Predictive of Perceived Learning: Academic Motivation and Attitudes to Mobile Learning

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ABSTRACT
In this research, it was aimed to determine the predictive power of academic motivation and attitudes towards mobile learning on perceived learning in sports science students. 416 (197 female+219 male) sports science students were included in the research, which was conducted in accordance with the correlational survey model. In the research, "Perceived Learning Scale", Academic Motivation Scale" "Mobile Learning Attitude Scale" and "Personal Information Form" were used as data collection tools. Data were analyzed with descriptive statistics, Pearson correlation and Regression analysis. When the findings of the study were examined, positive moderate and significant relationships were found between perceived learning and academic motivation in sports science students ($p<.05$), and positive low-level significant relationships were found with mobile learning ($p<.05$). In addition, it was determined that academic motivation and attitude towards mobile learning positively predicted learning ($p<.05$). As a result, if perceived learning is desired to increase in a positive way, this research has shown that academic motivation and mobile learning are important variables that can affect this.
Keywords: perceived learning, academic motivation, mobile learning, attitude, sports sciences.

INTRODUCTION

Mankind has been in an effort to explore his environment throughout his life. During this exploration, his effort to learn what is going on around him made him unique and indistinguishable from other living things. The desire to learn about the developing and changing world has kept people active in the mysterious world of life. So much so that this state of being active and ability to learn has led to new horizons in making sense of today's world.

Today, developing and open to innovations, information and communication technology has revealed a number of changes depending on the innovations it brings. These changes have also found a place in the field of education and provided the opportunity to design new models (Hergüner and others, 2020). In particular, the rapid change and development of technology has led to an increase in knowledge, which has made learning even more important (Molenda, 2008). Learning; *"It is a relatively permanent change in behavior that occurs as a result of the interaction of the individual with the environment at a certain level"* (Senemoğlu, 2010, p.14). The multi-faceted learning process and capacity is a feature that distinguishes humans from other living things (Gredler, 2017). So that the frontal lobe of the brain, which is necessary for high-order behaviors, is highly developed only in humans (Goldberg, 2001). The idea that learning, which is necessary for behavior, is

acquisition and participation has formed the basis of many educational ideas (Sfard, 1998). While acquisition deals with learning products such as knowledge, skills, attitudes, values, behavior and understanding, participation suggests active participation in the learning process (Rovai, Wighting, Baker & Grooms, 2009). As a matter of fact, the constructivist education approach that dominates today puts the student at the center, and also emphasizes being active in the learning process and participating in the decisions. When considered from this point of view, the learning in which the student evaluates and perceives himself gains importance (Albayrak, Güngören, & Horzum, 2014). Perceived learning can be expressed as the whole of the beliefs and emotions that emerge as a result of learning, and the retrospective evaluation of the learning experience (Caspi & Blau, 2008). Since this learning is the personal view of the individual about what he/she gains in the learning process, it can be expected to be at the forefront of student-centered learning (Albayrak, Güngören, & Horzum, 2014). It has been stated that perceived learning is an accepted criterion for measuring learning success (Batista & Cornachione, 2005). An important variable in the emergence of this success is the concept of academic motivation.

Motivation is an important factor that affects students' attitudes and behaviors at all levels of education (Gömleksiz & Serhatlıoğlu, 2014). Motivation *"expresses a process that regulates an individual's goal-directed behavior"* (Pintrich & Schunk, 2002). Academic motivation is defined as *"desire and energy expenditure in the academic field"* (Direktör & Nuri, 2017). Motivation for learning, which is one of the most important factors affecting academic success (Alderman, 2004), can be expressed as internal processes that encourage and direct behaviors in achieving certain academic goals (Pintrich & Zusho, 2002). Students who are motivated to learn tend to organize all their actions in order to learn that subject (Slavin, 2006), are willing to spend more time in the school environment, learn more and be successful in exams (Sternberg & Williams, 2009). From this point of view, if it is desired to increase the academic success of the student, the student should be motivated towards learning (Yurt & Bozer, 2015). From this perspective, it can be predicted that high academic motivation may also positively affect perceived learning.

