

# Distance Learners' Basic Digital Competence in Higher Education

## Yükseköğretimde Uzaktan Öğrenenlerin Temel Dijital Yetkinliği

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### ABSTRACT

Basic digital competence is essential for learners in higher education, especially in the field of distance education. The main purpose of this study was to understand the levels of digital competence of distance learners in Türkiye according to the variables of age, gender, and owning a computer. The participants consisted of 243 distance learners studying at various disciplines of Malatya Turgut Özal University in Türkiye. The data were collected through a survey via a digital competence scale. The findings of the research indicated that the basic digital competence of distance learners was high in communication and moderate in problem solving, university's virtual tools and social communication, and information and data literacy. However, distance learners were the least competent in digital content development. In addition, statistical analysis displayed that the basic digital competence of distance learners did not differ in gender. On the contrary, significant differences existed in the information and data literacy of the distance learners with regard to having a computer and age. The results of the study revealed that it was important to include the improvement of digital competence in distance education to provide distance learners an opportunity to reach high basic digital competence and facilitate their learning.

**Keywords:** Basic digital competence, Distance education, Distance learners, Higher education, Technology use

### ÖZ

Yükseköğretim kurumlarında ve özellikle uzaktan eğitimde öğrencilerin temel dijital yeterliliğe sahip olmaları esastır. Bu çalışmanın temel amacı Türkiye'de uzaktan öğrenim gören öğrencilerin dijital yeterlik düzeylerini yaş, cinsiyet ve bilgisayara sahip olma değişkenlerine göre incelemektir. Katılımcılar Malatya Turgut Özal Üniversitesi'nin çeşitli bölümlerinde öğrenim görmekte olan 243 uzaktan eğitim öğrencisinden oluşmaktadır. Çalışmanın verileri dijital yeterlilik ölçeği kullanılarak toplanmıştır. Araştırmanın bulguları, uzaktan öğrenenlerin temel dijital yeterliliğinin iletişimde yüksek, problem çözme, üniversitenin sanal araçları ve sosyal iletişim ile bilgi ve veri okuryazarlığında orta düzeyde olduğunu göstermiştir. Ancak dijital içerik geliştirme öğrencilerin en az yetkin oldukları alandır. Ayrıca istatistiksel analizler, uzaktan öğrenenlerin temel dijital yeterliliklerinin cinsiyet açısından farklılık göstermediğini ortaya koymuştur. Buna karşılık öğrenciler bilgi ve veri okuryazarlığında bilgisayara sahip olma ve yaş değişkenlerine göre anlamlı farklılıklar göstermişlerdir. Araştırmanın sonuçları, dijital yeterliliğin geliştirilerek uzaktan eğitime dahil edilmesinin uzaktan öğrenenlere temel dijital yeterliliğe ulaşma fırsatı sağlamak ve öğrenmeyi kolaylaştırmak açısından önemli olduğunu göstermiştir.

**Anahtar Sözcükler:** Temel dijital yeterlilik, Uzaktan eğitim, Uzaktan öğrenenler, Yükseköğretim, Teknoloji kullanımı

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## INTRODUCTION

For the information society, new challenges and conditions have appeared due to quick progress in the area of communication and information technology. These developments are in line with the use of technology to make students ready for the changing realities of the labor market and for life in higher education (Inamorato dos Santos, Chinkes, Carvalho, Solórzano & Marroni, 2023). Digital competence is regarded as a compilation of abilities, practices, and knowledge providing people to use new technologies for leisure, working, and learning activities (Cao, Bhuvanewari, Arumugam & Aravind, 2023). Elements of digital competence include digital literacy or technology literacy, professional skills, presentation skills, and knowledge depth (Szabo, Montgomerie & Davies, 2002, as cited in Cao, et al., 2023). According to the European Commission, it is regarded as one of the significant competencies that are essential for a person's work and full life (Henseruk, Boyko, Tsepeniuk, Buyak & Martyniuk, 2021). For Martin and Grudziecki (2006), digital literacy supports digital competence (as cited in Spante, Hashemi, Lundin & Algiers, 2018). Nowadays, advancement in digital competence is regarded as an important fragment of university students' education. For this reason, it is necessary for students in higher education to improve their capability to use digital technology efficiently in the process of learning and teaching (Awaludin, Prayitno & Haq, 2022, as cited in Arkorful, Salifu, Arthur & Abam Nortey, 2024).

