

## The Role of the Big Five Personality in Attitudes to Online Learning

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### ABSTRACT

In this study, it is aimed to reveal the role of the Big Five personalities in online learning attitude. In the research carried out with the relational screening model, 89 females ( $\bar{X}$  age=20.61±2.37) and 124 males ( $\bar{X}$  age=20.80±2.69) aged between 18 and 33, a total of 213 ( $\bar{X}$  age=20.71±2.57) sports science students studying in sports sciences faculties of three different state universities in Turkey participated. The data were collected using "Personal Information Form", "Online Learning Attitude Scale" and "Big Five-50 Personality Test". Pearson correlation and regression analyses were in the statistical evaluation of the data. According to the research findings, there were positive and low level significant relationships between online learning attitude scores and extraversion, conscientiousness, and openness to experience scores. In addition, openness to experience was found to have a significant predictive power on online learning attitude. As a result; the role of the Big Five personalities in online learning attitude has been revealed in the current research.

**Keywords:** Online learning, online learning attitude, personality, big five personality, sport sciences, student.

### INTRODUCTION

The century we live in is a period of change and development in which learning emerges in different ways and enables new learning experiences. Such that, apart from classical face-to-face education, online learning, which has been used preferably or compulsory in educational environments in recent years, is one of these changes and developments. Online learning, which brings a new breath to the way of learning by transferring the classical classroom environment to the online environment, has undoubtedly become a platform that the learner will benefit from as an exciting learning method for those who are looking for an alternative solution in the classroom environment.

Online learning, which is essentially the use of technology to disseminate knowledge (Tajik and Vahedi, 2021), is expressed as learning experiences in synchronous or asynchronous environments using mobile phones, laptops, internet access, which makes the teaching-learning process innovative and student-centered (Dhawan, 2020). Online learning is a learning paradigm where training data points come in sequential order. When new data comes in, the existing model is quickly updated to produce the best model available so far. Therefore, the purpose of this learning is the same as the classical learning style, but to optimize the performance in the new learning task (Chen and Liu, 2018). When considered in terms of time and space, online learning (Wu, Xu, Xue, and Hu, 2023) that includes flexibility as well as convenience, has advantages such as low costs such as no need to go to school and only sufficient internet connection (Wu, Lin, Ou, Liu, Wang, and Chao, 2020). In addition to providing credits in higher education institutions, online learning environments have been offered as part of the course curriculum in recent years (Cohen and Baruth, 2017). Moreover, while the number of students who do not take online courses is increasing, online learning has become a trend (Allen, Seaman, Poulin, and Straut, 2016).

Online learning (Vandenhouten, Lepak, Reilly, and Berg, 2014), which is versatile, requires an online attitude (Usta, Uysal, and Okur, 2016). The learner's attitude towards learning is directly related to learning (Kara, 2010). That is, while positive attitudes of the individual in the learning process increase success, negative attitudes can cause failure (Kazazoğlu, 2013). When attitudes are developed positively towards learning, it will positively affect students' openness to learning and their behavioral tendencies accordingly (Çetin and Çetin, 2019). Hergüner, Son, Hergüner-Son, and Dönmez (2020, p. 103) who stated that it is necessary to have a positive attitude towards online learning, defined online learning attitude as *"the desire and the manner of the individual towards online learning"*. It may not be correct to look at online learning only from a technological point of view and examine it from this perspective. Because examining and perceiving this learning method only in terms of technology may make the method unsuccessful (İşman, 2008). Considering this framework, the factors that can be effective in online learning should be examined (Biçer and Korucu, 2019). One of these factors is personality. Personality, which is closely related to learning (Eysenck, 1978), can provide information about the methodical approach of the person in terms of basic characteristics and the way of processing information, which is accepted as a measurement tool in terms of the learning process (Messick, 1984).

