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Digital Literacy Perspective: Reflections on Education

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Abstract: Today's society demands more and more different types of skills. These skills need to be used not only to strengthen the capacity to use information for social and personal development purposes, but also to manage potential risks associated with mass media and digital media. As a matter of fact, the rapid development of digital technologies in the digital age confronts individuals with situations that require the use of ever-growing cognitive, sociological and technical skills required to identify and solve problems in digital environments. Individuals who are digitally illiterate or who lack digital literacy face the situation of exclusion from the digital world. Therefore, in today's technology age, being digital literate is an important skill needed in people's workplace and social lives beyond educational institutions. The increased focus on the development of digital literacy should be a policy priority, especially for educational institutions. Because education, which includes the learning and teaching process, is an area where digital media are used. In this study, the concept of digital literacy, the development of digital literacy, strategic perspectives in education, the 'Ng Model' in digital literacy and the use of digital literacy in education have been examined.

Keywords: Digital literacy, Skills, Education, Technology

Introduction

Today's society requires more and more skills and different kinds; these skills to strengthen the capacity to use the information for only social purposes and personal development, but also with mass media and digital media must be used in managing the potential risks associated thereof. As a matter of fact, the rapid development of digital technologies in the digital age, the individuals are facing the use of continuously growing cognitive, sociological and technical skills required to determine and solve problems in digital environments. Digital literacy is much more than a functional issue of learning how to use a computer and a keyboard or how to do online calls. Digital literacy works as catalyst because it allows you to earn important life skills. Digital literacy, from a pragmatic perspective, is the set of skills, knowledge, and attitudes needed to access digital information effectively, efficiently, and ethically. Although it is expressed, increasing focus on the development of digital literacy should be a policy priority for educational institutions. Because training covering the learning and teaching process is an area where digital environments are used. Digital literacy is necessary primarily to be a digital citizen. In this respect, students are needed to consciously use technology to interact with the world around their environment and responsibility. The main challenge of school systems today is to place all levels of digital literacy education system in the professional development of teachers and instructors.

Digital Literacy Concept

In the source of digital technologies and digitalization process, the concept of "digital" is located. The concept of digital in late 15th century from Latin to English means' digit (us) = finger (s) as origin (Bayrakcı, 2020). The origin of the word literacy meets the ability to read and write (UNESCO, 2004). This concept contains the forms of communication with visual, electronic, and digital expression. Modern literacy, technology and culture has

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expanded as scope within time and the ability to be literate and the ability to be able to be literate and required a long-term commitment (Cordes, 2009).

Paul Gilster has first popular in 1997 the concept of digital literacy in the book named *Digital Literacy* (Gilster, 1997). However, it has not made a single description of digital literacy in his book. Digital literacy requires a mix of speaking, listening, reading, writing and viewing skills. For this reason, it is not an alternative to traditional literacy, but an assistant that contributes to multifaceted writing (Churcill et al., 2008). Kinzer (2010) defined this concept as the ability to communicate, collaborate, and search, find, and critically evaluate information using technological devices. Goodfellow (2011) expressed digital literacy as awareness, attitude, and competence in using digital technologies. Hague and Payton (2010) expressed the concept of the ability to create and share meaning in different styles and formats; understanding how and when digital technologies can best support and use these processes to establish effective communication and collaboration in a new process of formation.

The digital literacy statement is now used to explain our interactions with digital technologies because it is mediated by most of our social interactions (Lankshear et al., 2003). But seeing digital literacy on a par with digital technologies can lead to a superficial perception of this concept, because the concept of literacy evokes a large number of competencies, skills, and knowledge (Cope et al., 2000). According to Hobbs (2011), digital literacy competencies include:

- Access: Use of technologies to access information,
- Analysis and Evaluation: Senior skills such as evaluation, analysis, and synthesis,
- Creation: Ability to create and form artifacts,
- Reflection: Participation in reflective thinking,
- Transition to action: The activity of sharing information individually and in collaboration publicly.

Development of Digital Literacy in Education

The field of 'digital literacy' has a relatively long history. The beginning is the end of the 1960s adopted by the society of the standard definitions of literacy. Since the 1970s, the term 'technology literacy' has developed in parallel with visual literacy. The technology literacy was a combination of skills based on skills with a more academic approach and has made a publication of a publication that is considered to benefit for all Americans funded by the United States government (Belshaw, 2012). In the 1980s, the prevalence of computers and related technologies has strengthened the formalization of a type of literation related to the use of computers and other digital devices that are culturally positioned to computer-based media technologies for multiple perspectives for multiple perspectives (Belshaw, 2012; Smith et al., 1998). Thus, the digital pedagogy revolution came after decades from the first computerization burst of the 1980s (Policy Brief, 2011).

