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An Analysis on Digital Literacy Level of Faculty of Sports Science Students

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Abstract

The study aims to examine the digital literacy levels of students in the faculty of sports sciences. In the study group; there are 394 students (105 female and 289 male) studying in the departments of Physical Education and Sports Teaching, Sports Management, Coaching and Recreation of the Faculty of Sport Sciences at Atatürk University in the 2018-2019 academic year. "Digital Literacy Scale (DLS) is a scale, which was developed by Ng (2012) and translated into Turkish by Hamutoğlu, Güngören, Uyanık, and Erdoğan (2017) and it is composed of 17 items and 4 factors (attitude, technique, cognitive and social). Nonparametric tests (Kruskal Wallis, Mann-Whitney U) were used to analyse the data of the study. According to the findings; digital literacy levels of the participating students differ significantly in social sub-dimension in respect of gender variation. In the social sub-dimension of digital literacy scale, digital literacy levels of male students were higher than female students.

Keywords: Digital age, Digital literacy, Sports science students.

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Contents

Contribution of this paper to the literature

This study contributes to the existing literature by examining the digital literacy levels of students in the faculty of sports sciences. In the study group; there are 394 students (105 female and 289 male) studying in the departments of Physical Education and Sports Teaching, Sports Management, Coaching and Recreation of the Faculty of Sport Sciences at Atatürk University in the 2018-2019 academic year.

1. Introduction

Rapid developments in the 21st century have started to convert the way of technology that affects human life-style. In today's society, there has been a rapid transition from electronic media to digital media. The methods of obtaining and processing information in this process have also varied considerably (Gilster & Glister, 1997). The way to obtain information requires using multiple media so people need to use digital media correctly and effectively in order to achieve this. When it is considered that every digitalized media requires human being again, the virtual environment cannot exist without people, similarly people cannot be outside these environments. Technology is shaped by humans and the way how it should be used is the area where will be determined by the knowledge and equipment of the individual.

In this period of consumption, media consumption is increasing day by day and the society is closely monitored by the media (ALA, 2000; Koltay, 2011; Martin & Madigan, 2006). The media has expanded its traditionally known area with the new media and it has become a network community consisting of a versatile, interactive and active audience/spectator, not just a one-way passive audience process. However, traditional and multi-media messages deeply affect the thinking, behaviour and beliefs of societies. Media consumption also changes because of the usability of the communication and digital tools created by the user (Koltay, 2011).

In the new digital age, where digital tools are common, interest in information and communication technologies has increased. Considering the given importance on information in society and in human life, individuals' means of transportation and access have also started to change. It has created a new type of literacy that is different when we know how to get accurate and reliable information from digital tools and use these technologies correctly. According to Wu and Wang (2011) the experts in this field have classified this literacy process into three groups, considering it in its historical development:

- Classic literacy (literacy understanding).
- Audio-visual literacy (mostly related to electronic media).
- Digital literacy (Digital communication technologies).

Lanham (1995) claims that "literacy" extends its semantic access from "the ability to read and write" the expression of understanding now, to "the ability to understand the information presented." It emphasizes the multilingual nature of digital information. He argues that being digital literate involves “gaining the ability to solve syntactic subtleties of words as well as complex images and sounds”. He defines this literacy as digitally literate people running as they move from one type of environment to another, and to master [knowledge] in an environment where [the] audience will find it easier to understand, what kind of expressions are appropriate. Digital literacy enables us to comply with the type of information we provide and the audience we offer.

According to Paul Gilster, who made the definition of digital literacy for the first time, he defines it as "the ability to understand and use information from multiple sources in multiple formats when presented via computer" and especially on the Internet. He emphasizes what he sees as the natural differences between digital information media and traditional media. Digital literacy involves adapting our skills to a new and impressive new environment. However, these qualifications are not just "operational" or "technical" qualifications. Digital literacy is “having ideas, not typing the keys”. Gilster identifies four basic digital literacy competencies: gathering information, evaluating information content, searching the internet, and browsing in hypertext.