The idea that mobile learning, which is another variable of the research and which has come to the fore today, can make positive contributions to perceived learning, has been discussed in the theoretical framework of this research as a curious situation. Mobile learning can mean the use of mobile or wireless devices during movement for learning purposes (Çam and others, 2019). In another definition, mobile learning; it is expressed as the use of mobile technologies in education (Fabergerd, Rekkedal, & Russell, 2003; akt: Çam ve diğ., 2019). Unlike traditional learning environments, mobile technologies provide great convenience in the learning phase and students can learn whenever and wherever they want (Shih, 2007). In order for this learning to be successful, educational institutions have become obligated to provide mobile devices to students or to develop tools and content suitable for the devices they have (Sharples, 2013). Eliminating these obligations or adapting to mobile learning, thanks to the multimedia support to be provided to students, can also facilitate learning. In addition, it has been pointed out that perceived learning comes to the fore in adult education and distance education applications most (Glass & Sue, 2008; Stein & Wheaton, 2002; Wu & Hiltz, 2004).

Sports sciences, which has a multidisciplinary and versatile working perspective, has started to be positioned in different subjects and fields in the literature. Namely, during the Covid-19 epidemic, which is the reality of today, mobile learning has come to the fore in the field of sports sciences as well as in other fields, and in this process where distance education continues, academic motivation has found itself in the theoretical framework of this research as a curious concept. In addition, in the age of information and communication, where learning takes place constantly and changes people with innovations, it is necessary to determine the factors that can affect the learning perceived by students and to bring them into the literature. When considered from this point of view, the lack of such a research in the field of sports sciences attracted attention and research was needed. In this context, in the research; it was aimed to determine the predictive power of academic motivation and attitudes towards mobile learning on perceived learning in sports science students.

METHOD

Research Model

The research was designed with the *"correlational survey model",* which is one of the quantitative approaches in terms of its aim and scope. The correlational survey model is expressed as researches in which *"the relationship between two or more variables is examined without intervening in any way"* (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2016, p.15).

Population and Sample of the Research

The population of the research consists of Sakarya University of Applied Sciences and Balıkesir University Sports Sciences Faculty students. In determining the sampling frame, it was carried out in accordance with 384

populations corresponding to the largest population for α = 0.05, which is used as a different sampling technique from different universe sizes in order to minimize sampling errors in social sciences (Yazıcıoğlu and Erdoğan, 2004). In addition, convenience sampling (Altunışık, Çoşkun, Bayraktaroğlu & Yıldırım, 2007) method was preferred because distance education continued at universities at the time of data collection. In this context, 416 (197 female+219 male) sports science students studying in the departments of coaching training, physical education and sports teaching, recreation and sports management were included in the research. Information about the students is given in Table 1.

Table 1. Descriptive statistics of the research group

Gender	**n**	**%**
Female	197	47,4
Male	219	52,6
Department	**n**	**%**
Coaching Training	109	26,2
Physical Education and Sports Teaching	152	36,5
Recreation	54	13,0
Sports Management	101	24,3
Universities	**n**	**%**
Sakarya University of Applied Sciences	212	51,0
Balıkesir University	204	49,0
Total	**416**	**100,0**

According to the descriptive results in Table 1; 47.4% (n=197) of the students were female; 52.6% (n=219) were male; 26.2% (n=109) of them had coaching training; 36.5% (n=152) of them were physical education and sports teachers; 13.0% (n=54) had recreation; 24.3% (n=101) consists of students from the sports management department. Additionally, 51.0% (n=212) from Sakarya University of Applied Sciences; On the other hand, 49.0% (n=204) students from Balıkesir University were included in the study.

Data Collection Tools

"Personal Information Form", "Perceived Learning Scale", "Academic Motivation Scale" and "Mobile Learning Attitude Scale" were used as data collection tools. Detailed information about data collection tools is given below.

