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## From Chalk to Click: Elevating Information Technology Literacy Among Digital Immigrant Teachers in Bandar Lampung

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### ABSTRACT

The Elevating IT Literacy Among Digital Immigrant Teachers in Bandar Lampung aims to improve the digital skills of teachers in Indonesia by empowering teachers to integrate technology into their teaching. The initiative provides tailored training for elementary school teachers to enhance their digital proficiency and use digital tools effectively in their teaching. The transition implementation enhances ICT integration in classroom teaching, improving interactivity, accessibility, student engagement, and learning outcomes. The initiative took place at SDN 3 Sukajawa Bandar Lampung and resulted in a significant improvement in teachers' digital literacy, with a 33% increase. 25% increase in knowledge post-training program. The educational interventions narrowed the digital proficiency gap between educators and tech-savvy students. The program's success is evident in the teachers' enhanced ability to develop and use digital instructional materials, which are essential for creating an engaging learning environment. In the rapidly changing educational landscape, it's crucial to implement programs like this to ensure that teachers can effectively address their students' diverse needs in the digital era.

### INTRODUCTION

The proliferation of information and communication technology has extended its reach to nearly all global regions (Lai & Hong, 2015; Sahin, 2016). A multitude of technological devices equipped with diverse features and functions are designed to facilitate human management and enhance work efficiency. However, conversely, the human inability to match the rapid pace of technological advancement gives rise to its own set of challenges. The disparity between knowledge, attitudes, and proficiency in technology has resulted in limitations in society's ability to fully leverage technological advancements (Bruyckere et al., 2016; Goldie, 2016; Murray & Christison, 2019; Poole, 2017). This particular condition necessitates specific strategies to optimize the adoption of technology. The integration of information and communication technology has significantly impacted the global education system. Teachers, as essential facilitators of the learning process, are expected to possess proficiency in integrating

technology into the creation of instructional materials and resources (Guardia et al., 2019), and effectively implementing them in their daily classroom instruction (Bai et al., 2021).

The transition in educational pedagogy in Indonesia, from traditional teaching approaches to the digital age, has engendered a unique set of challenges for teachers (Kurniawati, 2018; Sejati, 2019; Wigati & Fithriyah, 2022). Teachers who are classified within the adult age demographic often exhibit a proclivity for being resistant to the adoption of innovative behavioral norms (Kurniawati, 2018), particularly in the context of updating pedagogical approaches to incorporate internet-based modalities (Anzari, 2021). In contrast, teachers, particularly those in the elementary school setting, hold a significant responsibility in establishing the fundamental tenets of the country's educational system (Kirschner & Bruyckere, 2017). To address this issue, it is imperative to implement a comprehensive training program.

The technical aspects related to expertise in utilizing technology for educational purposes, particularly in the realm of teaching, are significant as they impact students' acquisition of knowledge about educational objectives. To align with the rapidly advancing field of communication and information technology, the utilization of adaptive learning media is imperative within foundational educational settings (Coker et al., 2024; Instefjord & Munthe, 2017; Wojciech et al., 2021). The implementation of various considerations is crucial, including (1) the utilization of systematic, engaging, innovative, and appealing learning resources to enhance children's creativity and imagination in the development of cognitive processes; (2) audio-visual learning resources facilitate better comprehension; and (3) teachers are urged to adapt to technological advancements to impart supplementary insights to students on ethics and morals, to preempt and mitigate the adverse effects of technology. To create effective visual learning media, teachers must possess the necessary skills and knowledge. It is evident that the digital capabilities of teachers in Indonesia are typically low. This can be attributed to the prevalent use of traditional teaching methods and conventional learning media and aids in the country's educational system. In the current condition, teachers are required to transition from traditional, non-digital skills to effectively engage with the digital era. They are often being called as the digital immigrant (Anzari, 2021; Creighton, 2018; Salazar-Márquez, 2017). During the current phase of migration, teachers must receive intervention in the form of acquiring relevant knowledge. This will facilitate the assimilation of new knowledge, thereby promoting a rapid transition for elementary school teachers toward comprehending and harnessing digital tools for learning purposes.

The concepts of digital immigrant and digital native were initially introduced by Marc Prensky in a series of articles published in 2001 (Prensky, 2015; Prensky & Stenger, 2015). These concepts, with their origins in the United States, examine the implications of information and communication technology (ICT) on individuals' daily lives, with a specific focus on the dynamic between students and teachers serving as a case study (Prensky, 2016a) The instructor provided an elucidation for the current challenges faced by teachers in effectively

instructing students. Prensky contends that contemporary youth communicate using a digital vernacular, but teachers utilize an antiquated form of communication, reflecting their reluctance to embrace new technologies. The individual advocated for a modification in the pedagogical methods employed for the instruction of children. To facilitate learning, it is beneficial for individuals to receive information presented in a manner that is accessible and understandable to them.

Prensky derived two classifications of society based on the aforementioned depiction. The initial classification pertains to individuals categorized as digital immigrants. The term refers to a cohort of individuals who did not come of age during the digital era. Individuals born before 1985, who have subsequently integrated technology into their lives, are classified within this initial group. Digital natives are the antithesis of digital immigrants, denoting individuals who have been immersed in technology from a young age.