1.1. Fundemental Components of Digital Literacy

It is a decisive fact that the communication and computer technologies are becoming widespread and changing every dimension from education to work; therefore, it is necessary to answer the extraordinary technological inventions of the time in the best way. Therefore, it is necessary to start digital literacy education from an early age. While there are many definitions about digital literacy with the same meanings, there is a standard conceptualization of digital literacy. The main features of digital literacy are:

- Digital literacy involves performing successful digital actions embedded in business, learning, leisure and other aspects daily life.
- Digital literacy therefore improves for the individual as his or her private life situation develops as well as an ongoing lifelong process.
- Digital literacy is wider than ICT literacy and will include elements.
- Many related “digital literacy”.
- Digital literacy involves acquiring and using information and techniques. It will include attitudes and personal qualities and planning ability. Application and evaluation of digital actions in solving tasks in life.
- It also includes self-knowledge as a digital literate person and the ability to reflect on one's own digital literacy development.

Digital Literacy is the awareness, attitude and ability of individuals to use digital tools and facilities appropriately to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources and create new information. Communicate and influence media statements and others in the context of specific life situations to enable constructive social action. At the same time, three elements must be present in the individual in order to have digital literacy. These elements are: digital competence, digital use, digital transformation (Lankshear & Knobel, 2008).

2. Method

In this part of the study, the sample group of the study, the data collection tools used in the research, explanatory information about the data collection and detailed information about the analysis of the collected data are given.

2.1. Research Group

The study group of the study was 394 students (105 female, 289 male) who studied at Atatürk University Faculty of Sport Sciences, Physical Education and Sports Teaching, Sports Management, Coaching Education and Recreation departments in the 2018-2019 academic year and were included in the study by random method.

2.2. Data Collection Tools

As a data collection tool in the research; "Digital Literacy Scale" and "Personal Information Form" were used. Digital Literacy Scale, developed by Ng (2012) translated into Turkish by Hamutoğlu et al. (2017) is a scale consisting of 17 items and 4 factors (attitude, technique, cognitive and social). A 5-point Likert-type rating was used on the scale where the item scored in reverse order as "I strongly agree (5)" and "I strongly disagree (1)." The increase in the scores obtained from the sub-dimensions of DLS and the scale generally indicates high digital literacy. Cronbach Alpha internal consistency coefficient of the scale was calculated as "0,870" within the scope of this study. Depending on the alpha coefficient, the reliability of the scale is interpreted as follows: If 0.00≤alfa≤0.40, the scale is not reliable, if 0.40≤alfa≤0.60, the scale is low, if 0.60≤alfa≤0.80, the scale is very reliable, and 0.80≤alfa≤1.00, the scale is highly reliable (Kalaycı, 2009). According to this result (0,870), the reliability of the study can be said to be quite high.

2.3. Data Analysis

Data obtained from the research; descriptive statistical methods were analysed using Mann Whitney-U and Kruskal Wallis H-test. Whether the data met the prerequisites for parametric tests was determined by reviewing Skewness and Flatness (normal distribution state) values and Levene (equality of variance) test results (-1.5, + 1.5, Tabachnick and Fidell (2013). Analysis has shown that the data do not meet the parametric test assumptions. Cronbach Alpha internal consistency coefficients were calculated to determine the reliability of the scales.

3. Findings

In this part of the study, the findings obtained as a result of our research are included. Findings are explained in detail with descriptive information under the tables and tables.

Table-1. Demographic features of the participants.

Variable		n	%
Gender	Female	105	26,6
	Male	289	73,4
Bölüm	Department of Education	83	21,1
	Sports Management	84	21,3
	Coaching	104	26,4
	Recreation	123	31,2
Sınıf	Class 1	127	32,2
	Class 2	135	34,3
	Class 3	65	16,5
	Class 4	67	17,0
	Total	394	100,0

Table 1 provides information about students' demographic information. Accordingly, 26.6% of the students (105 sunjects) are female; 73.4% (289 Subjects) are male. Looking at the distribution of students regarding their departments; Department of Education of 21.1% (83); It was determined that 21.3% (84) studied Sports Management, 26.4% (104) were Coaching and 31.2% (123) were studying in the recreation department. Regarding the class variable: 32.2% (127) are 1st grade, 34.3% (135) are 2nd grade, 16.5% (65) are 3rd grade and 17%, It was determined that 0 (67) studied in the 4th grade.

Table-2. Scale point distribution.

Scales	N	Min	Max	Mean	SD	Skewness	Kurtosis
DLS	395	1,00	5,00	3,71-,	,766	-1,531	2,176

Table-3. Mann Whitney-u test results for digital literacy levels according to participants' gender variable.

