AN ASSESSMENT OF LITERATURE ON THE DIGITAL LITERACY OF LECTURERS IN TURKEY

Şeyma Esin Erben
İstanbul Gelişim University
Hazal Koray Alay
İstanbul Esenyurt University
TURKEY

Abstract

The aim of this study is to present the Turkish studies in a holistic way, in which the digital literacy of the instructors is evaluated. The study adopted systematic analysis, using a secondary source of data through Google Scholar, DergiPark, and National Thesis Center databases and 17 studies from Turkish studies on digital literacy, educational institutions, lecturers and digital transformation were included in the analysis. The research contributes to the literature as it provides a holistic source with findings on the development of digital literacy of lecturers and increasing their academic productivity and performance.

Keywords: digital literacy, digital transformation, education, efficiency

Introduction

Although it seems sufficient for the end-user to have basic digital skills to use ICT, the development of digital literacy has become mandatory for institutions due to the integration of these technologies with daily and professional life. Digital transformation is gaining momentum in areas such as remote working, distance education and e-commerce, especially in core countries, and these countries have pioneer roles in digitalization (Kim et al., 2018; Simonazzi, 2019). Although Fitzgerald et al. (2013, p. 2) stated the lack of sense of urgency as one of the obstacles to digital transformation, with the COVID-19 pandemic, digital transformation became inevitable by creating a need for institutions. While digital transformation refers to a process of change in which organizations use digital technologies to become efficient (Gaur, 2020), digital literacy is one of the main components of this procedure. Thus, digital literacy, which includes digital competence and security (Khitskov et al., 2017, p. 859), embraces different skills from accessing ICT to understanding and critically evaluating digital media contents (Ala-Mutka et al., 2008).

In universities, which are a driving force in digital transformation, the digital competencies of lecturers are of great importance for institutions, students,

scientific studies, and society. Therefore, it is a necessity to develop programs to improve the digital literacy of the instructors, if needed. This research, besides providing an up-to-date contribution to the literature, enables the discussion of the findings of the academic staff on digital literacy in the context of digital transformation.

Literature Review

Digital transformation, which offers solutions in the effective and efficient use of time and resources, interacts with almost all the practices of business and private life of those who have access to the relevant technology. Especially, with the post-COVID period, it is inevitable for laggards to accelerate digital transformation. As Odaro (2022, p. 96) points out, the epidemic has triggered the transformation of location-centric culture into virtual interaction in many countries. Digital literacy is a basic need for the full execution of the digital transformation process.

Martin (2005, pp. 135-136) defines digital literacy as the awareness and ability of individuals to use ICT in the most appropriate way for purposes such as identifying, evaluating, synthesising, analysing digital resources, and communicating with others. Buckingham (2015, p. 24) states that digital literacy discussions are intensely carried out around *information*, focus on technical skills that are easily obtained and will expire in a short time, and that the cultural uses of the internet tend to be neglected. Utsi and Lowyck (2018, p. 876) draw attention to the importance of the critical approach to information and digital literacy education in revealing unclear messages and content in digital literacy. Therefore, creating technically appropriate content and making it accessible to other users through digital channels is not enough to comprehend digital literacy.

Technological developments and the necessity of meeting the needs of digital natives also accelerate the development of digital transformation in the field of education. The digital literacy of the instructors has an important place in comprehending and conveying this rapid transformation. OECD (2021) defines literacy as constructing and validating knowledge in the 21st century. In the countries that switched to distance education between 2020-2022 due to the COVID-19 epidemic, whereas the discussions on education processes due to the digital divide continue, the interest in digital literacy is increasing. The interest in digital literacy is not limited to some inequalities and inadequacies that are revealed by distance education. In recent years, many academic studies have been carried out to determine roadmaps for digital transformation in educational institutions. For example, in the database of the Turkish Council of Higher Education (CoHE, 2022), it is seen that a total of 18 postgraduate theses, including one doctoral thesis and 17 master's theses, have directly been related to digital literacy and education since 2021.

