

Parent's Perspective: The Influence of Home Learning Environment (HLE) on Digital Literacy Skills

Ardiyansah Yuliniar Firdaus¹, Haryanto²
ardiyansahyuliniar.2022@student.uny.ac.id¹, haryanto_tp@uny.ac.id²
Doctorol Program, State University of Yogyakarta¹, State University Yogyakarta²

Abstract: This preliminary study aims to investigate the influence and factors affecting the home learning environment on students' digital literacy skills from the perspective of parents. The research employs a survey method with descriptive quantitative data analysis, involving 40 parents of students as participants. Data collection techniques include questionnaires and online interviews in the form of Google Forms. The results of the study indicate that, based on the primary questions 1 and 2 regarding the perspectives of parents, data were obtained indicating that the home learning environment is essential and has a significant impact in supporting and enhancing students' digital literacy skills. The factors within the home learning environment that influence students' digital literacy competence include: 1) internal factors such as motivation, communication, reflective effectiveness, cognitive abilities, emotional factors, interest in IT proficiency, available time, willingness to learn, and reading intensity; 2) external factors such as facilities and infrastructure, such as the availability of devices (smartphones/laptops) and their supporting specifications, stable internet connection, internet data quota, digital learning resources, the use of smartphones/computers for studying at home, and a comfortable study space. Additionally, external factors from parents towards students include guidance, encouragement, supervision, support, and motivation provided by parents.

Keywords: Parental Perspective, Home Learning Environment, Digital Literacy

Introduction

The development of industrial revolution 4.0 and society 5.0 necessitates the education system in Indonesia to enhance the quality of education in order to prepare a generation of the nation that excels in global competence while maintaining its Indonesian characteristics. This task is certainly not easy, given the existing challenges such as diverse home learning environments and digital literacy skills. Based on data from the digital literacy survey conducted by the Ministry of Communication and Information Technology (KEMENKOMINFO) and Katadata Insight Center (KIC) in 2021, Indonesia's digital literacy is rated at 3.49, indicating a moderate level [1]. Furthermore, according to data from the Economist Intelligence Unit 2020, Indonesia ranks 61 out of 100 countries in terms of internet readiness. Meanwhile, based on data from the Central Statistics Agency (BPS), the highest percentage of households accessing the internet is in DKI Jakarta at 93.33%, while the lowest is in Papua at 31.31% [2]. It can be concluded that the level of digital literacy in Indonesian society is still low, particularly in terms

of internet utilization. In response to this, there should be efforts made to address these issues, as a way forward through educational programs, particularly in school-based learning.

The learning process in schools should be tailored to the specific conditions of each region, considering that each region has its own unique characteristics and patterns that develop within the community. For example, local customs and ways of life within the home environment become a culture or habit. Additionally, in line with the geographical conditions in Indonesia, where the country is divided into different environmental conditions, it will certainly influence the lifestyle patterns of the local communities. Consequently, it shapes a culture that applies to that particular community. This culture will be adopted by the community, influencing their daily lives, including the mindset and activities of both students and individuals within the home and school environment.

Considering the significant influence of the home environment on mindset and activities, it is essential to have a balance that maximizes the connection between the home and school environments to support students' learning achievements both at home and in school. The learning conditions at home are influenced by various factors, such as the role of parents in taking on the position of companions and substitute teachers at home. This aligns with the perspective of Ki Hajar Dewantara, who stated that "...every home becomes a school." [3]. This can be interpreted as the learning process not only being acquired at school but can also be carried out at home. In other words, the learning process is not limited to and does not end when one is at school. Learning is a continuous and lifelong process that can take place when students are at home. This perspective is also in line with the belief that [4] the home learning environment is a place that helps children learn various things.

The learning process at home will be influenced by the conditions within and around the house, such as parental/family support. This is in line with the belief [5] families that do not overly intervene (provide comfort) can have a positive impact on HLE and children's reasoning and understanding. A supportive home learning environment, including access to digital devices, internet connectivity, and parental involvement, has a positive impact on children's digital literacy skills [6], furthermore a home learning environment that is rich in opportunities for digital play, access to diverse digital resources, and parental guidance and involvement contribute to the development of early childhood digital literacy skills. [7],[8] it is argued that the quality of the home learning environment, including parental involvement, the provision of digital tools and resources, and parental mediation, significantly influences children's digital literacy skills. Therefore, a good Home Learning Environment (HLE) is necessary to create a conducive home learning environment that supports the academic success of students, including in the field of literacy, which currently faces various challenges.

