SINIRSIZ EĞİTİM VE ARAŞTIRMA DERNEĞİ

Sınırsız Eğitim ve Araştırma Dergisi

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Dear Readers,

We are delighted to present you the March 2023 issue of the Journal of Limitless Education and Research.

The aim of our Journal, which has been published continually by the Limitless Education and Research Association (SEAD) since 2016, is to contribute scientifically to the field of education and research. For this purpose, priority is given to publishing theoretical and applied studies and sharing scientific information at national and international level.

The Limitless Journal of Education and Research is published three times a year, scanned in various national and international indexes, and receives numerous citations. Our Journal with an impact factor of 0.5 in SOBIAD 2021 is among the first 90 journals published in our country.

SEAD Journal is published with the scientific contributions and support of academicians working in Turkey and abroad, such as articles, research and projects. Our journal has been publishing for eight years without compromising its academic and scientific quality. We would like to thank all the editors, writers, referees and translators who contributed to the preparation and publication of our journal.

In this issue of our journal, as in other issues, five scientific research and articles related to education are included. These studies are presented in two languages, Turkish and English.

We hope that our journal will make significant contributions to the field of education and research. With our best regards.

LIMITLESS EDUCATION AND RESEARCH ASSOCIATION

The Journal of Limitless Education and Research, Volume 8, Issue 1

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Değerli Okuyucular,

Sizlere Sınırsız Eğitim ve Araştırma Dergisinin Mart 2023 sayısını sunmaktan mutluluk duyuyoruz.

Sınırsız Eğitim ve Araştırma Derneği (SEAD) tarafından 2016 yılından bu yana kesintisiz olarak yayınlanan Dergimizin amacı, eğitim ve araştırma alanına bilimsel yönden katkı sağlamaktır. Bu amaçla kuramsal ve uygulamalı çalışmaları yayınlamaya, bilimsel bilgileri ulusal ve uluslararası düzeyde paylaşmaya öncelik verilmektedir.

Sınırsız Eğitim ve Araştırma Dergisi, yılda üç sayı olarak yayınlanmakta, çeşitli ulusal ve uluslararası indekslerde taranmakta ve çok sayıda atıf almaktadır. SOBİAD 2021 yılı etki faktörü 0,5 olan Dergimiz, ülkemizde yayınlanan ilk 90 dergi arasında yer almaktadır.

SEAD Dergisi, yurt içi ve yurt dışında görevli akademisyenlerin makale, araştırma, proje gibi bilimsel katkı ve destekleriyle yayınlanmaktadır. Akademik ve bilimsel kalitesinden ödün vermeden sekiz yıldır yayın hayatını sürdürmektedir. Dergimizin hazırlanması ve yayınlanmasında emeği geçen bütün editör, yazar, hakem ve çevirmenlere teşekkür ediyoruz.

Dergimizin bu sayısında diğer sayılarda olduğu gibi eğitimle ilgili beş bilimsel araştırma ve makaleye yer verilmiştir. Bu çalışmalar Türkçe ve İngilizce olarak iki dilde sunulmuştur.

Dergimizin eğitim ve araştırma alanına önemli katkılar getirmesini diliyoruz. Saygılarımızla.

SINIRSIZ EĞİTİM VE ARAŞTIRMA DERNEĞİ

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Descriptive Content Analysis of Digital Literacy Studies in Education in Türkiye

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Abstract: The aim of this study is the descriptive content analysis of digital literacy studies carried out in the field of education in Türkiye between the years 2006-2021.In this research, the descriptive content analysis method, which is one of the content analysis types, was used. A total of 74 studies were examined within the scope of the study. The studies were coded using the Dedoose program according to specific themes. When the findings are examined, there has been an increase in the number of digital literacy studies after 2018. It has been determined that most of the studies consist of articles however quantitative research designs are preferred in studies. We have found that screening and relational screening methods are preferred in research more than other methods. It is seen that the studies carried out in the field of teacher training are carried out more frequently. The number of studies conducted with pre-service teachers, especially Social Studies and Turkish pre-service teachers, is higher. Sample selections in studies are generally determined by a convenient sampling method. It is seen that a single data collection tool was mainly used in the studies, and the sample size consisted of 201-500 participants. Based on the findings, suggestions were made for further research.

Keywords: Digital literacy, Education, Content analysis.

Cited in: Yeşiltaş, H. M., Çelikoğlu, M. & Taş, E. (2023). Descriptive content analysis of digital literacy studies in education in Türkiye. *The Journal of Limitless Education and Research, Sınırsız Eğitim ve Araştırma Dergisi, 8*(1), 37-55. DOI: 10.29250/sead.1198579.

1. Introduction

The rapid change in the 21st century has brought many innovations. Changes in technology are particularly remarkable. Rapid change and technological advances have led to the widespread use of technological tools and equipment among societies (Özer, 2021). In addition, there is a rapid transformation from electronic media to digital media. There are radical changes in accessing and obtaining information in such an environment. The need for and use of information also varies in the developing and changing world. The fact that there is more than one source of information makes it necessary for individuals to have various skills.