Learners' basic digital competences and skills and their relationship with gender, grade, methods, concepts, and attitudes relevant to study in higher education institutions have been reported previously (Henseruk et al., 2021; Silva & Behar, 2017; Vázquez-Cano, López Meneses & García-Garzón, 2017; Vishnu, Raghavan Sathyan, Susan Sam, Radhakrishnan, Olaparambil Ragavan, Vattam Kandathil & Funk, 2022; Zhao, Pinto Llorente & Sánchez Gómez, 2021). The study by Zhao et al. (2021) on digital competence in the context of higher education displayed that the majority of teachers and undergraduate students had a basic level of digital competence. It was suggested that higher education institutions were supported to concentrate on using proper instruments and suitable learning strategies and improving the digital competence of teachers and students for the sake of quality in education (Zhao et al., 2021). Silva and Behar (2017) underlined the importance of digital competences for distance learning students. They stated that digital competences should be constructed gradually over time since the technology was frequently developing and provoking changes. Henseruk et al. (2021) investigated the digital competence level of freshmen humanities learners and found that they did not have a sufficient level of digital competence development in communication and cooperation. They suggested that higher education institutions urgently provided a learning environment that created opportunities for future professionals' self-improvement and enhanced the achievement of learning outcomes. In another study, Vázquez-Cano et al. (2017) explored whether there were any differences between students' basic digital competences and gender. The participants were selected from the departments of Social Work and Pedagogy

and Social Education at two universities in Spain: one of the universities was a public full-time attendance university and the other one was a distance-learning university. The study showed that both female and male participants believed that they had satisfactory competence in terms of Podcasting, Digital Cartography, Web Browsers, and Search Engines factors. Additionally, they considered that they had good interpersonal competence. Nevertheless, in the factor of Digital Cartography, male participants showed higher perceived competence along with that of online presentations. Male participants got higher perceived competence in the use of university email than their female counterparts. The study also indicated that on-campus students did not feel that they were competent in the factors of Use of University Social Networks and Digital Cartography. However, distance learners thought of themselves to be competent in the factors of Social Networks and the Use of Web Browsers. Vishnu et al. (2022) explored the digital competence of online learners at Agriculture University in India. The results showed that most of the students were moderately competent or competent on account of different factors of digital competence. Specifically, most students had a medium level of digital competence in the factor of data and information literacy. More than one-third of the participants had average communication and collaboration competence. Half of them had a moderate level of digital content creation competence and one-third of them were moderately competent in problem solving competence. Besides, female students' overall digital competence was lower than the male ones. Compared to other devices like tablets, desktop computers, and laptops, Smartphone was the most prominent digital device that most students had access to.

In the context of Türkiye, various studies were done to explore the digital competence of Turkish university students according to different variables (Çebi & Reisoğlu, 2020; Karagozoglulu & Gezer, 2022; Koyuncuoglu, 2022; Tekin & Uysal, 2022; Yılmaz, Akel, Bayraktar & Demirkaya, 2023; Yurtseven, Sarac & Akgun, 2021). Yılmaz et al. (2023) stated that Türkiye was ready to take necessary steps in the context of education due to digital improvements and digital transformation around the world. Therefore, institutions in Türkiye such as universities and schools advanced towards digitization to make students equipped with the capability to utilize modern technology. Students and educators need to improve their digital literacy skills to be successful in this digital revolution. Çebi and Reisoğlu (2020) explored pre-service teachers' perceptions of digital competence in terms of branch and gender in Türkiye. The findings of the research revealed that participants' digital competence was found to be at an average level. Female participants were worse at factors such as problem solving, safety, digital content creation, and information and data literacy than males concerning gender. It was suggested that pre-service teachers should be trained according to their needs. Karagozoglulu and Gezer (2022) investigated the possible link between prospective social studies teachers' attitudes toward distance education and their digital literacy. The results of the research indicated that students with high incomes obtained higher levels of digital literacy than those with middle and low in-

