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THE EFFECT OF LIFELONG LEARNING ON INDIVIDUAL INNOVATIVENESS

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ABSTRACT

The purpose of this research is to examine the effects of secondary school teachers' lifelong learning levels on their individual innovativeness. The research was conducted using the relational survey model, one of the quantitative research methods. The sample of the study consists of a total of 364 teachers, 270 female and 94 male teachers working in public secondary schools in the Küçükçekmece district of İstanbul. "Lifelong Learning Scale (LLI)" and "Innovativeness Scale (IS)" were used as data collection tools. A ready-made statistical package program was used in the analysis of the data. As a result of the research, teachers' lifelong learning and individual innovativeness levels were found to be high. While the lifelong learning levels of teachers do not differ according to the variables of gender, age, education level, and total working time in the profession, they differ significantly according to the branch variable. While the individual innovativeness levels of teachers do not differ significantly according to gender, age, branch, and total working time in the profession, they differ significantly according to the education level variable. A positive and significant relationship was found between teachers' lifelong learning and their individual innovativeness levels. Lifelong learning level explains individual innovativeness level by 23%.

Keywords: Lifelong learning, individual innovativeness, teacher.

INTRODUCTION

In the current age, advances in science and technology make it necessary for individuals and societies to update their existing knowledge and equip themselves with new information to keep up with the current time (Celep, 2003). In the digitalized world, individuals must constantly learn to develop and change, adopt lifelong learning, and make it a habit; for this, they must knowingly fulfill their responsibilities, be comfortable in their personal areas, and be able to communicate easily with the people around them. They should be in a structure that can access, analyze and apply information in all kinds of different forms and features, diagnose and perceive problems correctly and find different solutions, not only develop the information but also use it correctly in the right place and enlighten their surroundings on this issue (Partnership for 21st Century Skills, 2003; cited in Kılıçer, 2011).

Information is the main source everywhere, from the economy to other social issues (Kutlu, 2000). In a world where borders between societies are being lifted, distances are getting shorter, turning into a more digital platform day by day. It has become necessary to spread information at the same speed to adapt to rapid technological developments and changes. For this reason, many developed countries have entered the race to become an information society and gain economic superiority. In this context, formal education is not sufficient to evolve into an information society; acquiring knowledge, including non-formal education and all kinds of original learning, is gaining importance (Urhan, 2020).

Another important point is that the lifelong learning skills of individuals contribute to the determination and continuity that they will show in renewing themselves and creating their innovative perspectives by adapting to modern times (Budak, 2009). Making lifelong education/learning activities widespread for society and providing equal opportunities and opportunities for everyone is essential for personal, social, economic, and employability. In addition, it is important to reconsider training programs, especially vocational education, on a field/person-based basis to give importance to teacher education and increase knowledge and skills in this way. The integration of formal and informal education is important for increasing the quality of education (Urhan, 2020).

Demirel (2013: 210) defines lifelong learning as "the understanding that aims to provide the necessary education for individuals as soon as they need it and to follow its conditions". The European Union considers activities that aim to develop the knowledge, abilities, and competencies acquired during the life of individuals, individually, socially, culturally or professionally, under the title of lifelong learning (European Commission, 2002). On the other hand, Aksoy (2013: 26) defines it as the activities that people carry out throughout their lives to increase their competencies in line with their interests and wishes.

The tools and methods used in working environments are changing day by day. This situation requires constant updating of information. Individual innovativeness is related to the individual's relevant and positive attitude towards innovation (Choi, 2004:397). At the core of the innovation, the phenomenon is the individual (Tabak, Erkuş, & Meydan, 2010), and individual innovativeness is a quality possessed at different levels (Midgley &

Dowling, 1978). When we consider innovation as a process, individual innovativeness comes to the fore; it requires the individual to apply the desired desire and behavior in an active way (Scott & Bruce, 1994). Individual innovativeness is also defined as finding different and effective solutions by approaching situations and problems with different perspectives. The faster adoption and implementation of innovations with the ability to make a difference is a reflection of the individual's constructive attitudes and behaviors towards innovation (Kılıçer & Odabaşı, 2010: 151).

Employees can increase their knowledge, skills, and abilities day by day by adopting lifelong learning. Studies have found that the concept of lifelong learning is associated with many positive organizational attitudes and behaviors. Teachers' lifelong learning levels have a positive relationship idealism (Taş, 2020), life and 21st-century skills (Korkmaz, 2019), happiness levels (Kabal, 2019), mobile learning attitudes (Bozkan, 2018), self-directed learning levels (Arslan, 2019), cultural capital adequacy (Aydın, 2020), information literacy (Özgür, 2016), digital literacy levels Boyacı, 2019) and professional self-efficacy (Ayra & Kösterelioğlu, 2015). Within the framework of the relevant literature, this study aims to examine the effect of secondary school teachers' lifelong learning levels on their individual innovativeness. In line with the purpose of the research, answers to the following questions were sought:

- 1) What are the lifelong learning and individual innovativeness levels of the teachers participating in the research?
- 2) Do the lifelong learning levels of the teachers participating in the research differ significantly according to their age, gender, branch, educational status, and total working time in the profession?
- 3) Do the individual innovativeness levels of the teachers participating in the research differ significantly according to their age, branch, gender, educational status, and total working time in the profession?
- 5) Is there a significant relationship between teachers' lifelong learning levels and individual innovativeness?
- 6) Do teachers' lifelong learning levels affect their individual innovativeness?.

METHOD

Research Model

This study was conducted using the relational survey model, one of the quantitative research methods. The relational screening model detects the degree of differentiation between two or more variables (Karasar, 2012). Relational studies are studies that are effective in revealing the relations of variables with each other, determining the rates of these relations, and providing information that will shed light on high-level research on these relations (Büyüköztürk et al., 2013).