Information and communication technologies are heavily involved in all areas of our lives today. For this reason, it is noteworthy that ICT, which is used in many fields, makes people's lives easier today, its use as a source of access to information, and its integration into education. Skills such as better memory, quick thinking, and attention develop especially in children who are introduced to information through ICT at a very early age (Anisimova, 2020). Developments in the Internet and ICT have brought about changes in people's learning styles and approaches (Ratheeswari, 2018). In addition, besides digital transformation (Ataş & Gündüz, 2019), critical thinking, problem-solving, access to information, collaboration, and socialization (Diaz & Lee, 2020) gain importance in learning and teaching methods in classrooms. Students learn from the lowest age group to the highest age group through a digital environment in many areas. In addition, digital environments in schools and our daily lives make it necessary for us to have some competencies and skills. We may say that digital literacy is the basic unit that can meet these needs and includes the skills needed and required in digital environments.

Digital literacy means accessing, managing, understanding, integrating, evaluating, and sharing information securely. It includes competencies such as computer-centered information literacy, media literacy, and ICT literacy (Law, Woo, Dela Torre, & Wong, 2018). Within the scope of the DigEuLit project, digital literacy was expressed with four indicators as computer, information, visual, and media literacy (Martin & Grudziecki, 2006). According to a different definition, working with digital media is defined as the skills required to search and process information (Wilson, Grizzle, Tuazon, Akyempong, & Cheung, 2011). In another context, it can be added that using devices such as computers, tablets, and smartphones means reaching the exact information, using this information, sharing and transferring it, and producing the information (Aksoy, Karabay, & Aksoy, 2021).

Especially in the modern era, the changing needs reveal the necessity of digital literacy (Korableva, Durand, Kalimullina, & Stepanova, 2019). Sorby (2008) stated that the use of digital content and digital media will increase by moving away from traditional tools in learning environments. This situation requires the acquisition of new skills and competencies for both students and teachers (Ocak & Karakuş, 2019). When we analyze what features individuals should have, in the context of Ng's (2012) digital literacy model, they should first have access to digital technology such as how to operate a computer and have mastery in the technical skills and tasks required to work with a computer (Lankshear & Knobel, 2008), then cognitively critical thinking, problem-solving and decision-making skills, as well as the ability to evaluate and apply new information obtained from digital environments (Ferrari, 2013), finally on the social-emotional dimension, they should be able to communicate both socially and professionally, understand cyber security, and use "netiquette" protocols. We can say that they should have the ability to follow. Considering that the supreme aim of many education systems is to raise individuals who can keep up with the digital age (Seward & Nguyen, 2019) , it is essential to determine the trends of the current studies on digital literacy in our country. We can say that the current situation should be researched and conveyed to determine the applications that can be made especially for students, teachers, or teacher candidates, in which direction the studies in the world are progressing, or to determine the missing or overlooked points in this context. In this context, it's seen that many descriptive content analyzes related to technology and its integration into education have been made. Göktaş Küçük, Aydemir, Telli, Arpacik, Yıldırım, and Reisoğlu (2012) conducted a content analysis study on Trends in Educational Technology Research in Türkiye between 2000-2009. Tatar, Kağızmanlı and Akkaya (2013) analyzed the content of technology-supported mathematics studies between 2000 and 2011 in their study. While Taş, Şener, and Yalçın (2013) carried out a descriptive content analysis on the integration of technology into science education between 2005 and 2012 in their study, Akgün, Yücekaya, and Dişbudak (2016) conducted a descriptive content analysis of research on smartboard use between 2008 and 2015 presented their analysis. It is seen that Korucu, Usta and Atun (2017) examined the studies on technological pedagogical content knowledge between the years 2010-2016. Namdar and Küçük (2018) conducted a descriptive content analysis of the integration of technology into science education between 2000 and 2016. Baysan, Bayra, and Demirkan (2018) carried out descriptive content analysis studies on technology-supported collaborative educational environments research between 2010 and 2015. Demrici Güler and Irmak (2018) examined the studies on the use of technology in science education between 2005-2018 in their

study. Akgün and Akgün (2020) also examined the studies on the use of technology in social studies education until 2020. In their studies, Tosuntaş, Emirtekin, and Süral (2019) examined the studies on education and training technologies between 2013 and 2018.

When the literature is examined, there are studies on technology-supported education and the integration of technology in education in many fields. However, no study has been found specifically examining digital literacy studies. The purpose of this research is the descriptive content analysis of digital literacy studies carried out in the field of education in Türkiye between the years 2006-2021. For this purpose, answers to the following research questions were sought.

- What is the distribution of the studies carried out by years?
- Which type of studies are included in the studies?
- Which research design was preferred in the studies?
- Which research method was preferred in the studies?
- Which study areas are included in the studies carried out?
- Which sample groups were preferred in the studies?
- Which sampling methods were used in the studies?
- What are the sample sizes in the studies conducted?
- What is the number of data collection tools used in the studies?

As a result of this research, it is planned that technology, which has become an even more important tool in the realization of education, especially with the COVID 19 pandemic process, will reveal general trends in the context of digital literacy.

2. Method

In this research, the descriptive content analysis method, which is one of the content analysis types, was used. Descriptive content analysis is the process of gathering, comparison, and classification of the trends and situations of the studies carried out in a certain field around a certain framework (Çalık & Sözbilir, 2014). In descriptive content analysis, studies carried out in the same field are brought together around common themes, and the findings are presented as a meaningful whole.

2.1.Procedure

Determining the process steps of the study is essential for the regular progress of the further parts of the research. For this reason, the process steps of this study are planned to carry out in the order given below (Figure 1).