The selection of the term "immigrant" is motivated by distinct considerations. Prensky (2016b, 2017) posits that individuals belonging to the older generation, who did not grow up in the digital era and have spent a significant portion of their lives without the pervasive influence of digital technology, may be considered to have lived in a "pre-digital style" (Kalimullina et al., 2021). In light of the increasing significance of digital media, individuals previously considered to be passive consumers of information are now being redefined as a collective cohort of "asylum seekers" seeking refuge within the digital landscape (Hakkarainen et al., 2015)

In essence, the elderly demographic is compelled to adjust their behavior and habits to gain acceptance within the technological society. According to Kennedy et al. (2008), while certain individuals classified as digital immigrants may ultimately adopt the use of technology, the majority continue to regard it as unfamiliar or alien. Dufresne and Bethke (2005) noted that individuals who have adapted to technology later in life often view their encounters with digital tools and platforms as disorderly, lacking in depth, and potentially menacing.

The occurrence of this phenomenon can be attributed to the entrenched nature of traditional values within the information-gathering process.

O'Hara and Steven (2006) argue that individuals who did not grow up with digital technology, commonly referred to as digital immigrants, require additional support in developing their ICT skills. The authors assert that these individuals often possess skills that are acquired through imitation and may feel compelled to learn ICT skills, as they are not as naturally integrated into their daily lives.

The situation above reveals a challenge in the education sector, specifically concerning the competency of teachers in creating comprehensive teaching materials for multiple subjects (Kjällander, 2018; Martínez & Olsson, 2022). The issue at hand is the need for teachers to possess the necessary skills and knowledge to effectively compile and prepare teaching materials for diverse subject areas. Due to the limited digital knowledge capital of teachers initially, there is a compelling need to make concerted efforts to enhance it (Lufri et al., 2022; Shimichev & Rotanova, 2021). This is imperative to ensure that primary school learning objectives can effectively align with and adapt to ongoing technological advancements.

The objective of this community service is to facilitate expedited development of the proficiency of elementary school teachers, enabling them to effectively transition into the digital age and subsequently integrate digital technologies into their pedagogical practices (Chhetri & Plathottam, 2021; Das, 2021). It is imperative to acknowledge that the development of interactive teaching media by Teachers is essential for facilitating the attainment of learning objectives.

This activity offers the advantage of enhancing the capacity of elementary school teachers to create instructional materials. The utilization of digital teaching materials and media will result in a heightened level of proficiency and competency in digital skills. This in turn fosters a more interactive learning atmosphere for students, which deviates from traditional learning environments. Furthermore, the utilization of digital teaching media enables students to visually engage with course material, thus fostering the development of critical thinking skills, creativity, and imagination under the guidance of their instructors. Additionally, teachers have the opportunity to instill moral values during the learning process, ultimately mitigating the adverse effects of information technology's rapid evolution.

## **METHODS**

This activity entails the instruction of elementary school teachers in the development and utilization of digital learning materials through the utilization of online resources. Teachers receive guidance on incorporating films and other audio-visual aids into their instructional materials to cultivate a dynamic learning environment that enhances students' understanding of academic concepts. The timing of the training sessions has been carefully coordinated to accommodate the school's academic calendar and the team's availability, thus mitigating any potential disruptions to regular school activities. Nonetheless, a potential issue arises because some teachers may lack proficient digital skills, thus emphasizing the necessity for this training.

In adherence to higher education's commitment to community engagement, an extension of methodologies has been employed to enable the academic community to make meaningful contributions. This methodology is consistent with our commitment to delivering educational and philanthropic support, to empower the community with the requisite competencies and information to autonomously confront their difficulties in the long term.

The methods utilized in this outreach program comprise:

1. The delivery of pre-designed materials through conventional lecture methods, combined with the use of digital educational resources obtained from online sources. Attendees are strongly encouraged to practice active listening and actively engage with the material being presented.
2. Supplementary discussion sessions will be conducted to provide participants with the opportunity to further enhance their comprehension of the material by engaging in dialogue and posing questions, while also addressing any concerns or issues that may arise.
3. Explanation of the effective strategies utilized in integrating relevant material into teaching practices.
4. Development of digital teaching materials utilizing online data.

## **RESULTS AND DISCUSSION**

### **The IT Training Program for Digital Immigrant Teachers at SDN 3 Sukajawa**

The community service initiative was conducted at the Computer Laboratory of SD 3 Sukajawa in Bandar Lampung in November. The initial day of the program comprised of imparting knowledge on the importance of technology in primary education. This aspect was deemed critical due to technology's capacity to record diverse social and natural phenomena, which assists in the visualization of educational concepts by teachers.



Picture 1. Dr. Nina Yudha presented the Using the Internet for Learning.

