
Digital Media based on Pancasila Values to Stimulate Character Building in Early Childhood

Yuliani Nurani¹, Niken Pratiwi², Lathipah Hasanah³

^{1,2} Universitas Negeri Jakarta, Indonesia

³UIN Syarif Hidayatullah Jakarta, Indonesia

Corresponding E-mail: yuliani.nurani@unj.ac.id

Received: 22-March-2022

Revised: 12-May-2022

Accepted: 25-May-2022

Abstract

Character development in children needs to be prepared to realise the golden generation of Indonesian children in 2045. Teachers play an important role in instilling character education according to Pancasila values in schools, especially Early Childhood Education institutions. To facilitate learning, teachers must prepare special methods that are by the time so that it is easier for children to carry out activities. In this era of digitisation, the role of digital media is very much needed. This study aims to develop digital media based on Pancasila values to stimulate character formation in early childhood. This research is the basis for developing curriculum models and digital media in the Independent Learning Curriculum in every Early Childhood Education Unit in Indonesia. Respondents in this study were educators, parents, and students at Early Childhood Education Institutions in the DKI Jakarta area. Research method with a qualitative approach. Research results in Digital media provide opportunities for children to master various life skills that are useful for children to gain knowledge, values, and good attitudes in adapting to the environment. Digital media is needed to facilitate the delivery of material. Digital media can transmit messages from the sender to the recipient to stimulate students' thoughts, feelings, concerns, and interests in such a way that the learning process occurs.

Keywords: Digital Media, Character Building, Early Childhood, Pancasila Values

1. Introduction

Early childhood is a child going through a process of growth and development with unique characteristics different from adults (Aktürk & Demircan, 2017; Ardoin & Bowers, 2020; Perren et al., 2019). Early childhood is an individual figure undergoing a rapid and fundamental development process for the next life. Early childhood experiences a developmental phase where the development of increasing abilities or skills (Eller, 2012; Read, 2019; Vartuli et al., 2016). Aspects of early childhood development that must be developed in children are aspects of religious, moral, physical, motor, cognitive, language, social, emotional, and artistic development. Efforts to develop potential in early childhood are an important concern for every adult around them. Providing appropriate stimulation is one form of support in the golden period of growth and development. This stimulation can be given in a synergy between the family, school, and community.

The provision of stimulus in the formation of character in early childhood must be carried out from an early age because the provision of stimulus will affect the development of children in the next period (Nurani & Pratiwi, 2020b). But unfortunately, stimulation for early childhood in Indonesia still needs to be developed. One of the most important stimulations to give to children is stimulation to develop character education. Character education in children is an effort to cultivate commendable behaviour, which should be instilled through habituation in daily activities.

Instilling personality values in students requires learning strategies and special skills. Therefore, schools must know the value of the character that will be developed in students. Therefore, the Ministry of Education and Culture of the Republic of Indonesia has adopted the values of Pancasila as one of its visions and missions of the Ministry of Education and Culture. Pancasila values the ethical foundation of students with global competence and noble behaviour. The values of Pancasila are based on six dimensions: faith, fear of God Almighty, noble character, global diversity, cooperation, independence, critical reasoning, and creativity. These characters are

considered suitable to be instilled from an early age and used as provisions to prepare Indonesian children who will grow and be strong as the golden generation in 2045.

Teachers play an important role in instilling character education based on Pancasila values in schools, especially Early Childhood Education institutions. Therefore, teachers need to prepare special methods that follow the times so that children are easier to make habituation. In this era of digitisation, the role of digital media is very much needed. In providing stimulation for the habituation of early childhood character education, teachers can take advantage of digital media such as digital books and animated videos. The use of digital media is adapted to children's learning activities so that they grow into individuals with character, toughness, and discipline in the future. Teachers and parents can disseminate information through various digital media types such as books, posters, and animated videos.

Development of digital media based on Pancasila values to develop innovations in curriculum and media in Early Childhood Education institutions. The development of this curriculum innovation is expected to contribute to changes and knowledge of Early Childhood Education educators in preparing the right program. These six dimensions of Pancasila learning values can be taught based on a learning design integrated with all aspects of child development. Teachers in schools have an important role in realising interesting, fun, and culture-based learning (Azmi et al., 2017).