While the digital literacy of individuals plays a prominent role in the digital transformation processes of the institutions they are affiliated with, the digital transformation approaches of the institutions are in close connection with the digital competencies of the individuals. Limiting digital literacy to only knowing how to use software and hardware tools in this non-unidirectional process ignores many skills such as evaluating digital tools and using them for different purposes. Yıldız (2020, p. 477) draws attention to the necessity of institutional support in order to increase the digital literacy skills of academicians. Similarly, according to Çam and Kıyıcı (2017, pp. 41-42), the processes of increasing digital competence in teaching and learning environments should be carried out effectively. In this direction, there is a need to prepare programs to improve the digital literacy of the instructors, if needed, as a result of an updated evaluation. Institutions need to consider all these different aspects in order to comprehensively evaluate the digital competencies of lecturers together with their technology, communication, information, critical and security skills (Rodríguez-de-Dios & Igartua, 2016, p. 60) and to develop digital literacy. Bingöl (2022, p. 78) stated in his research that the digital literacy of the lecturers is effective on professional motivation, and that the support provided by the institution managers to this process is effective on productivity and academic performance. Similarly, according to Sönmezand Gül (2014, p. 28), there is a significant correlation between digital literacy level and lifelong learning tendency, and the role of corporate managers in supporting technology use is an important parameter that affects employee performance.

Methodology

The scope of the research consists of 17 Turkish studies published in Google Scholar, DergiPark, and CoHE Thesis Center. The main purpose of this study is to examine the digital literacy issue, which has increasing importance in educational institutions, and to present the research in a holistic way. The following steps were followed to achieve the purpose of the research: a) Developing the research methodology; b) Scanning the relevant electronic database; and c) Synthesis of studies by the academic staff on digital literacy.

So as to be objective in the selection of the studies in the examined articles and theses, only the published studies were examined. In the research, systematic analysis was made according to the secondary source scanning strategies, which is one of the qualitative research methods. Systematic analyses are secondary research studies in which randomised controlled studies are collected and synthesised. In order for a study seeking an answer to a research question to be called a systematic analysis, the process of identifying the studies to be used, choosing them meticulously, and synthesising the outputs must be done in a systematic,

transparent, and reproducible manner. Correctly done systematic analyses create reliable evidence in research (Ata & Urman, 2008).

According to the PRISMA method shown in Figure 1, the total number of studies obtained by database scanning is 128. The sample was reached by using Google scholar, DergiPark, and National Thesis Center databases. The keywords of digital literacy, digital literacy in educational institutions, and digital literacy of instructors were scanned in these databases.

Figure 1

Flowchart of Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA)
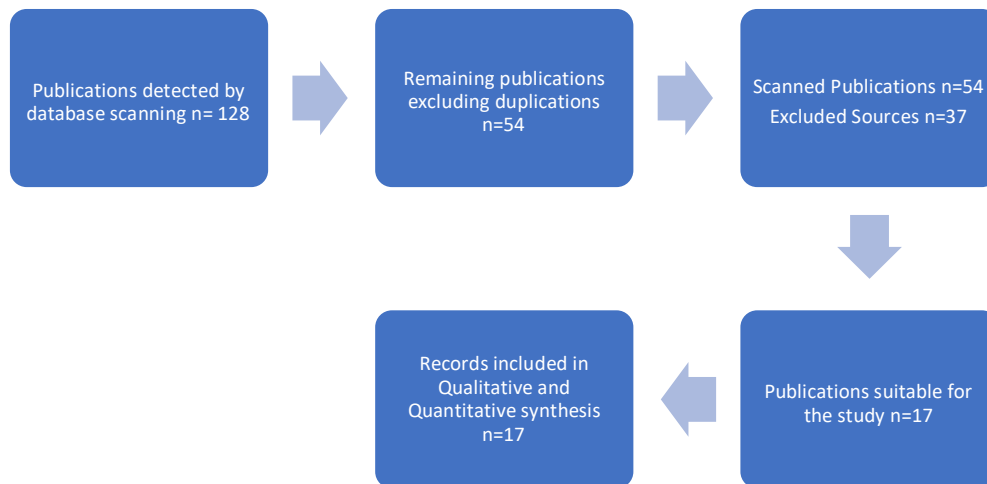
Note. Source: Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, *151*(4), 264-269.