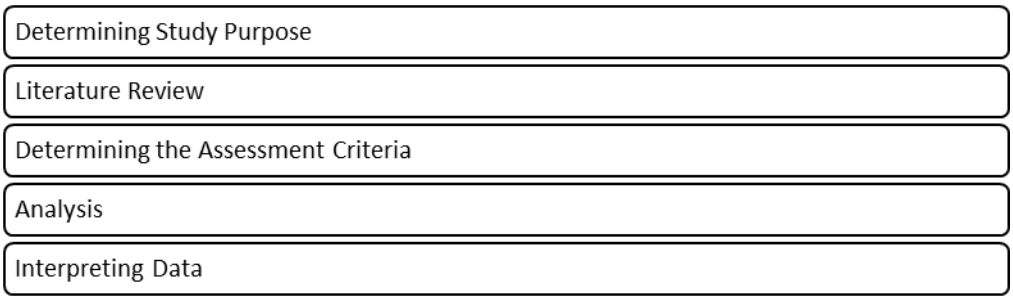

Figure 1. Study Procedure

2.2. Data Source

The data source of this research is in the National Thesis Center and Google Scholar, EBSCO, Dergi Park, TR Index, Sobiad databases between 2006-2021, which consists of Digital Literacy researches.

The population of the study (2006-2021) consists of digital literacy studies published in international academic journals. The sample of the research consists of 74 studies, including 4 papers, 18 master's theses, and 3 doctoral theses, which were published in 49 national-international journals between 2006-2021.

2.3. Data Collection

The full texts of the reached studies were examined in the literature review. As a result of the studies examined by the researchers, various themes were determined. These themes were determined as year, study type, sample group, study area, sample size, study design, study method, data collection tools, sampling method, and measured dimensions. In addition, 2 field experts were consulted for the data collection tool.

During the research process, reviews were made using the key words of "digital literacy", "digital" and "digital information literacy". The criteria for inclusion of the obtained studies were determined as being carried out within the borders of Türkiye and in the field of education. In this direction, 327 studies were reached within the scope of graduate theses. After subsequent inclusion and exclusion criteria, 21 studies were included in the study. As a result of the scans made from various databases, 512 scientific articles and papers were reached. However, some

studies are also found in different databases. After inclusion and exclusion criteria, 53 studies were included in the study.

2.4. Analysis of Data

The data obtained were analyzed under descriptive content analysis methods. The primary aim is to establish meaningful relationships between themes and content (Çepni, 2012). The data obtained were gained regarding the stages of coding, classification, and identification. A categorical analysis technique was used. In addition, the statements of the authors are taken as basis in the analysis of the data (Koşar, 2018). The Dedoose program was used to collect the obtained data in a systematic whole (Figure 3). It especially contributes to the systematic coding of data. Two independent researchers are involved in the coding process of the data. The researchers carried out the coding process without interacting with each other. In addition, analyzes were carried out within the themes determined by the researchers in the analysis of the data (Figure 2). All of the studies reviewed were based on the statements of the author/authors.