Universe and Sample

The universe of the research consisted of 2,194 branch teachers working in public secondary schools in the Küçükçekmece district of Istanbul in the 2020-2021 academic year (MEB, 2019). Three hundred sixty-four

volunteer teachers selected by convenience sampling method from the research universe are included in the research sample. Personal information of the participants in the sample is given in Table 1.

Table 1. Participants' Personal Variables

Baseline characteristic	Group	N	%
Gender	Female	270	74,2
	Male	94	25,8
Age	21-30 years	130	35,7
	31-40 years	174	47,8
	41 years and above	60	16,5
Education level	Associate degree	10	69,8
	Bachelor	305	30,2
	Master and PhD	49	
Tenure	Less than 1 year	32	8,8
	1-5 years	94	25,8
	6-10 years	122	33,5
	11-15 years	58	15,9
	16-20 years	33	9,1
	21 years and above	25	6,9
Branch	Applied Courses	28	7.7
	Information Technologies	30	8.2
	Religious Culture And Moral	22	6.0
	Science	52	14.3
	English	47	12.9
	Maths	41	11.3
	School Counselling	23	6.3
	Social Studies	36	9.9
	Technology And Design	17	4.7
Turkish	68	18.7	

Data Collection Tools

Personal information form, Lifelong Learning Scale, and Innovation Scale were used as data collection tools in the research.

Wielkiewicz and Meuwissen developed the Lifelong Learning Scale (2014), Engin et al. (2017) adapted it into Turkish. The Cronbach Alpha reliability coefficient for the overall scale is 0.93. The items in the scale are in five-point Likert type: 1: Never, 2: Rarely, 3: Sometimes, 4: Often, 5: Always.

The Innovativeness Scale was developed by Hurt, Joseph, and Cook in 1977 and adapted into Turkish by Kılıçer and Odabaşı (2010). The internal consistency coefficient of the 20-item scale is 0.82. The scale consists of 4 dimensions (resistance to change, opinion leadership, openness to experience, risk-taking) in a five-point Likert type ranging from 1: strongly disagree to 5: strongly agree (Kılıçer & Odabaşı, 2010).

Data Collection Process

All procedures performed in this study involving human participants were by the ethical standards of the institutional research committee. Before the research started, the researcher applied the institutional ethics

committee of Istanbul Sabahattin Zaim University for ethical approval. The ethical committee approval date is February 11, 2021, and the number of the approval document is E-20292139-050.01.04-2029.

Data Analysis

The normality test results of both scales used in the study are given in Table 2 and Table 3.

Table 2. Lifelong Learning Scale Normality Test Results

	N	Kurtosis	Skewness	p
Lifelong Learning	364	0.08	-0.53	0.01*

Table 3. Individual Innovativeness Scale Normality Test Results

	N	Kurtosis	Skewness
Resistance to Change	364	-0.14	0.40
Opinion Leadership	364	0.52	-0.57
Openness to Experience	364	0.04*	0.05*
Risk Taking	364	-0.23	-0.36
Individual Innovativeness (Total)	364	-0.48*	-0.23*

*Logarithmic transformation has been done.

Research data were analyzed with the SPSS (Statistical Package Program for Social Science) 21.0 program. The skewness and kurtosis coefficients were used to measure the normality of the scale scores. According to Büyüköztürk (2011), it can be expressed as "the skewness and kurtosis coefficients used in the normal distribution feature of the scores obtained from a continuous variable remain within ± 1 limits, and the scores do not show a significant deviation from the normal distribution". After the logarithmic transformation of the scores that did not show normal distribution. The scores were compared according to gender from the independent two-sample t-test; the ANOVA test compared the total working time in the profession, age, education level, and branch variables. LSD post hoc test was used to determine the groups with significant differentiation. Pearson Correlation was used to analyze the relationship between lifelong learning scores and individual innovativeness scores. Regression analysis was used to examine the effect (prediction) of lifelong learning on individual innovativeness. The analysis's confidence interval was determined to be 95% ($p < 0.05$).

FINDINGS

The data relating to determining the lifelong learning levels of the teachers who constitute the research sample are given in Table 4. When the data in the table are examined, the "Lifelong Learning" score of the teachers was found to be 3.96 ± 0.60 , and considering the lowest (1) and highest (5) points that can be obtained, it is seen that the scores are in the "often" range and at a high level.

Table 4. Lifelong Learning Scale Normality Test Results

	N	Mean	ss	Level
Lifelong Learning	364	3.96	0.60	High

While the lifelong learning levels of the teachers did not differ according to the variables of gender, age, education level, and total working time in the profession ($p>0.05$), it was found that they differed significantly according to the branch variable ($F=3.51$; $p<0.05$). Lifelong learning scores of teachers in information technologies, science, social studies, Turkish, technology and design, religious culture, and ethics branches are higher than those of teachers in mathematics and applied courses (painting, music, physical education, and sports) (Table 5).

Table 5. ANOVA Test Results for Teachers' Lifelong Learning Levels and Subject

	Subject	N	\bar{X}	Ss	F	p	Significant Difference
Lifelong Learning	A-Applied Courses	28	3.66	0.54	3.51	0.000	B,C,D,H,I,K>A,F
	B-Information Technologies	30	4.13	0.57			
	C-Religious Culture And Moral	22	4.00	0.49			
	D-Science	52	4.12	0.48			
	E-English	47	3.92	0.54			
	F-Maths	41	3.66	0.75			
	G-School Conselling	23	3.91	0.62			
	H-Social Studies	36	3.98	0.63			
	I-Technology And Design	17	4.31	0.60			
	K-Turkish	68	4.01	0.58			

When the sub-dimension scores were examined, the resistance to change (2.55 ± 0.58) score was in the range of "disagree" and at a low level; opinion leadership (3.81 ± 0.72), openness to experience (4.08 ± 0.63), and risk-taking (3.60 ± 0.94) scores were in the "agree" range and at high levels (Table 6).