The assumption that using computers to achieve certain goals constitutes literacy began to be questioned towards the end of the 1990s (Belshaw, 2012). In this period, a type of computer literacy consisting of seven components and the approximation of Shapiro and Hughes (1996), which predicts the curriculum: Using vehicle literacy, hardware and software tools; resource literacy, understanding forms of information resources and access to them; social-structural literacy, understanding the production and social importance of knowledge; research literacy, using computer technologies for research and science; publication literacy, ability to communicate and publish information; emerging technology literacy, understanding new developments in information technologies; critical literacy, the ability to evaluate the benefits of new technologies. The seven components of this approach include seven literacy features.

The historical process of 'visual literacy', 'technological literacy', 'computer literacy' and 'information literacy' after you fail at certain points, many researchers tried to find a more appropriate term to the age of digital communication and the internet. Although the concept of 'digital literacy' 'was not discovered by him, the beginning of the actual discussion of the term was the publication of Paul Gilster's 1997 book' *Digital Literacy*' (Bawden, 2008). Gilster has highlighted the ability to make critical thinking skills related to digital literacy and in particular on-conscious judiciary on online-reached content (Gilster, 1997). In later periods, various researchers and practitioner groups have studied to review digital literacy frames with different scopes and foci. In this context, Alexander et al. (2017) compared an eleven-sample framework of various institutions in their reports on the current state of digital literacy in higher education and determined certain themes in their content. Again, GAML (Learning Monitoring Global Association) and UNESCO (United Nations Education, Science and Culture Organization) examined the national levels generated or accepted in 43 countries to provide information on the development of the 'Digital Literacy Global Framework'. From the group of large national

frames examined, they chose nine frames to examine more and compare them in terms of the aim, competence areas, learning areas, types and tools (Feerrar, 2019). In the historical process, it should be a policy priority for educational institutions, especially for the development of digital literacy in the historical process.

Strategic Perspectives in Education

Digital literacy is considered to be a social, political, economic and cultural product and in the digital age, this literacy has significant effects for current education, culture and social development (Bruce, 2003). This perspective emphasizes the importance of being a digital citizen to develop digital literacy of individuals and to participate in digital society (Çakmak et al., 2018; Junge et. al. 2007). An institution with a digital literate is more equipped than other institutions in overcoming a number of difficulties, so it is critical to the organizational change in this field for strategic thinking and leadership in the framework of digital literacy at each level. There are a number of approaches that institutions can take digital literacy to help them advance their digital literacy in a consistent, holistic and sustainable manner. These (JIST Guide, 2021):

- To develop a strategic vision supported by corporate values and effective lead,
- Transform the vision to different strategies, policies and processes; to adopt an integrated approach,
- To provide support services and opportunities that enable students to develop their digital capabilities of the staff,
- To provide the infrastructure of auxiliary information technologies that support various digital applications and flexibility,
- To encourage the innovation and change culture in which the staff at all levels and students are included in the strategic interactions around the digital literacy, and a series of interaction model is supported,
- To better understand the existing digital literacy support and to help prioritize the development areas, review existing policies, processes, and applications.

‘NG Model’ in Digital Literacy

In the literature, various models of digital literacy are proposed. Therefore, it is necessary to examine the models with significant role in the development and conceptualization of these literacy in order to accurately understand the digital literacy. In the literature, there are many models of P21 model, Krumsvik model, DIGCOMP model, JISC model, Ng model, such as digital literacy. This section is included in the Ng digital literacy model.

In the digital literacy model developed by Ng (2012), digital literacy represented the intersection of three different dimensions, cognitive and social-emotional (Figure 1).