After eliminating the repetitions, articles dealing with the digital literacy of the instructors were filtered out of the remaining 54 articles. Table 1 presents information on the electronic database search result.

Table 1

Electronic Database Search Result

Database	Keyword	Limitation	# of papers
Google Scholar	digital literacy	Title, Publication + Turkish	35
DergiPark	digital literacy	Title, Article + Turkish + Social Sciences	49
National Thesis Center	digital literacy	Title, PhD/Master's Thesis + Turkish	44

Findings

In the systematic analysis made for this research, Turkish studies on the digital literacy of teaching staff were divided into categories. All collected studies were generalised and conceptualised. Some adjustments were made in line with the data obtained. These data also enabled the identification of the theme. In the light of the specified data, the systematic data analysis of the research is presented in Table 2.

Table 2

Systematic Analysis

Source	Database	Outcomes
Günay and Özden (2022)	DergiPark	Findings on the academics' perception of digital literacy as close to each other with distance education and feeling inadequate in functional skills
Ogelman, H.G., Demirci, F. & Güngör, H. (2022).	DergiPark	The digital literacy levels of teachers differ according to age: the digital literacy level of young teachers is higher
Sever, S., & Çati, K. (2021)	DergiPark	It has been determined that the digital literacy level of the academicians affects the satisfaction of the students participating in distance education.
Keskin, H. & Küçük, G. (2021)	DergiPark	It is determined that the digital literacy levels of the teachers differ significantly according to gender and the type of high school they graduated from.
Erdem, E.G., Başar, F.B., Toktay, G., Yayğaz, İ.H., & Küçüksüleymanoğlu, R. (2021)	DergiPark	It has been stated that teachers should work in accordance with the eTwinning criteria and use digital tools to improve their digital literacy skills.

Source	Database	Outcomes
Bingöl, H. (2022)	COHE	Findings show that the teachers have a high level of digital literacy in the distance education process and have a high level of professional motivation; there was no significant difference between the demographic characteristics of secondary school teachers and their professional motivation.
Doğan, D. (2022)	COHE	It has been observed that the digital literacy skills of academics and students are at a sufficient level, but these competencies differ according to gender.
Bozkurt, L. (2021)	COHE	It has been stated that there is a positive relationship between the lifelong learning tendencies of the teachers and their digital literacy levels.
Demirdağ, M. (2021)	COHE	It has been revealed that there is a linear relationship between teachers' digital literacy and research literacy skills.
Özer, M. (2021)	COHE	Teachers' perceptions of 21st century skills were found to be high in the sub-dimensions of learning and renewal, life and career, knowledge, media and technology.
Genç, O. (2021)	COHE	It has been determined that the digital literacy level of academics differs in terms of the demographic variables, and the administration of the universities should take new measures to support academics.
Arslan S. (2019)	COHE	A significant difference was found in the digital literacy levels of teachers in terms of demographic characteristics and access to technology.
Sezgin, A. A. & Karabacak, Z.İ. (2020)	Google Scholars	On behalf of the Digital Transformation and Digital Literacy Project in Turkey, it was stated that the project should be implemented more comprehensively to achieve the desired efficiency.
Yankın F. B. (2019)	Google Scholars	The studies of academics on the digital transformation process were interpreted and attention was drawn to the convergence of digitalization in progress and social life areas.
Aksoy, N. C., Karabay, E., & Aksoy, E. (2021)	Google Scholars	Teachers have a high level of digital literacy; it has been determined that various demographic characteristics make a significant difference regarding this level.