Table 6. Teachers' Individual Innovativeness (General) and Sub-Dimensional Levels

Sub-Dimension	N	Mean	Ss	Level
Resistance to Change	364	2.55	0.85	Low
Opinion Leadership	364	3.81	0.72	High
Openness to Experience	364	4.08	0.63	High
Risk Taking	364	3.60	0.94	High
Individual Innovativeness (Total)	364	86.09	7.60	High

While the individual innovativeness levels of the teachers did not differ significantly according to the subject variable ($p>0.05$), it was found that it differed significantly according to the variables of gender, age, education level, and total working time in the profession. Risk-taking levels of teachers differ significantly in favor of male teachers ($p<0.05$) according to their gender (Table 7).

Table 7. T-Test Results of Teachers' Differences in Individual Innovativeness and Sub-Dimensional Levels by Gender

Sub-Dimension	Gender	n	\bar{X}	SS	t	p
Resistance to Change	Female	270	2,54	0,85	-0,07	0,942
	Male	94	2,55	0,87		
Opinion Leadership	Female	270	3,79	0,73	-1,09	0,275
	Male	94	3,88	0,70		
Openness to Experience	Female	270	4,09	0,62	0,63	0,530
	Male	94	4,04	0,67		
Risk Taking	Female	270	3,54	0,96	-2,00	0,046
	Male	94	3,77	0,84		
Individual Innovativeness (Total)	Female	270	85,93	7,62	-0,68	0,498
	Male	94	86,57	7,54		

While teachers' individual innovativeness levels did not differ significantly according to age in the dimensions of resistance to change, opinion leadership, and risk-taking ($p>0.05$); found to differ in the dimension of openness to experience ($F=3.85$; $p<0.05$). Openness to experience scores of teachers under the age of 40 was higher than those of teachers aged 41 and over (Table 8).

Table 8. ANOVA Test Results for the Differentiation of Teachers' Individual Innovativeness and Sub-Dimensional Levels by Age

Sub-Dimension	Age Groups	n	\bar{X}	SS	F	p	Significant Difference
Resistance to Change	A. 21-30 years	130	2,54	0,83	2,75	0,065	
	B. 31-40 years	174	2,63	0,88			
	C. 41 years and above	60	2,33	0,79			
Opinion Leadership	A. 21-30 years	130	3,85	0,66	0,96	0,384	
	B. 31-40 years	174	3,82	0,73			
	C. 41 years and above	60	3,70	0,82			
Openness to Experience	A. 21-30 years	130	4,17	0,51	3,85	0,022	A,B>C
	B. 31-40 years	174	4,08	0,63			
	C. 41 years and above	60	3,86	0,83			
Risk Taking	A. 21-30 years	130	3,62	0,94	0,75	0,474	
	B. 31-40 years	174	3,64	0,90			
	C. 41 years and above	60	3,47	1,03			
Individual Innovativeness (Total)	A. 21-30 years	130	86,78	6,67	1,50	0,224	
	B. 31-40 years	174	86,17	7,54			
	C. 41 years and above	60	84,37	9,32			

While the individual innovativeness levels of the teachers did not differ according to their education levels in the dimensions of openness to experience and risk-taking ($p>0.05$); individual innovativeness (general), resistance to change and opinion leadership scores were found to differ according to education level ($F=3.73$; $p<0.05$). According to the LSD post hoc test conducted to determine the groups with differentiation, the individual innovativeness (general), resistance to change and opinion leadership scores of the postgraduate teachers, it was significantly higher than teachers with associate and undergraduate degrees (Table 9).

Table 9. ANOVA Test Results Regarding the Differences of Teachers' Individual Innovativeness and Sub-Dimensional Levels According to Education Levels

Sub-Dimension	Education Level	n	\bar{X}	SS	F	p	Significant Difference
Resistance to Change	A- Associate degree	10	3,19	1,15	5,33	0,005	A>B,C
	B- Bachelor	305	2,57	0,84			
	C- Master and PhD	49	2,29	0,81			
Opinion Leadership	A- Associate degree	10	3,82	1,01	3,73	0,025	C>A,B
	B- Bachelor	305	3,77	0,72			
	C- Master and PhD	49	4,07	0,63			
Openness to Experience	A- Associate degree	10	4,06	1,05	0,84	0,434	
	B- Bachelor	305	4,06	0,64			
	C- Master and PhD	49	4,20	0,49			
Risk Taking	A- Associate degree	10	3,85	1,03	2,83	0,060	
	B- Bachelor	305	3,55	0,95			
	C- Master and PhD	49	3,87	0,78			
Individual Innovativeness (Total)	A- Associate degree	10	85,91	11,34	3,26	0,040	C>A,B
	B- Bachelor	305	85,67	7,60			
	C- Master and PhD	49	88,78	6,18			

While the scores of teachers' individual innovativeness (general), resistance to change, opinion leadership, and risk-taking do not differ according to their total working time in the profession, the resistance to change scores differ significantly ($F=2.50$; $p<0.05$). According to the LSD post hoc test conducted to identify the groups with differentiation, it was found that the openness to experience scores of the teachers with a total working time of 16-20 years in the profession was significantly higher than the teachers with a working period of 5 years or less in the profession (Table 10).