The origin of the word personality (Li, Li, Hao, Guan, and Zhu, 2014; Özer and Benet-Martinez, 2006), which is one of the most important topics in psychology research, goes back to persona, which means mask in Latin (Chamorro-Premuzic, 2014). In addition to being rich with various views and theories, there are many definitions for the concept of personality, which has a deep literature (Dönmez, 2022). If a few of these definitions are mentioned, personality can be defined as *"the underlying causes of individual behavior and experience within the person"* (Cloninger, 2013, p. 2). Personality is *"a distinctive, consistent and structured form of relationship that an individual establishes with his/her internal and external environment"* (Cüceloğlu, 2017, p. 404). Personality has been expressed as *"consistent behavioral patterns and intrapersonal processes arising from the individual himself"* (Burger, 2021, p.23). In the current research framework, personality will be discussed within the framework of the widely known and accepted "big five" (McCrae and Costa, 1985, 1987; Goldberg, 1990). The big five are extroversion, agreeableness, conscientiousness, emotional stability (neuroticism), and openness to experience (McCrae and Costa, 1985, 1987, 1989; McCrae and John, 1992; Goldberg, 1992). Those who are extroverts are expressed as warm, sociable, active, and thrill-seeking (McCrae and Costa, 1985); the mild-mannered are those who communicate, cooperate, be kind, and treat others kindly (Tai, Chen, Chang, and Hong, 2012); conscientiousness are task and goal-oriented, control impulses (Cervone and Pervin, 2016); those who are emotionally stable are calm, avoid excessive and maladaptive behaviors (Burger, 2021); those who are open to experience are those who are inclined towards art, adventure, and extraordinary ideas (Smith, Hamplova, Kelley, and Evans, 2021).

Unavoidable disasters and disaster situations (pandemic, earthquake, etc.) can also directly affect the educational environment. When these negative effects start to show themselves, it will be useful to apply to online education environments for a while in order to give a sigh of relief to the education environment. So much so that the uninterrupted continuation of education is an indispensable element for societies. Because a society that has fallen behind in education may be insufficient to raise future generations. Undoubtedly, due to the nature of learning, situations such as attitude, interest and relevance towards learning should not be forgotten. Moreover, it should not be forgotten that the influence of personality in directing and managing attitudes (Anderson, 1988), which is seen as an important predictor of human behavior, should not be ignored. As a matter of fact, it has been seen for a long time that the Big Five have been used as predictors of performance and preferences in educational settings, and most of the research has focused on traditional learning methods (Keller and Karau, 2013). For this reason, in the current study, it was deemed necessary to address the relationship of the Big Five with online learning attitude, which has been very popular in recent years. Personality traits of an individual can affect his/her desire, and attitude towards learning. Although there are studies on personality and online learning in different disciplines in the literature (Ravizza, Meram, and Hambrick, 2023; Cohen and Baruth, 2017; Keller and Karau, 2013; Lee and Lee, 2006; Butler and Pinto-Zipp, 2005; Schniederjans and Kim, 2005; Kim and Schniederjans, 2004; Downing and Chim, 2004; Kanuka and Nocente, 2003; Rovai, 2003), it is noteworthy that there are limited studies on sports science students who will undertake important tasks in the multidisciplinary field of sports sciences. Moreover, it was deemed necessary to conduct a research in the field of sports sciences, which is indispensable for educational environments and is one of the most popular branches of science. As a result of the literature information mentioned above and the need for current research, it is aimed to reveal the role of five big personalities in online learning attitude in this research.

## METHOD

### Research Model

Quantitative approaches were preferred in this study, in which the role of big five personalities in online learning attitude was determined. In terms of the purpose and scope of the research, *"relational screening model"* was

used in model selection. Karasar (2018, p. 114) expressed the model in question as “research models aiming to determine the existence and/or degree of co-variation between two or more variables”.

### Research Group

The target audience of the research consists of sports science students studying at the Faculties of Sports Sciences of three different state universities in Turkey. The study group consisted of 89 females ( $\bar{X}_{age}=20,61\pm2,37$ ), 124 males ( $\bar{X}_{age}=20,80\pm2,69$ ), aged between 18 and 33, selected by the “criterion sampling method”, a total of 213 ( $\bar{X}_{age}=20,71\pm2,57$ ) sports science students. In determining the criteria, the participant's criterion of taking online courses for at least one semester was taken into account. Descriptive statistics results for the sampling are given in Table 1.

Table 1. Descriptive statistics of the participants

Gender	n	%
Female	89	41,8
Male	124	58,2
University	n	%
A-University	74	34,7
B-University	72	33,8
C-University	67	31,5
<b>Total</b>	<b>213</b>	<b>100,0</b>

According to Table 1, 41.8% of the participants were female (n=89); 58.2% (n=124) of them were male. In addition, it was determined that 34.7% of the participants studied at A-University, 33.8% (n=72) at B-University, and 31.5% (n=67) at C-University.