The use of media to support the program of play activities that have been designed has an important role in achieving learning objectives. The presence of digital-based playing media in the current era can be used to create a pleasant learning atmosphere. In addition, digital media provides opportunities for children to master various life skills that are useful for children to gain knowledge, values, and good attitudes in adapting to the environment (Buckingham, 2007; Nurani & Pratiwi, 2020a). Digital media used in early childhood learning include digital books, learning videos, digital posters, and interactive videos (Fred Rogers Center, 2012; Papadakis et al., 2019).

Development of digital media based on Pancasila values to develop innovations in curriculum and media in Early Childhood Education institutions. The development of this curriculum innovation is expected to contribute to changes and knowledge of Early Childhood Education educators in preparing the right program. These six dimensions of Pancasila learning values can be taught based on a learning design integrated with all aspects of child development. Teachers in schools have an important role in realising interesting, fun, and culture-based learning (Hariharasudan & Kot, 2018; Loyola et al., 2020; Sun et al., 2021).

The use of media to support the program of play activities that have been designed has an important role in achieving learning objectives. The presence of digital-based playing media in the current era can be used to create a pleasant learning atmosphere. In addition, digital media provides opportunities for children to master various life skills that are useful for children to gain knowledge, values, and good attitudes in adapting to the environment (Word-Bank, 2017). Digital media used in early childhood learning include digital books, learning videos, digital posters, and interactive videos.

2. Research Methods

This research is based on the research philosophy of interpretivism through a deductive approach and a case study strategy. The research method uses a qualitative mono-method. This research is exploratory, and considering the study's time, the cross-sectional method is used. Regarding data collection techniques and procedures, structured interviews were used as research instruments. Research participants involved teachers, parents, and students at the DKI Jakarta Early Childhood Education Institute. Conduct interviews with key people scheduled in advance by telephone. The following are the questions raised in the interview. Have you ever used digital media? What is the quality of learning when using digital media? Does digital media affect the quality of parental involvement? How does the level of student achievement compare after using digital media?

The sample selection technique used a combination of purposive judgment and snowball techniques, considered non-probability. Finally, 20 teachers, 20 parents and 15 students were interviewed, and the resulting data were investigated through thematic analysis. The interview lasted for 10 to 30 minutes according to the conditions and tendencies of the participants. Only the researcher and participants were present at the venue at the time of the interview. The analysis is used to identify, analyse, and report the patterns available in the qualitative data. The data analysis process is analysed and disseminated in detail. Validity is carried out through the steps

taken in the interview process, including how the interview questions are designed according to the needs in the field. For example, using simple and unambiguous questions and questions asked sequentially to get the quality and quantity of questions.

Each interview was given a code; if there were answers like each other, it was recognised as consistent and inconsistent answers were given a different code. This study uses data obtained from interviews with teachers, parents, and students. The analysis results using triangulation, namely the findings in the field, are analysed with theories and perceptions of researchers and experts.

3. Results and Discussion

The results of interviews with teachers, parents and students are as follows:

The first research question: What are the most important issues regarding using digital media as a character building for students from the perspective of teachers, parents, and students?

When asked about problems related to using digital media as character building for students, the students, parents, and teachers as resource persons discussed the main challenging issues related to using digital media for student character formation. "Lack of software and hardware infrastructure" was one of the most important issues raised by the three interviewed groups. In this case, the lack of access to necessary instruments such as smartphones, tablets or computers for students becomes a problem for parents of low-income students. One student said: "my sister and I have to use one cell phone while we have to be online simultaneously". However, the problem is different with parents of students who have middle and high incomes. Many parents want their children not to have their cell phones at an early age. One of them said: "We don't want to buy personal cell phones for early childhood". In addition, some teachers do not have adequate facilities such as high-quality microphones and others, thus affecting the quality of interaction in learning. In addition, using the internet is expensive for some families and teachers. However, the Ministry of Education has yet to take steps to reduce internet usage fees imposed on families and teachers. In addition, students stated that they could not interact with their classmates through digital media, so there was no interaction between them, so it is necessary to think about interactions between students in the future.