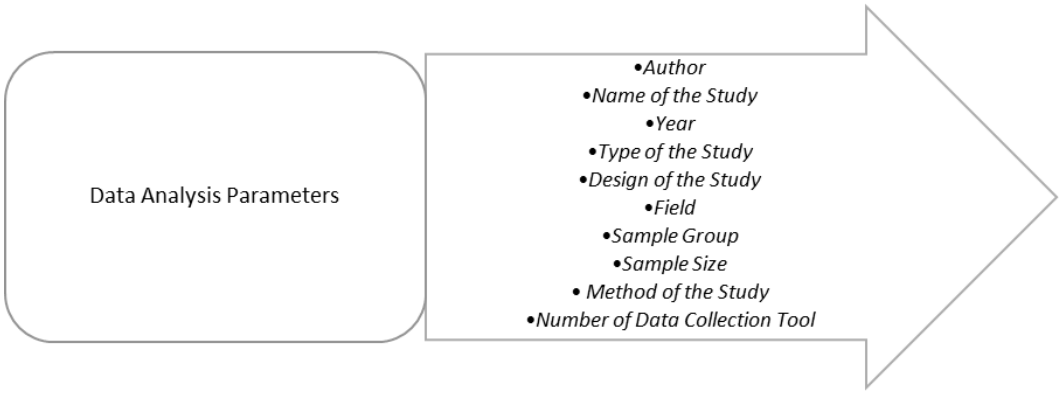

Figure 2. Data analysis parameters

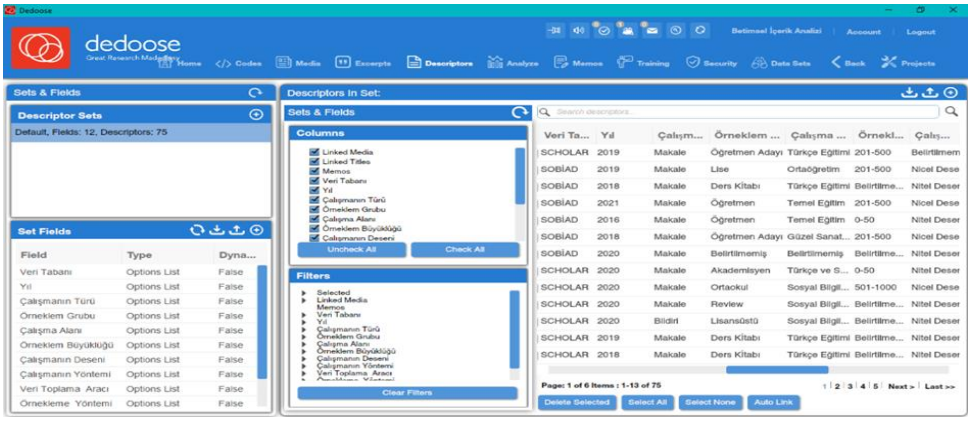

Figure 3. Dedoose program interface

2.5. Validity and Reliability

The findings were collected by two coders in light of the determined coding scheme. To ensure encoder reliability, the same study should be coded by different coders. Creating codes and themes by interpreting the same data by different researchers and comparing them is essential in terms of ensuring reliability. The reliability calculation for the created themes was calculated using the reliability formula of Miles and Huberman (1994). Reliability = Consensus / (Agreement + Disagreement) As a result of the calculation, the reliability of the research was calculated as 94%. Reliability calculations over 70% are considered reliable for research (Miles & Huberman, 1994).

2. Findings

The data revealed at the end of the research are presented visually with appropriate graphics. The data obtained are presented in order of year, study type, sample group, field, sample size, study design, study method, data collection tools, sampling method, and measured dimensions, respectively.

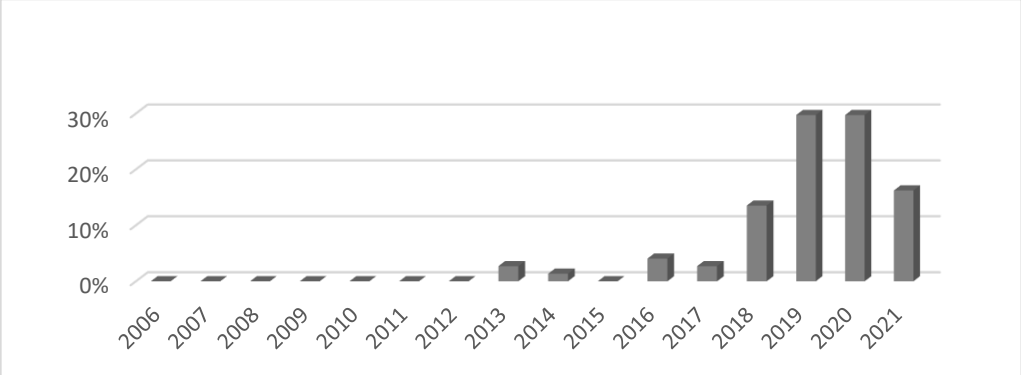

Figure 4. Distribution of studies by years

When the distribution of studies in the field of education in Türkiye, given in Figure 4, is analyzed by years, it is seen that as of the date of the study, the rate of study was 16% in 2021, 22% in 2019, and 2020, and 14% in 2018. In addition, it is seen that 3% of the studies were published in 2017, 4% in 2016, 1% in 2014, and finally 3% in 2013.

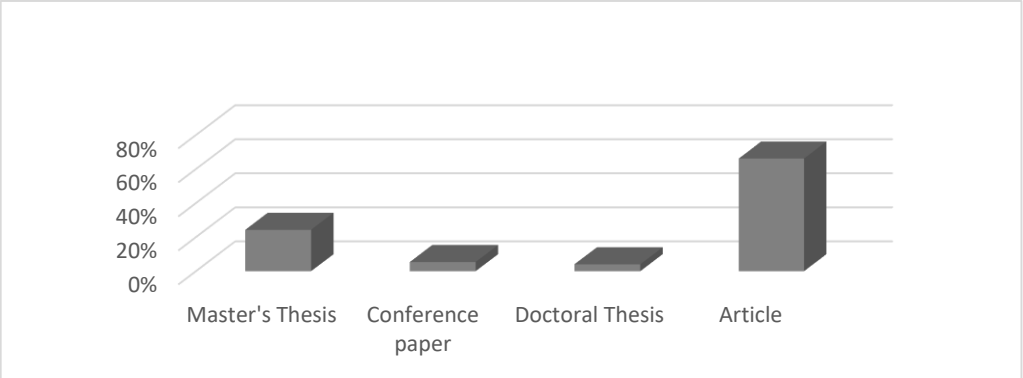

Figure 5. Distribution of the studies by the type of study

When the distribution of studies in the field of education in Türkiye, given in Figure 5, is analyzed according to the type of study, it is seen that 66% of the articles, 6% of the papers, 24% of the master's thesis and 4% of the doctoral thesis are published.