### Data Collection Tools

The data in the research were obtained by using the "Personal Information Form", "Online Learning Attitude Scale" and "Big Five-50 Personality Test". The details of the psychometric properties of the measurement tools are explained below.

### Personal Information Form

The "Personal Information Form" was used to reach information such as gender, age, department and university of education about the participants participating in the research.

### Online Learning Attitude Scale

“Online Learning Attitude Scale” developed by Usta, Uysal, and Okur (2016) was used to determine online learning attitude. The measurement tool consists of 20 items, 5-point Likert type, and there is no reverse scored item. In addition, it was revealed that the measurement tool had 4 factors (“general acceptance”, “individual awareness”, “usability” and “application effectiveness”) during the development phase. The high scores obtained from the measurement tool indicate that they have a positive attitude towards online learning (Usta, Uysal and Okur, 2016). In the current study, the measurement tool was used over the total score, and the results of the scale are presented in Table 2.

Table 2. Results of the online learning attitude scale

	n	Number of Expressions	Skewness	Kurtosis	Cronbach $\alpha$	$\bar{X} \pm SD$
Online Learning Attitude	213	20	-,260	,266	,903	65,67 $\pm$ 15,17

As a result of the analysis in Table 2, the skewness and kurtosis values of the online learning scale changed between -1,.....,+1 (George and Mallery, 2019, pp. 114-115), and the Cronbach Alpha coefficient of the scale was ,903, and this result was According to Karagöz (2017, p.26), it can be said to be quite reliable. When the average score of the measurement tool is examined, it has been determined that the mean score is 65,67 $\pm$ 15,17.

### The Big Five-50 Personality Test

The Big Five-50 Personality test, which was adapted into Turkish by Tatar (2017), was used to determine personality traits in the study. The measurement tool consists of five factors, 50 items, 5-point Likert type and has a reverse scored item. The factors in question are "Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience", respectively. The high scores obtained from the relevant factors in the measurement tool indicated that the relevant personality trait was dominant (Tatar, 2017). The results of the measurement tool in the current study are presented in Table 3.

Table 3. Results of the Big Five-50 Personality Test

Factors	n	Number of Expression	Skewness	Kurtosis	Cronbach $\alpha$	$\bar{X} \pm SD$
Extraversion	213	10	,202	,565	,706	3,11 $\pm$ ,64
Agreeableness	213	10	-,015	-,156	,655	3,50 $\pm$ ,61
Conscientiousness	213	10	,207	-,649	,713	3,70 $\pm$ ,62
Emotional Stability	213	10	,129	,166	,751	2,98 $\pm$ ,70
Openness to Experience	213	10	,047	-,188	,708	3,59 $\pm$ ,60

Table 3 shows that the skewness and kurtosis values of the big five-50 personality tests vary between -1,...,+1 (George and Mallery, 2019, pp. 114-115), and the Cronbach Alpha coefficients of the measurement tool are between ,655 and ,751 it can be said that this result is quite reliable according to Karagöz (2017, p.26). Considering the mean scores of the factors, extraversion was 3,11 $\pm$ ,64; agreeableness 3,50 $\pm$ ,61; your conscientiousness is 3,70 $\pm$ ,62; it was determined that emotional stability was 2,98 $\pm$ ,70 and openness to experience was 3,59 $\pm$ ,60.

### Data Collection

Written permission was obtained from the Sakarya University of Applied Sciences Ethics Committee (E-26428519-044-65461) to collect data in the study. After the permission obtained, the data collection tools were transferred to the online environment (Google Forms) and the necessary written instructions were placed in the introduction part of the research form and the voluntary consent button was added to the beginning of the research. Data were collected from sports science students who read the written instructions about the research. During data collection, support was received from faculty members and lecturers working in departments at the relevant universities. The data were collected during the 2022-2023 academic fall semester in November.