Second research question: What are the perspectives of teachers, students, and parents about the quality of learning with digital media in determining the character of early childhood?

According to students and their families, the quality of learning through digital media has not been satisfactory. Hence, the theme is "the low effectiveness of digital media as character building for early childhood". Likewise, parents stated that it was better to learn in face-to-face classes with direct games in class, not via smartphones or other electronic devices, to reduce children's use of electronic communication tools.

One student said: "I like it when the teacher repeats the lesson in class because it makes me study better and generally get an explanation of the material that is on digital media" and "I can't ask questions when I have difficulty". Many students take notes on questions to ask in class. Students generally report lower learning levels and show dissatisfaction with digital media if implemented without teacher guidance because many parents are working and do not understand the use of digital technology.

However, it should be noted that some teachers believe that students who are familiar with digital technology and parents with medium and high finances show that learning with digital media can improve students' abilities and work together with them. Also, one teacher stated that "a student who was not active in a face-to-face class had shown more engagement and increased learning in the new environment".

Third research question: Does digital media affect the quality of parental involvement from the perspectives of parents, teachers, and students?

Everyone interviewed agreed that parents had increased involvement and cooperation in the students' learning process with digital media. However, some teachers argued that there was no significant difference in parental involvement. Parents who have not been involved do not show an increase in participation, and parents who are involved in traditional education continue to participate in the new environment. Many students stated that their parents control them; in some cases, such control is usually not exercised. Hence, one student said, "my mother is always in touch with the principal and teachers and continues to encourage me to use the media.

Interestingly, some parents are happy that they can watch classroom educational videos so that they can learn and help students too. In addition, more parents monitor students' assignments and attendance in class or

even participate and cooperate in class administration. In other words, parents are more in touch with the digital school parent community. Remarkably, parental involvement is different in low-income areas than in rich areas. In private schools, parents concentrate more on teaching methods, but in public schools, parents concentrate more on students, their attendance, and activities.

Fourth research question: How is student achievement from the point of view of teachers, parents, and students?

When asked about the level of achievement in learning with digital media, the resource persons mentioned different points. Some argue that the achievement is lower. On the other hand, one student believes that "I am more successful and satisfied with digital media". Also, one parent said that "My teacher and I are more satisfied with digital media". Furthermore, a teacher assumes that students experience a decline in achievement in terms of education because they are far from together. However, some informants had a different view that there was more student achievement with digital media. In connection with this, a teacher stated that "after learning with digital media, students become more independent and form characters to be able to work independently", so intervention is needed for children to collaborate with their friends.

The study results from interviews with educators, parents, and students showed that the values of Pancasila became the spirit of the Merdeka Learning and Independent Campus programs that could stimulate character formation in early childhood. The result of the learning process is that the values of Pancasila are not limited to the context of knowledge but can be used as a guide for the noble character in real life. As a result, education leads to the realisation of students who can think critically and comprehensively and be proud of their identity as students. In other words, the characteristics of students who have global competence and behave according to the values of Pancasila.

Pancasila values are the foundation for lifelong students who have global competence and behave by the values of Pancasila, with six main characteristics: faith, fear of God Almighty, noble character, global diversity, cooperation, independence, reasoning critical and creativity. The six indicators can be broken down into:

1. Have faith, fear God, and have noble character

Indonesian students who believe, fear God Almighty, and have noble character are students who have a character in their relationship with God Almighty. He understands religious teachings and beliefs and applies these understandings in his daily life. There are five key elements of faith, fear of God Almighty, and noble character: (a) religious character; (b) personal character; (c) morality to humans; (d) morality to nature; and (e) state morality.

2. Global diversity

Indonesian students maintain a noble culture, locality and identity and keep an open mind in interacting with other cultures to foster mutual respect and the possibility of forming a noble culture that is positive and does not conflict with the noble culture of the nation. The elements and keys of global diversity include recognising and appreciating culture, intercultural communication skills in interacting with others, and reflection and responsibility for the experience of diversity.

