	70	3.49	0.48
	Elementary school teaching	86	3.31	0.46
	Social science teaching	42	3.46	0.66
Total		285	3.42	0.52

Source	Sum of squares	df	Mean square	f	P
Between-Groups	1.658	3	0.553		0.107
Within-Groups	75.817	281	0.270	2.049	
Total	77.475	284			

$p > 0.05$

According to the findings in Table 11, it is observed that level of effect of university education on lifelong learning tendencies of preservice teachers by 'department' variable do not vary statistically significant difference.

Result of conducted analysis to determine if levels of effect of university education on lifelong learning tendencies of preservice teachers vary by 'Grade' variable can be seen in Table 12.

Table 12. Result of independent t-test on levels of effect of university education on lifelong learning tendencies of preservice teachers by 'Grade' variable

Sub dimensions	Sex	N	\bar{X}	Sd	df	t	p
1. Individual development	3rd Grade	144	3.03	0.74	283	0.478	0.633
	4th Grade	141	2.99	0.72			
2. Education received	3rd Grade	144	3.93	0.61	283	-0.519	0.604
	4th Grade	141	3.97	0.69			
3. Sparing time	3rd Grade	144	3.27	0.76	283	-1.410	0.160
	4th Grade	141	3.39	0.77			
Total	3rd Grade	144	3.42	0.53	283	-0.181	0.857
	4th Grade	141	3.43	0.51			

$p > 0.05$

According to given findings in Table 12, levels of effect of university education on lifelong learning tendencies of preservice teachers by 'Grade' variable do not vary statistically significant difference.

4. Discussion and conclusion

Conclusions reached in the light of data analysis on level of effect of university education on lifelong learning tendencies of teachers and preservice teachers and findings obtained are below. In addition, suggestions to contribute to researchers have been offered.

It is concluded that effect of university education on lifelong learning tendencies of all participating teachers serving in elementary and secondary schools is at level 'Agree'. Although the conclusion is not high level, effect of university education on lifelong learning tendencies level is increasing positively. When literature is scrutinised, it can be seen that there are other researches in accordance with the result of the research (Ayra & Kosterelioglu, 2015; Demirel et al., 2016; Karacaoglu, 2012; Ozciftci & Cakir, 2015; Sahin & Arcagok, 2014). The findings are reflecting the requirements of information and technology era in which we live because nowadays, it is understood that the schools should be the institutions integrated with society with the importance having been given to lifelong

learning, and schools have been considered as the most important source for learning in respect to the effect of the concept of learning and interactive learning. Accordingly, those who are leading of the most influenced by this situation are teachers who should improve themselves and their specialised knowledge, so that they would move with the times (Demirel et al., 2016).

When effect of university education on lifelong learning tendencies of preservice teachers' level is scrutinised, it is determined that their tendencies are at level 'Agree' but a little more than those of 'Undecided'. This value indicates that although it is not high, its effect of university education on lifelong learning tendencies levels is increasing for preservice teachers as well. Findings are corroborated with research studies conducted before (Arsal, 2011; Demirel & Akkoyunlu, 2010; Gencil, 2013; Karakus, 2013; Kuzu, Demir & Canpolat, 2015; Sahin, Akbasli & Yelken Yanpar, 2010). The result is promising for diffusion of lifelong learning. In general, it can be said that teachers generate effect of university education on lifelong learning tendencies levels in their undergraduate years. According to Selvi (2011), raising preservice teachers as an individual having tendency to lifelong learning when they are undergraduate makes them lifelong learner. Therewithal, it enables preservice teachers to educate students in lifelong learning. Some studies in the literature show that lifelong learning tendencies of preservice teachers are inadequate (Coskun, 2009; Coskun & Demirel, 2012). Researchers conducted the research studies think that it is because of that preservice teachers are unwilling to learn lifelong and participate in related activities and they have difficulty in maintaining lifelong learning activities and have low instinct of curiosity.

The results of the analyses, to investigate if there is difference on effects on lifelong learning trends between teachers and preservice teachers, demonstrate that the level of effects of the university education on lifelong learning tendency is higher for teachers than those of the preservice teachers. To adapt the rapidly changing and evolving world, teachers should be aware of necessity to follow the developments and the changes in their expertise, and this is also a necessity in this information era. Teachers, aimed to train lifelong learning individuals, have to be lifelong learners themselves beforehand, and it is emphasised in studies in the literature (Breivik, 2000; Erdem, Yilmaz & Akkoyunlu, 2008; Selvi, 2011). Besides, the reason of the effects of the university education on lifelong learning tendency is higher in teachers than those of the preservice teachers can be related to the acquisitions in the period after the university education. The resources that come with the professional life like in-service trainings, public education courses, opportunities obtained by money income might have led to a higher lifelong learning tendency level. Since preservice teachers have a continuing education period and the expectancies from the university education is not satisfactory, this can be considered as a negative factor compared to the teachers in terms of lifelong learning tendency level.

The results of analyses if levels of effect of university education on lifelong learning tendencies of teachers vary by sex, age, seniority and branch variables show that sex variable generally has a significant difference on behalf of females for teachers. Also, the evaluation of the sub dimensions displayed that results of females have a significant difference, which correlates the studies of Konokman and Yelken (2014) and Sahin and Arcagok (2014). University education on lifelong learning tendency by age, seniority and branch indicates no significant difference for teachers; also, sex, department and grade level exhibit no significant difference for preservice teachers in the results of statistical analyses. The result of gender variable correlates with the study of Izi and Koc (2012); while this result contradicts with the study of Coskun and Demirel (2012) which is performed on the university students.

From the overall perspective, it is observed that; the sub dimension related to 'received education' displays higher results for the teachers than those of the preservice teachers regarding the effect of the university education on lifelong learning tendency levels. Other than the prior variable, the comparison between teachers and candidate teachers show no significant difference concerning the effect of the university education on lifelong learning tendency levels. It is highly important that universities should support the lifelong learning related studies to increase quality of the education

and the professional qualifications of the teachers (Saglam, Ozudogru & Ciray, 2011). The achievement of this goal depended on the professors' development of both research and pedagogic qualities along with the whole improvement of the university. From now on, the lecturers should be trained to be competent of lifelong learning, so that they pass these qualities to the undergraduate students (Soran, Akkoyunlu & Ve Kavak, 2006). Lifelong learning is an essential skill that the individuals should acquire in the information society (Demiralay & Karadeniz, 2008). Because of this, the education of the future teachers should be provided carefully, and these teachers should be trained as a model of lifelong learning to the students (Budak, 2009).

On the basis of the result of the study, the following recommendations were made:

1. It should be popularised that lifelong learning should be given as a characteristic in the universities in our era.
2. In these lectures, the needs to enhance lifelong learning can be listed as; the lecturing with quality of increasing the university education on lifelong learning tendency, organisation of related activities and adaptation of the current educational system in perspective of lifelong learning.
3. Supportive environment should be provided for lifelong learning opportunities and necessary regulation and activities should be provided for accessibility to continuing education centres.
4. The studies conducted in this field can be scrutinised through teachers and preservice teachers.

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