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Before The Pandemic and its Impact to the Future about IoT and the Transformation of Children's Social Education

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Abstract

This research invites us to analyze how IoT through social media is transformed as an educational medium for social interaction for children during the Covid-19 pandemic. This study also identifies how parents, teachers, and children perceive social interactions before and after the pandemic. This research method uses embedded mixed methods by utilizing a qualitative approach through virtual ethnography and borrowing a questionnaire to complement the qualitative data. The survey of responses in this study was obtained from 100 parents and children who carried out learning activities at home from April 2020 to April 2021.The results show that the transformation of IoT and social media has had a significant impact on children's education in social interaction, owing to their interactive nature. Thus, IoT and social media can evolve into additional artifacts that act as mediators in the post-millennial generation, rather than as a form of culture. When social media and online games are introduced into a child's environment, it has been demonstrated that they mediate their conceptualization of learning and cognitive development, among other agents through the interactions between teachers, children, and technology, children conceptualize higher mental functions such as continuous and ongoing problem-solving dispositions, as well as language acquisition and social learning. The effect of technology on human interaction results in the transformation of social functions into individual mental functions, a process facilitated by modern technology.

Keywords: Before pandemic and future; Internet of Thing (IoT); Transformation of children's social education.

Introduction

In childhood, social interaction skills become one of the central competencies that need to be developed from an early age (Ngoc, 2021). Social interaction is essential because it affects the next child's life, especially socializing and disseminating thoughts. One of the children's mediums to learn to interact socially is at school. Teachers as facilitators of social interaction education for children must be aware of the importance of social interaction skills for children, where through education, children will more easily achieve interaction competence with the surrounding environment. Children are also expected to control behavior and work together in groups for a broader social order. Children who struggle with social interaction will have difficulty communicating with their environment. So far, the representative place and medium in educating children about social interaction are in the school environment. However, the Covid-19 pandemic that emerged at the end of 2019 in Wuhan, China, and spread throughout the world, including Indonesia, ultimately demanded changes in almost all aspects of life, including social interaction education for children (Almonacid-Fierro, 2021; Marsudi et al., 2020; Sampurno et al., 2020; Tobaiqy et al., 2020).

Social interaction is crucial since it can be interpreted as a learning process to adjust to the prevailing npandemic orms and merge with the environment (Krzesni, 2015; Lindberg, 2020). The Covid-19 is giving a sense of concern for the continuity of children's social interaction education (Jones & Abdelfattah, 2020). This is because of the urgency of children to receive social interaction education. Furthermore, children's interaction and social development begin to be complex when the child is four years old, where the child begins to enter the realm of primary education. Due to the Covid-19 pandemic, various policies have been implemented to break the chain of virus spread in Indonesia (Mehta, 2020; Sampurno et al., 2020). One of the government's policies is to urge the public to carry out physical distancing, namely maintaining distance and avoiding all forms of crowds, including learning activities in schools. The Ministry of Education and Culture also issued a policy by closing schools and changing learning activities with an online learning system (Kemkes, 2020).

There have been many studies showing the effectiveness of online learning, and some show weaknesses and the need to increase the use of technology in online learning (Damary et al.,

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2017; Gregus et al., 2021; Johnson, 2014; Sampurno et al., 2020). Nevertheless, there is one aspect that is often forgotten, namely the interrelation between online education and social interaction education for children, especially elementary school students. As mentioned previously, before the Covid-19 pandemic, children's social interaction education was conducted conventionally and using a mainstream approach, namely face-to-face and direct interaction. When children interact directly, communication skills, gaze, self-confidence, trust in the environment, genuine friendship, and intimacy can all be developed. When the learning from home policy is implemented, concerns arise about how schools, teachers, and parents can accommodate children's social interactions. However, according to how many parties have responded to online education, it is only natural that schools, teachers, and parents respond and use digital technology as a medium and a place for children to socialize to get social interaction education (Crawford, 2017; Lucardie, 2014).

As predict, in the 2010s period, discourses began to emerge about the direction of education in the future (Johnston-Goodstar et al., 2014). The debate, which previously focused exclusively on methods and materials, has shifted its focus to the future and beyond of education. The development of generations also influences it. The millennial era is closely related to technology, and so is the next generation, namely generation Z (Gen Z), to the alpha generation (Lin et al., 2015; Schultz, 2016; Singer et al., 2006). The post-millennial generation is a generation that is increasingly inseparable from the technologies that are developing today. They make technology a part of their lives (Lin et al., 2015). Gadgets are one of the primary needs that must permanently be attached to their daily lives. An instant lifestyle, an attitude that gets bored quickly, and a critical mind are also one of the markers of the post-millennial generation. On the other hand, their attitudes are facilitated by digital technology that is fluid and dynamic. Technology has the power to blur physical boundaries into imaginary ones. This is useful for the post-millennial generation to reach space and time that were previously unattainable.

