

Analysis of The Influence of Digital Literacy, Pedagogical Skills and Continuous Training on Teacher Competence


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ABSTRACT

Penelitian ini bertujuan untuk memahami bagaimana literasi digital, keterampilan pendidikan, dan pelatihan berkelanjutan dapat meningkatkan kompetensi guru di kota-kota besar di Indonesia. Penelitian ini dilakukan dengan pendekatan kualitatif dan metode deskriptif. Data dikumpulkan melalui wawancara terstruktur dan mendalam dengan 30 guru dari berbagai jenjang pendidikan. Kepala sekolah dilibatkan sebagai informan pendukung untuk mendapatkan perspektif yang lebih luas. Hasil penelitian menunjukkan bahwa literasi digital sangat penting bagi guru karena membantu guru mengintegrasikan teknologi ke dalam proses belajar mengajar. Selain itu, keterampilan pedagogis membekali guru dengan kemampuan merencanakan, mengimplementasikan, dan mengevaluasi pengalaman belajar yang diinginkan dan sesuai dengan kebutuhan siswa. Pelatihan berkelanjutan juga sangat penting karena memungkinkan guru untuk terus memperbarui pengetahuan, mengembangkan keterampilan, dan mempertahankan profesionalisme di tengah perubahan yang terus terjadi di bidang pendidikan. Penelitian ini menyarankan sekolah dan pembuat kebijakan untuk meningkatkan program pelatihan guru dengan lebih giat, mendukung pemanfaatan teknologi dalam pendidikan, dan menciptakan lingkungan kerja yang kondusif bagi kolaborasi dan pengembangan profesional berkelanjutan.

This research is meant to understand how digital literacy, educational skills, and constant training can made teacher competence grow in big cities of Indonesia. The study was carried out using a qualitative approach and a descriptive method. Data were gathered through interviews which were structured and in-depth with 30 teachers from different levels of education. Principals of the schools were involved as supporting informants to get a wider perspective. The results reveal that digital literacy is extremely important to a teacher as it helps him or her to incorporate technology into the teaching and learning process. Besides that, pedagogical skills equip the teacher with the ability of planning, implementation, and evaluation of the desired learning experiences that are in line with the pupils' needs. The continuous training is also very important as it allows the teachers to keep their knowledge up-to-date, their skills developed, and their professionalism maintained amid the constant changes in the field of education. This study suggests schools and policymakers to improve teacher training programs with more energy, support the use of technology in education, and create a work environment that is conducive to collaboration and continuous professional development.



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INTRODUCTION

The quality of education is challenged with rapid and huge adjustments needed, as the world is undergoing a massive and fast ICT (Information and Communication Technology) development, especially in the role and competencies of teachers. Teachers in the current era need not only to be experts in their subjects but also to be able to handle digitally based learning processes efficiently (Alief et al., 2025). Such a situation is very applicable to the big cities in Indonesia, which are frequently considered the hubs of educational revolution and innovation. Teachers must be able to operate various digital platforms, create interactive teaching media, and adapt learning approaches to suit the characteristics of today's digital generation (Dacholfany et al., 2024). Without continuous competency development, teachers risk being left behind by the tide of change, which could ultimately stagnate the quality of education. Therefore, the role of teachers needs to transform from mere conveyors of information to innovative facilitators, motivators, and guides. Teachers' flexibility and their capability to do their work professionally, in particular, in an area with a multicultural student population and complex learning needs, are an indispensable asset in a constantly changing curriculum (Santoso et al., 2025). To be able to face the challenges of the 21st-century learning environment, teachers are required to engage in self-reflection and career development on a regular basis. Apart from being instructors, their position is becoming more and more tactical as they are also considered the leaders who will bring the change among the education system. With such a scenario, it becomes very important to dig deep into the multiple factors that affect teachers' competence so that the effort invested into improving the quality of education in the digital era would be at its best and sustainable (Fujiawan et al., 2023).

Digital literacy is one of the main factors that can enhance teacher competence. This literacy represents a person's ability to comprehend, evaluate, and implement information gleaned from various digital sources in a manner that is both efficient and ethical (Antoni & Mustafa, 2023). For the teachers, digital literacy not only involves the use of electronic gadgets for the teaching and learning procedure but also the capability to unify these gadgets so as to uplift the quality of learning (Mustafa & Afri, 2015). The teacher who manages to have digital literacy in an era of rapid technological advancement will be the one who will be better prepared to accept new, creative, and engaging learning approaches (Donal et al., 2019). The positive relationship between digital literacy and teacher competence has been supported by several researches as this literacy equips teachers to select learning media, plan teaching strategies, and assess students' learning outcomes, thus giving them more flexibility (Supriyanto et al., 2024). For example, the access to technology in urban areas like major cities in Indonesia is quite high; however, this is not always accompanied by digital literacy levels that are equally distributed. Digital literacy inequality can result in the mastery of learning technology, which is completely different even for the teachers who are in the same school environment (Susanto et al., 2023). Hence, it is very important to find out the extent of digital literacy that has an impact on teacher competence so as to be able to create the right interventions that would help teacher professionalism in the digital era develop (Yanto et al., 2023).

Besides digital literacy, pedagogical skills are also an important element that significantly affects a teacher's competency. Such skills cover the teacher's capacity to effectively plan, execute, and measure the learning process. Teachers who have high pedagogical skills can achieve great success in different ways such as through the effective handling of classes, adjusting the teaching methods as per the requirements and characteristics of the learners and also by establishing a learning environment that is friendly (Tannady et al., 2023). The connection between pedagogical skills and teacher competence is so strong that the essence of teacher professionalism is their capacity to bring out practices that are meaningful from the acquired knowledge. In big cities, students whose families come from various social, cultural, and economic backgrounds, the use of adaptive pedagogical skills is the only way for schools to be inclusive and efficient (Natalia et al., 2023). With the proper command of pedagogical skills, teachers become the facilitators of student-centered learning, the creators of the learning environment that promotes the development of creativity among students through the different activities and above all that they become the source of interest and motivation for learners. Thus, pedagogical skills have to be the main thing that is put into consideration in the process of measuring and developing teacher competency in a profound way (Sucipto et al., 2023).