### Data Analysis

The data collected online were first checked and numerically coded. The coded data were transferred to the SPSS program, firstly, the reliability coefficients of the data were examined and it was determined that the measurement tools were at a reliable level within the scope of the current research. In order to decide on the statistical analyzes to be made, the skewness and kurtosis values of the data were examined and as a result of the statistical process, it was determined that the data were in the range of -1,...,+1 (George and Mallery, 2019, pp. 114-115), which are considered to be suitable for normal distribution. Pearson correlation and regression analyzes were used in the statistical evaluation of the data.

## FINDINGS

Table 4. The results of the relationship between online learning attitude and five big personalities

		Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness to Experience
Online Learning Attitude	r	,169	,101	,193	-,068	,244
	p	,014*	,141	,005**	,324	,000**

According to the results of the “*Pearson correlation*” analysis in Table 4, participants' online learning attitude scores and extraversion ( $r=.169$ ;  $p=.014$ ), conscientiousness ( $r=.193$ ;  $p=.005$ ) and openness to experience ( $r=.244$ ;  $p=.000$ ) positive low-level significant correlations were found between the scores.

Table 5. Prediction of online learning attitude by big five personality traits

Variable	B	Std. Error	$\beta$	t	p
Stabil	43,554	6,128	---	7,107	,000
Openness to Experience	6,154	1,682	,244	3,658	,000

$R = ,24$        $R^2_{adj} = ,06$

$F_{(1,211)} = 13,383$        $p = ,000$

Dependent variable=Online Learning Attitude

Method: Stepwise

According to the multiple linear regression analysis in Table 5, it is seen that the regression model is statistically significant. When the t-test results regarding the significance of the regression coefficients were analyzed, it was found that openness to experience ( $\beta = .244$ ;  $t = 3.658$ ;  $p = .000$ ) had a significant predictive power on online learning attitude.

## DISCUSSION, CONCLUSION AND SUGGESTIONS

In this study, it was aimed to reveal the role of big five personalities in online learning attitude. For this purpose, 213 sports science students studying in sports sciences faculties of three different state universities in Turkey and selected by criterion sampling method were included in the study.

Mankind has entered into an effort to learn and discover the developing and changing world. This effort has made it unique by keeping it separate from other living things (Turan, Yaman, Genç, Dönmez, Hergüner, and Yaman, 2022). The learning process is a process that is affected by different social, psychological, physical and environmental factors (Yılmaz, 2009). Undoubtedly, individual differences should not be ignored in this process (Tatar and Tatar, 2017). Individual differences in the learning process is a subject that has been studied in the literature for years (Güler, 2017). Moreover, research on these differences not only provides practical information to support the teaching process, but also allows a deeper understanding of emotional, cognitive and behavioral mechanisms (Seel, 2011). For this reason, the effects of personality on educational behavior in traditional educational settings have been discussed in detail in studies (Miller, 1991; Rauste-von Wright, 1986). On the other hand, in online learning environments, this situation is controversial (Fırat, 2022). So much so that the influence of personality in understanding and directing human behavior cannot be ignored. It is not possible to consider this effect independently of the educational environment. As a matter of fact, as a result of the disasters (epidemics, earthquakes, etc.) that have negatively affected human life in recent years, online learning environments have become an indispensable element of education and training, as well as a learning environment that can be used when needed in the short term as well as extraordinary situations.

Along with the development and change of online learning information and communication technologies on a global scale, it has been widely used with learning styles suitable for today's technological trend (Etlioğlu and Tekin, 2020). While the popularity of online learning environments is increasing day by day, many universities and colleges are working in-depth to make better use of the online platform for the learner (Dumford and Miller, 2018). Teaching process planning has an important role in online education as it is important at every stage of education. It is extremely important to plan online learning environments correctly, especially since they allow reaching participants that cannot be reached with traditional methods at once (İlgaz, 2018). While making this planning, student attitudes, which are one of the important factors of academic success, should not be ignored (Dikmen, Tuncer and Şimşek, 2018). As a matter of fact, thanks to the attitude obtained as a learning product, the individual can experience a better learning process by improving himself (Hergüner, Yaman, Çağlak-Sarı, Yaman, and Dönmez, 2021; Kara, 2010). Whether learning is face-to-face or online, it is possible to say that a positive attitude towards learning will lead to more satisfaction with learning. So much so that the evidence in the literature supports this view (Ku, Tseng, and Akarasriworn, 2013; Piccoli, Ahmad, and Ives, 2001). In addition, the idea that student attitude in the learning process has a strong effect on behavior (Arbaugh, 2000) should not be ignored. Because behavior can be a guide in terms of preferences. Although many factors are effective on preference, the most important factor to manage these factors is personality. Moreover, personality traits are one of the most important elements to focus on in managing and directing behavior.