The discussion of digital technology and its use and its position in the lives of millennial, Z, and alpha generations reminds us of future education, especially in terms of social interaction (Li et al., 2016; McLay et al., 2015). As a result of the globalization process, rapidly developing technology is currently capable of facilitating communication and various human activities (Colman, 2018). Technology is also referred to as the fastest medium in disseminating information and knowledge and is considered capable of supporting facilities and infrastructure in the implementation of an education system. In today's world of education, ideally, education is oriented to the academic aspect and must also consider the skills, creativity, and potential that exist within a person (Canţer, 2012; Maney, 1999). In other words, it is not the only theory that is presented to children as the alpha generation, but practical knowledge is also critical so that they can apply the knowledge gained in their daily lives. Therefore, this study desires to identify the interplay of the Internet of Things (IoT) era through social media and children's education in accommodating the educational needs of children's social interactions during the Covid-19 pandemic. IoT is envisaged as a network of billions of devices be able to sense, communicate and share data which can then be analyzed to open a wealth of intelligence useful for planning, management and decision making (Patel and Patel, 2016; Umair et al., 2021).

Furthermore, this study invites us to analyze how IoT through social media is transformed as an educational medium for social interaction for children during the Covid-19 pandemic. This study also identifies how parents, teachers, and children perceive social interactions before and after the pandemic. With this critical discussion, it is hoped that it will become initial research to develop digital technology-based children's affective education media for the post-pandemic era. This facilitates children born in the alpha generation and after, where they are increasingly familiar with gadgets and technology, but it does not eliminate social interaction education which is often associated with character education.

Methods

This research method uses embedded mixed methods by utilizing a qualitative approach through virtual ethnography and borrowing a questionnaire to complement the qualitative data (Creswell, 2010; Lune & Berg, 2017; Tashakkori & Creswell, 2008). Uses a combined research method (mixed method), which is a research method that combines or combines quantitative research methods and qualitative research methods to be used together in research activities in order to obtain more comprehensive, valid, reliable, and objective data. In this study, the mixed research method uses an unbalanced mixed model, where this model uses qualitative research methods as the main method and quantitative research methods are used as secondary methods. Embedded mixed methods were chosen since the researcher was aware of the limitations when it did not accommodate the quantitative aspects, which in this study were represented through the responses of parents and children (Tashakkori & Creswell, 2008).

On the other hand, virtual ethnography refers to an ethnographic research approach carried out in an online setting which in this study examines IoT content and social media as educational media for children's social interactions during the Covid-19 pandemic (Boellstorff et al., 2012; Denzin & Lincoln, 2018; Hine, 2001). This was done out of an interest in learning how to transform IoT in the past and future and its impact on children's social interactions. Additionally, this research employs virtual ethnography to examine

communal tendencies, information dissemination, and online education

Participant and Data Collection

The survey of responses in this study was obtained from 100 parents and children who carried out learning activities at home from April 2020 to April 2021 in Surabaya, East Java, Indonesia. Respondents were obtained using purposive sampling who are eligible or meet requirements namely who carried out learning activities at home from April 2020 to April 2021. Participants are also given direction and understanding about the research and its scope so that they understand the purpose of this research. Embedded mixed methods were chosen since the researcher was aware of the limitations when it did not accommodate the quantitative aspects, which in this study were represented through the responses of parents and children (Tashakkori & Creswell, 2008).

Data Analysis

The data is presented in a descriptive-analytical format to facilitate discussion of the evolution of prior and future IoT and its impact on children's social interaction.

Results

Before we delve into how social interaction education plays out in IoT and social media, let us see how the responses that arise from parents and children can see about the before and future of IoT and social media use. Although IoT and social media offer complexities of convenience both in terms of effectiveness and efficiency in children's education, parents have slightly different arguments. Parents consider children's activities that spend more time in front of their gadget or laptop screen as harmful activities. The parents of the alpha generation are indeed at the age that is classified as the millennial generation. However, unfortunately, most have a mindset like before-millennials. Parents feel unprepared to facilitate their children's learning needs at home, especially by watching their children linger in front of their gadgets and laptop screens (Figure 1). This negatively impacts children because children feel intimidated in using gadgets as a medium for learning and interacting with their friends during the Covid-19 pandemic.

Parents' response to the readiness to facilitate children's online learning at home is in line with their response to success. Some parents even experience anxiety, where they feel they cannot facilitate their children in education during the Covid-19 pandemic (Figure 2). This has long implications, because psychologically there are two family members, namely parents and children who do not have a strong vision of understanding (Bilaver et al., 2021; Popyk, 2021). Furthermore, the effect is that misunderstandings often arise between family members. Of course, this disorder is not healthy for the child, because he feels he does not get support from his family, especially his parents, in facilitating himself psychologically during the Covid-19 pandemic. For children, playing and learning by using gadgets with IoT and social media is almost the same as playing in the field (Brits et al., 2014).

They are still able to elaborate on their creative ideas, explore unexpected creative possibilities, and other magical behaviors and activities. However, parents' distrust of themselves in facilitating children's learning and distrust of children in studying at home becomes their homework, especially for teachers who are felt to be the right person in educating parents. The new challenges that parents and teachers face in accompanying children as they learn from home cause parents to feel uncomfortable and object to the tasks and developments that must be assigned to students because parents are unable to contribute adequately to their children's development due to the generation gap and a lack of knowledge about child development, which inhibits the provision of adequate care (Deanne Brocato et al., 2010; Hauk & Immordino, 2014; Ngoc, 2021).