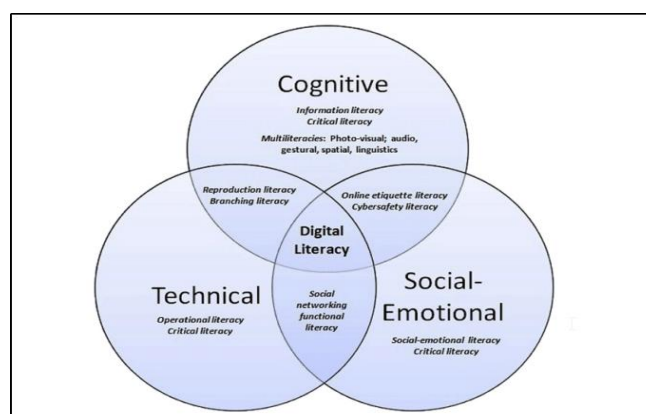


Figure 1. Ng digital literacy model (Ng, 2012)

As shown in Figure 1, the technical dimension of digital literacy generally includes the need to have technical and operational skills to use information and communication technologies in learning and daily activities. This means that you can connect and use input and external units such as earphones, external speakers and smart boards. The cognitive dimension includes legal and ethical issues with the effective and accurate evaluation, generating, selection, critical thinking, in the digital world. At the same time, this dimension also means to evaluate and select the appropriate software programs to learn or to make a particular task (Ng, 2012). At the intersection between technical and cognitive dimensions, Eshet-Alkalai (2004) has a proproduction and

reproduction literacy. These include intelligent navigation in hypermedia environments to generate information and synthesize new insights using appropriate online or offline tools that will best communicate meanings. The social-emotional dimension is to be responsible for the use of people in communication, socialization and learning means. In order not to make erroneous comments in this context, the use of appropriate language and proper words and respect should be treated similarly to face-to-face protocols. In addition, it is necessary to control security by keeping personal information as confidential as possible and without sharing more personal information than it should be. All three dimensions of the model include critical literacy. Being digital literate requires the development of a number of basic skills, which are technical, cognitive, and social-emotional. Basic skills that a digital literate person should be able to demonstrate (Ng, 2012):

- To perform basic computer-based operations and access resources for daily use,
- Search, identify and evaluate information in order to make research,
- To complete the tasks, select and develop the competence to use the most suitable technological tools or properties to create products that are optimizing the problems, or optimizing new understanding,
- Protection of self in accordance with online communities and in digitally improved environments.

Teaching these skills and providing opportunities to apply them in a way that demonstrates the importance of skills when using them appropriately in the choices made is necessary and invaluable for both personal and academic development of students (Ng, 2012).

Use of Digital Literacy in Education

Digital technologies now play an important role in many areas, from business to education, from social services to the economy, from management to health and from entertainment to culture. Therefore, it is necessary to manage the life of a literate person and to effectively use the information that has acquired. Technological and social developments in contemporary communities require people to have multiple readers-authorship skills. For this reason, one literacy is not sufficient, and it is not considered sufficient in education, which is given within the traditional literacy limits at the stage of education. Because there are many and different resources to contribute to education in the digital environment (Karakuş et al., 2019). As a matter of fact, developments in the field of education, changing educational environments, tools and equipment used have revealed that there is more need for digital literacy (Ceylan, 2017). Such changes experienced in the digital area, the socio-psychological and psycho-pedagogical portrait of students; the nature of their participation in education, vocational and social life; has changed the methods of learning of humanities and natural sciences (XpomoB et al., 2016).

The skills they need regarding the digital media are not limited to receiving information. They should be able to evaluate and use the information they obtain. This means that the resources of the information is to ask questions about the interests of the publishers and how to represent the world and to understand the depth of the relationship with the broader social, political and economic forces of existing technological developments (Buckingham, 2010). In this sense, digital literacy is very important for all young people with increasing digital culture. Because it offers children and youths now and in the future social, cultural, economic, civil and intellectual life to play a complete and active role to play a complete and active role. To have digital literacy is to have access to a wide range of applications and cultural resources that you can apply to digital tools. It is the ability to create and share meaning in different formats. Creating, collaborating, communicating effectively using digital technologies (Hague et al., 2010). It contains a versatile approach to learning, which hosts such features in the content of the digital literacy. Are linked to independent learning and lifetime learning strategies. It is believed to be a prerequisite for literacy and creates a framework to learn to teach individuals by leading critical thinking and helping individuals (Jeffrey et al., 2011).