3. Working together

Indonesian students can work together, namely the ability to carry out activities voluntarily so that the activities can run smoothly, easily, and lightly. The elements of gotong royong are collaboration, caring, and sharing.

4. Independent

Indonesian students are independent students, namely students who are responsible for the process and learning outcomes. The key elements of independence consist of awareness of oneself and the situation at hand and self-regulation.

5. Critical reasoning

Students who think critically can objectively process information both qualitatively and quantitatively, build relationships between various information, analyse information, and evaluate and conclude it. The elements

of critical reasoning are obtaining and processing information and ideas, analysing and evaluating reasoning, reflecting on thoughts, and thought processes, and making decisions.

6. Creative

Creative students can modify and produce something original, meaningful, useful, and impactful. The key element of creativity is generating original ideas and producing original works and actions.

Support from parents to children is very important, not only in the form of financial but also motivation so that children want to think critically and have noble character. The form of motivation, among others, can be in the form of congratulations when children can do their work or encouragement never to give up. Recognition and support from parents will determine the development of children's interests and confidence (Nurhafizah, 2012). Character formation needs to be grown from an early age, not only at the level of mental formation. The values of Pancasila can be integrated into the theme of learning through a hidden curriculum; this can be done by the teacher creatively and innovatively when providing material (Yetti & Aulia Azizah, 2017). Growing character at an early age is more about building independent, creative, critical thinking, responsible, optimistic, and collaborative traits, and characters (Ehrlin et al., 2015). Therefore, learning Pancasila values in early childhood can be integrated into the curriculum through programs or activities designed by schools whose implementation involves not only principals, teachers, and children but also parents.

The internalisation of the spirit of Pancasila values at the preschool and study group stages is carried out using various game methods. The purpose of this game is not to build children's skills directly to be noble but to form specific characters to become successful global students in the future. For example, children are asked to sing while crossing a wooden bridge. It stimulates children's courage to take risks with the goal achieved. Likewise, as adults, they must be able to take risks to develop their skills.

Pancasila values education is needed to improve the quality of education and improve the quality of individuals. Therefore, they are providing education on Pancasila values in preschool institutions to increase creativity in children's development (Sarikaya & Coskun, 2015). Pancasila values education can increase early childhood social awareness and sensitivity to problems in the environment, provide opportunities to explore the right things, help solve innovative solutions in solving problems and support the ability to give opinions about the solutions they make.

In this era of digitalisation, the role of digital media as a learning tool is very much needed. With the presence of digital playing media, children will find it easier to access all knowledge information even though they must remain under the supervision of their parents. In addition, digital playback media can allow children to acquire new knowledge and skills more easily (Dezuanni, 2018; Martinez, 2019; Wartella et al., 2019). Digital media for early childhood is an introduction to the information stored in digital format that can be disseminated regardless of distance and provide opportunities for children to gain broader knowledge (Fred Rogers Center, 2012; Nurani & Pratiwi, 2020b; Papadakis et al., 2019).

Digital media can also provide variations in teaching methods for teachers so that children do not get bored during the learning process (Srivastava, 2016). This digital media is right for children because, with digital media, children can gain new skills using these digital media activities (Liu, 2018; Mashhadi & Kargozari, 2011a). Children will be more motivated to acquire new knowledge and get a more enjoyable learning atmosphere if they use digital playing media appropriately. Digital media development for early childhood can be in the form of digital books, digital posters, animated videos, YouTube content, and applications (Spante, 2019). The use of digital play media in early childhood must be accompanied by parents and adapted to the needs, age, and stage of child development.

Instruction media technology introduces changes in learning methods and forms the basis for designing quality educational processes. The use of media allows interaction without the barriers of space and time. Interaction offers learning that is not confined to the classroom. So, learning through media offers many things, efficiency, effectiveness, practicality, standardisation, and other learning performance. The utilisation of learning media is an innovation to increase the effectiveness of learning methods (Phosuwan et al., 2013). Instruction media in a learning environment facilitates children's learning about understanding concepts so that children can see graphically the changes displayed from real experience (Sangsawang, 2015). An important aspect of learning through media is the development of individuality in learning.