Parents' perceptions of children's learning patterns at home are almost inversely proportional to what children feel. From the child's point of view, they feel that their learning

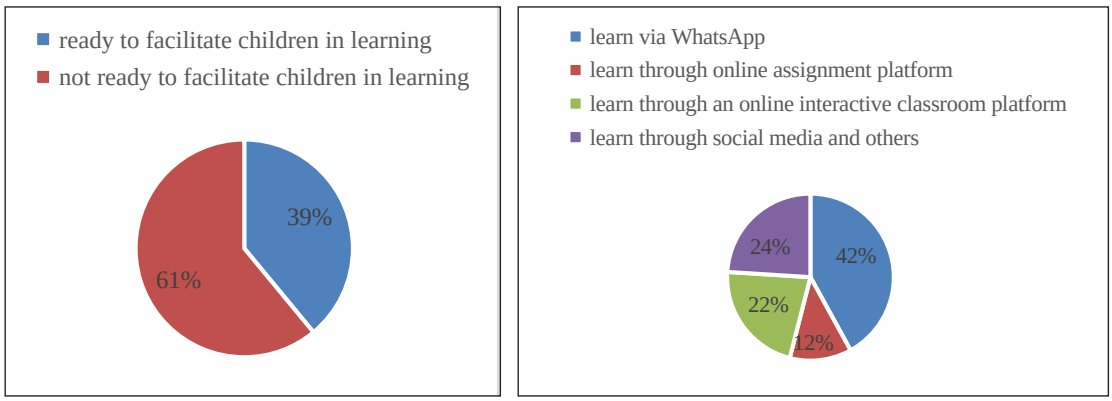

Fig. 1: Parents' perceptions of online learning and the reality of students' learning modes at home

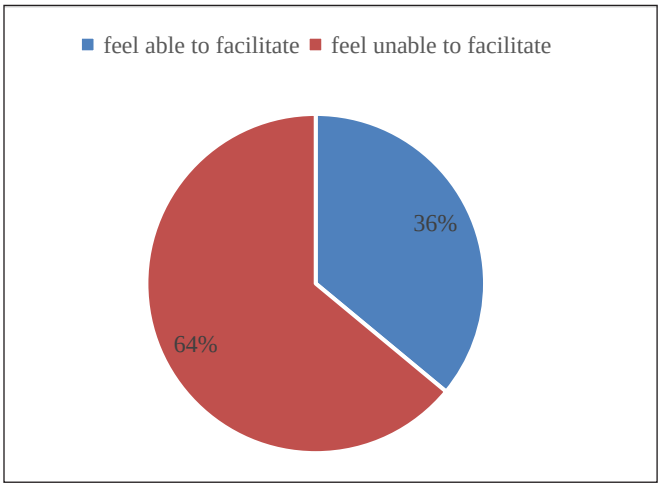

Fig. 2: Parents' perceptions of success as facilitators of children learning at home

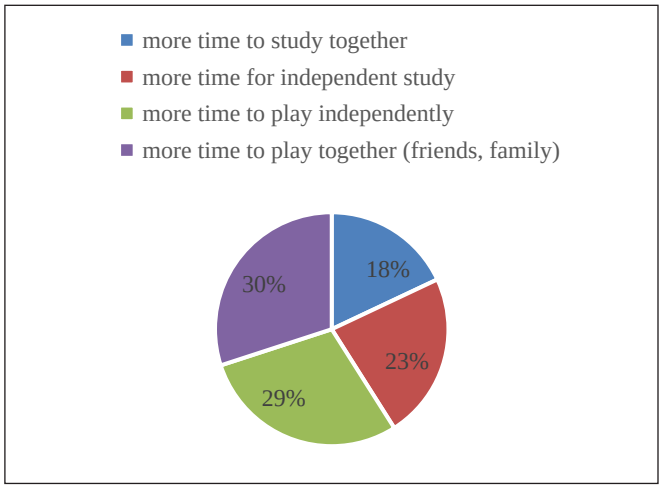

Fig. 3: Children's activities in spending time at home

time is per their instinctive needs (Figure 3). The need for interaction with friends and family in children should come first. This is because the interaction is a non-verbal skill that is never explicitly stated but is always implied. This demonstrates the critical nature of interaction education and how these needs have been met by children studying at home (Figure 4).

Children have a natural aspect related to their generation, namely how they explore IoT and social media as a medium for learning and interacting. Although children still consider interacting offline by playing in the field or a friend's yard or house (although on a limited basis) as the most preferred and representative medium for interacting, it is necessary to highlight how they respond to interactions through games and social media (Figure 4).

