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THE RELATIONSHIP BETWEEN INDIVIDUAL INNOVATIVENESS LEVELS AND LIFELONG LEARNING TENDENCIES OF STUDENTS

A RELAÇÃO ENTRE OS NÍVEIS INDIVIDUAIS DE INOVAÇÃO E AS TENDÊNCIAS DE APRENDIZAGEM AO LONGO DA VIDA DOS ESTUDANTES*

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Abstract: This study aimed to examine the relationship between individual innovativeness levels and lifelong learning tendencies of physical education and sports school students. The study was designed in the relational survey model, which is one of the quantitative research methods. The questionnaire technique was used as the data collection method. The study was carried out on a voluntary basis. The research universe consisted of students studying at Istanbul Gelisim University School of Physical Education and Sports. The students (n=195) who volunteered to participate in the study constitute the sample. The data of the study were collected using a personal information form, Individual Innovativeness Scale, and Lifelong Learning Tendency Scale. The data were analyzed using the SPSS 25.0 package software. The Spearman correlation analysis was preferred as a statistical analysis.
As a result, it was determined that the individual innovativeness level and lifelong learning tendencies of the Physical Education and Sports School students were high, and there was a weak, moderate, and high level of negative and positive correlations between the individual innovativeness levels of students and their lifelong learning tendencies. In other words, it has been determined that the lifelong learning tendency is positively affected by the increase in the level of individual innovativeness.

Keywords: Individual Innovativeness. Lifelong Learning. Student.

Resumo: Este estudo teve como objetivo examinar a relação entre os níveis individuais de inovação e as tendências de aprendizagem ao longo da vida dos estudantes de educação física e de escolas esportivas. O estudo foi concebido no modelo de pesquisa relacional, que é um dos métodos de pesquisa quantitativa. A técnica do questionário foi utilizada como método de coleta de dados. O estudo foi realizado numa base

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voluntária. O universo de pesquisa consistiu de estudantes estudando na Escola de Educação Física e Esporte da Universidade de Istambul Gelisim. Os estudantes (n=195) que se voluntariaram para participar do estudo constituem a amostra. Os dados do estudo foram coletados utilizando um formulário de informações pessoais, Escala de Inovatividade Individual, e Escala de Tendência de Aprendizagem ao Longo da Vida. Os dados foram analisados utilizando o software do pacote SPSS 25.0. A análise de correlação Spearman foi preferida como uma análise estatística.
Como resultado, foi determinado que o nível de inovação individual e as tendências de aprendizagem ao longo da vida dos estudantes da Educação Física e da Escola de Esportes eram altos, e havia um nível fraco, moderado e alto de correlações negativas e positivas entre os níveis de inovação individual dos estudantes e suas tendências de aprendizagem ao longo da vida. Em outras palavras, foi determinado que a tendência de aprendizagem ao longo da vida é positivamente afetada pelo aumento do nível de inovação individual.

Palavras-chave: Inovatividade individual. Aprendizagem ao longo da vida. Estudante.

1. INTRODUCTION

The rapid change and globalization in the 21st century cause the rapid spread of information and technology in terms of meeting social expectations. The formation and dissemination of knowledge oblige people to change and to be renewed. Every piece of information carries with it a more up-to-date, more practical, and newer one to human life. Today, with the rapid change and transformation in information and communication technologies, it is considered that individuals should adapt to 21st-century learner skills. Therefore, individuals should exhibit innovative behavior toward practices that will benefit such as ideas, products, and services. "Innovation is the production, acceptance, and implementation of new ideas, processes, products, and services to create economic or social value" (Tewari, 2011). Innovativeness, on the other hand, is a concept that involves the evaluation of new ideas, requires the production of different goods and services, and the development of a different perspective on events (Oğuztürk and Türkoğlu, 2004). Innovation, which varies according to time, changes according to people's perceptions. The state of "individuals to take risks, accept, adapt, tolerate and be open to experience against what is new" (Demiraslan and Usluel, 2008) is expressed as individual innovativeness. The process we are in forces individuals to adapt to change and to be open to innovation. It is considered that individuals, especially young people, should follow the development of information and technology or tend to learn to adapt to today's conditions. Individual innovativeness contributes to the better life of individuals and continuously improves their standards. Therefore, individuals should focus on learning,