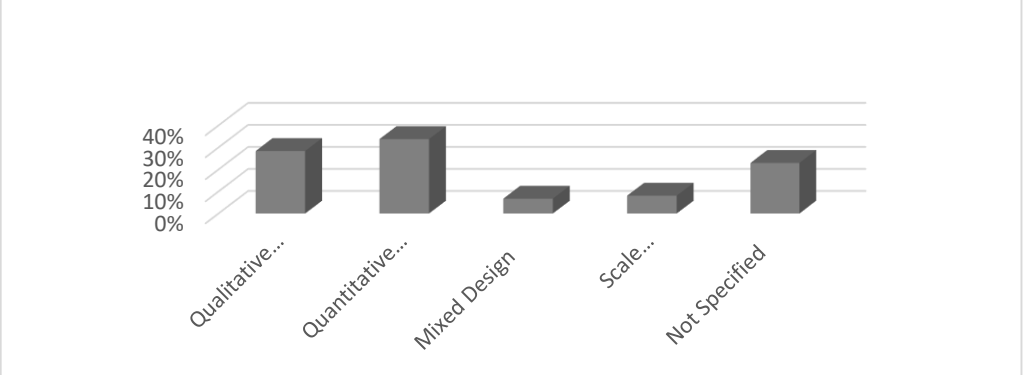

Figure 6. The distribution of the studies by the study design

To the analysis of the study design conducted in the field of education in Türkiye, given in Figure 6, it is seen that the quantitative design 25 (34%), the qualitative design 21 (28%), the mixed design 5 (7) and the scale development 6 (8%) study appears to have been published. In addition, 17 studies (23%) of the studies examined did not specify the design.

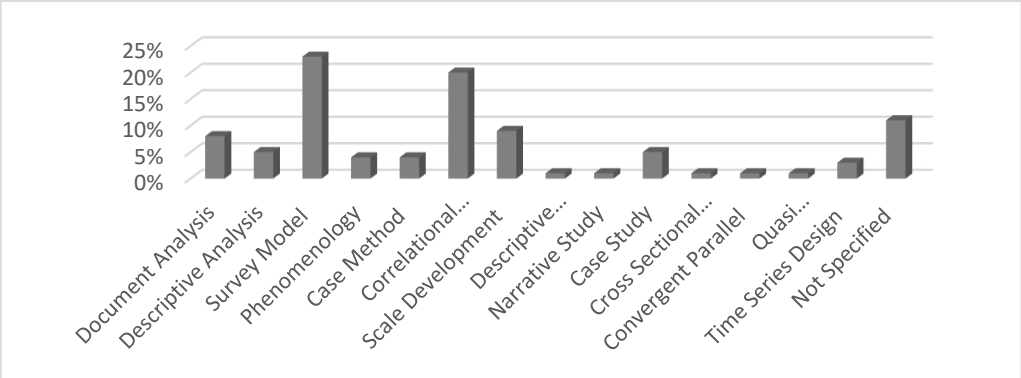

Figure 7.Distribution of the studies by the study method

When the distribution of the studies conducted in the field of education in Türkiye according to the methods given in Figure 7 is examined, 23% of the studies are scanning model, 20% are correlational scanning, 9% are scale development, 8% are document analysis, 5% are case studies, 4% are phenomenology, 5% are descriptive analysis and 4% case study methods. In addition, 1% of the studies were carried out in the descriptive correlational, narrative, cross-sectional design, convergent parallel, quasi-experimental single-group method, and 2% in the time-series design. When the studies are examined, research methods were not specified in 11% of the studies based on the statements of the authors.

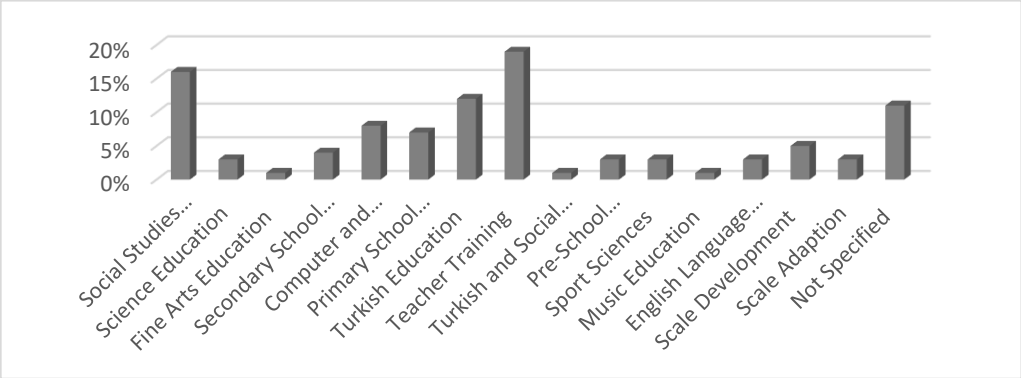

Figure 8. Distribution of the by the field of study.

When the distribution of the studies conducted in the field of education in Türkiye, given in Figure 8, is examined according to the fields of study, it is seen that the studies are carried out in teacher training at 19%, social studies education at 16%, Turkish at 12%, and primary education at 7%. In the studies examined, it was determined that the study area was not specified by the author(s) of 11% of the studies. In addition, it is seen that studies in the fields of 5% Scale development, 3% Science education, 4% Secondary Education, 3% Preschool,

3% Sport sciences, 3% English teaching, 3% Scale adaptation and 1% Music education have been published.