Digital pedagogy is encouraged in two main ways: to improve teaching and learning processes with digital solutions, and to facilitate access to educational resources (Policy Brief, 2011). Education and technology firms are also developing many digital applications that will allow them to be used in schools. The i-theater application for kindergartens offers children's digital history creations, add visuals, by adding their own drawings. The most important contribution to children is not consuming digital content, it is to grow and increase their creativity (Kurudayıoğlu et al, 2014). Recently, digital competencies provided more content and motivating environments to learn to children and youth and to use more digital media to achieve the goals of students with interactive participants in the future. In this context, it has become unthinkable that there are teachers and students who have been stripped of their digital identity, resisting the development around lesson tools that are moving away from traditionalism, within the changing classes (Soby, 2008). In this sense, teachers

'preparation of lesson plans using web 2.0 tools will approach the goal of educating digital literate individuals by turning students' perspectives in another direction. For example, access to our cultural heritage, such as museums, galleries, ruins, was provided through digital technologies and the internet, more people were introduced, and in this sense, very effective learning environments were presented in the field of education (Arslan, 2019). Digital technologies have positive and negative effects on the educational process. Digital technologies cooperative work, social development, while providing positive contributions such as providing material effortlessly ready to reach people away from their creativity, laziness push, unreliable access to information, plagiarism, such as insecurity leads to negative situations (Baker, 2000; Evering et al., 2012; Hague et al., 2010; Scanlon et al., 2002). Digital literacy anticipates that we use the current positive and negative effects of digital resources within our skills in a way that is useful within the framework of a critical point of view in the educational process.

Conclusion

As a result, individuals must be digitally literate and educate themselves accordingly in order to adapt to the changing world, not to get lost in the digital world, not to stay away from developments, to socialize digitally. Technology should be used as a tool, not as a goal, to facilitate a person's life as it should be properly. For this reason, every student who uses technology is aware of digital literacy issues and complies with the rules are important at the point of standing in the digital environment. Due to the global crisis of the Suddenly developing Covid-19 epidemic, training institutions have difficulty in the academy, as it is forced to shift their teaching activities to online modalities. As a result of this transition, many students had to face many challenges in accessing necessary resources to continue their education, digital literacy has become more important than ever.

Scientific Ethics Declaration

The author declares that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the author.

References

- Alexander, B., Adams-Becker, S., Cummins, M. & Hall-Giesinger, C. (2017, Dec 10). *Digital literacy in higher education*. <https://library.educause.edu/resources/2017/8/digital-literacy-in-higher-education-part-ii-an-nmc-horizon-project-strategic-brief>
- Arslan, S. (2019). *İlkokullarda ve ortaokullarda görev yapan öğretmenlerin dijital okuryazarlık düzeylerinin çeşitli değişkenler açısından incelenmesi*. [Unpublished thesis]. Sakarya Üniversitesi, Sakarya.
- Baker, E. (2000). Integrating literacy and tool-based technologies. *Computers in the Schools*, 16(2).
- Bawden, D. (2008, Mar 19). *Origins and concepts of digital literacy*. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.741.4617&rep=rep1&type=pdf>
- Bayrakçı, S. (2020). *Dijital yetkinlikler bütünü olarak dijital okuryazarlık: Ölçek geliştirme çalışması*. [Unpublished doctoral dissertation]. Marmara Üniversitesi.
- Belshaw, D. (2012, Feb 25). *What is 'digital literacy'? A pragmatic investigation*. [http://theses.dur.ac.uk/3446/1/Ed.D.thesis \(FINAL TO UPLOAD\).pdf?DDD29+](http://theses.dur.ac.uk/3446/1/Ed.D.thesis%20(FINAL%20TO%20UPLOAD).pdf?DDD29+)
- Bruce, B. (2003). *Literacy in the information age: Inquiries into meaning making with new technologies*. Newark, DE: International Reading Association.
- Buckingham, D. (2010 Mar 19). *Defining digital literacy*. https://link.springer.com/chapter/10.1007%2F978-3-531-92133-4_4
- Ceylan, B. (2017). Bilgi ve iletişim teknolojileri ve öğretmen. In S. Z. Genç (Ed.), *Değişen Değerler Ve Yeni Eğitim Paradigması* (pp. 107-126). Pegem Akademi.
- Churchill, N., Ping, L. Ç., Oakley, G. & Churchill, D. (2008, Feb 20). *Digital storytelling and digital literacy learning*. https://www.academia.edu/2818859/Digital_storytelling_and_digital_literacy_learning
- Cope, B. & Kalantzis, M. (2000). *Multiliteracies: Literacy and the design of social futures*. London: Routledge.
- Cordes, S. (2009, Mar 22). *Broad horizons: The role of multimodal literacy in 21st century library instruction*. <http://www.ifla.org/files/hq/papers/ifla75/94-cordes-en.pdf>
- Çakmak, Z. & Aslan, S. (2018). Sosyal bilgiler öğretmen adaylarının dijital vatandaşlık davranışlarının bazı değişkenler açısından incelenmesi. *Adıyaman Üniversitesi Eğitim Bilimleri Dergisi*, 8(1).
- Eshet-Alkalai, Y. (2004). Digital literacy: a conceptual framework for survival in the digital era. *Journal of Multimedia and Hypermedia*, 13(1).