Instruction media technology is a potential tool for educators to motivate and involve children in learning. For example, they are helping children improve learning skills such as exercises and practice, information inquiry, participatory learning, and increasing children's responsibility. Therefore, educators need to know how to adapt effective learning tools for use in the classroom (Mashhadi & Kargozari, 2011b; Pérez et al., 2017; Robinson et al., 2019). This opinion emphasises that Instruction media is an effective learning tool to improve cognitive, affective, and psychomotor understanding.

Instruction media in a learning environment can improve children's reasoning power and facilitate learning in understanding abstract concepts so that children can see real changes from the experience that is displayed visually (Din et al., 2016; Jabbar et al., 2016; Meissner et al., 2018). Therefore, teaching using media is one of the most important components of the learning process. Moreover, the effectiveness of constructive learning media in learning improves children's knowledge process skills (Vebrianto & Osman, 2011). So, Instruction media is very effective in improving skills and understanding.

Instruction media is needed to facilitate the delivery of material. According to Kistner et al., suggests that the media is anything that can be used to transmit messages from the sender to the recipient so that it can stimulate the thoughts, feelings, concerns and interests and concerns of students in such a way that the learning process occurs (Kistner et al., 2015). Meanwhile, Perez et al, stated that the media is a tool that conveys learning messages (Pérez et al., 2017). With instruction media, the information will be easily understood by students.

According to Hanafiah & Suhana, instruction media are all forms of stimulants and tools the teacher provides to encourage students to learn quickly, precisely, easily, correctly and without verbalism (Hanafiah & Suhana, 2010). Nurulanjani explained that instruction media are media that can be used to help students understand and obtain information that can be heard or seen by the five senses so that learning can be effective and efficient (Nurulanjani, 2018).

According to Gervais, instruction media is a messenger technology (information) that can be used for learning purposes (Gervais, 2016). Bernacki et al., define instruction media as a physical means to deliver learning material (Bernacki et al., 2020). Omeng & Priscah instruction media can channel messages from sender to receiver to stimulate students' thoughts, feelings, concerns, and interests so that the learning process occurs (Omeng & Priscah, 2016). In essence, the learning process is also a communication, so instruction media can be understood as a communication medium used in the communication process. Therefore, learning media has an important role in channelling learning messages.

In particular, the benefits of learning media are 1) The delivery of learning materials can be uniform. Teachers may have various interpretations of something. Through the media, these diverse interpretations can be reduced and conveyed to students uniformly; 2) The learning process becomes more interesting. The media can convey information that can be heard (audio) and can be seen (visual) so that it can describe principles, concepts, processes, or procedures that are abstract and incomplete to be clearer and more complete; 3) The learning process becomes more interactive, if selected and designed properly, media can help teachers and students engage in active two-way communication. Without media, teachers may tend to talk "one way" to students; 4) The amount of learning time can be reduced; teachers often spend a lot of time explaining teaching materials. Even though the time spent does not need that much, if you use learning media properly, 5) The quality of student learning can be improved. The use of media makes the learning process more efficient. Learning media can be designed so students can learn anywhere and anytime they want, without depending on the teacher's presence; 7) Students' positive attitude towards the learning process can be improved. With the media, the learning process becomes more interesting. And this can increase students' love and appreciation of science and the process of seeking knowledge; 8) The teacher's role can change in a more positive and productive direction. With the media, the teacher does not need to repeat explanations and reduce verbal (oral) explanations so that teachers can pay more attention to aspects of providing motivation, attention, guidance and so on (Morrison et al., 2013). It means everything that can be used to stimulate the learners' thoughts, feelings, attention and abilities or skills to encourage the learning process.

4. Conclusion

Digital media is needed to facilitate the delivery of material. Digital media can transmit messages from the sender to the recipient to stimulate students' thoughts, feelings, concerns, and interests in such a way that the

learning process occurs. With digital media, information will be easily understood by students as a stimulus provided by the teacher to encourage students to learn quickly, precisely, easily, and correctly and there is no verbalism. In general, the results show that teachers and students face different software and hardware problems using digital media, although sometimes there are differences between private and public schools.