If combined, the percentage of children's interactions through online games and social media is more than interactions through face-to-face meetings. By bringing the spirit of technology, of course, the transformation of interactions that occurred during the Covid-19 pandemic impacted children's perceptions of "interaction" itself (López Peláez et al., 2020). As a post-millennial generation who are attached to technology, they see the opportunity for interaction that is broad and unlimited through social media that will never be reached by face-to-face interaction. Therefore, there needs to be negotiations and assistance to focus on what interaction with technology looks like in the context of children's education. IoT and social media provide a framework for showing how technology integration and interactivity are possible through proximal (face-to-face) and distal (behind-the-scenes pedagogic planning) interactions, although the percentage going forward is more likely to be distal (Díaz-Jiménez et al., 2020; Gregus et al., 2021).

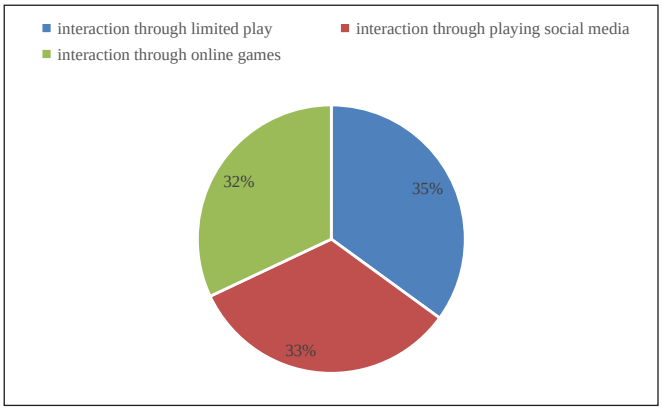

Fig. 4: The child's perception of the interaction he/she does

The interactions that occur are characterized by the child's experience in demonstrating, enjoying, explaining, instructing, managing, modeling, monitoring, promoting, providing feedback, and supporting content or phenomena in social media, games, or other IoT media (Adedoyin & Soykan, 2020). The IoT transformation in the Covid-19 pandemic is growing to offer different affordability, such as physical and online obfuscation (Kewalramani et al., 2020). Also, because IoT has a pre-programmed function of enhancing social interaction education through socially mediated play either with entertainment content on social media by children sharing their playing experiences either proximally or through connectivity on online platforms. In addition, because of their interactivity, interactions are mediated by social media, but the child can also re-communicate to the toys their personal experiences (Arnott et al., 2019; Kewalramani et al., 2020).

In this context, interaction education through IoT and social media values a children's rights-based approach that promotes the agency nature of children who can participate and have a voice in all aspects of their lives. Thus, IoT and social media as educators and children are positioned as collaborators

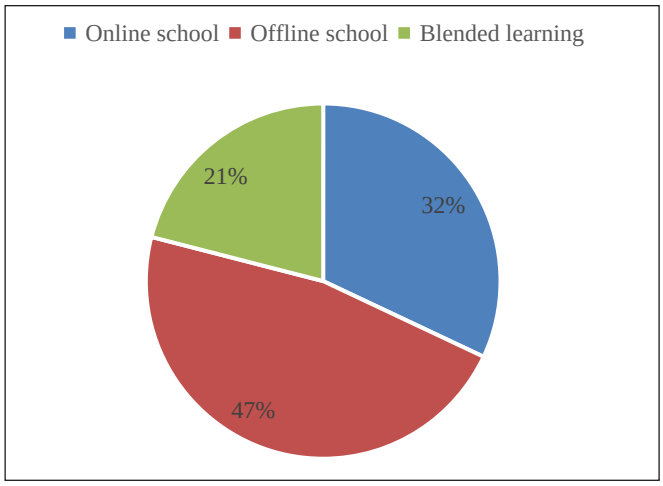

Fig. 5: Children's perception of online learning

who share learning experiences, with a shared focus on fun, and consider the virtual environment of the child to consist of several interactions with peers, adults, and cultural contexts, in where children build together their exploration and learning of social interactions.

In this regard, reflection on government policies in implementing Learning from Home has a positive impact. However, this policy seems to have a pitfall in it, namely when children's concept of Learning from Home is not well understood. Children still have difficulty in adapting to the concept of Learning from Home. In addition to the absence of explanations, children also still feel that the Learning from Home mode does not facilitate their world, which is full of playing aspects. When asked to choose again, the children still chose to go back to school and study offline (Figure 5). This becomes interesting because, at the beginning (Figure 3 and Figure 4), students feel comfortable playing, interacting socially, and learning through IoT and social media. Therefore, it is necessary to pay more attention to why the concept of online learning, which has a positive complexity in it, cannot be explained well to children.

This concept ultimately becomes a pitfall that needs attention because social interaction education and other education with IoT and social media can solve education in the post-pandemic. Education with IoT and social media has proven to be supported by the positive response for most children. The complex use of IoT and social media is an outcome that should be appreciated to meet a generation and a world that is increasingly sensitive to technological developments.

Discussion

Children's social development is needed to foster tolerant, active, and imitative aspects in early childhood to avoid deviant behavior in the next life. Social development must be formed from childhood to cultivate the values of social education in children, which later can become a positive habitus that can be their guide when growing up and as a provider of knowledge to take the next level of education. The development of social interaction in children during the Covid-19 pandemic still requires the role of teachers in providing social values to early childhood, and this can be accommodated with the concept of public pedagogy in social media; educators are expected to be able to guide children's social values. Through aspects of tolerance, imitation, and active participation in decision-making.