- Evering, L. C. & Moorman, G. (2012). Rethinking plagiarism in the digital age. *Journal of Adolescent & Adult Literacy International Reading Association*, 56(1).
- Feerrar, J. (2019 May 15). *Development of a framework for digital literacy*. <https://vtechworks.lib.vt.edu/bitstream/handle/10919/89673/Development%20of%20a%20Framework%20for%20Digital%20Literacy.pdf?sequence=1&isAllowed=y>
- Gilster, P. (1997). *Digital literacy*. New York: Wiley Computer Publication.
- Goodfellow, R. (2011). Literacy, literacies, and the digital in higher education. *Teaching in Higher Education*, 16(1).
- Hague, C. & Payton, S. (2010). *Digital literacy across the curriculum*. London, UK: Futurelab.
- Hobbs, R. (2011). Empowering learners with digital and media literacy. *Knowledge Quest*, 39(5).
- Jeffrey, L., Hegarty, B., Kelly, O., Penman, M., Coburn, D. & McDonald, J. (2011). Developing digital information literacy in higher education: Obstacles and supports. *Journal of Information Technology Education: Research*, 10.
- JIST Guide (2021, Feb 25). *Developing digital literacies*. <https://www.jisc.ac.uk/guides/developing-digital-literacies>
- Junge, K., & Hadjivassiliou, K. (2007). What are the EU and member states doing to address digital literacy?. *eLearning Papers*, (6), 1.
- Karakuş, G. & Ocak, G. (2019). Öğretmen adaylarının dijital okuryazarlık öz-yeterlilik becerilerinin farklı değişkenler açısından incelenmesi. *Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi*, 21(1).
- Kinzer, C. K. (2010). Considering literacy and policy in the context of digital environments. *Language Arts*, 88(1), 51.
- Kurudayıoğlu, M. & Bal, M. (2014). Ana dili eğitiminde dijital hikâye anlatımlarının kullanımı. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 28.
- Lankshear, C. & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning*. United Kingdom, UK: Open University Press.
- Ng, W. (2012). Can we teach digital natives' digital literacy? *Computers & Education*, 59(3)
- Policy Brief (2011, May 20). Digital literacy in education. <https://gdc.unicef.org/resource/digital-literacy-education>
- Scanlon, P. M. & Neumann, D. R. (2002). Internet plagiarism among college students. *Journal of College Student Development*, 43(3).
- Shapiro, J. J. & Hughes, S. K. (1996, Apr 10). *Information literacy as a liberal art. Enlightenment Proposals for a New Curriculum*. <https://teaching.uncc.edu/sites/teaching.uncc.edu/files/media/article-books/InformationLiteracy.pdf>
- Smith, R. & Curtin, P. (1998, Apr 22). *Children, computers and life online: Education in a cyber-world*. <https://www.semanticscholar.org/paper/Children%2C-computers-and-life-online%3A-education-in-a-Smith-Curtin/7c604b39302de89f6b8d146266a13ec53671aeb0>
- Soby, M. (2008). Digital competence-from education policy to pedagogy: The Norwegian context. In C. Lankshear & M. Knobel (Eds.), *Digital literacies* (pp. 91-117). Peter Lang Publishing.
- UNESCO. (2004, Apr 12). *The plurality of literacy and its implications for policies*. <http://unesdoc.unesco.org/images/0013/001362/136246e.pdf>
- Хромов, С. С. & Каменева, Н. А. (2016, Jan 19). *Modern approach to digital literacy development in education*. https://www.researchgate.net/publication/304185958_MODERN_APPROACH_TO_DIGITAL_LITERACY_DEVELOPMENT_IN_EDUCATION

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