development, and thinking differently by constantly experiencing. The fact that people's characteristics are different from each other also affects people's perspectives on innovation. While some individuals adopt innovations immediately, some individuals adopt more difficult and even show a skeptical and questioning approach. Social and personal needs, economic reasons, change, and development can only be realized when individuals develop their knowledge, skills, interests, and competencies. This can only be achieved through basic education as well as lifelong learning behavior. Lifelong learning, which covers the stages of formal and non-formal education, is not an alternative to formal education, but an attempt to provide support at the points where formal education is lacking or insufficient. Individuals who place lifelong learning at the center of their lives contribute to both themselves and their environment and can approach events from a broader perspective. In the formation of today's modern societies, it is important to have individuals who follow the developments in science and technology, adopt the principle of lifelong learning and do not resist innovations and encourage their spread. The level of relationship between lifelong learning tendencies that facilitate students to spend their lives in a better way, adapt to scientific and technological developments, their perception of change and their level of adaptation to new situations, and innovations that develop their competencies and potential throughout their lives is a matter of curiosity. In this regard, this study aimed to examine the relationship between university students' individual innovativeness levels and their lifelong learning tendencies.

2. METHOD

2.1. Research Model

In the study, the quantitative research relational screening method, which is a research model that aims to determine the existence or degree of change between more than one variable (Karasar, 2017), was preferred. As a data collection method, the survey technique was applied and data were collected voluntarily. The data of the study were collected using a personal information form, Individual Innovativeness Scale, and Lifelong Learning Tendency Scale.

2.2. Universe and Sample

Istanbul Gelişim University School of Physical Education and Sports students constitute the universe of the study. The sample consists of students (n=195) determined by the simple random sampling method.

2.3. Data Collection Tools

In addition to the personal information form prepared to determine the demographic characteristics of the participants, the "Individual Innovativeness Scale" and the "Lifelong Learning Tendency Scale" were used as data collection tools.

2.4. Individual Innovativeness Scale

The Individual Innovativeness Scale was developed by Hurt, Joseph, and Cook (1977) and adapted to Turkish by Kılıçer and Odabaşı (2010). The Individual Innovativeness scale consists of 20 items in 5-point Likert-type. Twelve of the items (items 1, 2, 3, 5, 8, 9, 11, 12, 14, 16, 18, and 19) of the scale consist of positive statements, while eight of them (4, 6, 7, 10, 13). , 15, 17, and 20) consists of negative statements. The sub-dimensions of the scale were determined as resistance to change, opinion leadership, openness to experience, and risk-taking. According to the innovativeness score calculated with the help of the scale, the innovativeness level of the individuals can be evaluated in general and the individuals are examined in the context of innovativeness according to the determined score ranges (Hurt et al., 1977). The Cronbach Alpha coefficient of the scale was expressed as 0.88 (Kılıçer and Odabaşı 2010).

2.5. Lifelong Learning Tendency Scale

Lifelong Learning Tendency Scale was developed by Coşkun (2009). The lifelong learning tendency scale has a total of four sub-dimensions, two of which are positive and two are negative, that characterize the lifelong learning tendencies of individuals. While the “Motivation” and “Perseverance” sub-dimensions of the five-point Likert-type scale contain positive items, the “Lack of Regulating Learning” and “Lack of Curiosity” sub-dimensions contain negative items. When the dimensions and item distribution of the lifelong learning scale were examined, it was determined that all the items of the motivation sub-dimension (1, 2, 3, 4, 5, 6) were positive, all the items of the perseverance sub-dimension (7, 8, 9, 10, 11, 12) were positive, all the items of the lack of regulating learning sub-dimension (13, 14, 15, 16, 17, 18) were negative, and all the

items of the lack of curiosity sub-dimension (19, 20, 21, 22, 23, 24, 25, 26, 27) were negative. The Cronbach Alpha coefficient of the scale was determined as .89 by Coşkun (2009).