On the other hand, digital literacy is an essential part of the skills and competencies required in the era of the fourth industrial revolution. This aligns with the belief that [9] it is believed that digital literacy competence is crucial for teachers and students in the school environment. Digital literacy can be defined as the survival skills in the digital era [10]. Meanwhile, according to [11] digital literacy is the awareness, attitude, and ability of individuals to effectively use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, build new knowledge, create media expressions, and communicate with others in specific life situations, enabling constructive social actions.

The digital literacy skills of students can be enhanced through the support and guidance of parents in a conducive home learning environment, which can help children understand and address risks associated with technology use, such as online security, privacy, and information authenticity. The home learning environment can facilitate children's digital literacy learning through parental supervision and discussions regarding technology use. Additionally, the home,

school, and peer environments serve as important sources for developing self-efficacy, specifically in digital devices such as information and computer technology (ICT) [12], in this case, it is necessary for every child to have digital literacy skills, where the frequency of digital home learning environments will increase as they grow older [13].

Based on the above explanation, it is deemed necessary to conduct a preliminary study in the form of an analysis of the home learning environment's impact on digital literacy skills at the primary school level as a form of service and facilitation for this educational issue. From the description, the problem formulation for this preliminary research can be formulated as follows: 1) What is the parents' perspective on the influence of the home learning environment on students' digital literacy skills? 2) What factors influence the home learning environment's impact on students' digital literacy skills from the parents' perspective? The research objectives are: 1) To identify and describe the influence of the home learning environment on students' digital literacy skills, and 2) To determine the factors influencing the home learning environment's impact on students' digital literacy skills.

METHOD

The method used in this research is a survey method, which aims to map information and evaluate statements from a number of respondents regarding the research object/issue [14],[15]. This survey research utilizes a quantitative research strategy with a set of questionnaire items assessed numerically by the respondents [16],[17],[18]. The data analysis in this study employs descriptive quantitative data analysis, with a sample of 40 parents who have children attending primary school (SD) in Bangkalan Regency. The data collection technique utilizes an online questionnaire through Google Forms, as well as observation and interviews. The questionnaire consists of open-ended questions that allow participants to provide their own answers. The data analysis technique aims to determine the perspectives of parents regarding the analysis of the home learning environment's impact on students' digital literacy skills during their time at home. The obtained data is analyzed by calculating the percentage of responses, and the resulting percentages are presented in qualitative descriptive form.

DISCUSSION

Digital literacy skills

From the data obtained regarding the influence of the home learning environment on students' digital literacy skills at home, it can be observed in the analysis of the questionnaire and interview results as follows.

1. Parental Perspectives on the Home Learning Environment in Students' Digital Literacy Skills

From the data obtained based on the questionnaire distributed to 40 parents of students, which was used to determine parental perspectives on the home learning environment in students' digital literacy skills, consisting of 2 main questions, with each main question consisting of 5 supporting questions, resulting in a total of 10 supporting questions. The data obtained was collected through a questionnaire distributed via Google Forms, and the detailed data is as follows.

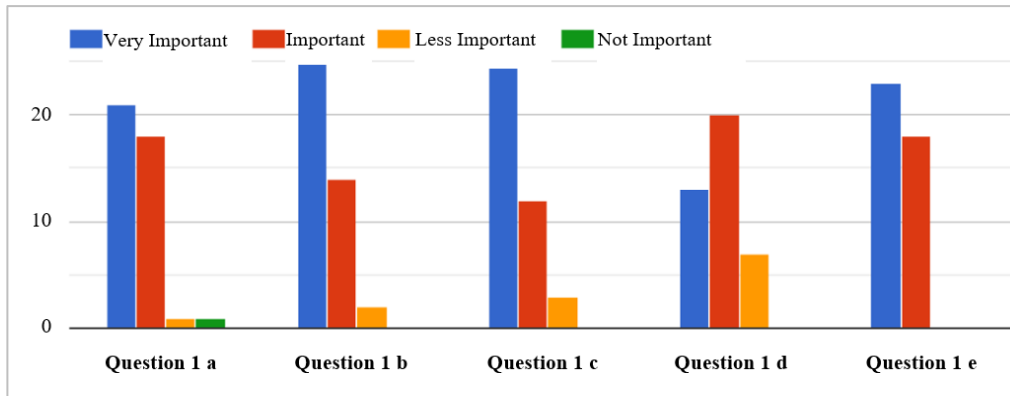


Figure 1. Graph of Question 1 Data Results

For question 1 with the keyword "importance," there are 5 supporting questions or sub-questions that are useful in obtaining information regarding parental perspectives on the home learning environment. From these five sub-questions, the following data can be obtained:

- a. From the question about the importance of the availability of smartphones or computers in supporting the digital literacy skills of your children, parents of students responded as follows: 52.5% (21) of parents considered this to be very important, while 42.5% (17) of parents responded that it is important. Additionally, 5% (2) of other parents stated that it is less important and not very crucial in supporting students' digital competence. In general, responses are very important and crucial, in line with opinion [19] that mobile phones and computing devices have a significant impact on children's digital literacy skills and can help improve students' digital literacy and academic achievements [20].
- b. From the question about the importance of having a stable internet connection in supporting the digital literacy skills of your children, parents of students responded as follows: 60% (24) of parents considered this to be very important, while 35% (14) of parents responded that it is important. Additionally, 5% (2) of other parents stated that it is less important in supporting students' digital competence. Internet connection plays a crucial role in providing children access to digital resources, such as online educational materials, interactive learning platforms, and digital libraries [21]. Limited or unreliable internet access can be a barrier to the development of children's digital literacy [22],[23]. Moreover, issues with weak signals and difficult internet access can hinder children's ability to find, use, and evaluate information online [24]). Internet connectivity enables parents to play an active role in supporting their children's digital literacy skills. Parents with internet access can guide their children in navigating online information, selecting appropriate digital content, and engaging in collaborative online activities [25]). Internet connection allows children to participate in digital literacy practices, such as reading digital books, participating in online discussions, and using digital devices for learning [26],[27].
- c. From the question about the importance of having sufficient internet quota in supporting the digital literacy skills of your children, parents of students responded as follows: 65% (26) of parents considered this to be very important, while 27.5% (11) of parents responded that it is important. Additionally, 7.5% (3) of other parents stated that it is less important in supporting students' digital competence. The availability of internet connection at home,

- along with factors such as parental trust, parental mediation, and family socio-economic status, can significantly predict children's digital literacy skills [28],[29].
- d. From the question about the importance of having a dedicated study space at home in supporting the digital literacy skills of your children, parents of students responded as follows: 30% (12) of parents considered this to be very important, while 50% (20) of parents responded that it is important. Additionally, 20% (8) of other parents stated that it is less important in supporting students' digital competence. Essentially, by providing a dedicated space, it is possible to develop high-level digital literacy skills such as critical thinking, problem-solving, and communication [30].
 - e. From the question about the importance of having supportive learning resources in supporting the digital literacy skills of your children, parents of students responded as follows: 55% (22) of parents considered this to be very important, while 45% (18) of parents responded that it is important in supporting students' digital competence. The availability of learning resources can support children's digital literacy skills, for example, the Digital Play 3C Questioning Framework, multimedia learning resources, multilingual digital thematic dictionaries, and technology-integrated spaces. These learning resources can help develop children's digital literacy skills and encourage their engagement with digital technology [31],[32],[33],[34].

Based on the explanation above regarding question 1 with the keyword "importance," it can be concluded that the availability of smartphones/computers, stable internet connection, internet quota, dedicated study space, and learning resources are considered highly important and influential. In other words, they are primary needs in supporting and enhancing children's (students') digital literacy skills.

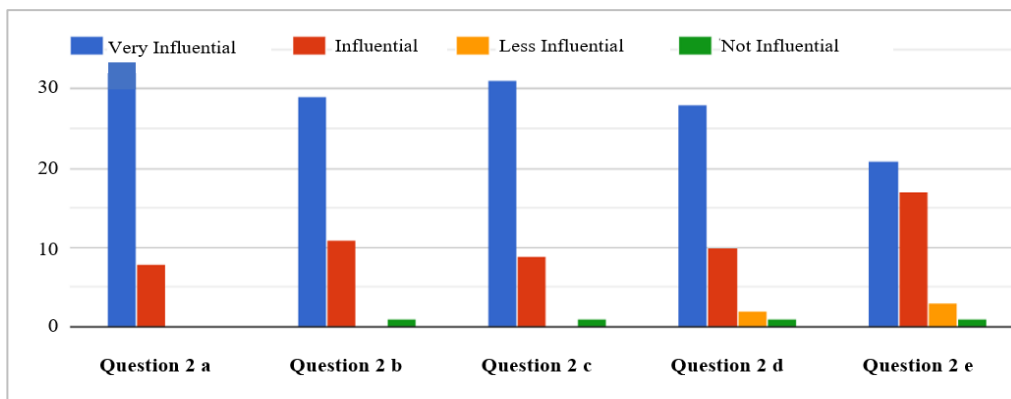


Figure 2. Graph of Question 2 Data Results

From the results of Question 2 with the keyword "influence," there are 5 supporting or partial questions that are useful for obtaining information related to parents' perspectives on the home learning environment. The data and information obtained from these five sub-questions are as follows:

- a. In response to the question "Does parental motivation influence a child's digital literacy abilities?" 82.5% (33) of parents responded that it has a significant influence, while 17.5% (7) of parents responded that it influences the digital competence of the students. Essentially,