During the course of the event, the teachers displayed an evident and palpable enthusiasm, regardless of their age. The individuals were enthusiastic about aligning their proficiencies with the most recent technological advancements. The interviews conducted with the teachers revealed some valuable insights. Specifically, the teachers expressed a keen interest in acquiring knowledge of new technologies that could be applied in educational settings. However, they also reported facing challenges in this regard, largely stemming from their limited familiarity with such technologies. The limited knowledge of contemporary technology, such as computers and the internet, had a detrimental effect on their proficiency in operating said technologies, thereby causing them to rely on more traditional methods. Numerous individuals reported that their efforts to acquire knowledge from their children were met with limited success, and psychological variables, in addition to age, impeded their ability to adjust to technology.

The service team administered practical training sessions covering a range of technological tools. The implementation of Microsoft PowerPoint as an instructional tool was initiated. However, a

significant number of teachers encountered difficulties in operating the computer and accessing the software. The utilization of the Internet on personal computers was perceived as bewildering by individuals primarily accustomed to using smartphones. The team exemplified the process of acquiring and incorporating multimedia elements such as images, sounds, and videos into presentations, providing a unique learning experience for the majority of participants.

The training received a significantly positive response, as evidenced by a substantial number of teachers expressing interest in additional sessions to further solidify their acquisition and utilization of the newly acquired skills. The teachers' evident enthusiasm and high motivation for learning were demonstrated through their active participation and their proactive requests for homework to prepare for future meetings. The prevailing sentiment underscored the fervent aspiration for sustained involvement to mitigate the risk of skill attrition.



Picture 2. Andi Windah assisted teachers in preparing internet-based teaching material designs.

### **Insights from the IT Training for Digital Immigrant Teachers at SD 3 Sukajawa**

The findings from the pretest and post-test indicated a statistically significant 33.25% increase in the participants' knowledge, which can be classified as a medium level of improvement. The identified improvement, as substantiated through interviews and observational data, was found to be impacted by a range of factors, notably the widespread possession of smartphones among teachers and the comparatively young age of certain teaching professionals, who tend to exhibit a heightened awareness of technological advancements. Several young teachers who frequently use laptops and internet networks in their

laboratory work demonstrated fewer notable improvements, possibly attributable to their preexisting proficiency with technology. The results of the pretest, post-test, and percentage of increases can be seen below.

The overall outcome of the activity was perceived as highly successful in enhancing the skills of elementary school teachers at SDN 3 Sukajawa Bandar Lampung and assisting them in adapting to the demands of the digital age. The training yielded numerous substantial advantages.

#### **Impact and Implications of IT Training for Digital Immigrant Teachers at SD 3 Sukajawa**

Initially, the intervention resulted in an augmentation of teachers' digital competencies and proficiency, as evidenced by their enhanced capacity to create and utilize digital instructional resources and technologies. The acquired knowledge and hands-on experience obtained through this training program empowered the teachers to develop more interactive media, thereby streamlining the attainment of educational goals.

Furthermore, the professional development program inspired teachers to regularly enhance their expertise to stay current with the ever-evolving advancements in technology. It is anticipated that this motivation will impact their everyday teaching methodologies, integrating digital media to enhance the interactivity of classroom activities. Utilizing a range of advanced media technologies such as YouTube and Flash enables teachers to deliver educational content in a more efficient manner. The aforementioned approach not only facilitates the achievement of learning objectives, but also cultivates students' cognitive skills, creativity, and imagination, thereby fostering a more dynamic and interactive learning environment.

Moreover, the swift assimilation of students to technological progress has exacerbated the disparity in technological proficiency between them and less technologically adept teachers, potentially resulting in adverse consequences. The training program provided teachers with the necessary skills and knowledge to integrate technology confidently and ethically into their teaching practices, while also imbuing students with moral values. This approach aimed to mitigate the potential negative impacts of information technology on students. All in all, this program effectively enhanced the technological skills of teachers, enabling them to effectively

address the digital divide with their students and ultimately improve educational achievements and ethical development.

#### **CONCLUSIONS**

The outreach program, which was designed to enhance the digital competencies of elementary school teachers in Bandar Lampung, was concluded with noteworthy results. The focus of the initiative Elevating Information Technology Literacy Among Digital Immigrant Teachers in Bandar Lampung centered on imparting teachers with the requisite skills to effectively engage and excel in the digital era. The efficacy of the program was evaluated through the analysis of pre-test and post-test scores administered to the participants.

The findings derived from these evaluations revealed a notable augmentation in knowledge, demonstrating an average improvement of 33.25%, indicative of a moderate level of enhancement. The increase in performance signifies that the program has successfully achieved its goal of delivering focused and expedited educational interventions. The interventions were purposefully developed to enhance the digital proficiency of educators, with the goal of equipping them with the necessary skills to effectively utilize digital tools and seamlessly incorporate these technologies into their instructional methods.

Due to enhanced digital fluency, educators are now better equipped to cultivate dynamic and interactive educational settings for their students. The integration of digital media into instructional methods has the potential to enhance the dynamism and accessibility of learning experiences, thereby facilitating the attainment of educational objectives. The utilization of this approach not only enhances the pedagogical capabilities of educators but also contributes substantially to the enhancement of students' educational experiences, resulting in increased effectiveness and engagement in learning.

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