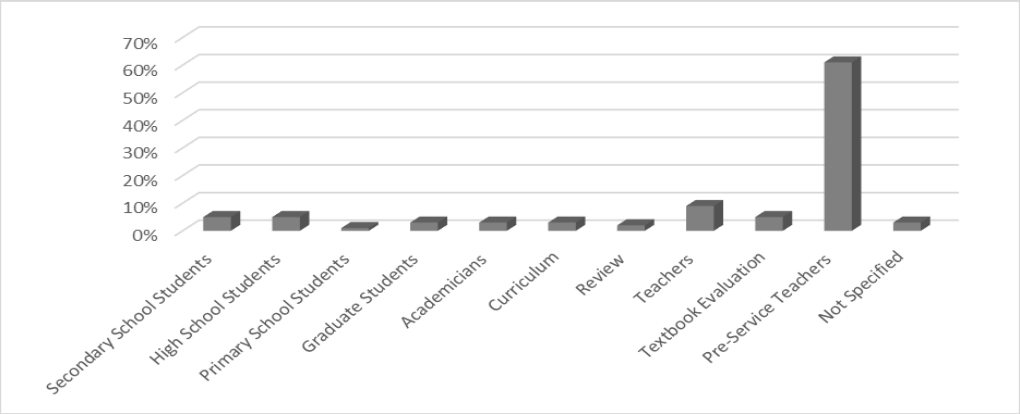

Figure 9. Distribution of the studies by the sample group.

When the distribution of the studies conducted in the field of education in Türkiye according to the sample groups, given in Figure 9, is examined, the rate of working with pre-service teachers is 61%, with teachers 9%, high school students 5%, secondary school students 5%, academicians 3%, graduate students 1% and 1% of primary school students work. In addition to this, there are 4% textbook, 1% scale development, 1% lesson review, and 3% program review studies. In the two studies, the author/authors did not specify the sample groups.

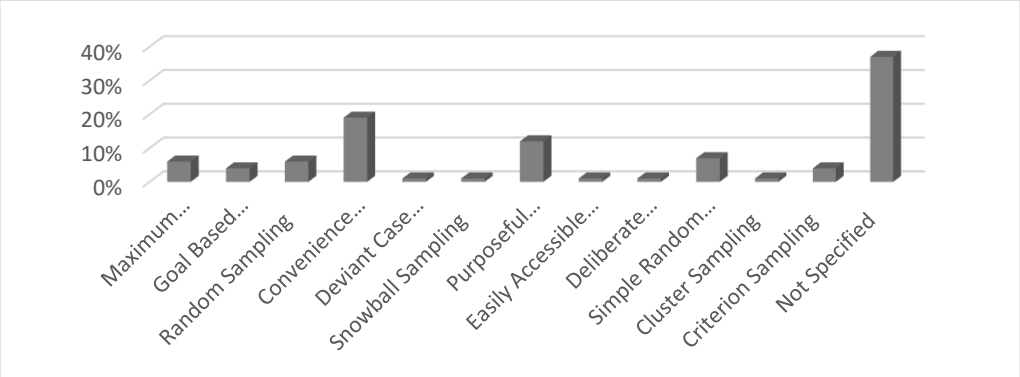

Figure 10. Distribution of the studies by the sampling method.

When the distribution of the studies conducted in the field of education in Türkiye, given in Figure 10, is examined according to the sampling methods, 19% convenience sampling, 12% purposive sampling, 7% simple random sampling, 4% goal based sampling, 4% criterion, 1% deviant case, 1% snowball sampling, 1% easily accessible, 1% deliberate sampling and 1% cluster sampling methods are preferred. 37% of the authors/authors did not specify which sampling methods they used in the study.

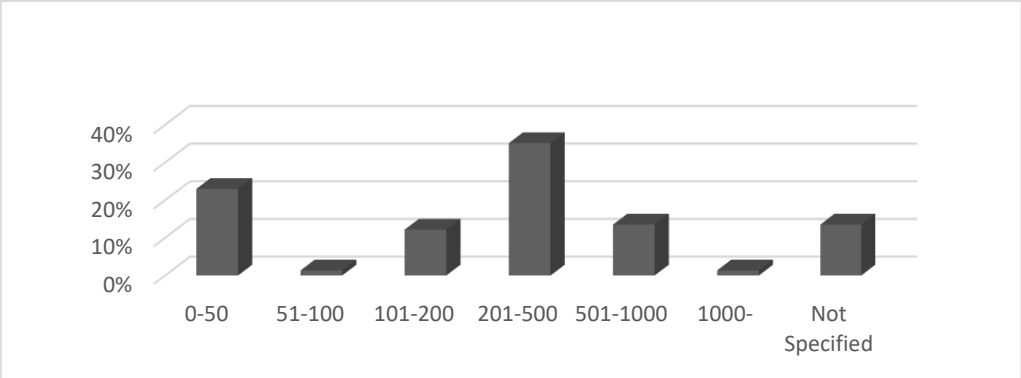

Figure 11. Distribution of studies by the sample size distribution of the studies by the sampling method.

When the distribution of the studies conducted in the field of education in Türkiye, given in Figure 11, is analyzed according to sample sizes, 35% of the studies are 201-500 participants, 23% with 0-50 participants, 14% with 501-1000 participants, and 101-200 participants 12%. 1% of 51-100 participants and 1% of 1000 participants seem to have been published. At the same time, 14% of the authors did not inform about the number of participants in the study.