- parents can motivate their children to engage in home learning to further support the achievement of their children's digital literacy competencies [35].
- b. In response to the question "Does parental guidance influence a child's digital literacy abilities?" 72.5% (29) of parents responded that it has a significant influence, while 25% (10) of parents responded that it does have an influence, and 1 parent (2.5%) stated that it does not influence the digital competence of the students. This is in line with the opinion of [36], which emphasizes the importance of parental guidance in the digital literacy process for children. Thus, there is a need for education for parents about the significance of their role in their children's digital literacy journey.
 - c. In response to the question "Does parental control influence a child's digital literacy abilities?" 75% (30) of parents responded that it has a significant influence, while 22.5% (9) of parents responded that it does have an influence, and 1 parent (2.5%) stated that it does not influence the digital competence of the students. The significant role of parents for elementary school students in utilizing electronic information sources as learning resources should be accompanied by good digital literacy skills so that parents can participate in controlling the use of the internet during the learning process [37]. Parents need to provide proper supervision for children's use of digital media because many parents overlook and allow children to freely play with smartphones without supervision [38],[39]).
 - d. In response to the question "Does a comfortable learning environment at home influence a child's digital literacy abilities?" 67.5% (27) of parents responded that it has a significant influence, while 25% (10) of parents responded that it does have an influence, 5% (2) of parents stated that it has less influence, and 1 parent (2,5%) stated that it does not influence the digital competence of the students. A comfortable learning environment can be seen from a cozy home study setting, which allows parents to supervise their children's digital activities and ensure they engage with appropriate content. This can help children develop critical thinking skills and avoid potential risks associated with digital media [40],[41],[42]). Moreover, a comfortable home learning environment can provide children access to devices and digital technology, which can help them develop digital literacy skills through hands-on experiences [43].
 - e. In response to the question "Does the use of smartphones/digital devices during home learning influence a child's digital literacy abilities?" 52.5% (21) of parents responded that it has a significant influence, while 40% (16) of parents responded that it does have an influence, 5% (2) of parents stated that it has less influence, and 2.5% (1) parent stated that it does not influence the digital competence of the students. The use of digital devices in the classroom can also influence children's digital literacy skills. Teachers who effectively use technology can help students develop digital literacy skills, and students can benefit from the use of digital devices and ICT in the classroom [44]. Children's access to various digital technologies at home, including smartphones, can also impact their digital literacy and multimodal practices. Family SES and parental factors can significantly predict children's digital literacy and multimodal practices at home [45],[46],[47].

Based on the explanation above, it can be concluded that motivation, guidance, control (supervision) from parents, a comfortable learning environment at home, and the use of smartphones/digital devices during home learning are crucial and have a significant influence. In other words, they are primary needs in supporting and enhancing a child's digital literacy abilities.

Based on Questions 1 and 2 regarding parents' perspectives on the home learning environment, it is evident that they are crucial and have a significant influence in supporting and enhancing a child's digital literacy abilities.

2. Factors influencing the home learning environment on students' digital literacy skills, from the perspective of parents.

The factors influencing the home learning environment on students' digital literacy skills, from the perspective of parents, can be divided into two main parts: internal factors based on the students themselves and external factors based on the home environment or external to the students. The internal and external factors influencing this, based on interviews with parents, are as follows:

a. Internal factors of the students:

Through interviews conducted with parents regarding factors influencing their children's digital literacy skills, information was obtained that these factors are influenced by internal aspects of the students themselves. These factors include: a) Motivation, this is also in line with the opinion of [48] that influences the development of children's digital literacy skills; b) Communication, children with strong communication skills can effectively use and combine these modes to create and share digital content, enhancing their digital literacy abilities [49],[50]; c) Reflective effectiveness; d) Mental capacity; e) Emotional, children's emotional well-being (maturity) can affect their attention, concentration, and ability to process and retain information, which, in turn, can impact their digital literacy skills [51],[52]; f) Interest in IT mastery, children's interest in specific digital media or topics can enhance their motivation to engage with digital media and develop their digital literacy skills. For example, a child interested in video editing may be more motivated to learn about video creation and develop their video editing skills [53],[54]; g) Available time, other studies discuss the impact of various computer uses and usage time on students' digital reading achievement [55]; h) Willingness to learn; and i) Reading intensity.

These internal factors require special attention from parents at home in order to achieve the goal of enhancing students' digital literacy competencies.

b. External factors of the students (home learning environment):

External factors related to the students can either support or hinder their digital literacy competencies. Through interviews with parents, information was gathered and conclusions were drawn regarding these external factors.