Source	Database	Outcomes
Korkmaz, M. (2020)	Google Scholars	Significant differences were obtained between the digital literacy levels of primary school teachers, their demographic characteristics, and the technological education they received.
Sönmez, E. E. & Gül, H. Ü. (2014)	Google Scholars	Emphasising the role of administrators in the use of technology in schools, it was stated that they could not benefit enough from technology in education.

Discussion and Conclusion

In this study, the studies in the international literature were not evaluated, and this was intentional to draw attention to the low number of Turkish studies on digital literacy of teaching staff. In addition, it has been revealed through this study how little is studied and needs to be studied in the national literature on the digital literacy of instructors.

When the findings of the systematic analysis were examined, it was determined that most of the lecturers from whom the data were collected through the interview technique accept digital literacy as an activity of reading and writing from the Internet or a digital environment. On the other hand, lecturers, who are aware that digital literacy is not limited to these, also stated that they did not receive the necessary support for this equipment (Günay & Özden, 2022; Erdem, et al., 2021). This finding reveals the fact that the educational institutions in Turkey need to do more work on digital transformation and technological efficiency. Similar findings were obtained in other studies that examined the perceptions of academics and university students towards digital literacy. This situation reveals most of the academics positively evaluate their self-efficacy in digital literacy, but they feel inadequate in the adaptation process related to the transition from printed publications to digital tools (Günay & Özden, 2022; Doğan, 2022). This is probably due to the fact that the concept of digital literacy is newly recognised in Turkey and its framework is still unclear.

In a study in which digital literacy was associated with technology knowledge and integration into digital transformation, it was emphasised that lecturers should be made aware of how the technology used can be integrated into the course at higher levels (Keskin & Küçük, 2021). According to this finding, although teachers think that their digital competencies are good, they cannot integrate their competencies into their lessons. In many studies examining the digital literacy of instructors, it has been tried to put forward that literacy as a roof concept should be taught as a compulsory course by CoHE and that the 21st century literacy types should be diversified as a course at undergraduate and graduate levels (Korkmaz, 2020; Yankın, 2019; Özer, 2021; Günay & Ozden, 2022).

Demirdağ (2021), in his study in which the digital literacy levels of teachers were evaluated, revealed that mathematics and classroom pre-service teachers had better digital literacy levels than all other branch pre-service teachers. According to Demirdağ, this is because most of the courses taken in mathematics and classroom teaching programs are carried out in the computer environment. This finding reveals the importance of the branch factor. A similar finding is also valid for academics (Sezgin & Karabacak, 2020).

Sönmez and Gül (2014) emphasise that individuals need to have digital literacy skills to solve the digital problems they face in digital transformation. Similarly, Çubukçu and Bayzan (2013) state that digital literacy has become more important than traditional literacy. These studies indicate that the development of the competencies of the instructors, who will gain digital literacy skills in education, should be prioritised. Scanning and classifying studies on the digital literacy of instructors, which is the focus of this research, provides a holistic framework to the literature.

References

Aksoy, N. C., Karabay, E., &Aksoy, E. (2021). Sınıf öğretmenlerinin dijital okuryazarlık düzeylerinin incelenmesi. *Selçuk İletişim*, *14*(2), 859-894.

Ala-Mutka, K., Punie, Y., &Redecker, C. (2008). Digital Competence for Lifelong Learning. *Technical Note: JRC*, *48708*, 271-282.

Arslan, S. (2019). İlkokullarda ve ortaokullarda görev yapan öğretmenlerin dijital okuryazarlık düzeylerinin çeşitli değişkenler açısından incelenmesi [Unpublished doctoral dissertation]. Sakarya University, Institute of Education Sciences.]