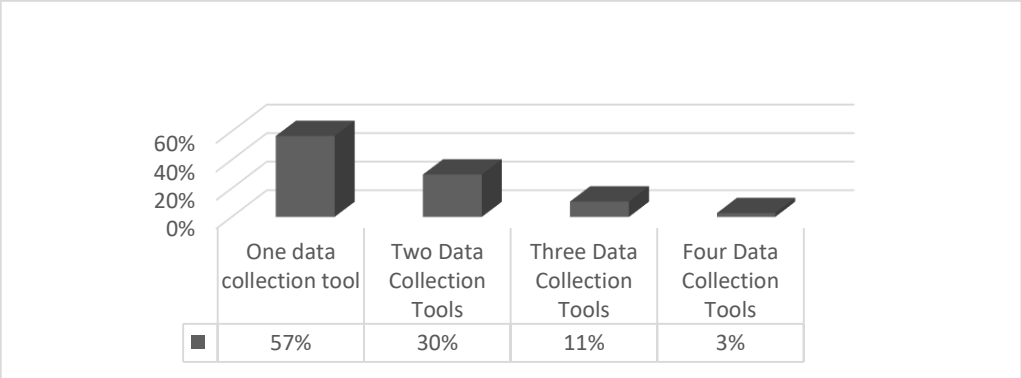

Figure 12.Distribution of the number of data collection tools used in studies

When the number of data collection tools used in the studies is examined, it is seen that the number of studies using a data collection tool is high (57%, N=41). On the other hand, the rate of studies in which two data collection tools were included in the studies included 30% (N=21). 11% (N=8) of three data collection tools and 3% (N=1) of the studies that included four data collection tools.

4. Discussion and Conclusion

In this section, the research questions are discussed in light of the findings. The reviewed articles and theses were examined from various perspectives. Studies included in the study were analyzed systematically using the classification form. The variables such as year, type, study pattern, study method, study area, sample, sampling method, sample size, number of data collection tools, and data collection tools of the studies were examined and during the study nine research questions were focused on.

When studies in the field of digital literacy are examined in Türkiye, the first study took place approximately nine years ago. There has been an increase in the number of digital literacy studies over the years. Findings show that most of the studies were carried out in recent years. The number of studies carried out especially since 2018 (14%) is very high when compared to previous years. However, in 2019 and 2020 (30%), an extremely large number of studies were carried out compared to other years. It is thought that the increase in the number of studies in 2018 and after, especially the reorganization of the curriculum in 2018 may have an effect. Considering the years 2020 and 2021, when the pandemic period was experienced, it was determined that 46% of the work took place in the last few years. It is observed that there is an increase in the need for technology and technological tools in the distance education process (He, Zhang & Li, 2021). These developments in the field of education have led to an increase in the number of studies in the field of digital literacy.

When the types of studies in the field of digital literacy in Türkiye are examined, 66% of the studies consist of published articles. Compared to other types of work, the article writing process can be shown to be easier and shorter than the thesis writing process. Göktaş et al. (2012) show similarities with the findings of their study. 6% of the studies examined include scientific papers. While the master's theses that include digital literacy studies are determined at the rate of 24%, the doctorate thesis studies are realized at the rate of 4%. It is predicted that the numerical difference between the studies carried out between the master's and doctoral thesis studies is because the doctoral thesis studies are more difficult and long-term.

When the designs of studies in the field of digital literacy in Türkiye are examined, it is seen that 34% of the studies consist of quantitative patterns. Since the data collection and analysis process of the quantitative design is shorter and easier compared to other designs, it can be seen as the reason for more studies. Göktaş et al., (2012) and Namdar and Küçük (2018) reached similar results in their study. We may say that 28% of the studies examined are

qualitative design studies. It's known that the preparation process of data collection tools in qualitative design research involves a shorter and easier process compared to quantitative research methods (Frost, 2021). In addition, researchers frequently conduct qualitative studies on digital literacy at various levels. In particular, the researchers' use of the triangulation method by frequently resorting to interview and observation techniques increases the number of qualitative studies (Tosuntaş, Emirtekin & Süral, 2019). However, mixed designresearchs are realized at a rate of 7% in the studies examined. The use of mixed design research in education has been increasing day by day (Göktaş et al., 2012; Demrici Güler & Irmak, 2018). However, it is seen that 8% of the studies are scale development studies. It has been determined that scale development studies are carried out at different grade levels (especially secondary school students and teacher candidates). The rate is thought to be high for this reason (Güneş, 2018).

When the research models used in studies in the field of digital literacy in Türkiye are examined, we may say that the survey model is used at a rate of 23%. On the other hand, it was determined that 20% of the correlational survey model studies were carried out to support this finding. Göktaş et al., (2012) and Alper and Gülbahar (2009) state that the survey model was mainly used in their studies. When the researchers' preference for the scanning model is associated with previous findings, it can explain the high rate of quantitative design approaches. In addition to that, the scale development model is used in 9% of the studies. Besides these, we determined 8% document review, 8% case study, 5% phenomenology, 5% descriptive analysis, and 4% case study methods. In addition, it is seen that 1% of the studies were carried out in the descriptive correlational, narrative, cross-sectional survey, convergent parallel, quasi-experimental single-group method, and 3% in the time-series design. Finally, we determined that research methods were not specified in 11% of the studies based on the statements of the authors.