These factors include facility and infrastructure provisions such as the availability of devices (smartphones/laptops) and their supporting specifications, stable internet connection, sufficient data quota, access to digital learning resources that provide quality knowledge (both digital and non-digital books for reading), appropriate use of devices for studying at home, and a comfortable learning space. Additionally, factors related to parents such as guidance, encouragement, supervision, mentoring, support, and motivation provided by parents to their children (students).

Basically, the home learning environment plays a role in shaping children's digital literacy skills. A supportive and conducive environment that encourages exploration, creativity, and critical thinking can foster the development of digital literacy [56]. Children who have access to devices such as computers, tablets, or smartphones, and a reliable internet connection are more likely to engage in digital learning activities and develop their digital literacy [57]. On the other hand, the level of parental involvement in their children's digital learning can significantly impact their digital literacy skills. Parents who actively interact with their children, provide guidance, and set limits on the use of digital media can help develop their children's digital literacy [58].

Based on the interviews conducted, it can be explained that the factors influencing the home learning environment on students' digital literacy competencies include internal factors of the students themselves, external factors such as facility and infrastructure provisions, as well as the support and facilitation provided by parents in terms of moral and material support.

CONCLUSION

Based on the preliminary study regarding parents' perspectives on the Home Learning Environment (HLE) and its influence on children's digital literacy abilities, several conclusions can be drawn:

From the explanation of Question 1 with the keyword "importance," it can be explained that the availability of smartphones/computers, stable internet connection, internet data, dedicated study space, and learning resources are crucial and influential. In other words, they are primary needs in supporting and enhancing a child's digital literacy abilities. Similarly, from the explanation of Question 2 with the keyword "influence," it can be explained that motivation, guidance, control (supervision) from parents, a comfortable learning environment at home, and the use of smartphones/digital devices during home learning are crucial and have a significant influence. In other words, they are primary needs in supporting and enhancing a child's digital literacy abilities.

Factors influencing the home learning environment consist of internal and external factors. Internal factors within the students themselves include motivation, communication, effective reflection, cognitive abilities, emotional state, interest, IT proficiency, available time, willingness to learn, and reading intensity. External factors include facilities and infrastructure, such as the availability of devices (smartphones/laptops) and their supporting specifications, stable internet connection, data allocation, digital learning resources that provide the best knowledge (including both digital and non-digital books), the use of smartphones/devices during home learning, and a comfortable study space. Meanwhile, factors from parents include guidance, encouragement, supervision, support, and motivation provided by parents to their children (students).

ACKNOWLEDGMENTS

This article is part of a doctoral research in Elementary Education pursued by the first author (1) at Yogyakarta State University, Indonesia. We express our heartfelt gratitude to the Center for Higher Education Funding (BPPT) and the Education Fund Management Agency (LPDP) of the Republic of Indonesia, as well as the Education Financing Service Center (PUSLAPDIK) of the Ministry of Education, Culture, Research, and Technology, for granting the Indonesian Education Scholarship (BPI) that enabled the first author (1) to pursue this academic degree.

REFERENCES

- [1] Dirjen Aptika Kominfo Semuel Abrijani Pangerapan. Artikel ini telah tayang di Bisnis.com dengan judul "*Kominfo: Literasi Digital Masyarakat Masih Jadi Tantangan*", Klik selengkapnya di sini: <https://teknologi.bisnis.com/read/20210318/101/1369062/kominfo-literasi-digital-masyarakat-masih-jadi-tantangan>. Author: Akbar Evandio Editor : Rio Sandy Pradana (2021)
- [2] Fairuza, Nadia. *Urgensi Literasi Digital untuk Masa Depan Indonesia*. Tersedia pada: <https://nasional.sindonews.com/read/380378/18/urgensi-literasi-digital-untuk-masa-depan-indonesia-1617026634> (2021)