Table 10. ANOVA Test Results Regarding the Differentiation of Teachers' Levels of Individual Innovativeness and Sub-Dimensions by Tenure

Sub-Dimension	Tenure	n	\bar{X}	SS	F	p	Significant Difference
Resistance to Change	A. Less than 1 year	32	2,43	0,83	0,88	0,497	
	B. 1-5 years	94	2,59	0,84			
	C. 6-10 years	122	2,56	0,88			
	D. 11-15 years	58	2,68	0,69			
	E. 16-20 years	33	2,42	0,99			
	F. 21 years and above	25	2,35	0,97			
Opinion Leadership	A. Less than 1 year	32	3,74	0,84	0,97	0,435	
	B. 1-5 years	94	3,80	0,64			
	C. 6-10 years	122	3,84	0,68			
	D. 11-15 years	58	3,72	0,75			
	E. 16-20 years	33	4,02	0,75			
	F. 21 years and above	25	3,71	0,88			
Openness to Experience	A. Less than 1 year	32	3,94	0,69	2,50	0,030	E>A,B
	B. 1-5 years	94	4,08	0,56			
	C. 6-10 years	122	4,16	0,58			
	D. 11-15 years	58	3,90	0,72			
	E. 16-20 years	33	4,27	0,54			
	F. 21 years and above	25	3,96	0,83			
Risk Taking	A. Less than 1 year	32	3,77	0,94	0,79	0,560	
	B. 1-5 years	94	3,57	0,91			
	C. 6-10 years	122	3,65	0,91			
	D. 11-15 years	58	3,41	0,86			
	E. 16-20 years	33	3,68	1,12			
	F. 21 years and above	25	3,58	1,05			
Individual Innovativeness (Total)	A. Less than 1 year	32	85,51	8,41	1,94	0,087	
	B. 1-5 years	94	85,98	6,53			
	C. 6-10 years	122	86,77	7,21			
	D. 11-15 years	58	84,27	7,98			
	E. 16-20 years	33	88,40	8,26			
	F. 21 years and above	25	85,18	9,63			

As a result of the correlation analysis, lifelong learning and opinion leadership ($r=0.48$; $p<0.05$), openness to experience ($r=0.48$; $p<0.05$), risk-taking ($r=0.31$; $p<0.05$) sub-dimensions and general individual innovative behavior. A significant positive correlation was found between the score ($r=0.53$; $p<0.05$). A negative significant ($r=-0.14$; $p<0.05$) relationship was found between lifelong learning and the sub-dimension of resistance to change (Table 11).

Table 11. The Results of Correlation Analysis of Lifelong Learning Levels and Individual Innovativeness and Sub-Dimensional Levels

Variable	2	3	4	5	6
1- Lifelong Learning	-0.14**	0.48**	0.48**	0.31**	0.53**
2- Resistance to Change	1	-0.02	-0.11*	0.02	-0.18**
3- Opinion Leadership		1	0,71**	0.49**	0.88**
4- Openness to Experience			1	0.57**	0.90**
5- Risk Taking				1	0.71**
6- Individual Innovativeness (Total)					1

Teachers' level of lifelong learning and resistance to change, one of the sub-dimensions of individual possessiveness, was 2% ($F(1; 362)=7.713$; $p<0.05$); opinion leadership by 23% ($F(1; 362)=109.72$; $p<0.05$); openness to experience 23% ($F(1; 362)=111.27$; $p<0.05$); risk taking 9% ($F(1; 362)=37.48$; $p<0.05$); The model of the effect on the total score of individual innovativeness at the rate of 27% is suitable ($F(1; 362)=138.09$; $p<0.05$) (Table 12).

Table 12. Regression Analysis Results on the Effect of Lifelong Learning on Individual Innovativeness and Its Sub-Dimensions

Independent Variable	Dependent Variable	B	SHB	β	t	p
Lifelong Learning	Constant	3,36	0,296		11,339	0,000
	Resistance to Change	-0,205	0,074	-0,144	-2,777	0,006
R ² =0,021	$\Delta R^2=0,018$	F(1; 362)=7,713		p=0,006		
Lifelong Learning	Constant	1,518	0,221		6,855	0,000
	Opinion Leadership	0,579	0,055	0,482	10,475	0,000
R ² =0,233	$\Delta R^2=0,230$	F(1; 362)=109,725		p=0,000		
Lifelong Learning	Constant	-1,632	0,099		-16,535	0,000
	Openness to Experience	0,260	0,025	0,485	10,549	0,000
R ² =0,235	$\Delta R^2=0,233$	F(1; 362)=111,273		p=0,006		
Lifelong Learning	Constant	1,707	0,313		5,457	0,000
	Risk Taking	0,478	0,078	0,306	6,122	0,000
R ² =0,094	$\Delta R^2=0,091$	F(1; 362)=37,481		p=0,000		
Lifelong Learning	Constant	-7,306	0,296		-24,656	0,000
	Individual Innovativeness (Total)	0,869	0,074	0,525	11,751	0,000
R ² =0,276	$\Delta R^2=0,274$	F(1; 362)=138,093		p=0,000		

CONCLUSION and DISCUSSION

Individuals who can acquire the information needed for a solution in case of a problem, apply them, and put new ones on top of this information are lifelong learners (Polat & Odabaş, 2008). In the study, teachers' lifelong learning levels were found to be "high", similar to many studies in the literature (Çam & Üstün, 2016; Ayra & Kösterelioğlu, 2015; Ayaz & Ünal, 2016; Kılıç, 2015; Özçiftçi & Çakır, 2015; İleri, 2017; Bozkan, 2018; Kabal, 2019; Korkmaz, 2019; Gür Erdoğan, 2014; Yaman & Yazar, 2015; Ergün&Cömert Özata, 2016; Bulaç, 2019; Gedik, 2019; Hürsen, 2011; Aydın, 2020; Şahin et al., 2020; Kaya, 2018; Erdoğan, 2020). This finding can be interpreted as that teachers adopt the philosophy of lifelong learning and attach importance to their personal development, that they continually renew themselves to improve in their profession, and that they acquire

new knowledge and skills. Adopting and implementing lifelong learning are important characteristics of individuals in information societies (Demiralay & Karadeniz, 2008).

While the lifelong learning levels of the teachers did not differ according to the variables of gender, age, education level, and total working time in the profession, it was found to differ according to the branch variable. The lifelong learning scores of teachers in the branches of information technologies, science, social studies, Turkish, technology and design, and religious culture and ethics are higher than the scores of teachers in mathematics and applied courses (painting, music, physical education, and sports). It can be said that the teachers' being in different branches and graduating from different departments make a difference in their willingness to acquire new knowledge and skills and their lifelong learning levels. This difference may also be due to the differences in the need for new learning depending on the branch.

