



Immigrant Digital Generation Teacher Efforts in Investing Digital Literacy in Early Childhood Education

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ABSTRACT

Learning difficulties that many students experience are learning concentration, management of learning materials, storage of learning outcomes, and exploration of stored learning outcomes. With digital literacy, it can increase student independence in finding solutions to problems that arise during learning using various digital sources. However, this is a problem for teachers of the digital immigrant generation because of the large difference in the generation gap. The output targets are (1) research reports on teachers' efforts to instill digital literacy for early childhood, (2) research articles published in the journal "Cakrawala Dini" accredited national journal Sinta 3. This research is a qualitative research with a case study type. The object of this research is the digital immigrant generation teacher at Aisiyah Kartasura Kindergarten. Data collection techniques used are through observation, interviews, and documentation. While testing the validity of the data includes: internal validity, external validity, reliability, and objectivity. Data obtained by in-depth interviews can be analyzed by open-coding.

KEYWORDS

Digital Literacy, Digital Immigrant Teacher, Early Education

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INTRODUCTION

Today's society has moved from the industrial era to the information age. This phenomenon has resulted in many paradigm shifts in all fields that are global in nature, including education which is the most crucial field. Teachers need to develop skills in utilizing information, both in terms of tools and content that will be used for the purpose of achieving an educational goal (Chow et al., 2020; Vélez et al., 2017; Zain, 2020). Digital tools have become a priority need for educators around the world, without digital tools education will be difficult to progress because they cannot keep up with the times. When this paradigm shift occurs, it results in all elements of the world of education being very dependent on technology (Safitri et al., n.d.).

This dependence on technology does not look at who and how old humans are. In the digital world, this is known as a generation, namely the digital immigrant generation and the digital native generation. Digital immigrants are people who switch from the analog world to the digital world. While digital native is a generation that grows and is immersed in the digital world. So that between these two generations there is a very clear gap, because the period and characteristics are very different. It should be noted that the current school environment is dominated by teachers of the digital immigrant generation while students or students are digital natives (Prensky, 2001).

The characteristics of digital natives refer to the actions and behavior of 21st century children such as digital consumerism from the internet and social media. Digital native children tend to enjoy interacting by utilizing internet and social media facilities to become their social world, both in the process of learning to find information or for children's entertainment. Prensky coined the term digital natives when he explored digital theory to promote understanding of the 21st century generation or today's generation of digital learners.

Apart from the technological aspect, the digital native generation prefers a collaborative and technology-based learning environment. This is because this generation is very familiar with digital technology and online communication, so that the digital native generation represents an education system with

learners who do not only see technology as a tool but as a way to live. The generation of digital natives focuses their daily life on the internet, especially with social media (Kopáčková, 2015).

Prensky stated that digital natives are used to receiving information quickly, and they are able and accustomed to multitasking. Digital natives students prefer graphics before text, they are also capable and well connected to the network. Digital natives students like instant gratification and rewards that are given. However, the accent on teachers who are digital immigrants is considered strange and less attractive to digital natives. This assumption certainly affects the quality of education delivered to digital natives, one form of learning that is very important at this time for digital natives' children is digital literacy.

Integration of digital literacy in the learning process is something that cannot be avoided in the ICT era (Mardiah, 2022). The existence of good digital literacy will help students overcome their learning problems. Learning problems faced by students are very diverse, such as: learning concentration, management of learning materials, storage of learning outcomes, and exploration of learning outcomes. Sagitaa et al., (2019) emphasize that with digital literacy, student competence will also improve, especially in the aspects of internet search, hypertext guidance, assessment of information content and compilation of knowledge.

Learning difficulties that many students experience are learning concentration, management of learning materials, storage of learning outcomes, and exploration of stored learning outcomes. With digital literacy, it can increase student independence in finding solutions to problems that arise during learning using various digital sources (Amnie et al., 2021). In addition, digital literacy will also be related to the ability to innovate, think critically in solving problems and communication and collaboration skills (Sagitaa et al., 2019). Students need to be given an understanding of online safety, effective communication in using social media and how to find reading sources that can be trusted or not (Mardiah, 2022) so that later problems related to digital can be minimized.



The main problem in this study is that there is a big difference between generations. The generation before digital natives could not fully understand the generation of digital immigrants or share their values, the previous generation found it difficult to communicate with digital natives, this collaboration could lead to teachers educating them. To differentiate between digital natives and other digital ICT users, Mark Prensky introduced the concept of "digital immigrants". These are individuals who were not born in the digital world, but who adopted many aspects of the new digital age. They are fundamentally different from digital natives in the sense that they have to learn what digital natives are and grow up knowing it as their mother tongue. Like people learning a foreign language, they have an "accent." For example, they print their e-mail, they read the manual, they go next door to show interesting websites instead of sending URLs.