The development of educational science with educational technology is significant for the progress of the education system in the future. In addition, to understand the potential of the field of study of educational technology as a social transformation, historical studies can be used to illustrate the sociological dimensions that affect the development of education. Improvements in the education system need to be considered in terms of educational components and facilities, human resources, and the existing curriculum to support an effective and efficient social interaction education process (Bratina, 2019; Crowder et al., 2020). In this case, educational technology as a pedagogic practice can be understood as education and learning by utilizing developing technology. Initially, educational technology began with developing two things: learning media and teaching design, which historically involved electronic goods such as gadgets and social media as a means of communication and entertainment directed at educational purposes (Orakci, 2020; Sampurno et al., 2020).

Educational technology is referred to as behavioral science and an educational model that implements and manages technology to facilitate and solve learning problems (Almalki, 2020; Son et al., 2019)research, and assignments. Student reflective essays at the end of the semester were collected and analysed using thematic analysis to identify engagement and outcomes from these activities. Students perceived three interactive learning activities: (1. Educational technology has a positive purpose, supported by current technological developments that need to be appropriately addressed by parents towards children's education. The attitude they can show is their high enthusiasm for new information, the willingness to develop their potential, make the best use of the knowledge they have acquired, and develop their knowledge. That way, they can adequately receive education through technology-based education systems and IoT.

Social media mediate the interplay that occurs between IoT and children's social interaction education (Miller et al., 2016). Social media is one of the products of the rapid development of IoT in this millennial era. The number of social media platforms is increasing day by day. The features and functions also vary. Starting from as a medium of entertainment, communication media, business to its function as a source of knowledge and knowledge. The use of social media in delivering information is considered more up-to-date and effective at this time.

This is because most children make social media a primary need in their daily life. The birth of content, be it entertainment content, science and education content, and inspirational content, has become content to enliven social media platforms.

The sheer volume of opportunities available to children daily, if not hourly, is both an attraction and a distinct advantage for the owner of interest or the owner of information with a specific purpose (Ala, Alluhaidan; Samir, Chatterjee; Agnis, 2018; Lehrl et al., 2020). Although social media is an easy media choice in entertainment, communication, information delivery, and education, it should be noted that it certainly has a significant impact, both in terms of positive and negative impacts. Unlimited internet access is certainly not bound by age until all are free to access. This point is essential to note and be taken into consideration when enjoying social media content. Paying attention to the audience and observing the content displayed is an important thing that parents and teachers must always hold in mediating social media as an educational medium for children's social interactions.

IoT with social media has considerations that can be used as media for children's education in social interaction. In addition, social media helps develop children's creative power in communicating (Arnott et al., 2019; Torrez et al., 2019). This must be accommodated as a mode of creative communication in which there are interdisciplinary aspects of education. Furthermore, it shows the efficiency of social media, which acts as a media for children's education in interacting with the environment during the Covid-19 pandemic. In light of the above, with the increasing connectivity of digital technology, a new artifact in IoT; physical individuals who are indicators of the success of an interaction education for children, are finally able to connect to the internet, and their connectivity is now in the interplay between entities, things, and people (Cohen & Anders, 2020).

Virtual communication as part of the IoT is a "toy" connected to the internet. In contrast to physical individuals who are real but not connected to the online platform, social media interaction is connected to the online platform through social media. IoT and social media allow children to blur the physical environment with an online environment where digital and non-digital elements exist synchronously. IoT and social media facilitate children's interaction with the broader environment while playing virtually and examine how the blurred boundaries for informal and formal social interaction education are well intertwined, of course, through fun learning (Luo et al., 2021; Mantovani et al., 2021). IoT and social media invite all elements of children's education, especially parents and teachers, to explore possibilities to develop children's interaction and cognitive capacities such as creativity, inquiry abilities, and design thinking and how children can be empowered to gain relationships by involving them in the process virtual social interactivity.

Conclusion

The development of an increasingly rapid era is balanced by technological advances that trigger social transformations in everyday life, including how social interaction education for children is carried out. More and more children's activities are made easier with digital devices that help them instantly. Communication and information are effortless to access even by anyone without exception. Not only that, but social media platforms are also one of the alternative media for social interaction education which is considered easy to implement and well accepted by the community, especially the post-millennial generation.

The development of the times accompanied by the current technology has many impacts, both positive and negative. Children can quickly obtain ease and various benefits in terms of communication and information dissemination media. This is also used by educational disciplines to provide interactive educational media for children through IoT and social media or the delivery of technology-based education that is used as a pedagogic practice and can be understood as an educational and learning practice developing technology. The educational technology paradigm used in spreading knowledge and learning is one of the right choices because social media is currently inseparable from the lives of post-millennial generation children.