The study found that teachers' individual innovativeness levels were at a "high" level. When the literature is examined, it is seen that there are similar findings. (Kılıçer, 2011; Yılmaz Öztürk, 2015; Aktaş, 2020; Atlı, 2019; Sadıç, 2019; Bozkurtlar Peçe, 2020; Yılmaz, 2019; Yılmaz, 2018; Keskin, 2021; Yoz, 2020; Uysal Kara, 2019; Yapıcı, 2016; Safa, 2019; Kayasandık, 2017; Mülhim, 2018; Köroğlu, 2014; Özbek, 2014; Yıldız, 2019; Özgür, 2013; Kılıç, 2015; Solmaz, 2019). When the sub-dimensions of individual innovativeness are examined, it is seen that teachers' openness to experience, opinion leadership, and risk-taking scores are at high levels; It was concluded that the resistance to change scores was at a low level. This finding is in parallel with the previous research results (Kılıçer, 2011; Yılmaz, 2019; Güngör, 2019; Çetin, 2017; İlhan Fındıkoğlu, 2019; Yoz, 2020; Özgür, 2013; Tuysuz, 2017; Yılmaz, 2018; Solmaz, 2019). The highest scores for openness to experience and the lowest for resistance to change can be interpreted as teachers' willingness to explore and experience innovations.

As a result of the research, it was determined that the individual innovativeness levels of the teachers did not differ according to the variables of gender, age, branch and total working time in the profession; however, it was found that the individual innovativeness scores of the teachers studying at the graduate level were higher than the scores of the teachers with associate and undergraduate degrees. The increase in the level of education increases the interest in innovations; It can be interpreted as supporting qualities such as being more willing to accept and implement innovations.

In the risk-taking sub-dimension of individual innovativeness, male teachers; In the sub-dimension of openness to experience, teachers under the age of 40 and with 16-20 years of working time were found to have higher scores than the others in the resistance to change and opinion leadership sub-dimensions. It is thought that female teachers are more cautious than male teachers, more cautious in the decision-making process, more skeptical, and prejudiced against uncertainties, so they can take risks more difficult. It can be said that teachers in the young age group are open to innovations, can adopt differences without prejudice, and are eager to experience new ideas. In addition, it can be interpreted as the fact that teachers trust their knowledge, practices, and methods more in later ages and that they have a fixed-line that is taken for granted. The increase

in the total working time of teachers in the profession may have contributed positively to the ability to create more productive workspaces, gain new experiences, and pioneer ideas.

A positive and significant relationship was found between teachers' lifelong learning levels and individual innovativeness total score, resistance to change, opinion leadership, openness to experience, and risk-taking sub-dimensions. This finding is in line with the findings of Beşkaya (2017), Öztürk Yurtseven and Aldan Karademir (2017), Mülhim (2018) and Yüksel (2020). Erdogan and Ayanoglu (2021) found a significant, positive, and moderate relation between lifelong learning tendencies and innovative behavior of school administrators and teachers. Mülhim (2018) concludes that there is a significant, positive, and moderate relation between lifelong learning tendencies of teacher candidates and individual innovativeness levels, while Yılmaz and Beşkaya (2018) state that there is a significant, positive, and moderate relation between lifelong learning tendencies of school administrators and individual innovativeness levels. Teachers' level of lifelong learning, resistance to change, one of the sub-dimensions of individual innovativeness, was 2%; opinion leadership by 23%; experience gap of 23%; risk-taking 9%; explains the total score of individual innovativeness by 27%. Öztürk Yurtseven Aldan Karademir (2017) infer that the lifelong learning trends of teacher candidates predict individual innovativeness levels by 30%. Adigüzel, Kaya, Balay and Göçen (2014) determine that there is a moderate positive relationship between the teacher candidates' individual innovativeness levels and their attitudes towards learning. Yavuz Konokman, Demircioğlu, and Akay (2016) conclude that the level of innovation of faculty members is effective in their attitudes towards European Union Lifelong Learning projects. Unlike these results, in a study by Kılıç (2015), it is stated that there is no significant relationship between teachers' lifelong learning trends and individual innovativeness levels.

RECOMMENDATIONS

The findings obtained from the research and suggestions given to practitioners, decision-makers and researchers are listed below:

1. Since the level of individual innovativeness and resistance to change and opinion leadership in the sub-dimensions has been found in favor of postgraduate teachers, teachers can be encouraged for postgraduate education and supported by their institutions.
2. According to the research results, since teachers' lifelong learning levels in mathematics and applied courses (painting, music, physical education, and sports) are low, they can organize seminars and in-service training for these branches.
3. Seminars, in-service training, and activities can be organized for female teachers that will raise their features such as planning the future, experiencing the new, entrepreneurship, and taking risks.
4. Activities and programs that increase openness to experience can be organized for teachers with higher age groups, and they can be included in projects in different fields.
5. It is recommended to create a school climate based on lifelong learning in schools where individual innovativeness has a key role, especially in project schools.

6. Qualitative research can be conducted to understand and examine teachers with a high lifelong learning level.

7. Comparative studies on teachers' lifelong learning and individual innovativeness can be conducted in different countries.

ETHICAL TEXT

“In this article, journal writing rules, publication principles, research and publication ethics rules, journal ethics rules have been followed. Responsibility for any violations that may arise regarding the article belongs to the authors. Ethics committee approval of the article was obtained by Istanbul Sabahattin Zaim University/Ethics Committee with the decision dated 11.02.2021 and numbered 2021/2.