This difference creates big problems for parents, stakeholders, and fellow teachers. The relationship between the digital native generation and their parents is not easy, because conflicts arise from differences in approaches, values, competencies, and language. When digital natives find work in pre-digital companies or institutions, they may also face great difficulties, because they have different visions of what work is, what communicates, what collaborates, and also different meanings of hierarchy. Generational conflict appears evident in education when non-digital natives teach digital natives.

RESEARCH METHOD

The objects in this study were teachers aged 45-50 years at TK Aisyiyah Kartasura. The object chosen is a teacher who is teaching Kindergarten B class and has a vision of a technology-based school. The purpose of this study is to examine the life experiences of digital immigrant generation teachers in instilling digital literacy in early childhood. This study uses a case study approach to determine the form of interaction between digital immigrants and digital natives when instilling digital literacy. Data collection

applied as a data collection tool in this study is observation, interviews, and documentation.

The data obtained was then analyzed using open-coding or coding techniques. Open-coding was used to analyze data from LoTi self-evaluations, interviews, observations, lesson plans, reflection sheets, and journal entries. Merriam (2002) discusses the development from open coding to axial coding to selective coding. I use this protocol to analyze data from this study. During open coding, the data is given a name, and an initial code is assigned to the text, which is then grouped together to produce a common theme or category. Miles and Huberman (1994) use the analogy of a code as an index of categories and ways of organizing text and then compare these categories to find patterns or themes. Merriam (2002) stated that categorizing would result in reducing the number of individual code words, under a larger category, creating code notes, i.e. a type of memo

RESULTS AND DISCUSSION

The purpose of this qualitative research is to examine the insights of several digital immigrant generation teachers and their attitudes related to the use and utilization of technological tools, as well as challenges and beliefs that shape digital immigrant generation teachers in accepting and integrating the application of applied technology and dimensions of digital literacy in their teaching. This study uses a qualitative method to see comprehensively how digital immigrant generation teachers overcome a technological barrier in implementing digital literacy in their teaching.

As many as 5 teachers participated in in-depth interviews, observations and submitted a lesson plan (RPP) related to technology-integrating learning for review, this data will be used to explore digital immigrant generation teachers and teachers' life experiences in using technology.



Each teacher conducts interviews separately. No time limit was set and the interview lasted as long as necessary for the participant to answer questions effectively and engage in dialogue. The interview lasted an average of 60 minutes. Coding and analysis of content is triangulated and analyzed so that it is repeatable which refers to a particular theme. These themes are generated to address research results effectively based on the questions that frame a research.

Each teacher has an institutional vision in the form of adaptation to technological developments. All teachers were teachers of TK B class. All interview transcripts, observation notes and lesson plans were analyzed to identify themes that referred to the three interview questions that guided the research results that could be produced. Research questions were developed to find out the digital immigrant generation's digital life experiences and how they integrate technology in a meaningful way and their instructions can be understood by the digital native generation.

Themes are identified and supported through data. 20 codes are initially used when open coding takes place. Subsequently the number was reduced to 15 during axial coding and to 10 codes during selective coding. Groundedness refers to how often codes are used/identified when analyzing data. Codes are identified to represent and capture key content and essence data. These codes can be used to summarize or condense data, which then develops research themes and is able to answer problems in research questions.

Table 1. Selection Code

Code	Groundedness
Tantangan	25
Manfaat	34

Digital Natives	23
Content	53
Literasi Digital	38
Strategi	41
Penggunaan Teknologi	32
Motivasi	32
Media Digital	21
Produktivitas	12

As illustrated in Table 2, digital literacy is the code with the highest groundedness, with 53 occurrences in all coded data. The strategy also shows high incidents with 41 uses, so this study is very relevant to the efforts of digital immigrant teachers in instilling digital literacy in early childhood.

All participants in this study had limited experience with technology, which had an impact on teachers' skills and abilities in integrating technology into classroom learning. Many participants have the notion that the use of technology is only used for administrative purposes. This was conveyed by Mrs. Siti

“Sebenarnya saya sadar mbak, teknologi itu sangat penting ya. Dalam arti dengan teknologi bisa membuat pekerjaan lebih efektif dan efisien. Meskipun memang saya pribadi pada saat itu tidak memanfaatkan, bukan tidak memanfaatkan ya tapi lebih ke tidak tahu apa yang harus saya lakukan dengan adanya teknologi ini bagi pembelajaran, namun



tetap ada rasa bahwa suatu saat nanti pasti teknologi akan digunakan dalam segala unsur, mungkin sekitar 10 tahun yang lalu mbak saya memiliki pemikiran seperti ini"

In contrast to Mrs. Siti Zulaeha, Mrs. Kristina who is one generation older, Mrs. Kristina is able to use several application programs for implementation in class. Such as educational game applications that are installed on the PC. However, children are still limited in their use because the facilities in institutions are still not evenly distributed. Ibu Kristina teaches the children how to turn on and turn off the PC and open educational game applications, download pictures and print them using a printer. Even though Ms. Kristina has limitations regarding the use of technology, Ms. Kristina acknowledged from the start that technology is the main and very valuable resource that needs to be implemented in class.