- [3] KEMENDIKBUD.: *NASKAH AKADEMIK Rancangan Standar Sarana dan Prasarana Konsep Sekolah Masa Depan Melalui Review Permendiknas Nomor 24 Tahun 2007*. Jakarta (2021)
- [4] Kumalasari, P. I., & Sugito, S.: The Role of Student's Parent in Shaping Home Learning Environment (HLE) for Early Childhood. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(2), 1521-1535 (2020). DOI: 10.31004/obsesi.v5i2.881
- [5] Niklas, F., Cahrssen, C., & Tayler, C.: Home learning environment and concept formation: A family intervention study with kindergarten children. *Early Childhood Education Journal*, 44(5), 419-427 (2016)
- [6] Livingstone, S., & Sefton-Green, J.: "The Class: Living and Learning in the Digital Age." New York: NYU Press (2019)
- [7] Marsh, J., et al.: "Young Children's Digital Literacy Practices in the Home: A Review." *Early Childhood Education Journal*, 46(6), 693-703 (2018)
- [8] Chaudron, S., et al. (2015).: *Young children (0-8) and digital technology: A qualitative exploratory study across seven countries*. JRC; ISPRA, Italy (2015)
- [9] Asari, A., Kurniawan, T., Ansor, S., & Putra, A. B. N. R.: Kompetensi literasi digital bagi guru dan pelajar di lingkungan sekolah kabupaten Malang. *BIBLIOTIKA: Jurnal Kajian Perpustakaan dan Informasi*, 3(2), 98-104 (2019). DOI: <http://dx.doi.org/10.17977/um008v3i22019p98-104>
- [10] Eshet, Y.: Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of educational multimedia and hypermedia*, 13(1), 93-106 (2004)
- [11] Hidayat, N., & Khotimah, H.: Pemanfaatan teknologi digital dalam kegiatan pembelajaran. *Jurnal Pendidikan dan Pengajaran Guru Sekolah Dasar (JPPGuseda)*, 2(1), 10-15 (2019). DOI: 10.55215/jppguseda.v2i1.988
- [12] Bonanati, S., & Buhl, H. M.: The digital home learning environment and its relation to children's ICT self-efficacy. *Learning Environments Research*, 25(2), 485-505 (2022)
- [13] Lehl, S., Linberg, A., Niklas, F., & Kuger, S.: The home learning environment in the digital age-Associations between self-reported "analog" and "digital" home learning environment and Children's socio-emotional and academic outcomes. *Frontiers in psychology*, 12, 592513 (2021)
- [14] Pinsonneault, A., & Kraemer, K.: SurveyResearch Methodology in Management Information Systems. *Journal of Management Information Systems - Special Section: Strategic and Competitive Information Systems Archive*, 10, 75-105 (1993)
- [15] Creswell, J. W.: *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. In Sage Publications, Inc. (2014)
- [16] Ponto J.: *Understanding and Evaluating Survey Research*. J Adv Pract Oncol. (2015)
- [17] Trentelman, C. K., Irwin, J., Petersen, K., Ruiz, N. S., & Szalay, C. S.: The Case for Personal Interaction: Drop-Off/Pick-Up Methodology for Survey Research. (2016)
- [18] Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C.: The online survey as a qualitative research tool. *International Journal of Social Research Methodology*, 24, 641-654 (2020). <https://doi.org/10.1080/13645579.2020.1805550>
- [19] Sarwatay, D., Raman, U., & Ramasubramanian, S.: Media literacy, social connectedness, and digital citizenship in India: Mapping stakeholders on how parents and young people navigate a social world. *Frontiers in Human Dynamics*, 3, 601239. (2021)
- [20] Bidaki, Zare M., Naderi, F., & Ayati, M.: Effects of mobile learning on paramedical students' academic achievement and self-regulation. *Future of medical education journal*, 3(3), 24-28. (2013). <https://doi.org/10.22038/fmej.2013.1524>