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REFERENCES

- Adıgüzel, A., Kaya, A., Balay R. & Göçen, A. (2014). The relationship between teacher candidates' individual innovativeness and their learning attitudes. *Milli Eğitim Dergisi*, 204, 135-154.
- Aksoy, M. (2013). Kavram olarak hayat boyu öğrenme ve hayat boyu öğrenmenin Avrupa Birliği serüveni. *Bilig/Türk Dünyası Sosyal Bilimler Dergisi*, 64: 23-48.
- Aktaş, Z. (2020). *Ortaokul matematik öğretmenlerinin eğitim bilişim ağını kullanma durumları ve bireysel yenilikçilik özellikleri* [Unpublished master's thesis]. Yıldız Teknik Üniversitesi, Fen Bilimleri Enstitüsü.
- Atlı, Y. (2019). *Sınıf öğretmenlerinin bireysel yenilikçilik özellikleri ile derste teknoloji kullanımına yönelik eğilimleri arasındaki ilişkinin incelenmesi*[Unpublished master's thesis]. Uşak Üniversitesi, Sosyal Bilimler Enstitüsü.
- Ayaz, C. & Ünal, F. (2016). Öğretmenlerin yaşam boyu öğrenme eğilimlerinin bazı değişkenler açısından incelenmesi. *Journal of International Social Research*, 9(44), 847-856.
- Aydın, Ş. (2020). *Öğretmenlerin yaşam boyu öğrenme eğilimleri ile kültürel sermayelerinin bazı değişkenler açısından incelenmesi*[Unpublished master's thesis]. Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü.
- Ayra, M. & Kösterelioğlu, İ. (2015). Öğretmenlerin yaşam boyu öğrenme eğilimlerinin mesleki öz yeterlik algıları ile ilişkisi. *Education Sciences*, 10(1), 17-28.
- Beşkaya, Y. M. (2017). *Eğitim yöneticilerinin yaşam boyu öğrenme eğilimleri ile bireysel yenilikçilik düzeylerinin incelenmesi*[Unpublished master's thesis]. Bartın Üniversitesi, Eğitim Bilimleri Fakültesi.
- Bozkan, E. (2018). *Öğretmenlerin yaşam boyu öğrenmelerini etkileyen faktörler ile mobil öğrenmeye ilişkin tutumları arasındaki ilişki (sakarya ili örneği)*[Unpublished master's thesis]. Sakarya Üniversitesi, Eğitim Bilimleri Enstitüsü, Sakarya.

- Bozkurtlar Peçe, S. (2020). *Öğretmenlerin “seç – katıl – öğren hizmet içi eğitim teknolojileri programı”nı değerlendirmesi ve katılımlarının bireysel yenilikçilik özelliklerine göre incelenmesi*[Unpublished master’s thesis]. Bahçeşehir Üniversitesi.
- Budak, Y. (2009). Yaşamboyu öğrenme ve ilköğretim programlarının hedeflemesi gereken insan tipi. *Gazi University Journal of Gazi Educational Faculty (GUJGEF)*, 29(3), 693-708.
- Bulaç, E. (2019). *Öğretmen adaylarının yaşam boyu öğrenme eğilimlerinin incelenmesi*[Unpublished master’s thesis]. Amasya Üniversitesi, Sosyal Bilimler Enstitüsü.
- Büyüköztürk, Ş., vd. (2013). *Bilimsel araştırma yöntemleri (11.basım)*, PegemA.
- Celep, C. (2003). *Halk eğitim*. Anı Yayıncılık.
- Choi, J. N. (2004). Individual and contextual dynamics of innovation-use behavior in organizations. *Human Performance*, 17(4): 397- 414.
- Çam, E. & Üstün, A. (2016). Öğretmenlerin mesleki tutumları ile yaşam boyu öğrenme eğilimleri arasındaki ilişki. *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9 (1), 461-477.
- Çetin, D. (2017). *Okul yöneticilerinin teknostres algıları ile bireysel yenilikçilik özellikleri arasındaki ilişkinin incelenmesi (Edirne ili örneği)* [Unpublished master’s thesis]. Trakya Üniversitesi, Sosyal Bilimler Enstitüsü.
- Demiralay, R. & Karadeniz, Ş. (2008). İlköğretimde yaşam boyu öğrenme için bilgi okuryazarlığı becerilerinin geliştirilmesi. *Cypriot Journal of Educational Sciences*, 2(6), 92.
- Demirel, M. (2008). Yaşam boyu öğrenmenin anahtarı: öğrenmeyi öğrenme. 2. *Ulusal Eğitim Psikolojisi Sempozyumu*, 22-23 Mart 2008. Kültür Üniversitesi.
- Devlet Planlama Teşkilatı [DPT]. (2001). Özel ihtisas komisyonu raporu: hayatboyu eğitim veya örgün olmayan eğitim. Sekizinci Beş Yıllık Kalkınma Planı.
- Engin, M., Kör, H. & Erbay, H. (2017). Yaşam boyu öğrenme ölçeği Türkçe uyarlama çalışması. *Kastamonu Eğitim Dergisi*, 25(4), 1561-1572.
- Erdoğan, D. (2020). *Türkçe dersi öğretmen adaylarının 21. yüzyıl becerileri ile yaşam boyu öğrenme eğilimleri arasındaki ilişkinin incelenmesi*[Unpublished master’s thesis]. Zonguldak Bülent Ecevit Üniversitesi, Sosyal Bilimler Enstitüsü.
- Erdogan, D. G., & Ayanoglu, Ç. (2021). The Examination of Relationship between Lifelong Learning Trends of School Administrators and Teachers, and Their Innovative and Entrepreneurial Behavior Levels. *International Journal of Progressive Education*, 17(2), 331-351.
- Ergün, S. & Cömert Özata, S. (2016). Okul öncesi öğretmenliği bölümüne devam eden öğrencilerin yaşam boyu öğrenme eğilimleri. *International Journal of Human Science*, 13(1), 1851-1861.
- European Council [EC]. (2000). *Lisbon European Council 23 and 24 March 2000. Presidency Conclusions*. Lisbon. https://www.ab.gov.tr/files/ardb/evt/1_avrupa_birligi/1_4_zirveler_1985_sonrasi/2000_3_lizbon_zirve_si_baskanlik_sonuc_bildirgesi_en.pdf Access date: 01.03.2021.
- Gedik, G. (2019). *Sınıf öğretmenlerinin yaşam boyu öğrenme eğilimlerinin incelenmesi (manisa-demirci ilçesi örneği)*[Unpublished master’s thesis]. Manisa Celal Bayar Üniversitesi, Sosyal Bilimler Enstitüsü.