Education leads to the realisation of students who can think critically and comprehensively and be proud of their identity as students. In other words, the characteristics of students who have global competence and behave according to the values of Pancasila. Digital media provides opportunities for children to master various life skills that are useful for children to gain knowledge, values, and good attitudes in adapting to the environment. The limitations of research on the effectiveness of the developed product need to be field tested so that the product developed is effective and feasible to use. There needs to be a learning intervention with large groups to find out the results of character-building development through digital media based on Pancasila values.

References

- [1]. Aktürk, A. A., & Demircan, H. Ö. (2017). Preschool Teachers' Teacher-Child Communication Skills: The Role of Self-Efficacy Beliefs and Some Demographics. *Journal of Education and Human Development*, 6(3), 86–97. <https://doi.org/10.15640/jehd.v6n3a10>
- [2]. Ardoin, N. M., & Bowers, A. W. (2020). Early childhood environmental education : A systematic review of the research literature. *Educational Research Review*, 31(November 2019), 100353. <https://doi.org/10.1016/j.edurev.2020.100353>
- [3]. Azmi, F., Halimah, S., & Pohan, N. (2017). Implementation of Learning Guiden Cognitive aspect, afective and psychomotoric student. *At-Tazakki*, 1(1), 15–28.
- [4]. Bernacki, M. L., Greene, J. A., & Crompton, H. (2020). Mobile technology, learning, and achievement: Advances in understanding and measuring the role of mobile technology in education. *Contemporary Educational Psychology*, 60, 101827. <https://doi.org/10.1016/j.cedpsych.2019.101827>
- [5]. Buckingham, D. (2007). Media education goes digital: An introduction. *Learning, Media and Technology*, 32(2), 111–119. <https://doi.org/10.1080/17439880701343006>
- [6]. Dezuanni, M. (2018). Minecraft and children ' s digital making : implications for media literacy education literacy education. *Learning, Media and Technology*, 0(0), 1–14. <https://doi.org/10.1080/17439884.2018.1472607>
- [7]. Din, N., Haron, S., & Rashid, R. M. (2016). Can Self-directed Learning Environment Improve Quality of Life? *Procedia - Social and Behavioral Sciences*, 222, 219–227. <https://doi.org/10.1016/j.sbspro.2016.05.150>
- [8]. Ehrlin, A., Insulander, E., & Sandberg, A. (2015). Perspectives on entrepreneurial learning in the early years of education. *Journal of Education and Human Development*, 4(3), 151–159. <https://doi.org/10.15640/jehd.v4n3a16>
- [9]. Eller, B. (2012). Educational Psychology for Effective Teaching. In *Educational Psychology*.
- [10]. Fred Rogers Center. (2012). Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8. *Children*, January, 1–15. <http://www.naeyc.org/positionstatements>
- [11]. Gervais, J. (2016). The operational definition of competency-based education. *The Journal of Competency-Based Education*, 1(2), 98–106. <https://doi.org/10.1002/cbe2.1011>
- [12]. Hanafiah, N., & Suhana, C. (2010). Konsep Strategi Pembelajaran. In *PT Refika aditama*. (Vol. 20, Issue 5). PT Refika aditama.
- [13]. Hariharasudan, A., & Kot, S. (2018). A scoping review on Digital English and Education 4.0 for Industry 4.0. *Social Sciences*, 7(11). <https://doi.org/10.3390/socsci7110227>
- [14]. Jabbar, A., Gasser, R. B., & Lodge, J. (2016). Can New Digital Technologies Support Parasitology Teaching and Learning? *Trends in Parasitology*, 32(7), 522–530. <https://doi.org/10.1016/j.pt.2016.04.004>
- [15]. Kistner, S., Rakoczy, K., Otto, B., & Klieme, E. (2015). Teaching learning strategies : The role of instructional context and teacher beliefs. *Journal for Educational Research Online*, 7(1), 176–197. <http://www.j-e-r-o.com/index.php/jero/article/download/542/228>