3. RESULTS

The data obtained from the personal information form, individual innovativeness scale, and lifelong learning tendency scale were computerized and the analyzes were carried out using IBM SPSS25.0 package software. While examining the distribution normality, the normal distribution curves and skewness-kurtosis values were examined through histograms, the Kolmogorov-Smirnov test values used in cases where the number of participants was greater than 50 were examined, and it was determined that the data did not show a normal distribution and non-parametric tests were applied. The data do not show a normal distribution. Spearman correlation analyzes were used in statistical operations.

Table 1. Demographic characteristics of the participants

		Frequency	Percentage
Gender	Female	87	44.6
	Male	108	55.4
	Total	195	100.0
Age	18-22	70	35.9
	23-27	84	43.1
	28 and older	41	21.0
	Total	195	100.0
Grade	1st- Grade	14	7.2
	2nd- Grade	20	10.3
	3rd- Grade	39	20.0
	4th- Grade	122	62.6
	Total	195	100.0
Department	Department of Coaching Training	42	21.5
	Department of Sports Management	65	33.3
	Department of Exercise and Sports Sciences	35	17.9
	Department of Exercise and Sports Sciences for the Handicapped	33	16.9
	Department of Recreation Education	20	10.3
	Total	195	100.0

It was determined that 44.4% of the participants were female, 55.4% were male, 35.9% were 18-22 years old, 43.1% were 23-27 years old, 21.0% were 28 years old or older, 7.2% were 1st-grade students, 10.3% were 2nd-grade students, 20.0% were 3rd-grade students, 62.6% were 4th-grade students, 21.5% were students of the coaching training department, 33.3% were students of the sports management department, 17.9% were students of the exercise and sports sciences department, 16.9% were students of the exercise and sports sciences for the handicapped, and 10.3% were students of the recreation education department.

Table 2. Skewness-Kurtosis values of individual innovativeness scale scores and Kolmogorov-Smirnov test significance level results

Dimensions	N	Skewness	Kurtosis	P
Resistance to Change	195	.203	-1.681	.002
Opinion Leadership	195	-.474	.044	.000
Openness to Experience	195	-1.843	2.425	.000
Risk Taking	195	-1.792	.385	.000
Individual Innovativeness Total Score	195	-.090	1.038	.008

As can be seen from the Kolmogorov-Smirnov test results in Table 2, there are deviations from normality in the total and sub-dimension scores of the individual innovativeness scale. The Kolmogorov-Smirnov analysis is only one of the methods used to determine the distribution normality of data. When the normal distribution curves were examined, it was determined that there were deviations from normality. While Büyüköztürk (2007) explained that the skewness-kurtosis values of the variables were in the range of ±1 as there were no extreme deviations from normality, Tabachnick and Fidell (2013) stated that if the skewness-kurtosis values of the variables were between ±1.5, the data showed a normal distribution. It was determined that there were deviations from normality in the scale scores, the coefficients were not in the range of ±1 to ±1.5 and the data did not show normal distribution.

Table 3. Skewness-Kurtosis values of lifelong learning tendency scale scores and Kolmogorov-Smirnov test significance level results

Dimensions	N	Skewness	Kurtosis	P
Motivation	195	.442	-2.057	.000
Perseverance	195	1.553	-.954	.000
Lack of Regulating Learning	195	.140	-1.191	.001
Lack of Curiosity	195	-.035	-1.114	.000
Lifelong Learning Tendency Scale Total Score	195	-1.683	-2.068	.000

As can be seen from the Kolmogorov-Smirnov test results in Table 3, it was determined that there were deviations from normality in the Lifelong Learning Tendency Scale total and sub-dimension scores. The Kolmogorov-Smirnov analysis is only one of the methods used to determine the distribution normality of data. When the normal distribution curves were examined, it was determined that there were deviations from normality. While Büyüköztürk (2007) explained that the skewness-kurtosis values of the variables were in the range of ±1 as there were no extreme deviations from normality, Tabachnick and Fidell (2013) stated that if the skewness-kurtosis values of the variables were between ±1.5, the data showed a normal distribution. It was determined that there were deviations from normality in the scale scores, the coefficients were not in the range of ±1 to ±1.5 and the data did not show normal distribution.