- Güngör, N. B. (2019). *Beden eğitimi ve spor öğretmenlerinin bireysel yenilikçilik düzeyinin öğretmen profesyoneliğine olan etkisinde bilişsel esnekliğin aracılık rolü*[Unpublished doctoral thesis]. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Gür Erdoğan, D. (2014). *Öğretmen adaylarının yaşam boyu öğrenme eğilimlerine etki eden faktörler*[Unpublished master's thesis]. Abant İzzet Baysal Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Hürsen, Ç. (2011). *Öğretmenlerin yaşam boyu öğrenme yaklaşımına yönelik görüş-tutum ve yeterlik algılarının değerlendirilmesi*[Unpublished doctoral thesis]. Yakın Doğu Üniversitesi, Eğitim Bilimleri Enstitüsü.
- İleri, S. (2017). *Din kültürü ve ahlak bilgisi öğretmenlerinin yaşam boyu öğrenme eğilimleri ve hayat boyu öğrenme faaliyetlerine katılım düzeyleri (karşıyaka-bayraklı örnekleme)*[Unpublished master's thesis]. Dokuz Eylül Üniversitesi, Sosyal Bilimler Enstitüsü.
- İlhan Fındıkoğlu, D. (2019). *Öğretmen adaylarının bireysel yenilikçilik profilleri, öğretme-öğrenme anlayışları ve yapılandırmacı öğrenme ortamlarını değerlendirmeleri arasındaki ilişki*[Unpublished master's thesis]. Yıldız Teknik Üniversitesi, Sosyal Bilimler Enstitüsü.
- Kabal, D. (2019). *Öğretmenlerin yaşam boyu öğrenme eğilimleri ve mutluluk düzeyleri üzerine bir çalışma (kocaeli örneği)*[Unpublished master's thesis]. Sakarya Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Karasar, N. (2012). *Bilimsel araştırma yöntemi (23. basım)*, Nobel Yayınları.
- Kaya, K. (2018). *Öğretmenlerin bilimsel epistemolojik inançları ile yaşam boyu öğrenme yeterlikleri arasındaki ilişki*[Unpublished master's thesis]. Van Yüzüncü Yıl Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Kayasandık, A. E. (2017) Öğretmenlerin bireysel yenilikçilik ve değişime hazır olmalarının algılanan örgütsel destek ile ilişkisi. *Akademik Sosyal Araştırmalar Dergisi*, 5(54), 511-527.
- Keskin, F. N. (2021). *Fen bilimleri öğretmenlerinin bireysel yenilikçilik düzeylerinin incelenmesi*[Unpublished master's thesis]. Kastamonu Üniversitesi, Fen Bilimleri Enstitüsü.
- Kılıç, H. (2015). *Primary subject teachers' individual innovativeness levels and lifelong learning tendencies: within Denizli province* [Unpublished master's thesis]. Pamukkale Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Kılıçer, K. (2011). *Bilgisayar ve öğretim teknolojileri eğitimi öğretmen adaylarının bireysel yenilikçilik profilleri*[Unpublished doctoral thesis]. Anadolu University Educational Sciences Institute.
- Kılıçer, K. & Odabaşı, H.F., (2010). Bireysel yenilikçilik ölçeği (byö): türkçeye uyarlama, geçerlik ve güvenilirlik çalışması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 38, 150-164.
- Korkmaz, Ç. (2019). *Sınıf öğretmenlerinin yaşam boyu öğrenme eğilimleri ile yaşam ve 21. yüzyıl öğrenen beceri düzeyleri arasındaki ilişki*[Unpublished master's thesis]. Afyon Kocatepe Üniversitesi, Sosyal Bilimler Enstitüsü.
- Köroğlu, A. Y. (2014). *Okul öncesi öğretmenlerinin ve öğretmen adaylarının bilişim teknolojileri özyeterlik algıları, teknolojik araç gereç kullanım tutumları ve bireysel yenilikçilik düzeylerinin incelenmesi*[Unpublished master's thesis]. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Kutlu, E. (2000). *Bilgi toplumunda kalkınma stratejileri*, A.Ü.İ.İ.B.F. Yayınları.
- Midgley, D. F. & Dowling, G. R. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research*, 4(4): 229-242.