Regarding the results of the studies for study field in the field of digital literacy in Türkiye, we may say that 19% is realized in the field of teacher training. It is thought that such a situation arises since the studies are carried out with more than one teacher candidate group, especially in education faculties. When the literature is examined, it is seen that the number of studies in the field of teacher training is high (Göktaş et al., 2012; Alper & Gülbahar, 2009; Erdoğmuş & Çağıltay, 2009). In line with the fields of study, it has been determined that 16% is in the field of social studies education and 12% is in the field of Turkish education. In digital literacy studies, we found that the fields of study occur more in verbal fields than in other fields. However, it was determined that 7% of the study took place in Primary Education. In addition, it is seen that

studies in the fields of 5% Scale development, 3% Science education, 4% Secondary Education, 3% Preschool, 3% Sport sciences, 3% English teaching, 3% Scale adaptation, and 1% Music education have been published. In the studies examined, we determined that the study field was not specified by the author(s) of 11% of the study.

When the sample groups of the studies in the field of digital literacy in Türkiye are examined, 61% of the studies are carried out with pre-service teachers. We may say researchers work with pre-service teachers to make sample groups more accessible. At the same time, it can be explainedasr reasons for saving time and space. Besides, there are studies with 9% of teachers and 3% of academicians. A large number of studies with teachers can be shown as a larger sample size. The studies, it was determined that the studies were carried out with 5% high school students and 5% secondary school students. However, the rate of studies involving primary school students is 1%. This is thought to bebecausee the researchers preferred higher age groups as the sample group preference. The fact that older age groups interact more with digital technologies can be cited as a reason (Donnelly, Vitale, & Linn, 2015; Svihla & Linn, 2012). The rate of studies conducted with graduate students is 1%. In addition, it is seen that there are 4% textbook reviews, 1% scale development, 1% course reviews, and 3% program reviews. In 3% of the studies examined, it was determined that the author/authors did not specify the sample groups.

When the distribution of studies in the field of digital literacy in Türkiye according to sampling methods is examined, it is seen that a convenient sampling method is used at the rate of 19% and purposeful sampling at the rate of 11%. Appropriate sampling and purposive sampling methods are thought to save time in determining the participants compared to other methods (Tosuntaş, Emirtekin, & Süral, 2019). Tosuntaş, Emirtekin and Süral (2019), Akça-Üstündağ (2009), Alper and Gülbahar (2009) and Göktaş et al. (2012) stated that easily accessible and purposeful sampling methods were used in their studies. It is seen that 7% simple random sampling, 5% random sampling, 1% easily accessible, 4% target-based, 4% criterion, 1% outlier, 1% snowball sampling, 1% deliberate sampling, and 1% cluster sampling methods are preferred. It was determined that 36% of the authors/authors did not specify which sampling methods they used in the study. When the sample sizes of studies conducted in the field of digital literacy in Türkiye are examined, 35% of the studies are 201-500 participants, 23% are 0-50 participants, 14% are 501-1000 participants, 12% are 101-200 participants, 1% are 51-100 participants and 1000-participant 1% study appears to be published. At the same time, 14% of the authors did

not inform about the number of participants in the study. Göktaş et al. (2012) show similarities with the findings of their study.

When the distribution of the number of data collection tools used in studies in the field of education in Türkiye is examined, it is seen that a data collection tool is used by 57% of the studies. Accordingly, in 30% of these studies of two data collection tools, 11% of the studies, three data collection tools, and 3% of the studies, four data collection tools have been used. Göktaş et al. (2012) show similarities with the findings of their study..

5. Implications

In light of the findings obtained as a result of the study, the following suggestions were made.

1. In future studies, digital literacy studies in the field of education can be examined all over the world, not only in Türkiye.

2. Due to a large number of studies with incomplete declarations, it is recommended to prepare publications that provide theoretical information on the writing of scientific studies more clearly and understandably.

3. In light of the research findings, it is seen that there are deficiencies in various aspects of studies in the field of digital literacy. For example, it is seen that more studies are needed at the pre-school, primary, and secondary school levels. For this reason, it is recommended to carry out studies in related fields to eliminate the deficiencies in the literature.

4. Ng (2012) model mentions that there are three basic dimensions of digital literacy (cognitive, technical, and socio-emotional dimensions). In future studies, to reveal the situation of all these dimensions in the sample groups studied, it is recommended not only to collect data through scales but also to provide data diversity and increase the number of qualitative and mixed studies to obtain more in-depth data.

5. Considering that the number of doctoral dissertations in this field is low, it is recommended to work on a doctoral degree in the context of digital literacy.

6. Generally, it is seen that quantitative methods are preferred in studies to reveal the current situation or to examine it in terms of different variables. However, there is a need to carry out integrated studies into curricula or to reveal the situation in these programs to both raise awareness about digital literacy and ensure that it becomes widespread in classrooms.

6. Appendix

This study was published as an oral presentation at the 3. International Conference on Science, Mathematics, Entrepreneurship, and Technology Education.

CONFLICT OF INTEREST STATEMENT

The author declares that there is no conflict of interest in this study.

RESEARCH AND PUBLICATION ETHICS STATEMENT

The author declares that research and publication ethics are followed in this study.

AUTHOR LIABILITY STATEMENT

The authors declare that the "Conceptual Framework" part of this work was done by Res. Assist Meral ÇELİKOĞLU, and "Method and Manuscript, Visualization and Research" parts of this work was done by Res. Assist. Hacı Mehmet YEŞİLTAŞ, "Writing Draft, Analysis and Editing" parts of this work was done by Prof. Dr. Erol TAŞ.

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