comes. It was displayed that a significant correlation existed between students' attitudes towards distance education and digital literacy. Concerning the variable of gender, no significant relationship was encountered but the female students' digital literacy levels were found to be lower than the male counterparts. The study showed that the more students' positive attitudes towards distance education increased the more their levels of digital literacy enhanced. Similarly, Tekin and Uysal (2022) investigated the link between medical students' attitudes towards e-learning and their digital competence levels. The study displayed that medical students had an average level of e-learning and a high level of digital competence. It also indicated a significant and positive relationship between e-learning and digital competence. However, no statistically significant difference was found between male and female participants. The research revealed that the more the students' e-learning attitudes enhanced the more the students' digital competences increased. Therefore, designing a curriculum to improve the digital skills of the students was crucial for medical education. Yurtseven et al., (2021) stated that for the learners in distance education having adequate digital skills for learning was important. In the study, they searched for whether distance students' digital literacy influenced their online learning readiness. Findings displayed the existence of a significant difference between students' online learning readiness and their digital literacy levels. The study concluded that students who were highly competent in digital literacy were ready for online learning. Digital skills could partly explain online learning readiness and distance education perceptions of the students. Koyuncuoglu (2022) searched Turkish university students' digital and technological competence in terms of gender, achievement, and grade. The students studied at various departments of different universities in Türkiye. The findings indicated that students had a medium level of digital competencies in the factors of Social Dimension, Professional Production and General Knowledge and Functional Skills while they had a very high level of those in the factors of Privacy and Security, Daily Use, and Ethics and Responsibility. The study displayed that gender was not a significant contributor to students' digital competencies. However, there was a significant difference according to students' achievement and grade level. It was recommended that learning to use digital information was necessary in students' professional lives and university education. Thus, programs need to be developed to increase students' digital skills.

Digitalization and improvements in technology have a significant effect on education. As there is a change from traditional education mode to online education, this shift has provided students to reach global knowledge and local sources easier (Yılmaz et al., 2023). Digital education and digital literacy have gained more importance within the context of distance education. Nevertheless, all factors contributing digital competence of distance learners have been explored in a limited number of research and studies have generally been carried out in specific countries. In this vein, research comprehensively searching for the digital competences of distance learners, and specifically explaining the deficiencies of distance learners in the context of Türkiye is required. In this respect, the aim of the present

research focused on examining the basic digital competence of distance learners who had just started their undergraduate education regarding different variables such as owning a computer, age, and gender. Therefore, the research questions of the study were addressed as follows:

1. What are the levels of basic digital competence of distance learners?
2. How does distance learners' basic digital competence differ by gender, age, and owning a computer?

## METHODS

### Study Design

This research was administered as a cross-sectional kind of survey research as the data were collected in a certain period in the context of different variables. It was based on a quantitative research method to examine the basic digital competence of distance learners who had just started their university education.

### Research Sample

The sample group was consisted of distance learners studying in various faculties and vocational schools of Malatya Turgut Özal University in Türkiye such as the Faculty of Social Sciences and Humanities, the Faculty of Engineering, the School of Civil Aviation, the School of Health Services and two other vocational schools. Of the participants, 145 of them (59.7) were female and 98 of them were male (40.3) with a total of 243. The ages ranged between 17 and 43 with a mean score of 20.31. The students with age of 17-19 (67.5) were 164, 20 and above (32.2) were 79. 123 (50.6) students stated that they had their own computer while 120 of them (49.4) did not have a computer. 110 students stated that they took their courses with a Smartphone (45.3), 110 students (45.3) with their own computer, and 23 (9.5) with another's computer. Table 1 displayed demographic information about the participants of the study.