- [16]. Liu, W. (2018). Design of a digital art teaching platform based on automatic recording technology. *International Journal of Emerging Technologies in Learning*, 13(8), 185–197. <https://doi.org/10.3991/ijet.v13i08.9050>
- [17]. Loyola, C. C., Grimberg, C. A., & Colomer, Ú. B. (2020). Early childhood teachers making multiliterate learning environments: The emergence of a spatial design thinking process. *Thinking Skills and Creativity*, 36(March), 100655. <https://doi.org/10.1016/j.tsc.2020.100655>
- [18]. Martinez, C. (2019). Promoting critical digital literacy in the leisure-time center: Views and practices among Swedish leisure-time teachers. *Nordic Journal of Digital Literacy*, 14(3–4), 134–146. <https://doi.org/10.18261/ISSN.1891-943X-2019-03-04-04>
- [19]. Mashhadi, V. Z., & Kargozari, M. R. (2011a). Influences of digital classrooms on education. *Procedia Computer Science*, 3(July), 1178–1183. <https://doi.org/10.1016/j.procs.2010.12.190>
- [20]. Mashhadi, V. Z., & Kargozari, M. R. (2011b). Influences of digital classrooms on education. *Procedia Computer Science*, 3, 1178–1183. <https://doi.org/10.1016/j.procs.2010.12.190>
- [21]. Meissner, A., Müller, M., Hermann, A., & Metternich, J. (2018). Digitalization as a catalyst for lean production: A learning factory approach for digital shop floor management. *Procedia Manufacturing*, 23(2017), 81–86. <https://doi.org/10.1016/j.promfg.2018.03.165>
- [22]. Morrison, G. R., Ross, S. M., Kalman, H. K., & Kemp, J. E. (2013). *Designing Effective Instruction* (7th ed.). John Wiley & Sons, Inc.
- [23]. Nurani, Y., & Pratiwi, N. (2020a). Curriculum Design of Early Childhood Life Skill Based on Indonesian Local Culture. *Advances in Social Science, Education and Humanities Research*, 422(Icope 2019), 333–337. <https://doi.org/10.2991/assehr.k.200323.145>
- [24]. Nurani, Y., & Pratiwi, N. (2020b). Digital Media for the Stimulation of Early Childhood Self Help Skills. *Advances in Social Science, Education and Humanities Research*, 487(Ecpe), 240–244. <https://doi.org/10.2991/assehr.k.201112.042>
- [25]. Nurhafizah. (2012). *Relationship Between the Intencity Parents Guidance to Early Math in Kindergarten*. Kampus Ilmu Khas.
- [26]. Nurulanjani, D. (2018). Peran Media Time Lines Chart Dalam Pembelajaran IPS di Sekolah Dasar. *Mimbar Sekolah Dasar*, 5(1), 43. <https://doi.org/10.17509/mimbar-sd.v5i1.9302>
- [27]. Omenge, O. R., & Priscah, M. J. (2016). Understanding the Utilization of Instructional Media in Training Health Professionals. *IOSR Journal of Nursing and Healt Science (IOSR-JNHS)*, 5(3), 1–8. <https://doi.org/10.9790/1959-0503030108>
- [28]. Papadakis, S., Zaranis, N., & Kalogiannakis, M. (2019). Parental involvement and attitudes towards young Greek children’s mobile usage. *International Journal of Child-Computer Interaction*, 22(xxxx), 100144. <https://doi.org/10.1016/j.ijcci.2019.100144>
- [29]. Pérez, A., Santamaria, E. K., Operario, D., Tarkang, E. E., Zotor, F. B., Cardoso, S. R. de S. N., Autor, S. E. U., De, I., Dos, A., Vendas, O. D. E., Empresas, D. A. S., Atividades, P. O., Artigo, N., Gest, G. N. R. M. D. E., Para, D. E. F., Miranda, S. F. da R., Ferreira, F. A. A., Oliver, J., Dario, M., ... Boasberg, J. (2017). Instructional Media. *BMC Public Health*, 5(1), 1–8. <https://ejournal.poltektegal.ac.id/index.php/siklus/article/view/298%0Ahttp://repositorio.unan.edu.ni/2986/1/5624.pdf%0Ahttp://dx.doi.org/10.1016/j.jana.2015.10.005%0Ahttp://www.biomedcentral.com/1471-2458/12/58%0Ahttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&P>
- [30]. Perren, S., Sticca, F., Weiss-Hanselmann, B., & Burkhardt Bossi, C. (2019). Let us play together! Can play tutoring stimulate children’s social pretend play level? *Journal of Early Childhood Research*, 17(3), 205–219. <https://doi.org/10.1177/1476718X19849248>
- [31]. Phosuwan, A., Sopeerak, S., & Voraroon, S. (2013). Factors Related the Utilization of Instructional Media and Innovation of Nursing Instructors at Boromarajonani College of Nursing, Suphanburi, Thailand. *Procedia - Social and Behavioral Sciences*, 103, 410–415. <https://doi.org/10.1016/j.sbspro.2013.10.354>
- [32]. Read, M. (2019). Designing with Color in the Early Childhood Education Classroom: A Theoretical Perspective. *Creative Education*, 10(06), 1070–1079. <https://doi.org/10.4236/ce.2019.106080>
- [33]. Robinson, J., Dusenberry, L., Hutter, L., Lawrence, H., Frazee, A., & Burnett, R. E. (2019). State of the