- [21] Martens, M.: Considerations of how Children Think: Danish Responses to the International Children's Digital Library. *New Review of Children's Literature and Librarianship*, 19, 139 - 156. (2013). <https://doi.org/10.1080/13614541.2013.813339>
- [22] Kerslake, L., & Hannam, J.: Designing media and information literacy curricula in English primary schools: children's perceptions of the internet and ability to navigate online information. *Irish Educational Studies*, 41, 151 - 160. (2022). <https://doi.org/10.1080/03323315.2021.2022518>
- [23] Mudra, H.: Digital Literacy among Young Learners: How Do EFL Teachers and Learners View Its Benefits and Barriers?. *Teaching english with technology*, 20, 3-24. (2020).
- [24] Kerslake, L., & Hannam, J.: Designing media and information literacy curricula in English primary schools: children's perceptions of the internet and ability to navigate online information. *Irish Educational Studies*, 41, 151 - 160. (2022). <https://doi.org/10.1080/03323315.2021.2022518>
- [25] Mudra, H.: Digital Literacy among Young Learners: How Do EFL Teachers and Learners View Its Benefits and Barriers?. *Teaching english with technology*, 20, 3-24. (2020).
- [26] Muscat, A.: "Siri, do dogs lay eggs?" Examining young children's digital literacy experiences in domestic contexts. (2021).
- [27] Martens, M.: Considerations of how Children Think: Danish Responses to the International Children's Digital Library. *New Review of Children's Literature and Librarianship*, 19, 139 - 156. (2013). <https://doi.org/10.1080/13614541.2013.813339>
- [28] Dong, C., Cao, S., & Li, H.: Profiles and Predictors of Young Children's Digital Literacy and Multimodal Practices in Central China. *Early Education and Development*, 33, 1094 - 1115. (2021). <https://doi.org/10.1080/10409289.2021.1930937>
- [29] Mascheroni, G., Livingstone, S., Dreier, M., & Chaudron, S.: Learning versus play or learning through play? How parents' imaginaries, discourses and practices around ICTs shape children's (digital) literacy practices. (2016).
- [30] Oncul, G.: Defining the need: digital literacy skills for first-year university students. *Journal of Applied Research in Higher Education*, 13(4), 925-943. (2021). <https://doi.org/10.1108/jarhe-06-2020-0179>
- [31] Theobald, M., McFadden, A., Lunn, J., Smeaton, K., Radanovic, S., Nielson, C., & Danby, S.: Digital Play in Early Childhood Education: Supporting children's relational information literacy (eLearning Module). (2020).
- [32] Rutherford, S. M., & Prytherch, Z. C.: Assessment 'for' Learning: Embedding Digital Literacy and Peer-Support of Learning into an Assessment. In Handbook of Research on Engaging Digital Natives in Higher Education Settings (pp. 121-153). *IGI Global*. (2016). <https://doi.org/10.4018/978-1-5225-0039-1.CH006>
- [33] Parmawati, L., Ratminingsih, N. M., & Budasi, I. G.: The Development of Multilingual Thematic Digital Dictionary for Elementary School Students. *E-LINK JOURNAL*, 9(2), 60-75. (2022). <https://doi.org/10.30736/ej.v9i2.513>
- [34] Mune, C., & Thompson, S.: From the Commons to the Spartan Floor: Enhancing Digital Literacy Through Technology-Integrated Spaces. (2015).
- [35] Rizaldi, D. R., Nurhayati, E., Fatimah, Z., & Amni, Z.: The Importance of Parental Assistance in Supervising the Use of Technology for Children During the Home Learning Program. *International Journal of Engineering, Science and Information Technology*, 1(3), 7-10. (2021).
- [36] Hardiningrum, A., Shari, D., Asmara, B., Syaikhon, M., Djuwari, D., & Rulyansah, A. Pelatihan Literasi Digital Bagi Orangtua Dalam Mendampingi Anak Belajar Di Zaman

- Generasi Milenial. *Indonesia Berdaya: Journal of Community Engagement*, 4(1), 7-12. (2022). <https://doi.org/10.47679/ib.2023369>
- [37] Lestari, S., Kurnianingsih, I., & Wardiyono, W.: Pengukuran kemampuan literasi digital orang tua menggunakan instant digital competence assessment (Instant Dca). *Bibliotech: Jurnal Ilmu Perpustakaan dan Informasi*, 3(2). (2018). <https://doi.org/10.33476/bibliotech.v3i2.598>
- [38] Kumpulainen, K., & Gillen, J.: Young children's digital literacy practices in the home: A review of the literature. *Cost Action ISI1410 DigiLitEY*. (2017). <http://hdl.handle.net/10138/229241>
- [39] Nurhayati, S., Noor, A. H., Musa, S., Jabar, R., & Abdu, W. J. (2022). A Digital Literacy Workshop Training Model for Child Parenting in a Fourth Industrial Era. *HighTech and Innovation Journal*, 3(3), 297-305. <https://doi.org/10.28991/hij-2022-03-03-05>
- [40] Barzillai, M., & Thomson, J. M.: Children learning to read in a digital world. *First Monday*. (2018). <https://doi.org/10.5210/FM.V23I10.9437>
- [41] Kumpulainen, K., & Gillen, J.: Young children's digital literacy practices in the home: A review of the literature. *Cost Action ISI1410 DigiLitEY*. (2017). <http://hdl.handle.net/10138/229241>
- [42] Mascheroni, G., Livingstone, S., Dreier, M., & Chaudron, S.: LEARNING VERSUS PLAY OR LEARNING THROUGH PLAY? HOW PARENTS'IMAGINARIES, DISCOURSES AND PRACTICES AROUND ICTS SHAPE CHILDREN'S (DIGITAL) LITERACY PRACTICES. *Media Education*, 7(2), 242-261. (2016). <https://doi.org/10.14605/MED721606>
- [43] Dong, C., Cao, S., & Li, H.: Profiles and Predictors of Young Children's Digital Literacy and Multimodal Practices in Central China. *Early Education and Development*, 33, 1094 - 1115. (2021). <https://doi.org/10.1080/10409289.2021.1930937>
- [44] Singh, M. Digital Literacy: an Essential Life Skill In the Present Era of Growing and Global Educational Society. *Journal of Advances and Scholarly Researches in Allied Education*. (2018). <https://doi.org/10.29070/15%2F57868>
- [45] Hardiningrum, A., Shari, D., Asmara, B., Syaikhon, M., Djuwari, D., & Rulyansah, A.: Pelatihan Literasi Digital Bagi Orangtua Dalam Mendampingi Anak Belajar Di Zaman Generasi Milenial. *Indonesia Berdaya: Journal of Community Engagement*, 4(1), 7-12. (2022). <https://doi.org/10.47679/ib.2023369>
- [46] Dong, C., Cao, S., & Li, H.: Profiles and predictors of young children's digital literacy and multimodal practices in central China. *Early Education and Development*, 33(6), 1094-1115. (2022). <https://doi.org/10.1080/10409289.2021.1930937>
- [47] Mascheroni, G., Livingstone, S., Dreier, M., & Chaudron, S. LEARNING VERSUS PLAY OR LEARNING THROUGH PLAY? HOW PARENTS'IMAGINARIES, DISCOURSES AND PRACTICES AROUND ICTS SHAPE CHILDREN'S (DIGITAL) LITERACY PRACTICES. *Media Education*, 7(2), 242-261. (2016). <https://doi.org/10.14605/MED721606>
- [48] Jatmoko, D., Suyitno, S., Rasul, M. S., Nurtanto, M., Kholifah, N., Masek, A., & Nur, H. R.: The Factors Influencing Digital Literacy Practice in Vocational Education: A Structural Equation Modeling Approach. *European Journal of Educational Research*, 12(2). (2023). <https://doi.org/10.12973/eu-jer.12.2.1109>
- [49] Brown, S.: Pushing against hegemonic practices: emergent bilinguals respond to children's literature. *European Early Childhood Education Research Journal*, 28(2), 242-255. (2020). <https://doi.org/10.1080/1350293X.2020.1735742>