The spread of social interaction education through IoT and social media is becoming more and more common through content about tips and tricks, history, and information about phenomena that are the scope of children's activities. This is certainly a positive impact for children who, during the Covid-19 pandemic, appear reduced opportunities to interact face-to-face at school. Through this content, most of the children apply the knowledge gained in their daily life creatively. Social media content indirectly moves children to be more creative and brings enthusiasm to explore new things more. It can be said that the educational technology system through social content has succeeded in making children easy to understand and well-received the information they get through developments of technology today, namely social media.

The impact of the transformation of IoT and social media on children's education in social interaction is due to their interactive nature. So that IoT and social media in the future can become additional artifacts that act as mediators, not just a form of culture in the post-millennial generation. As has been shown with social media and online games when placed in a child's environment, it mediates their conceptualization of learning and cognitive development, among other agents. Furthermore, in the pool of interactions between teachers, children, and technology, children conceptualize higher mental functions such as problem-solving dispositions and question-driven questions that are continuous and ongoing

and language acquisition and social learning. The impact on interaction with technology leads to the transformation of social functions into individual mental functions, which form a process mediated by modern technology.

As a result, the integration of IoT and social media as mediators impacts children's 'study room ecology' during the Covid-19 pandemic. The concept of 'learning space ecology' is used here to describe the indoor environment of the early childhood setting and the outdoor and the interactions that occur within the educational framework in each of its contexts. In the context of education, children's interactions are influenced by various mediating factors obtained by children, including values, norms, and resources that shape actual pedagogical practices and form knowledge about new perspectives and possibilities that can be widely explored. The impact of the transformation of IoT and social media in this interaction includes how a child interacts with others, peer interactions, and educator interactions. It respects the agent nature of children, namely how children interact with netizens and how these interactions interact can be shaped as pedagogical practice.

References

Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, *0*(0), 1–13. https://doi.org/10.1080/10494820.2020.1813180

Ala, Alluhaidan; Samir, Chatterjee; Agnis, S. (2018). Persuasive Technology 13th. In J. Ham, E. Karapanos, P. P. Morita, & C. M. Burns (Eds.), *13th International Conference of PERSUASIVE 2018, Waterloo, ON, Canada, April 18-19, 2018*. Springer. https://doi.org/10.1007/978-3-319-78978-1

Almalki, S. (2020). Using Video Modeling and Video Prompting to Teach Conversational Skills to Students with Autism: A Consideration of Effectiveness, Practicality, and Acceptability. *International Journal of Early Childhood Special Education*, *12*(2), 103–114. https://doi.org/10.9756/INT-JECSE/V12I2.201062

Almonacid-Fierro, A. (2021). Impact on teaching in times of Covid-19 pandemic: a qualitative study. *International Journal of Evaluation and Research in Education (IJERE)*, *10*(2), 432–440. https://doi.org/10.11591/ijere.v10i2.21129

Arnott, L., Palaiologou, I., & Gray, C. (2019). Internet of toys across home and early childhood education: understanding the ecology of the child's social world. *Technology, Pedagogy and Education*, *28*(4), 401–412. https://doi.org/10.1080/1475939X.2019.1656667

Bilaver, L. A., Das, R., Martinez, E., Brown, E., Gupta, R. S., & Love, M. (2021). Addressing the social needs of individuals with food allergy and celiac disease during COVID-19: A new practice model for sustained social care. *Social Work in Health Care*, *60*(2), 187–196. https://doi.org/10.1080/00981389.2021.1904323

Boellstorff, T., Nardi, B., Pearce, C., & Taylor, T. L. (2012). *Ethnography and Virtual Worlds: A Handbook of Method*. Princeton University Press.

Bratina, T. (2019). Mobile phones and social behavior among millennials – future teachers. *Revija Za Elementarno Izobraževanje (Journal of Elemntary Education)*, *12*(4), 315–330. https://doi.org/10.18690/rei.12.4.315-330. 2019

Brits, J. S., Potgieter, A., & Potgieter, M. J. (2014). Exploring the Use of Puppet Shows in Presenting Nanotechnology Lessons in Early Childhood Education. *International Journal for Cross. Disciplinary Subjets in Education (IJCDSE)*, *5*(4), 1798–1803.

Canţer, M. (2012). E-heutagogy for lifelong e-learning. *Procedia Technology*, *1*, 129–131. https://doi.org/10.1016/j.protcy.2012.02.025

Cohen, F., & Anders, Y. (2020). Family involvement in early childhood education and care and its effects on the social-emotional and language skills of 3-year-old children. *School Effectiveness and School Improvement*, *31*(1), 125–142. https://doi.org/10.1080/09243453.2019.1646293

Colman, A. (2018). Net.art and Net.pedagogy : Introducing Internet Art to the Digital Art Curriculum. *Studies in Art Education*, *46*(Technology Issue), 61–73.

Crawford, R. (2017). Rethinking teaching and learning pedagogy for education in the twenty-first century: blended learning in music education. *Music Education Research*, *19*(2), 195–213. https://doi.org/10.1080/14613808.2016.1202223

Creswell, J. W. (2010). *Research Design Pendekatan Kualitatif, Kuantitatif, Dan Mixed*. Pustaka Pelajar.