**Table 1:** Descriptive Statistics of Participants' Demographics

	n	Percentage (%)
Gender		
Female	145	59.7
Male	98	40.3
Age		
17-19	164	67.5
20 and above	79	32.5
Owning a computer		
Yes	123	50.6
No	120	49.4
Tools for taking courses		
Smartphone	110	45.3
Own computer	110	45.3
Other's computer	23	9.5

### Data Collection Tool

The data were collected via the Turkish version of University Students' Basic Digital Competences 2.0 COBADI® scale (Adanir & Guven, 2022). The scale consisted of 29 items and determined five main blocks under the name of communication, problem solving, university's virtual tools and social communication, information and data literacy, and digital content development. It consisted of two sections. The first section included participants' demographic background such as age, gender, owning a computer, and how they took the courses, and the second section contained the questions of the scale. Specifically, the first block, digital content development, included nine items. The second factor, information and data literacy, consisted of ten items. The third factor, communication, consisted of three items. The fourth factor, the university's virtual tools and social communication, included four items, and the last factor, problem solving, consisted of three items. The Cronbach alpha value of the scale was measured and obtained to be .90 (Adanir & Guven, 2022). The overall Cronbach's alpha value was found to be .92 for the current study, which was quite high. In addition, it was .89, .88, .86, .62, and .68 for the first, second, third, fourth, and fifth blocks.

### Data Collection Procedure

The data were gathered at the beginning of the fall term during the 2023-2024 academic year. The questionnaire was distributed through Google Forms online to students from different faculties and vocational schools of the university to ensure the heterogeneity of the sample. While sending the forms, the students' e-mail addresses were not asked to keep their personal information confidential.

### Data Analysis

Descriptive statistics such as standard deviation and mean were used for the analysis of the data gathered from the participants. SPSS statistics program was conducted for data analysis. An independent samples t-test was administered to compare the mean scores obtained from the scale depending on gender and basic digital competence. Additionally, a One-Way ANOVA test was conducted to understand the possible differences regarding variables such as distance learners' owning a computer and age. The items were measured on a 4-point Likert scale, 4 being 'I feel completely in control' and 1 being 'I feel completely ineffective'.

### Ethics Declaration

The current study was administered with the approval decision taken at the Ethics Committee for Human Research in Social Sciences (Decision No.9/2) of Malatya Turgut Özal University dated 27.11.2023.

## FINDINGS

The digital competency levels of 243 distance learners were sought with descriptive statistics such as standard deviations and arithmetic means in order to respond to the first research question of the study, which elicited distance learners' basic digital competences. The overall mean score of distance learn-

ers' basic digital competences was found to be 2.77, which indicated that distance learners had an average level of digital competence. The results of the five blocks are displayed in Table 2.

**Table 2:** Descriptive Results of Distance Learners' Basic Digital Competence Levels

Blocks	M	SD
Problem solving	2.95	1.02
University's virtual tools and social communication	2.75	1.04
Communication	3.47	0.87
Information and data literacy	2.93	1.01
Digital content development	1.86	0.91
Overall	2.77	0.97

The first block, digital content development, included nine items. The total mean score of the distance learners' digital content development was found to be 1.86 and it was at a "low" level. The learners reported that they could join forums properly at an "average" level (M=2.78). However, the learners did not consider themselves competent in designing, creating, or modifying a wiki (M=1.60). They could not organize, analyze, and synthesize information with concept maps using social software tools (M=1.67). They did not feel competent in working with social software tools that helped them analyze and/or navigate content found on blogs (M=1.68). Additionally, they could not use programs to publish interactive presentations on the Internet (M=1.71) and could not design, create and modify blogs (M=1.77).

The second block, information and data literacy included ten items. The total mean score of the distance learners' information and data literacy was 2.93 and it was at an "average" level. The learners stated that they could communicate with other people via e-mail (M=3.56) and use audio recordings and video streams (M=3.39) at a "very good" level. Nevertheless, they did not know how to use wikis (M=2.21) and could not use educational platforms adequately as their mean scores in these items were at a "low" level (M=2.27).

The third block, communication, included three items. The total mean score of distance learners' communication was 3.47 and it was at a "high" level. The learners stated that they could communicate with other people participating in social networks (M=3.56), use instant messaging as a means of communication with other people (M=3.46), and use chat to interact with other people (M=3.39) at a "very good" level.