Knowing the personality traits of people, their thinking, feeling and behavioral tendencies has always been a popular and studied subject (Sánchez-Fernández, Ruiz, and Jiménez, 2023). In addition, the idea that personality is effective on learning is not a new claim (Bidjerano and Dai, 2007). So much so that when examining the characteristics underlying learning, it has been suggested that personality traits are responsible for processing information and that this is a factor that is consistent in this process, which is also examined as a learning feature (Messick, 1984). The research focused on five factor models that were agreed upon to examine personality in the literature (McCrae and Costa, 1987; McCrae and John, 1992; John and Srivastava, 1999).

As a result of the research, positive and low-level significant relationships were found between the participants' online learning attitude scores and their extraversion, conscientiousness and openness to experience scores. In addition, it has been revealed that openness to experience has a significant predictive power on online learning attitude. According to these results, it can be stated that with the increase of extraversion, conscientiousness and openness to experience, there is a positive attitude towards online learning. In addition, as a result of the regression model, it was determined that while other personality traits were excluded from the model, the prediction of openness to experience in online learning attitude was 6%.



Extraversion includes warmth, being active and seeking excitement (McCrae and Costa, 1985), agreeableness being cooperative and sympathetic (Bruso, Stefaniak, and Bol, 2020); conscientiousness is goal-oriented working and controlling impulses (Cervone and Pervin, 2016); emotional stability is calm, avoiding excessive and maladaptive behaviors (Burger, 2021); openness to experience expresses intellectual curiosity and new experiences (John and Srivastava, 1999). Due to the results of the research and the nature of the personality traits in question, extroversion may also be willing to learn as a result of the necessity of being social whether it is face-to-face or online learning, conscientiousness may accept online learning as an educational tool as a result of the need for success and disciplined work, and openness to experience can be an educational tool. It has been shown that it can be thought that intellectual curiosity and new experiences can also be reached in the online learning environment. In addition, the fact that experience openness predicts online learning positively points out that the fact that online learning is an interesting learning environment should not be ignored. Evidence for this view has also been demonstrated in studies conducted in the literature (Lajunen, Gaygisiz, and Wang, 2023).

Considering the studies conducted, Al-Dujaily, Kim, and Ryu (2013) reported that personality traits are indicative of learning styles and found that especially extrovert/introverted personality traits affect online learning. In another study, it was revealed that personality traits affect students' preferences in online learning environments (Tlili, Essalmi, Jemni and Chen, 2016). Ellis (2003) reported in his study that personality types show patterns in student attitudes. Firat (2022) revealed in his research that extroversion, agreeableness, conscientiousness and openness to experience significantly predict e-learning in online learning environments in distance education students. Randler, Horzum, and Vollmer (2014) reported in their research on students that openness to experience is their willingness for distance education. In the results of his research on university students, Zhang (2003) revealed that conscientiousness and openness to experience are the best predictors of one's approach to learning. Other evidence in another study showed that conscientiousness is a personality trait that can benefit significantly in online courses, and openness to experience positively accepts online learning for career goals (Keller and Karau, 2013). In the studies conducted, it was emphasized that the students gave different reactions to the education methods depending on their personalities (İrani, Telg, Scherler, and Harrington, 2003). It is also included in research reports that personality is related to human-computer interaction and technology (Svendsen, Johnsen, Almås-Sørensen, and Vittersø, 2013).

Of course, there are some limitations in this research. More importantly, results are based on self-report. For this reason, revealing the role of personality on these behaviors by considering the variables that will affect student behavior such as participation rate in online learning, group assignments and course activities in future studies may support the current results. In addition, the findings of this study tried to reveal the personality in the attitude towards online learning. Revealing the role of personality while actively taking online courses in future research can support current research. Finally, the results obtained were not associated with learning outcomes. For this reason, revealing the possible effects of learning outcomes as a result of the online course will enrich the literature.

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