Personal Information Form

In order to determine some demographic information of the students, the "Personal Information Form" created by the researchers was used. In this form, it is aimed to reach information such as gender, age, department and university of the students.

Perceived Learning Scale

The Perceived Learning Scale, developed by Rovai and others (2009) and adapted into Turkish by Albayrak and others (2015), was used to determine the perceived learning levels of sports science students. The measurement tool consists of 9 items and is in 7-point Likert type (1=definitely false; 7=definitely true). The measurement tool consists of three factors: cognitive, affective and psychomotor. In addition, the total score is taken in the scale and can be calculated in this way. The Cronbach Alpha reliability coefficient of the measurement tool was determined as .83 (Albayrak and others, 2015). In this study, statistical analyzes were made on the total score. The reliability coefficients, skewness and kurtosis values of the measurement tool of this study are given in Table 2.

Table 2. Results of the perceived learning scale

	n	Expression Number	Skewness	Kurtosis	Croncbach α	$\overline{X} \pm SS$
Perceived Learning	416	9	-,47	-,11	,78	49,61±7,79

As a result of the analysis in Table 2, the skewness and kurtosis values of the perceived learning scale changed between -1…..+1; In addition, it is understood that the Cronbach Alpha coefficients for the scale dimensions are quite reliable compared to Karagöz (2017, p.26).

Academic Motivation Scale

The "Academic Motivation Scale" developed by Bozanoğlu (2004) was used to determine the academic motivation levels of sports science students. The measurement tool is 5-point Likert-type (1=definitely not suitable; 5=definitely suitable) and consists of 20 items. The lowest 20 points and the highest 100 points can be

obtained from the scale. Higher scores mean that academic motivation will increase. Although the measurement tool consists of 3 factors, as the researcher said in his study, *"as it is not to develop a multidimensional measurement tool, all possible items were evaluated in the item software, not the items suitable for a certain structure"* (Bozanoğlu, 2004, p.88) based on his statement, it was used as one-dimensional in the research. The Cronbach Alpha reliability coefficient of the measurement tool was determined as .86 (Bozanoğlu, 2004). The reliability coefficients, skewness and kurtosis values of the measurement tool of this study are given in Table 3.

Table 3. Results of the academic motivation scale

	n	Expression Number	Skewness	Kurtosis	Croncbach α	$\overline{X} \pm SS$
Academic Motivation	416	20	-,29	-,44	,89	76,33±10,66

As a result of the analysis in Table 3, the skewness and kurtosis values of the academic motivation scale changed between -1……+1; In addition, it is understood that the Cronbach Alpha coefficients for the scale dimensions are highly reliable compared to Karagöz (2017, p.26).

Mobile Learning Attitude Scale

In order to determine the attitudes of sports science students towards mobile learning, the "Mobile Learning Attitude Scale" developed by Knezek and Khaddage (2013) and adapted into Turkish by Çam, Uysal, Kıyıcı, and İşbulan (2019) was used. The measurement tool is 5-point Likert-type (1=strongly disagree; 5=strongly agree) and consists of 7 items. The scale consists of a single factor. The Cronbach Alpha reliability coefficient of the measurement tool was determined as .81 (Çam and others, 2019). The reliability coefficients, skewness and kurtosis values of the measurement tool of this research are given in Table 4.

Table 4. Results of mobile learning attitude scale

	n	Expression Number	Skewness	Kurtosis	Croncbach α	$\overline{X} \pm SS$
Mobile Learning	416	7	-,85	-,86	,88	24,81±5,29

As a result of the analysis in Table 4, the skewness and kurtosis values of the academic motivation scale changed between -1……+1; In addition, it is understood that the Cronbach Alpha coefficients for the scale dimensions are highly reliable compared to Karagöz (2017, p.26).