The fourth block, the university's virtual tools and social communication, included four items. The total mean score of distance learners' university's virtual tools and social communication was 2.75 and it was at an "average" level. The learners reported that they followed the social networks of the university (M=3.25), and used the university's virtual education platform (M=3.19) and university e-mail (2.75) at an "average"



level. On the contrary, students read the university newspaper at a “very low” level ( $M=1.84$ ).

The fifth block, distance learners’ problem solving, included three items. The total mean score of distance learners’ problem solving competency was 2.95 and it was at an “average” level. The learners stated that they talked to a friend to see if they could solve problems about using an app together ( $M=3.10$ ), consult the instructor through a network communication channel ( $M=2.88$ ) and look for tutorials online and try to figure issues out independently ( $M=2.88$ ) at an “average” level.

The digital competency levels of 243 distance learners were examined by conducting an independent t-test to answer the second research question of the study, which aimed to show the correlation between distance learners’ basic digital competence and their gender, as displayed in Table 3.

As Table 3 displayed, the gender of the students did not make a significant difference in their level of digital content develop-

ment ( $p: 0.90, p>0.05$ ), information and data literacy ( $p: 0.35, p>0.05$ ), communication ( $p: 0.87, p>0.05$ ), university’s virtual tools and social communication ( $p: 0.60, p>0.05$ ), and problem solving competences ( $p: 0.53, p>0.05$ ).

The second research question also investigated the correlation between age and digital competence of distance learners. The results of the one-way ANOVA test are shown in Table 4.

It was indicated in Table 4 that age did not influence distance learners’ level of digital content development competence ( $p: 0.19, p>0.05$ ), communication competence ( $p: 0.14, p>0.05$ ), university’s virtual tools and social communication competence ( $p: 0.73, p>0.05$ ) and problem solving competence ( $p: 0.18, p>0.05$ ) except from information and data literacy ( $p: 0.01, p>0.05$ ). A statistically significant difference was found to be in the block of information and data literacy on behalf of the younger distance learners. In detail, the mean scores ( $M=3.01$ ) of those whose ages were between 17 and 19 were higher than those whose ages were between 20 and above ( $M=2.76$ ).

**Table 3:** Results For Gender and Digital Competence

	Gender	n	Mean	SD	t	p
Digital content development	Female	145	1.87	0.67	241	0.90
	Male	98	1.86	0.69		
Information and data literacy	Female	145	2.90	0.78	241	0.35
	Male	98	2.98	0.61		
Communication	Female	145	3.47	0.81	241	0.87
	Male	98	3.46	0.71		
University’s virtual tools and social communication	Female	145	2.77	0.77	241	0.60
	Male	98	2.72	0.64		
Problem solving	Female	145	3.03	0.82	241	0.53
	Male	98	2.83	0.76		

**Table 4:** Results for Age and Digital Competence

	Source	SS	df	MS	F	p
Digital content development	Between	0.78	1	0.78	1.70	0.19
	Within	110.56	241	0.45		
	Total	111.34	242			
Information and data literacy	Between	3.43	1	3.43	6.77	0.01*
	Within	122.12	241	0.50		
	Total	125.55	242			
Communication	Between	1.28	1	1.28	2.14	0.14
	Within	144.38	241	0.59		
	Total	145.66	242			
University’s virtual tools and social communication	Between	0.06	1	0.06	.119	0.73
	Within	126.93	241	0.52		
	Total	126.99	242			
Problem solving	Between	1.12	1	1.12	1.74	0.18
	Within	156.04	241	0.64		
	Total	157.16	242			

The study also explored the link between the variable of owning a computer and the digital competence of distance learners to give a response to the second research question. The findings are indicated in Table 5.