Table 4. Descriptive analysis of participants' responses to the individual innovativeness scale

Sub-Dimensions	N	Min	Max	Mean±SD
Resistance to Change	195	1.00	4.50	2.27± 0.83
Opinion Leadership	195	1.40	5.00	3.90± 0.82
Openness to Experience	195	1.60	5.00	4.12± 0.76
Risk Taking	195	1.00	5.00	3.82± 0.99
Individual Innovativeness Total Score	195	2.20	4.35	3.33± 0.35

As can be seen in Table 4, the overall individual innovativeness scale mean score was 3.33+0.35, resistance to change sub-dimension mean score was 2.27±0.83, opinion leadership sub-dimension mean score was 3.90±0.82, openness to experience sub-dimension mean score was 4.12+0.76, and the risk-taking sub-dimension mean score was 3.82+0.99.

Table 5. Descriptive analysis of participants' responses to the lifelong learning tendency scale

Sub-Dimensions	N	Min	Max	Mean±SD
Motivation	195	1.00	5.33	2.40± 1.25
Perseverance	195	1.00	5.67	2.34± 1.24
Lack of Regulating Learning	195	1.00	6.00	3.28± 1.65
Lack of Curiosity	195	1.00	6.00	3.41± 1.56
Lifelong Learning Tendency Scale Total Score	195	2.20	4.35	3.33± 0.35

As can be seen in Table 5, the overall lifelong learning tendency scale mean score was found to be 3.33±0.35, motivation sub-dimension mean score was found to be 2.40+1.25, perseverance sub-dimension mean score was found to be 2.34±1.24, lack of regulating learning sub-dimension mean score was found to be 3.28±1.65, and lack of curiosity sub-dimension mean score was found to be 3.41±1.56.

Table 6. The relationship between individual innovativeness level and lifelong learning tendency

		Motivation	Perseverance	Lack of Regulating Learning	Lack of Curiosity	Lifelong Learning Tendency Scale Total Score
Resistance to Change	r	.252**	.390**	-.103	-.199	.101
	p	.000	.000	.000	.000	.000
Opinion Leadership	r	-.458**	-.575**	-.167*	-.191**	.546**
	p	.000	.000	.000	.000	.000
Openness to Experience	r	-.509**	-.546**	-.267**	-.278**	.681**
	p	.000	.000	.000	.000	.000
Risk Taking	r	-.415**	-.460**	-.144*	-.141*	.412**
	p	.000	.000	.000	.000	.000
Individual Innovativeness Total Score	r	-.396**	-.372**	-.424**	-.423**	.860**
	p	.000	.000	.000	.000	.000

As can be seen from Table 6, It was determined that there was a weak positive correlation between the participants' resistance to change sub-dimension of the individual innovativeness scale scores and lifelong learning scale total, motivation, and perseverance sub-dimension scores, while there was a weak negative correlation between the participants' individual innovativeness