Crowder, R., Lock, J., Hickey, E., McDermott, M., Simmons, M., Wilson, K., Leong, R., & De Silva, N. (2020). Art as Meditation: A Mindful Inquiry into Educator Well-Being. *The Qualitative Report*, *25*(3), 876–890. https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/2394540059?accountid=15115%0Ahttps://ocul-uwo.primo.exlibrisgroup.com/openurl/01OCUL_UWO/01OCUL_UWO:UWO_DEFAULT??url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journa

Damary, R., Markova, T., & Pryadilina, N. (2017). Key Challenges of On-line Education in Multi-cultural Context. *Procedia - Social and Behavioral Sciences*, *237*(June 2016), 83–89. https://doi.org/10.1016/j.sbspro.2017.02.034

Deanne Brocato, E., Gentile, D. A., Laczniak, R. N., Maier, J. A., & Ji-Song, M. (2010). Television Commercial Violence: Potential Effects on Children. *Journal of Advertising*, *39*(4), 95–108. https://doi.org/10.2753/JOA0091-3367390407

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). *The SAGE Handbook of Qualitative Research* (Fifth Edit). Sage Publications. https://doi.org/10.1007/s11229-017-1319-x

Díaz-Jiménez, R. M., Caravaca-Sánchez, F., Martín-Cano, M. C., & De la Fuente-Robles, Y. M. (2020). Anxiety levels among social work students during the COVID-19 lockdown in Spain. *Social Work in Health Care*, *59*(9–10), 681–693. https://doi.org/10.1080/00981389.2020.1859044

Gregus, S. J., Hernandez Rodriguez, J., Faith, M. A., & Failes, E. (2021). Parenting & Children's Psychological Adjustment During the COVID-19 Pandemic. *School Psychology Review*, *0*(0), 1–16. https://doi.org/10.1080/2372966X.2021.1880873

Hauk, E., & Immordino, G. (2014). Parents, Television and Cultural Change. *The Economic Journal*, *124*(579), 1040–1065. https://doi.org/10.1111/ecoj.

Hine, C. (2001). *Virtual Ethnography*. Sage Publications. https://doi.org/10.4324/9781315797915-4

Johnson, G. M. (2014). The ecology of interactive learning environments: Situating traditional theory. *Interactive Learning*

Environments, *22*(3), 298–308. https://doi.org/10.1080/10494820.2011.649768

Johnston-Goodstar, K., Richards-Schuster, K., & Sethi, J. K. (2014). Exploring Critical Youth Media Practice: Connections and Contributions for Social Work. *Social Work (United States)*, *59*(4), 339–346. https://doi.org/10.1093/sw/swu041

Jones, R. E., & Abdelfattah, K. R. (2020). Virtual Interviews in the Era of COVID-19: A Primer for Applicants. *Journal of Surgical Education*, 3–4. https://doi.org/10.1016/j.jsurg.2020.03.020

Kemkes. (2020). *Tentang Novel Coronavirus (NCOV)*. https://www.kemkes.go.id/resources/download/info-terkini/COVID-19/TENTANG NOVEL CORONAVIRUS.pdf

Kewalramani, S., Palaiologou, I., Arnott, L., & Dardanou, M. (2020). The integration of the internet of toys in early childhood education: a platform for multi-layered interactions. *European Early Childhood Education Research Journal*, *28*(2), 197–213. https://doi.org/10.1080/1350293X.2020.1735738

Krzesni, D. (2015). Environmental Education. *Counterpoints*, *503*(Pedagogy for Restoration: Addressing Social and Ecological Degradation through Education), 9–18.

Lehrl, S., Evangelou, M., & Sammons, P. (2020). The home learning environment and its role in shaping children's educational development. *School Effectiveness and School Improvement*, *31*(1), 1–6. https://doi.org/10.1080/09243453.2020.1693487

Li, X., Chen, Q., Fang, F., & Zhang, J. (2016). Is online education more like the global public goods? *Futures*, *81*, 176–190. https://doi.org/10.1016/j.futures.2015.10.001

Lin, T.-B., Chen, V., & Chai, C. S. (Eds.). (2015). *New Media and Learning in the 21st Century; A Social-Cultural Perspektive*. Springer. https://doi.org/10.1007/978-981-287-326-2

Lindberg, S. (2020). Politics of digital learning—Thinking education with Bernard Stiegler. *Educational Philosophy and Theory*, *52*(4), 384–396. https://doi.org/10.1080/00131857.2019.1586531

López Peláez, A., Erro-Garcés, A., & Gómez-Ciriano, E. J. (2020). Young people, social workers and social work education: the role of digital skills. *Social Work Education*, *39*(6), 825–842. https://doi.org/10.1080/02615479.2020.1795110

Lucardie, D. (2014). The Impact of Fun and Enjoyment on Adult's Learning. *Procedia - Social and Behavioral Sciences*, *142*, 439–446. https://doi.org/10.1016/j.sbspro.2014.07.696

Lune, H., & Berg, B. L. (2017). *Qualitative Research Methods for the Social Sciences* (Ninth edit). Pearson.