Table 5 displayed that owning a computer did not affect distance learners' level of digital content development competence ( $p: 0.17, p>0.05$ ), communication competence ( $p: 0.12, p>0.05$ ), university's virtual tools and social communication competence ( $p: 0.45, p>0.05$ ) and problem solving competence ( $p: 0.12, p>0.05$ ) except from information and data literacy ( $p: 0.02, p>0.05$ ). The findings indicated a statistically significant difference between the information and data literacy and distance learners who owned a computer. This meant that the mean scores ( $M=3.03$ ) of those who had their own computers were higher than those who did not ( $M=2.83$ ).

### DISCUSSION

The current study mainly aimed to investigate basic digital competence levels of distance learners regarding variables of computer ownership, gender, and age. With this aim, the first research question addressed to determine distance learners' basic digital competence levels according to five categories as communication, problem solving, university's virtual tools and social communication, information and data literacy, and digital content development. As a result of the research, it could be said that distance learners were moderately competent in their overall basic digital competences, the findings of which were in line with the previous studies (Çebi & Reisoğlu, 2020; Vishnu et al., 2022) but not consistent with the research indicating medical students' high level of digital competence (Tekin & Uysal, 2022). This result revealed that distance learners had basic digital competence providing them adequate skills and knowledge to learn and live in the knowledge society (Godhe, 2019). Furthermore, distance learners' digital competence

item responses to the blocks of communication, problem solving, information and data literacy, and university's virtual tools and social communication were higher than the blocks of digital content development. To be more specific, distance learners got the highest mean score in the block of communication competence, the findings of which were inconsistent with the previous research displaying an average level of communication competence of the students (Vishnu et al., 2022). It was seen that distance learners could use social networks effectively to communicate with other people. This may be due to their interest in new technology use efficiently and effectively for leisure time, working and learning activities (Cao et al., 2023), and their use of digital technology in their daily lives (Çebi & Reisoğlu, 2020). Moreover, they had average levels of digital competence in three factors of basic digital competences: problem solving, the university's virtual tools and social communication, and information and data literacy. Specifically, distance learners were moderately competent in the factor of information and data literacy, the results of which were consistent with the previous research showing an average level of digital competence in this area (Çebi & Reisoğlu, 2020; Vishnu et al., 2022). To be more specific, the results displayed that distance learners had the ability to use e-mail sufficiently to communicate with other people and use the most popular video streams and audio recordings such as YouTube or Vimeo in a good way. The reason behind this may be related to learners' preference for following up with modern and common digital tools in their usual lives to socialize. As already mentioned, they need to have the necessary digital competencies to learn in the field of distance learning (Yurtseven et al., 2021). Similarly, distance learners had an average level in the factor of university's virtual tools and social communication. It was obvious that distance learners could use their university's virtual education platforms and email, and also follow the social networks of the university at an average level. It can

**Table 5:** Results for Owning a Computer and Digital Competence

	Source	SS	df	MS	F	p
Digital content development	Between	0.84	1	0.84	1.83	0.17
	Within	110.50	241	0.45		
	Total	111.34	242			
Information and data literacy	Between	2.65	1	2.65	5.20	<b>0.02*</b>
	Within	122.90	241	0.51		
	Total	125.55	242			
Communication	Between	1.42	1	1.42	2.37	0.12
	Within	144.24	241	0.59		
	Total	145.66	242			
University's virtual tools and social communication	Between	0.29	1	0.29	0.56	0.45
	Within	126.69	241	0.52		
	Total	126.99	242			
Problem solving	Between	1.50	1	1.50	2.33	0.12
	Within	155.66	241	0.64		
	Total	157.16	242			

be stated that learners should have basic skills and knowledge about using virtual platforms of their institutions as indicated in the previous study which stated that the more the students were competent the more they were ready for distance learning (Yurtseven et al., 2021). In the factor of problem solving, it was seen that distance learners were moderately competent, the results of which were the same as the earlier study (Vishnu et al., 2022) indicating that students tried to find ways in order to solve their problems related to using an app with their friends, they use a network communication channel to interact with their instructors. Nevertheless, this finding was not in parallel with the previous study displaying lower scores of Turkish students in this area (Çebi & Reisoğlu, 2020). When looking at the overall scores of distance learners' basic digital competence, it was clear that they obtained the lowest mean score in the factor of digital content development among other factors of basic digital competence. They got the lowest score in this part with the statement that they did not consider that they were competent enough for designing, creating, or modifying a wiki. This result was not consistent with the earlier research showing moderate levels of students' competence in this block (Vishnu et al., 2022) but was in line with the findings of the other study (Çebi & Reisoğlu, 2020). Regarding the findings, it could be said that distance learners were lacking in the creation of digital content, which required having higher digital skills so they should be trained in this area (Çebi & Reisoğlu, 2020).