scale resistance sub-dimension scores and lack of regulating learning and lack of curiosity sub-dimensions' scores. It was determined that there was a moderate negative correlation between the individual innovativeness scale's opinion leadership sub-dimension and motivation and perseverance sub-dimensions. It was determined that there was a weak negative correlation between the individual innovativeness scale's opinion leadership sub-dimension and the lack of regulating learning and lack of curiosity sub-dimensions. It was determined that there was a moderate positive correlation between the individual innovativeness scale opinion leadership sub-dimension and lifelong learning scale total scores. It was determined that there was a moderate negative correlation between openness to experience and motivation and perseverance sub-dimensions. It was determined that there is a weak negative correlation between the openness to experience sub-dimension and lack of regulating learning and lack of curiosity sub-dimension. It was determined that there was a moderate correlation between openness to experience sub-dimension and lifelong learning scale total scores. It was determined that there was a moderate negative correlation between the risk-taking sub-dimension and the motivation and perseverance sub-dimensions. It was determined that there was a weak negative correlation between the risk-taking sub-dimension and lack of regulating learning and lack of curiosity sub-dimensions. It was determined that there is a moderate positive correlation between the risk-taking sub-dimension and lifelong learning scale total scores. It was determined that there is a moderate negative correlation between the individual innovativeness scale total scores and the sub-dimensions of motivation, perseverance, lack of regulation learning, and lack of curiosity. It was determined that there is a high level of positive correlation between the total scores of the individual innovativeness scale and the total scores of the lifelong learning scale.

4. DISCUSSION AND CONCLUSSION

It was determined that the participants' overall individual innovativeness scale mean score was 3.33± 0.35, resistance to change sub-dimension mean score was 2.27±0.83, opinion leadership sub-dimension mean score was 3.90±0.82, openness to experience sub-dimension mean score was 4.12± 0.76, and the risk-taking sub-dimension mean score was 3.82± 0.99. In the light of the findings, it can be stated that the individual innovativeness levels of the students are at a good level and they have a high level of innovativeness. Mülhim (2018) stated that the

students have a high level of individual innovativeness. Deniz (2016) determined that sports science students have a higher level of individual innovativeness than other students. The findings in the literature are similar to the findings of the current study. In line with the research findings, it can be stated that students are open to innovation and do not tend to resist change.

It was determined that the overall lifelong learning tendency scale mean score was 3.33±0.35, motivation sub-dimension mean score was 2.40± 1.25, perseverance sub-dimension mean score was 2.34±1.24, lack of regulating learning sub-dimension mean score was 3.28±1.65, and lack of curiosity sub-dimension mean score was 3.41±1.56. When the findings obtained as a result of the analyzes were examined, it was concluded that the students' lifelong learning tendency levels were good and they were open to learning throughout their lives. Demirel and Akkoyunlu (2010) examined the lifelong learning tendencies of teacher candidates and found that these people had a high level of lifelong learning tendencies. In their study, Saylam et al. (2019) found that sports science students tend to learn lifelong in general. Coşkun and Demirel (2012), on the other hand, stated that university students do not show a sufficient level of a tendency towards lifelong learning. As can be seen, there are studies in the literature that support the findings of the current study as well as studies that do not. This may be due to time-dependent change and the different characteristics of the students in the sample group.

When the correlation between individual innovativeness and lifelong learning tendency was examined, a weak negative correlation was observed between the resistance to change sub-dimension and the lack of regulating learning and lack of curiosity sub-dimensions, while a weak correlation was found between the resistance to change sub-dimension and the motivation, perseverance, and lifelong learning tendency total score. In other words, as the resistance to change increases, perseverance, motivation and lifelong learning tendency increase, and the levels of lack of regulating learning and lack of curiosity tend to decrease.

While there was a weak negative correlation found between the opinion leadership sub-dimension of the individual innovativeness scale and the lack of regulating learning, and lack of curiosity sub-dimensions of the lifelong learning tendency scale, there was a moderate negative correlation between the opinion leadership sub-dimension and the motivation and perseverance sub-dimensions. In addition, a moderate positive correlation was found between opinion leadership and the general lifelong learning tendency level. As a result, it was determined that there were weak and moderate negative and positive correlations between the opinion leadership

sub-dimension and the general level of lifelong learning tendency and its sub-dimensions. As the level of opinion leadership increases, the level of motivation, perseverance, lack of curiosity, and lack of regulating learning decreases, while the general level of lifelong learning tendency increases.