Luo, W., Berson, I. R., Berson, M. J., & Han, S. (2021). Young chinese children's remote peer interactions and social competence development during the COVID-19 pandemic. *Journal of Research on Technology in Education*, *0*(0), 1–17. https://doi.org/10.1080/15391523.2021.1906361

Maney, J. K. (1999). The Role of Technology in Education. *Handbook of Educational Policy*, *January*, 387–415. https://doi.org/10.1016/b978-012174698-8/50043-6

Mantovani, S., Bove, C., Ferri, P., Manzoni, P., Cesa Bianchi, A., & Picca, M. (2021). Children 'under lockdown': voices, experiences, and resources during and after the COVID-19 emergency. Insights from a survey with children and families in the Lombardy region of Italy. *European Early Childhood Education Research Journal*, *29*(1), 35–50. https://doi.org/10.1080/1350293X.2021.1872673

Marsudi, M., Sampurno, M. B. T., Wiratmoko, C., & Ratyaningrum, F. (2020). Kontribusi Desain Komunikasi Visual dalam Anti-Hoax System saat Pandemi Covid-19 di Indonesia. *SALAM: Jurnal Sosial Dan Budaya Syar-i; Vol 7, No 10 (2020): Special Issue Coronavirus Covid-19DO - 10.15408/Sjsbs.V7i10.15844* . http://journal.uinjkt.ac.id/index.php/salam/article/view/15844

McLay, K., Renshaw, P., & Phillips, L. G. (2015). iBecome: iPads as a tool for self-making. *International Journal of Educational Research*, *84*, 68–78. https://doi.org/10.1016/j.ijer.2016.05.009

Mehta, V. (2020). The new proxemics: COVID-19, social distancing, and sociable space. *Journal of Urban Design*, *25*(6), 1–6. https://doi.org/10.1080/13574809.2020.1785283

Miller, D., Costa, E., Haynes, N., Mcdonald, T., Sinanan, J., Spyer, J., Venkatraman, S., & Wang, X. (Eds.). (2016). Education and Young People. In *How the World Changed Social Media* (pp. 70–84). UCL Press.

Ngoc, N. T. (2021). Effects of Family Education on Children's Personal Development. *International Journal of Early Childhood Special Education (INT-JECSE)*, *13*(1), 80–84. https://doi.org/10.9756/INT-JECSE/V13I1.211010

Orakci, Ş. (2020). Postgraduate students' expectations of their lecturers. *Qualitative Report*, *25*(1), 199–215.

Patel, K.K.; Patel, S.M. Internet of things-IoT: definition, characteristics, architecture, enabling technologies, application & future challenges. *Int. J. Eng. Sci. Comput.* 2016, *6*, 6122–6131.

Popyk, A. (2021). The impact of distance learning on the social practices of schoolchildren during the COVID-19 pandemic: reconstructing values of migrant children in Poland. *European Societies*, *23*(S1), S530–S544. https://doi.org/10.1080/14616696.2020.1831038

Sampurno, M. B. T., Kusumandyoko, T. C., & Islam, M. A. (2020). Budaya Media Sosial, Edukasi Masyarakat, dan Pandemi COVID-19. *SALAM: Jurnal Sosial Dan Budaya Syar-I*, *7*(5). https://doi.org/https://doi.org/10.15408/sjsbs.v7i5.15210

Schultz, D. (2016). Public Affairs Education for a New Generation. *Journal of Public Affairs Education*, *22*(1), 7–10.

Singer, D. G., Golinkoff, R. M., & Hirsh-Pasek, K. (Eds.). (2006). *Play = Learning: How Play Motivates and Enhances Children's Cognitive and Social-Emotional Growth*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195304381.001.0001

Son, J., Sun, J., & Lee, J. (2019). Interactive learning through social media for large size classes in the clothing and textile curriculum. *International Journal of Fashion Design, Technology and Education*, *12*(2), 129–139. https://doi.org/10.1080/17543266.2018.1534002

Tashakkori, A., & Creswell, J. (2008). Mixed Methodology Across Disciplines. *Journal Of Mixed Methods Research*, *2*(1), 1–5.

Tobaiqy, M., Qashqary, M., Al-Dahery, S., Mujallad, A., Hershan, A. A., Kamal, M. A., & Helmi, N. (2020). Therapeutic management of patients with COVID-19 : a systematic review. *Infection Prevention in Practice*, *May*. https://doi.org/10.1016/j.infpip.2020.100061

Torrez, B., Wakslak, C., & Amit, E. (2019). Dynamic distance: Use of visual and verbal means of communication as social signals. *Journal of Experimental Social Psychology*, *85*(August 2018), 103849. https://doi.org/10.1016/j.jesp.2019.103849

Umair, M., Cheema, M. A., Cheema, O., Li, H., & Lu, H. (2021). Impact of COVID-19 on iot adoption in healthcare, smart homes, smart buildings, smart cities, transportation and industrial IoT. In *Sensors* (Vol. 21, Issue 11). MDPI AG. https://doi.org/10.3390/s21113838