The first time Mrs. Sudarti taught, namely in 2007, the technology used was still very low and teacher-centered. Technology is only used for daily needs, not in the field of education. The school institution was a larger system so that the technological resources at that time were very limited. Despite having several technological tools such as PCs, PCs are used to compile children's lesson plans or worksheets rather than writing them by hand, this results in a lack of involvement of children in using technology.

This happened until the widespread use of technology in educational institutions. Mrs. Sudarti began to be motivated and provide support to students because she saw the benefits and integration of technology into learning. Ibu Sudarti also often hears students talk about using technology outside of school and how it attracts children's attention. After listening to children talk that technology provides benefits, Ms. Sudarti began attending

training and training on using digital tools and learning STEAM (Science, Technology, Engineering, Arts, Mathematics).

During this study it was found that each participant had changed in their acceptance and use of technology. Ibu Kristina and Ibu Nur Amalia have had the ability to use technology from the start, this reflects their initial attitude towards using digital tools in the classroom. Kristina's mother has more experience with technology. On the other hand, Mrs. Sudarti, Mrs. Siti Zulaeha, and Mrs. Sartik started their careers as teachers with minimal use of technology. All participants experienced a shift in their use of technology and while technology may still be used for lower-level tasks, higher-level tasks have become commonplace for all participants.

The use of technology in education has become commonplace. The benefits of the technology of its implementation are enormous. In a meta-analysis conducted by Lai and Bower (2020), 65 of the 73 articles analyzed concluded that the use of technology brings learning and improvement benefits, leading Lai and Bower (2020) to emphasize the importance of using technology in education. Among the benefits mentioned by Lai and Bower (2020) are improvements in problem solving, interpersonal skills, and knowledge. Affective benefits were also found in 31 of 33 articles that examined the affective elements of technology use. The affective elements include motivation, satisfaction, and enjoyment. Learning behaviors, such as negotiation and social interaction, are also said to increase with the use of technology.

Chauhan (2017) asserts that when technology becomes an integral part of pedagogy, it is a dynamic tool for effective learning in elementary school students. Chauhan (2017) also stated that many school districts across the region contribute large amounts of their annual budget to stay abreast of current technological developments, with the



aim of increasing student academic achievement.

Autry and Berge (2011) mention many differences between digital immigrants and digital natives, ranging from personality to learning styles. However, despite these differences, digital immigrant educators must work together and teach digital native students and need to do so effectively. Autry and Berge (2011) confirm the need for a new digital pedagogy. Within this pedagogy, there should be an emphasis on providing digital native children with various technological tools, which then enable them to construct their own knowledge and understanding (Autry & Berge, 2011). However, this can be a challenge for digital immigrant teachers.

The results of the study reveal the attitude of digital immigrant teachers towards the use of technology in their teaching. To answer the first research question regarding Changes in attitudes of Digital Immigrant teachers towards technology in the classroom, data were analyzed and coded. These codes are then seen by all participants. When observing the acceptance of technology in teaching in the classroom, Mrs. Siti had a big change in attitude when she said that at the beginning of teaching Mrs. Siti was very unfamiliar with the tools, but she had the awareness that technological tools could help work (teaching in class) run smoothly. effective and efficient.

The challenge faced by digital immigrant generation teachers is in applying technology to their teaching, data is analyzed and coded. Then the code is observed by all participants. Challenges are codes with a groundedness of 25. Groundedness refers to how often a given code appears. The time challenge becomes a special challenge for the participants. Time has many branches, the challenge is not only a challenge on certain aspects of time, but also the challenge of time to apply technology as a barrier for participants to keep abreast of the latest technological developments. Access is also a

challenge of the times that many participants encounter in integrating technology into learning. Most teachers have problems with access to technology, such as uneven facilities.

It can be concluded that teachers of the digital immigrant generation need to have an attitude that is open to change in order to learn new things with a coercive nature and need for adaptation so that teachers are able to balance the ability to use digital tools in digital native students. This was also expressed by Ms. Sudarti, who at the time of her career was not familiar with technology due to limited facilities.



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