While there was a moderate negative correlation between the openness to experience sub-dimension of the individual innovativeness scale and the motivation and perseverance sub-dimensions of the lifelong learning tendency scale, there was a weak negative correlation between the openness to experience sub-dimension and the lack of regulating learning and lack of curiosity sub-dimensions, and there was a positive moderate correlation between openness to experience sub-dimension and lifelong learning tendency total scores. As can be seen, there are weak and moderate negative and positive correlations between the openness to experience sub-dimension and the overall and sub-dimensions of lifelong learning tendency. In other words, there are weak and moderate negative and positive correlations between the sub-dimensions of individual innovativeness level and the tendency to life satisfaction.

While there was a moderate negative correlation between the risk-taking sub-dimension of the individual innovativeness scale and the motivation and perseverance sub-dimensions of the lifelong learning tendency scale, it was determined that there was a weak negative correlation between the openness to experience sub-dimension and the lack of regulating learning and lack of curiosity sub-dimensions. It was determined that there was a moderate positive correlation between openness to experience sub-dimension and lifelong learning tendency total scores. As a result, it was determined that there were weak and moderate negative and positive correlations between the risk-taking sub-dimension and the general level of lifelong learning tendency and its sub-dimensions. With the increase in risk-taking, motivation, perseverance, lack of regulating learning, and lack of curiosity decreases, while the overall score of lifelong learning tendency is increasing.

While there was a moderate negative correlation between the individual innovativeness scale and the motivation, perseverance, lack of regulating learning, and lack of curiosity sub-dimensions of the lifelong learning tendency scale, there was a high positive correlation between the individual innovativeness scale total scores and the lifelong learning tendency total scores. It was determined that there were moderate and high negative and positive correlations between the individual innovativeness scale and the general level of lifelong learning tendency and its sub-

dimensions. It was determined that as the scores of the individual innovativeness scale increased, the scores of motivation, perseverance, lack of regulating learning, and lack of curiosity decreased, while the overall score of lifelong learning tendency increased.

In general, it was determined that there is a high level of correlation between individual innovativeness level and lifelong learning. Therefore, as the level of individual innovativeness increases, the tendency to lifelong learning increases as well. By reviewing the literature, national and international studies examining the correlation between students' individual innovativeness levels and lifelong learning tendencies were examined. Mülhim (2018) determined that there was a significant correlation between the individual innovativeness levels of physical education students and their lifelong learning tendencies. Kılıç (2015) stated that there was no correlation between the tendency to lifelong learning and the level of individual innovativeness. Yenice and Tunç (2019) stated that there was no significant correlation between the lifelong learning tendencies of teacher candidates and the total scores of individual innovativeness levels. Although there was no significant correlation in terms of the total score, it was stated that there was a significant correlation in terms of sub-dimensions. The studies in the literature partially support our findings.

An opinion leader is someone who adopts new ideas before others and leads the masses in a coordinated way. Therefore, opinion leaders are considered as individuals who tolerate mistakes, are creative, cooperate constantly, show behaviors compatible with change, are innovative in the social environment and make lifelong learning a behavior. Developing and rapidly changing technology causes rapid changes in sports sciences. Therefore, individual innovativeness and lifelong learning attitudes should be emphasized in sports science students, who are our future in the preparation and delivery of sustainable sports services.

As a result, it was determined that the individual innovativeness level and lifelong learning tendencies of the Physical Education and Sports School students were high, and there was a weak, moderate, and high level of negative and positive correlations between the students' individual innovativeness levels and their lifelong learning tendencies. In other words, it has been determined that the lifelong learning tendency is positively affected by the increase in the level of individual innovativeness. The existence of individuals who follow the changes in science and technology, learn at every moment of their life, and pioneer the spread of innovations is very important in the formation of the information society and the development of our country. In

this regard, the importance of concepts such as 21st-century skills, lifelong learning, and individual innovativeness should be conveyed to the students starting from the high school period, with the revisions to be made in the education programs to create innovative individuals with lifelong learning skills. It is considered that supportive and encouraging practices should be done for sports science students to be individuals who like to take risks in the teaching and learning process, are willing to try new ideas, are entrepreneurial, can use communication tools and technology, are curious, and have high-level thinking skills.

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