Data Collection

Research data were collected online during the process of continuing education at universities. The questions in the research were made ready by transferring them to the online environment via Google forms. At the beginning of the form, detailed explanations about the purpose and importance of the research were given, and a voluntary participation consent button was added. Data were collected from students who read the information given and voluntarily agreed to participate in the research. Data were collected between 05.04.2021 and 30.04.2021.

Analysis of Data

The data collected online were coded and transferred to the SPSS program and tested for normality. In the analyzes made, the skewness and kurtosis values of the data were taken into account and it was determined that the values obtained were in the range of -1,…,+1. These values were accepted as suitable for normal distribution (Tabachnick & Fidell, 2013). Descriptive statistics, Pearson correlation and Regression technique were used in statistical analysis.

FINDINGS

Table 5. The results of the relationship between perceived learning, academic motivation and attitude towards mobile learning

		Attitude Towards Mobile Learning	Academic Motivation
Perceived Learning	r	,191	,457
	p	,000**	,000**

According to the results of Pearson correlation analysis in Table 5, there was a moderate positive correlation between perceived learning and academic motivation (r=.191; p=000); On the other hand, low-level significant positive correlations were found between attitudes towards mobile learning (r=.191; p=000).

Table 6. The effect of attitude towards mobile learning and academic motivation on perceived learning

Variable	B	Std. Error	β	t	P
Stable	20,90	2,71	---	7,68	,000
Academic Motivation	,32	,03	,43	9,94	,000
Attitude Towards Mobile Learning	,18	,07	,12	2,70	,007
R= ,47 R^2_{adj}=,22					
$F_{(2,413)}$ = 59,10 p= ,000					

As a result of the multiple linear regression analysis in Table 6, it is seen that the regression model is statistically significant. According to the standardized regression coefficient (β), the relative importance of the predictor variables on perceived learning is academic motivation and attitude towards mobile learning. Examining the t-test results regarding the significance of the regression coefficients, academic motivation (β= .43; t=9.94; p=.000) and attitude towards mobile learning (β=.12; t=2.70, p=.007) were found to be significant on perceived learning. These variables explain 22% of the total variance on perceived learning.

DISCUSSION AND CONSLUSION

In the research, the effect of attitude towards mobile learning and academic motivation on perceived learning was investigated. As a result of the analysis, it was determined that attitude towards mobile learning and academic motivation had a significant effect on perceived learning and this effect explained 22% of perceived learning.

As the finding of the study, it was seen that a one-unit change in academic motivation caused a .43 change in perceived learning. Therefore, it has been determined that academic motivation plays a role as a factor on perceived learning. A student who is motivated to learn wants to spend longer periods in school, tends to be more successful in exams, and wants to learn more (Sternberg & Williams, 2009). In addition, students with a high level of motivation can act with less anxiety by displaying a more positive attitude towards school (Ratelle, Guay, Vallerand, Larose & Senécal, 2007). Therefore, it can be said that the perceived learning capacity of the academically motivated student will increase. Pintrich and Schunk (2002) stated that students with high motivation do not give up when faced with a difficult task and display insistent behavior on a solution, and this situation increases the academic success of students. When the literature was examined, it was seen that similar studies were conducted with the findings of this study. Various empirical studies on the importance of academic motivation have revealed that there is a significant relationship between students' motivation and their academic performance (Sogunro, 2014; Pintrich, 2003; Rotgans & Schmidt, 2012). Amrai, Motlagh, Zalani, & Parhon (2011) determined that there is a positive and significant relationship between academic motivation and academic achievement in their study on university students. In some studies, it has been determined that intrinsic motivation affects perceived learning positively and significantly (Ferreira, Cardoso, & Abrantes, 2011). Lamb Annetta, Firestone & Etopio (2018) revealed that student motivation is related to learning outcomes. Calp and Bacanlı (2016) stated that autonomous academic motivations directly affect school performance. Abdelrahman (2020) determined that academic motivation has a statistically significant and positive effect on academic achievement. Many studies have also confirmed that motivation plays a dominant role in academic achievement (Smith, Smith, Gilmore, & Jameson, 2012; Aunola, Leskinen, & Nurmi, 2006; Marsh, Trautwein, Lüdtke, Köller & Baumert, 2005). In most of the studies reviewed, students with no academic motivation demonstrated poor academic achievement (Cokley, 2003; Turner, Chandler & Heffer, 2009). In addition, in a meta-analysis study conducted in 109 studies, when the motivation levels of university students were measured according to the participants' overall grade point averages, it was determined that the level of motivation showed a consistent and positive relationship with school success (Robbins, Lauver, Le, Davis, Langley, & Carlstrom, 2004).