Variable	Groups	N	X̄ order	U	Z	p
Attitude	Female	105	191,29	14520,00	-,655	,513
	Male	289	199,76			
Technique	Female	105	186,01	13966,00	-1,211	,226
	Male	289	201,67			
Cognitive	Female	105	192,43	14640,50	-,541	,589
	Male	289	199,34			
Social	Female	105	176,47	12964,00	-2,240	**,025**
	Male	289	205,14			
DLS	Female	105	180,92	13432,00	-1,742	,082
	Male	289	203,52			

Within the scope of the research, the arithmetic mean of the scores that the students got from the scale of DLS answered was 3.71-, 787. When the skewness (-1,531) and kurtosis (2,176) coefficients are examined, it is seen that the data collected from the participants do not have a normal distribution and non-parametric tests should be applied Table 2.

In Table 3, According to the results of the Mann-Whitney U test, the digital literacy levels of the participant students differ significantly in their social sub-dimensions according to the gender variable. In the social sub-dimension of the digital literacy scale of male students (X) = 205.14), digital literacy levels were statistically significantly higher than female students (X) = 176.47) (p =, 025, p <0.05).

Table-4. Kruskal wallis h-test results for participants' digital literacy levels according to department variable.

Variable	Groups	N	$\bar{X}_{order}$	x^2	sd	P
Attitude	Department of Education	83	195,11	2,260	3	,520
	Sports Management	84	207,01			
	Coaching	104	204,93			
	Recreation	123	186,33			
Technique	Department of Education	83	192,71	,704	3	,872
	Sports Management	84	198,75			
	Coaching	104	204,68			
	Recreation	123	193,80			
Cognitive	Department of Education	83	188,51	5,496	3	,139
	Sports Management	84	187,44			
	Coaching	104	219,43			
	Recreation	123	191,90			
Social	Department of Education	83	188,34	2,360	3	,501
	Sports Management	84	187,65			
	Coaching	104	208,81			
	Recreation	123	200,85			
DLS	Department of Education	83	189,18	2,679	3	,444
	Sports Management	84	191,41			
	Coaching	104	212,88			
	Recreation	123	194,27			

İn Table 4, According to the Kruskal-Wallis test results, the digital literacy levels of the participant students do not differ significantly according to the department variable ($\chi 2$ = 2.679 and p> 0.05).

Table-5. Kruskal Wallis h-test results regarding the level of digital literacy according to the class variable of the participants.

Variable	Groups	N	$\bar{X}_{order}$	x^2	sd	P	Significant Difference
Attitude	Class 1	127	210,10	3,547	3	,315	
	Class 2	135	184,07				
	Class 3	65	196,46				
	Class 4	67	201,68				
Technique	Class 1	127	206,12	2,043	3	,563	
	Class 2	135	186,70				
	Class 3	65	199,17				
	Class 4	67	201,31				
Cognitive	Class 1	127	203,91	5,835	3	,120	
	Class 2	135	182,86				
	Class 3	65	191,28				
	Class 4	67	220,90				
Social	Class 1	127	217,64	7,470	3	,048*	1>4
	Class 2	135	192,70				
	Class 3	65	192,42				
	Class 4	67	173,35				
DLS	Class 1	127	215,62	6,441	3	,092	
	Class 2	135	182,74				
	Class 3	65	185,59				
	Class 4	67	204,44				

In Table 5, When the Kruskal-Wallis test results are analysed, it is seen that the digital literacy levels of the participant students differ significantly according to the class variable [$\chi 2$ (3) = 7,470; p <, 05]. According to the results of the Mann-Whitney U test, this difference was found to be between the students studying in the 1st grade and the students in the 4th grade. According to the rank averages of the groups, digital literacy levels decrease as the grade level of students progresses from the 1st grade to the 4th grade in the social sub-dimension.

4. Discussion

According to the findings we have obtained; there was no significant difference between the digital literacy levels of male and female students participating in the study in terms of attitude, technical, cognitive and total digital literacy sub-dimensions. In the social sub-dimension, there is a meaningful difference between the digital literacy scores. It is concluded that this difference is in favour of male students, and the scores of male students in all dimensions are higher than female students. Studies supporting the findings we obtained in the literature review (Cetin, 2016; Göldağ & Kanat, 2018; Korkmaz & Mahiroğlu, 2009) were found. However, there are studies showing that there is no relationship between gender and digital literacy (Kazu & Erten, 2014).

No significant difference was found between the levels of digital literacy according to the department variable of the participants. When looking at the general averages; It was determined that the students in the technical, cognitive and social sub-dimensions had the highest averages in the department of coaching and in the sub-dimension of the sports management. Among the digital literacy total scores, it is seen that the students studying in the department of coaching have the highest average.