Ata, B., &Urman, B. (2008). Sistematik derleme lerinkritikanalizi. *Türk Jinekolojive Obstetrik Derneği Dergisi, 5*(4), 233-240.

Bingöl, H. (2022). *Uzaktan eğitim sürecinde öğretmenlerin dijital okuryazarlık düzeyleri ile mesleki motivasyonlarının incelenmesi* [Unpublished Master's Thesis]. Zonguldağ Bülent Ecevit Üniversitesi, Sosyal Bilimler Enstitüsü.Turkey.

Buckingham, D. (2010). Defining Digital Literacy. In Bachmair, B. (Ed.),*Medien bildung in neuenKulturräumen. VS Verlag fürSozialwissenschaften* (pp. 21-34). https://doi.org/10.1007/978-3-531-92133-4_4

Buzkurt, L. (2021). *Okul öncesi öğretmenlerinin yaşam boyu öğrenme eğilimleri ile dijital okuryazarlık düzeyleri arasındaki ilişkinin incelenmesi* [Unpublished Master's Thesis]. Dicle University Institute of Educational Sciences, Diyarbakır.Turkey.

Çam, E., &Kıyıcı, M. (2017). Perceptions of prospective teachers on digital literacy. *Malaysian Online Journal of Educational Technology*, *5*(4), 29-44.

Council of Higher Education (CoHE). (2022). Access: https://tez.yok.gov.tr/UlusalTezMerkezi/

Çubukcu, A., &Bayzan, Ş. (2013). Türkiye'de dijital vatandaşlık algısı ve bu algıyı internetin bilinçli, güvenli ve etkin kullanımı ile artırma yöntemleri. *Middle Eastern & African Journal of Educational Research*, *5*(148), 148-174.

Demirdağ, M. (2021*). Öğretmenlerin dijital okuryazarlık düzeyleri ile araştırma okuryazarlık becerileri arasındaki ilişkinin incelenmesi* [Unpublished Master Thesis]. Atatürk University, Eğitim Bilimleri Enstitüsü.

Doğan, D. (2022). *Üniversite öğrencilerinin ve akademisyenlerin dijital okuryazarlık düzeylerinin incelenmesi* [Unpublished Master Thesis]. Gazi Üniversitesi, Education Science Institute).

Erdem, E. G., Başar, F. B., Toktay, G., Yayğaz, İ. H., & Küçüksüleymanoğlu, R. (2021). eTwinning projelerinin öğretmenlerin dijital okuryazarlık becerilerine katkısı. *International Journal of Social Sciences and Education Research*, *7*(3), 204-219. https://doi.org/10.24289/ijsser.901129

European Commission Joint Research Centre Institute for Prospective Technological Studies.

Fitzgerald, M., Kruschwitz, N., Bonnet, D., Welch, M. (2013). *Embracing digital technology: A new strategic imperative*. MIT Sloan Management Review.

Gaur, M. (2020). *Digital Transformation Framework for Driving Future Growth*. http://dx.doi.org/10.2139/ssrn.3684057

Genç, O. (2021). Dijital okuryazarlık yeterlik düzeylerinin akademik personel yönünden araştırması [Unpublished master thesis]. Munzur Üniversitesi / Lisansüstü Eğitim Enstitüsü.

Genç, O. (2021). Dijital okuryazarlık yeterlik düzeyinin akademik personel yönünden araştırması [Unpublished Master Thesis]. Munzur University, Education Institute, Tunceli, Turkey.

Günay, G. & Özden, M. (2022). Dijital okuryazarlık becerisi ve ana dili eğitimi çerçevesinde dijital okuryazarlığa ilişkin öğrenci ve akademisyen algıları. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, (27), 163-183.

Keskin, H., & Küçük, G. Sınıf öğretmenlerin kendilerine yönelik dijital okuryazarlık düzeylerinin farklı değişkenler açısından İncelenmesi. *Temel Eğitim Araştırmaları Dergisi, 1*(2), 131-147.