- [50] Von Gillern, S. Young Children, Computer Coding, and Story Creation.: An Examination of First-and Second-Grade Children's Multimodal Stories and Literacy Practices When Engaged with a Multimedia Coding Application (Doctoral dissertation, Iowa State University). (2017). <https://doi.org/10.31274/ETD-180810-5066>
- [51] Saleha, L., Baharun, H., & Utami, W. T.: Implementation of Digital Literacy to Develop Social Emotional in Early Childhood. *Indonesian Journal of Early Childhood Educational Research (IJECEER)*, 1(1), 1-10. (2022). <https://doi.org/10.31958/ijecer.v1i1.5834>
- [52] Kumpulainen, K., & Gillen, J. (2017). Young children's digital literacy practices in the home: A review of the literature. *Cost Action ISI1410 DigiLitEY*. (2017). <http://hdl.handle.net/10138/229241>
- [53] Rakimahwati, R., & Ardi, Z.: An alternative Strategy for Increasing Indonesian Student Digital Literacy Skills through Interactive Game. *In Journal of Physics: Conference Series* (Vol. 1339, No. 1, p. 012122). IOP Publishing. (2019, December). <https://doi.org/10.1088/1742-6596/1339/1/012122>
- [54] Mascheroni, G., Livingstone, S., Dreier, M., & Chaudron, S.: LEARNING VERSUS PLAY OR LEARNING THROUGH PLAY? HOW PARENTS'IMAGINARIES, DISCOURSES AND PRACTICES AROUND ICTS SHAPE CHILDREN'S (DIGITAL) LITERACY PRACTICES. *Media Education*, 7(2), 242-261. (2016). <https://doi.org/10.14605/MED721606>
- [55] Cao, H., Kwon, C., & An, Y.: Impact of information technology various use on students digital reading achievement. *In 2020 International Conference on Big Data and Informatization Education (ICBDIE)* (pp. 457-460). IEEE. (2020, April). <https://doi.org/10.1109/ICBDIE50010.2020.00113>
- [56] Rihlah, J., Shari, D., & Hardiningrum, A.: PENERAPAN MEDIA DIGITAL LIBRARY UNTUK MENGEMBANGKAN KEMAMPUAN LITERASI ANAK USIA DINI. *Early Childhood: Jurnal Pendidikan*, 6(2), 116-124. (2022). <https://doi.org/10.35568/earlychildhood.v6i2.2558>
- [57] Yuliana, E., Nirmala, S. D., & Ardiasih, L. S.: Pengaruh Literasi Digital Guru dan Lingkungan Belajar terhadap Hasil Belajar Siswa Sekolah Dasar. *Jurnal Basicedu*, 7(1), 28-37. (2023). <https://doi.org/10.31004/basicedu.v7i1.4196>
- [58] Putri, M. S.: Transformasi lingkungan pembelajaran berbasis literasi digital pada anak usia dini. *Jurnal Pendidikan Anak Usia Dini Undiksha*, 9(3), 408-415. (2021). <https://doi.org/10.23887/paud.v9i3.38491>