As another result of the study, it was determined that the attitude towards mobile learning significantly predicted the perceived learning and a one-unit change in the attitude towards mobile learning caused an effect of .12 on the perception of learning. Therefore, it can be said that the attitude towards mobile learning is important for perceived learning. Mobile learning is an important advantage for lifelong learning by providing the opportunity to learn anywhere and anytime. Especially in today's world, with the effect of the COVID-19 process, technology has entered human life more and increased its presence in different areas. Technology, which makes its presence felt in the field of education, has reflected itself with different applications. Applications on mobile devices have facilitated individuals' access to learning by providing education opportunities everywhere. It is thought that this facilitating effect on mobile devices enables the individual to access information more easily, so his attitude towards mobile learning affects the perceived level of learning. In addition to the many benefits of face-to-face education, it makes it difficult to access learning because it requires a physical environment. However, this necessity is eliminated through mobile devices and a situation of flexibility is created. It is thought that removing this complicating effect with mobile devices makes the attitude towards mobile learning positive

and has a facilitating effect on the perceived learning of the individual. Islam (2013) reported that the use of e-learning system significantly predicted perceived learning. In some studies, it has been determined that online courses lead to better academic performance (Lee & Lee, 2008), provide learning effectiveness and satisfaction (Wan, Wang, & Haggerty, 2008), and positively affect perceived learning (McGill & Klobas, 2009). In addition, in some studies, it has been stated that blogs as social media tools affect the development of perceived learning (Churchill, 2009; Halic, Lee, Paulus, & Spence, 2010). Hsieh and Cho (2011) determined that there is a strong relationship between satisfaction and e-learning. In recent studies in the domestic literature, it has been reported that there are positive and significant relationships between online learning attitude and online learning readiness (Hergüner and others, 2020; Hergüner and others, 2021). However, in some studies, students preferred face-to-face learning more strongly than online learning (Aguilera-Hermida, 2020; Tichavsky, Hunt, Driscoll & Jicha, 2015). Some studies have determined that social/physical presence positively affects perceived learning (Hostetter, 2013; Joksimović, Gašević, Kovanović, Riecke & Hatala, 2015; Kang & Im, 2013). In addition, students stated that their motivation decreased when they switched to online learning (Tichavsky and friends, 2015). In some studies, it has been determined that students experience stress related to online learning and have difficulty completing school assignments (Ali, 2020; Daniel, 2020; Murphy, 2020).

As a result, it was determined that academic motivation and attitudes towards mobile learning of the students of the faculty of sports sciences who participated in the research significantly predicted their perceived learning levels. Academic motivation is an important factor in university success. The effects of internal and external motivation sources on learning can be investigated by considering academic motivation sub-dimensions. University students may lack the motivation needed to be academically successful and achieve their goals. Students sometimes lose their motivation by taking education in a department they do not want due to family pressure and sometimes due to their lack of knowledge. For this reason, future studies can be carried out with different samples and different education groups in order to understand the effects of academic intrinsic motivation and academic extrinsic motivation on the academic success of the university. Today, the transfer of education to online environments and the use of technological tools have brought mobile learning to the fore. From this point of view, methods that will increase the permanence of knowledge in mobile learning can be researched. This research can also be done in different faculties and also in private and public schools comparatively.

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