- Milli Eğitim Bakanlığı [MEB]. (2019). *İstanbul Valiliği Küçükçekmece İlçe Millî Eğitim Müdürlüğü 2019– 2023 stratejik planı*.
http://kucukcekmece.meb.gov.tr/meb_iys_dosyalar/2019_12/27105736_StratejikPlan2019-2023
01.03.2021.
- Mülhim, M. A. (2018). *Examination of individual innovation levels and lifelong learning trends of students with physical education and sports high school students: Bartın University example*, [Unpublished master's thesis]. Bartın Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Özbek, A. (2014). *Öğretmenlerin yenilikçilik düzeylerinin tpbab yeterlikleri üzerindeki etkisinin incelenmesi*[Unpublished master's thesis]. Necmettin Erbakan Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Özçiftçi, M., & Çakır, R. (2015). Öğretmenlerin yaşam boyu öğrenme eğilimleri ve eğitim teknolojisi standartları özyeterliklerinin incelenmesi. *Eğitim Teknolojisi Kuram ve Uygulama*, 5(1), 1-19.
- Özgür, H. (2013). Bilişim teknolojileri öğretmen adaylarının eleştirel düşünme eğilimleri ile bireysel yenilikçilik özellikleri arasındaki ilişkinin çeşitli değişkenler açısından incelenmesi. *Mersin Eğitim Fakültesi Dergisi*, 9(2), 409-420.
- Öztürk Yurtseven, G. & Aldan Karademir, Ç. (2017). Individual innovativeness levels and lifelong learning tendencies of preservice teachers in pedagogical formation training certificate program. *Eğitim Bilimleri Araştırmaları Dergisi*, 7(2), 171-188.
- Polat, C. & Odabaş, H. (2008, March 27-30). *Bilgi toplumunda yaşam boyu öğrenmenin anahtarı: bilgi okuryazarlığı*. International Symposium on Globalization, Democratization and Turkey Proceedings, Antalya-Turkey.
- Rogers, E. M. (1995). *Diffusion of innovations (4th edition)*. The Free Press.
- Safa, B. S. (2019). *Sınıf öğretmenlerinin eğitim teknolojileri kullanım düzeylerinin bireysel yenilikçilik özellikleri açısından incelenmesi*[Unpublished master's thesis]. Adnan Menderes Üniversitesi, Sosyal Bilimler Enstitüsü.
- Sadıç, T. (2019). *Lise öğretmenlerinin bireysel yenilikçilik algıları, eğitim araştırmalarına yönelik tutumları ile araştırma yeterlilikleri arasındaki ilişki*[Unpublished master's thesis]. Yıldız Teknik Üniversitesi, Sosyal Bilimler Enstitüsü.
- Scott, S.G. & Bruce, R.A. (1994). Determinants of innovative behavior: a path model of individual innovation in the workplace, *Academy of Management Journal*, 37(3): 580-607.
- Solmaz, İ. (2019). *Öğretmenlerin bireysel yenilikçilik düzeyleri ile teknopedagojik eğitim yeterlikleri arasındaki ilişki*[Unpublished master's thesis]. Sakarya Üniversitesi, Eğitim Bilimleri Enstitüsü, Sakarya.
- Şahin, Ü., Sarıtaş, E. & Çatalbaş, G. (2020). Sınıf öğretmeni adaylarının yaşam boyu öğrenme eğilimleri. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 48, 374-389.
- Tabak, A., Erkuş, A. & Meydan, C.H. (2010). Denetim odağı ve yenilikçi birey davranışları arasındaki ilişkiler: belirsizliğe tolerans ve risk almanın aracılık etkisi. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 10(1): 159–176.

- Tuysuz, F. G. (2017). *Resmi ortaokul görev yapan öğretmenlerin bireysel yenilikçilik düzeyleri ile örgütsel yaratıcılık algı düzeyleri arasındaki ilişkinin incelenmesi (manisa ili salihli ilçesi örneği)*[Unpublished master's thesis]. Bahçeşehir Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Urhan, N. (2020). Hayat boyu öğrenme: avrupa birliği ve türkiye karşılaştırması. *Çalışma İlişkileri Dergisi*, 1, 18-45.
- Uysal Kara, M. (2019). *Mesleki ve teknik anadolu lisesinde çalışan öğretmenlerin eğitimde teknoloji kullanım tutumları ve bireysel yenilikçilik düzeylerinin incelenmesi (küçükçekmece örneği)*[Unpublished master's thesis]. Marmara Üniversitesi-İstanbul Sabahattin Zaim Üniversitesi, Sosyal Bilimler Enstitüsü.
- Yaman, F. & Yazar, T. (2015). Öğretmenlerin yaşam boyu öğrenme eğilimlerinin incelenmesi(diyarbakır ili örneği). *K.Ü. Kastamonu Eğitim Dergisi*, 23(4), 1553-1566.
- Yapıcı, İ. Ü. (2016). Biyoloji öğretmen adaylarının bireysel yenilikçilik düzeylerinin incelenmesi. *Eğitim ve Öğretim Araştırmaları Dergisi*, 5(4), 2146-9199.
- Yazvuz Konokman, G. & Yanpar Yelken, T. (2014). Investigation of preschool teacher candidates' attitudes towards learning and their entrepreneurship levels. *International Online Journal of Educational Sciences*, 6(3), 648-665. doi: 10.15345/iojes.2014.03.013
- Yıldız, E. (2019). *Okul yöneticilerinin dönüştürücü liderlik davranışlarının öğretmenlerin bireysel yenilikçilik algılarına etkisi*[Unpublished master's thesis]. Bolu Abant İzzet Baysal Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Yılmaz, H. (2018). *İlkokul öğretmenlerinin bireysel yenilikçilik ile mesleki değerlerini yansıtma düzeyleri*[Unpublished master's thesis]. Abant İzzet Baysal Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Yılmaz, O. (2019). *Öğretmenlerin BİT entegrasyon yaklaşımları, teknoloji entegrasyonuna yönelik öz-yeterlik algısı ve bireysel yenilikçilik özellikleri arasındaki ilişkiler*[Unpublished master's thesis]. Necmettin Erbakan Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Yılmaz Öztürk, Z. (2015). *İlköğretim okulu öğretmenlerinin bireysel yenilikçilik düzeyleri ve bu düzeylere etki eden etmenlerin incelenmesi*[Unpublished doctoral thesis]. Gaziantep Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Yılmaz, R. & Beşkaya, Y. M. (2018). Investigation of lifelong learning trends and individual innovativeness level of education administrators *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 51(1), 159–181. doi: 10.30964/auebfd.406246
- Yoz, E. (2020). *Öğretmenlerin bireysel yenilikçilik düzeylerinin yordayıcısı olarak okul müdürlerinin kuantum liderlik davranışları*[Unpublished master's thesis]. İstanbul Kültür Üniversitesi, Lisansüstü Eğitim Enstitüsü.
- Yüksel, R. (2020). *Fen bilimleri öğretmenlerinin bireysel yenilikçilik düzeyi, yaşam boyu öğrenme eğilimleri ile stem uygulamaları öz-yeterlik algıları ve aralarındaki ilişkinin incelenmesi*[Unpublished master's thesis]. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.