- Field: Teaching with Digital Tools in the Writing and Communication Classroom. *Computers and Composition*, 54(April 2017), 102511. <https://doi.org/10.1016/j.compcom.2019.102511>
- [34]. Sangsawang, T. (2015). Instructional Design Framework for Educational Media. *Procedia - Social and Behavioral Sciences*, 176, 65–80. <https://doi.org/10.1016/j.sbspro.2015.01.445>
- [35]. Sarikaya, M., & Coskun, E. (2015). A New Approach in Preschool Education : Social Entrepreneurship Education. *Procedia - Social and Behavioral Sciences*, 195, 888–894. <https://doi.org/10.1016/j.sbspro.2015.06.368>
- [36]. Spante, M. (2019). Digital creativity: learning by story driven digital production. *International Journal of Information and Learning Technology*, 36(3), 182–191. <https://doi.org/10.1108/IJILT-11-2018-0129>
- [37]. Srivastava, S. (2016). ICT implementation for Education and Learning. *IOSR Journal of Research & Method in Education*, 6(4), 40–44. <https://doi.org/10.9790/7388-0604044044>
- [38]. Sun, L., Ruokamo, H., Siklander, P., Li, B., & Devlin, K. (2021). Learning , Culture and Social Interaction Primary school students ' perceptions of scaffolding in digital game- based learning in mathematics. *Learning, Culture and Social Interaction*, 28, 1–11. <https://doi.org/10.1016/j.lcsi.2020.100457>
- [39]. Vartuli, S., Snider, K., & Holley, M. (2016). Making it Real: A Practice-Based Early Childhood Teacher Education Program. *Early Childhood Education Journal*. <https://doi.org/10.1007/s10643-015-0733-2>
- [40]. Vebrianto, R., & Osman, K. (2011). The effect of multiple media instruction in improving students' science process skill and achievement. *Procedia - Social and Behavioral Sciences*, 15, 346–350. <https://doi.org/10.1016/j.sbspro.2011.03.099>
- [41]. Wartella, E. A., Lovato, S. B., Pila, S., Lauricella, A. R., Echevarria, R., Evans, J., & Hightower, B. (2019). Digital Media Use by Young Children. In *Child and Adolescent Psychiatry and the Media*. Elsevier Inc. <https://doi.org/10.1016/b978-0-323-54854-0.00016-3>
- [42]. Word-Bank. (2017). Learning to realize education's promise. In *World Development Report 2018: Learning to Realize Education's Promise* (pp. 1–35). https://doi.org/10.1596/978-1-4648-1096-1_ov
- [43]. Yetti, E., & Aulia Azizah, S. (2017). Improved Creativity in Early Childhood through Entrepreneurship Educatio. *Advances in Social Science, Education and Humanities Research*, 58, 399–403. <https://doi.org/10.2991/icece-16.2017.70>