The second research question of this study sought for how distance learners' basic digital competence differed by gender. Concerning gender differences, this research displayed that gender did not make a significant contribution to distance learners' digital competence. This result was supported by the findings of other studies in the context of Turkish university students' digital competence (Karagozoglu & Gezer, 2022; Koyuncuoglu, 2022; Tekin & Uysal, 2022). In detail, female learners were better at problem solving, digital content development, the findings of which were different from the earlier study (Çebi & Reisoğlu, 2020; Karagozoglu & Gezer, 2022), communication, and university's virtual tools and social communication. Regarding problem solving which was connected to defining the reasons and finding solutions to the problems met while utilizing various digital and technical devices, female learners had slightly higher scores than males. Concerning university's virtual tools and social communication, female learners were better at using university's virtual education platforms and communication tools such as emails. This finding was not in line with the results of the study displaying that males had higher perceived competence in using university emails (Vázquez-Cano et al., 2017). In terms of digital content development, it was found that female learners received higher scores than male learners in working with software applications and creating simple content forms. They also outperformed male learners in using social networks and instant messages and chatting according to the block of communication. However, male learners outperformed female learners in information and data literacy (Çebi & Reisoğlu, 2020) as they could access and identify information better than female learners.

The second research question was asked to identify whether there was a difference between distance learners' basic digital competence and age. Regarding age differences, the study revealed the existence of differences between the block of information and data literacy and age as distance learners whose ages ranged from 17 to 19 had a higher level of competence than those who were 20 years old or above. This may be related to younger learners' familiarity with modern technology use, which made them skilled in the area of information and data literacy.

The second research question also was asked to elicit whether there was a difference between distance students' basic digital competence and computer ownership. The findings of this research revealed that a statistically significant difference existed between distance learners who owned a computer and the factor of information and data literacy as owning a computer had a positive effect on distance learners' digital literacy. The reason behind this result may stem from the fact that having learners' own computers provided them opportunities to access the internet, search engines, documents, programs, and educational platforms directly and easily. Therefore, they had the opportunity to improve their digital skills by using digital sources. The present research also demonstrated that smartphone was the most prominent digital device that many students had access to when compared to computers and other devices (Vishnu et al., 2022).

## CONCLUSION

This study intended to tackle the issue of learners' basic digital competence in distance education concerning variables such as gender, age, and computer ownership. The use of communication and information technologies helps distance students increase their learning. Therefore, they need to get a high level of digital competence in learning to employ suitable communication and information technologies (Maphosa & Bhebhe, 2019) as students studying through e-learning and open distance education have their learning separated by time and space. Designing educational programs to enhance digital skills and measuring students' digital competence levels have become vital in distance education. Moreover, when students' attitudes toward distance education positively increase, their levels of digital literacy also enhance (Karagozoglu & Gezer, 2022; Tekin & Uysal, 2022). Therefore, elective courses including distance education and digital skills can be recommended. This study acclaimed that it is important to incorporate the improvement of digital competence into distance education to facilitate learning and help students achieve a higher digital competence.

Although this study included students from six disciplines, the sample was limited to distance learners who had just started their university education and conducted at a single state university so that it minimized the generalizability of the findings. Further studies should consider having larger sample sizes with senior, junior, and sophomore students in different educational settings such as in private universities and other universities. This study certainly requires further exploration using differ-

ent data collecting instruments such as qualitative methods (semi-structured interviews) with different variables. Additionally, more research is needed to raise distance students' awareness of digital skills and competencies through training, workshops, or interventions. Courses designed for embedding digital competence and skills necessary for distance education should be included in the curriculum of distance education programs.

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