There was a significant difference between the digital literacy levels of the students participating in the study according to the classes they studied, but there was no significant difference in the attitude, technical and cognitive sub-dimensions. In the social sub-dimension, there is a meaningful difference between the students studying in the first grade and fourth grade, and this difference is in favour of the students studying in the first grade. In his study on prospective teachers, Yontar (2019) could not detect a significant difference in the class variable of digital literacy levels. In their study, Ozerbaş and Kuralbayev (2018) concluded that there is no significant difference in the comparison of digital literacy levels of pre-service teachers according to their class levels, except for contextual use.

In the digital age we live in, there are digital literacy studies on students studying in the field of sports sciences, as well as literacy studies such as information literacy, media literacy, sports literacy (Biricik, 2019; Demir, Tosun, Yüksel, & Konak, 2019; Yıldırım, 2019).

According to results of our study, the following suggestions can be made.

- To improve the digital literacy levels of students studying in the Faculty of Sport Sciences; Elective courses can be included in the curriculum in the context of digital literacy.
- Awareness can be created for students studying in this section by organizing various panels, seminars, conferences related to the importance of the digital age.
- It is considered important to give importance to these studies in the field of sports sciences and to increase the number of research.

References

ALA. (2000). *Information literacy competency standards for higher education.* Chicago, il: Association of College and Research Libraries.

Biricik, Y. S. (2019). Examining the media literacy levels of students studying in the faculty of sports sciences. *SPORMETRE Journal of Physical Education and Sports Sciences, 17*(4), 56-67.

Cetin, O. (2016). Investigation of digital literacy levels of prospective science teachers with pedagogical formation program. *Erzincan University Journal of Education Faculty, 18*(2), 658-685.

Demir, B., Tosun, A., Yüksel, A., & Konak, O. (2019). Determination of the sports literacy levels of students studying in the faculty of sports sciences. *International Journal of Social and Humanities Research, 6*(45), 3814-3821.

Gilster, P., & Glister, P. (1997). *Digital literacy.* New York: Wiley Computer Pub.

Göldağ, B., & Kanat, S. (2018). Digital literacy status of students studying fine arts. *International Journal of Social Sciences, 70*, 77-92. Available at: http://dx.doi.org/10.9761/JASSS7736.

Hamutoğlu, N. B., Güngören, Ö. C., Uyanık, G. K., & Erdoğan, D. G. (2017). Digital literacy scale: Adaptation study to Turkish. *Aegean Education Magazine, 18*(1), 408-429.

Kalaycı, S. (2009). *SPSS applied multivariate statistical techniques.* Ankara: Asil Publishing.

Kazu, I. Y., & Erten, P. (2014). Numerical competency levels of prospective teachers. *Bartın University Faculty of Education Journal, 3*(2), 132-152.

Koltay, T. (2011). The media and the literacies: Media literacy, information literacy, digital literacy. *Media, Culture & Society, 33*(2), 211-221. Available at: https://doi.org/10.1177/0163443710393382.

Korkmaz, O., & Mahiroğlu, A. (2009). Computer literacy levels of newly acquired students. *Kastamonu Education Journal, 17*(3), 983-1000.

Lanham, R. A. (1995). Digital literacy. *Scientific American, 273*(3), 198-199.

Lankshear, C., & Knobel, M. (2008). *Digital literacies: Concepts, policies and practices.* New York: Peter Lang.

Martin, A., & Madigan, D. (2006). Preface. In: Martin A and Madigan D. (Eds.), Digital literacies for learning (pp. 25-28). London: Facet.

Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education, 59*(3), 1065-1078. Available at: https://doi.org/10.1016/j.compedu.2012.04.016.

Ozerbaş, M., & Kuralbayev, A. (2018). Investigation of Turkey and Kazakhstan the level of digital literacy teachers. *MSKU Faculty of Education Journal, 5*(1), 16-25.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston: Allyn and Bacon.

Wu, P. C., & Wang, Y. C. (2011). The influences of electronic word-of-mouth message appeal and message source credibility on brand attitude. *Asia Pacific Journal of Marketing and Logistics, 23*(4), 448-472.

Yıldırım, T. (2019). *Employability and information literacy skills of students: Hacettepe university example.* Ph.D. Thesis, Hacettepe University Institute of Social Sciences Department of Information and Document Management, Ankara.

Yontar, A. (2019). Digital literacy levels of prospective teachers. *Journal of Mother Tongue Education, 7*(4), 815-824.