Khitskov, E. A., Veretekhina, S.V., Medvedeva, A. V., Mnatsakanyan, O. L., Shmakova, E. G., & Kotenev, A. (2017). Digital transformation of society: Problems entering in the digital economy. *Eurasian Journal of Analytical Chemistry, 12*, 855-873.

Kim, G., Lee. H-K., Kim, J., & Kwon, H. (2018). The fourth industrial revolution in major countries and its implications of Korea: U.S., Germany and Japan

Cases. *World Economy Brief* (pp.18-20). Korea Institute for International Economic Policy.

Korkmaz, M. (2020*). Sınıf öğretmenlerinin dijital okuryazarlık seviyelerinin belirlenmesi* [Unpublished Master's thesis]. ESOGÜ, Eğitim Bilimleri Enstitüsü.

Martin, A. (2005). DigEuLit—a European framework for digital literacy: A progress report. *Journal of E-Literacy*, *2*(2), 130–136.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, *151*(4), 264-269.

Odaro, E. (2022). *Making Data Work: Enabling Digital Transformation, Empowering People and Advancing Organisational Success*. CRC Press.

OECD. (2021). *21st-Century Readers: Developing Literacy Skills in a Digital World.* PISA, OECD Publishing. https://doi.org/10.1787/a83d84cb-en

Ogelman, H. G., Demirci, F., & Güngör, H. (2022). Okul öncesi eğitimi öğretmenlerinin dijital okuryazarlık düzeylerinin İncelenmesi. *Trakya Eğitim Dergisi*, *12*(1), 235-247.

Özer, M. (2021). Sınıf öğretmenlerinin 21: Yüzyıl becerilerine yönelik yeterlilik algıları ile dijital okuryazarlık düzeyleri arasındaki ilişkinin incelenmesi [Unpublished master thesis]. Fırat University, Institute of Education Sciences. Turkey.

Rodríguez-de-Dios, I., & Igartua, J. J. (2016). Skills of digital literacy to address the risks of interactive communication. *Journal of Information Technology Research*, *9*(1), 54–64.

Sever, S., & Çati, K. (2021). The mediating role of attitude towards distance education in the effect of digital literacy level on satisfaction with distance education. *Yükseköğretim ve Bilim Dergisi*, *11*(3), 559-574.

Sezgin, A. A., & Karabacak, Z. İ. (2020). Yükseköğretimde dijital dönüşüm ve dijital okuryazarlik dersine yönelik betimsel bir analiz. *Kurgu*, *28*(1), 17-30.

Simonazzi, A. (2019). What do we mean by "Industrial policy"? In R. Cappellin, E. Ciciotti and E. Battaglini (Eds.), *The guidelines of a "New European Industrial Strategy" oriented to the citizens and the territory: Policy proposals for the European economic growth* (pp. 73-78). Academia.edu

Sönmez, E. E., & Gül, H. Ü. (2014). Dijital okuryazarlık ve okul yöneticileri. *XIX. Türkiye'de İnternet Konferansı.* http://inet-tr.org.tr/inetconf19/ozet/69.html

Utsi, S., & Lowyck, J. (2018). Digital literacy and the position of the end-user. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology (*4th ed., Vol. 2, pp. 875-880). Idea Group Reference.

Yankın, F. B. (2019). Dijital dönüşüm sürecinde çalışma yaşamı. *Trakya Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *7*(2), 1-38.

Yıldız, E. P. (2020). Opinions of academicians on digital literacy: A phenomenology study. *Cypriot Journal of Educational Science,15*(3), 469-478.

Author Details

Şeyma Esin Erben
İstanbul Gelişim University
Turkey
esin.erben@gmail.com

Hazal Koray Alay
İstanbul Esenyurt University
Turkey
hazalkorayalay@esenyurt.edu.tr