One of the main points that lead to the level of teacher competency is the continuous professional development (Rahayu et al., 2019). This training is just like the professional development which is organized and carried out in a systematic and continuous manner throughout the career of a teacher. These programs may vary in their modalities, for example, they can be a workshop or a seminar, a web-based training program, or even a program for improving the academic qualification (Ramli et al., 2023). Through regular training, teachers not only have the opportunity to update their knowledge, polish their skills, and get acquainted with the newest learning strategies and student development, they also have the opportunity to do that. The need for this kind of training is becoming more and more urgent in the fast-changing environment of big cities. Teachers have to be ready for changes in the curriculum, the coming of new technological devices, and the complicated character of students which keeps changing (Antoni, 2014). The relationship between continuous professional development and the improvement of teacher competencies is very strong as training is a major tool that can be used to renew and enrich teaching practices. When training is done in a manner which reflects the actual situation in the field, the quality of teaching can be the first area that benefits from such kind of training including the pedagogical aspect, professionalism, and social skills. Therefore, it is important to explore more deeply the extent to which ongoing training contributes to strengthening teacher competency comprehensively (Reynaldo et al., 2022).

Based on this background, this study aims to examine how digital literacy, pedagogical skills, and ongoing training influence teacher competency. From a theoretical perspective, this research is expected to enrich the body of knowledge, particularly in developing teacher competency theories relevant to the demands of digital-based 21st-century education. The findings of this study can also serve as a foundation for academics in designing more holistic teacher development models that are tailored to current needs. Practically, the results of this study can be utilized by education policymakers to formulate more effective training programs that address the challenges faced by teachers, particularly in urban areas. Schools and educational institutions can also use the results of this study as a reference in designing ongoing teacher professional development programs. For teachers, this research can serve as a mirror to evaluate the extent to which their digital literacy, pedagogical skills, and involvement in training have supported competency improvement. Thus, this research not only contributes academically but also has a tangible impact on efforts to improve the quality of education in Indonesia.

METHOD

This study employed a qualitative approach with descriptive methods to explore in-depth the views, opinions, and experiences related to the influence of digital literacy, pedagogical skills, and ongoing training on teacher competency. Thirty teachers from various educational levels and school backgrounds in major cities in Indonesia were purposively selected to reflect the diversity of experiences and learning contexts. In addition to the teachers, principals from each institution were also interviewed, given their strategic position as direct superiors, making them a relevant source of information in assessing teacher competency. Data were collected through structured interviews to obtain systematic information, as well as in-depth interviews to further explore the informants' views and experiences. All data were then analyzed using thematic analysis, which encompasses transcription, coding, theme identification, and interpretation of meaning. To ensure the validity of the findings, this study employed triangulation, both from the source side by comparing data from teachers and principals, and from the technical side by comparing the results of structured and in-depth interviews, and conducting reconfirmation with informants (member checks) to ensure that the interpretations made truly reflect the reality on the ground.

RESULT AND DISCUSSION

According to the survey, teacher digital literacy is an effective lever to improve the skill level of teachers, notably in major cities of Indonesia. One-on-one interviews have revealed that most of the teachers have reported that their information technology mastery along with their ability to use digital platforms have been the major drivers of the learning process becoming more efficient. A teacher who is digitally literate is likely to be the one who can plan the learning more interactive, engaging, and updated with the learning of today's students who are technology-savvy. They also find it easier to access a variety of learning resources, update their knowledge on their own, and conduct online learning

evaluations. Besides that, these digital skills are also serving as facilities for administration in the classroom and communications with students and their parents. The interviewed principals pointed out that the teachers with a high digital literacy level are the ones who are more flexible and creative. The staff is very good at using Learning Management Systems (LMS), as well as video conference software and various other learning tools. Some teachers are even the main drivers of the digital community of their schools, the supporters who help the co-workers to be technologically skilled. Consequently, these results provide evidence that digital literacy not only contributes to communication skills but also motivates the collaboration of the teacher and the development of learning culture. Thus, digital literacy can be considered an important factor in strengthening professional teachers' competence, especially in urban areas where rapid and continuous technological innovations are required.

The study also came out with the result that teaching skill is an influential factor for teacher's abilities. The teachers who were asked to comment gave the answer that their capability to plan, organize, and assess the learning process is the key factor for the success of teaching in the class. Good pedagogical skills will open various ways for teachers to explore all the strengths of students. As a result, in such a learning process, students will not only feel the joy of participation but also will find the learning process itself more interesting. For a good many, management is a chore, however with teaching materials this is rarely the case, and besides all, there is a great motivation for the teachers to push forward and learn more and better topics. Around the same time, the schoolmasters as the respondents of the interview, also point out the role of pedagogical skills as the base of the whole potential of teachers. Referring to the fact that a teacher with good teaching skills is a good communicator, in possession of class management skills and capable of presenting the material in a way that is comprehensible, they also add that such a teacher can do it successfully because of and through the use of a good teaching strategy. Moreover, practicing teachers in schools should take pride in it as well because they become habituated to doing a constant self-reflection and are always ready to change the tactics if the class situation so requires. In the large cities where students represent various social, cultural, and ability backgrounds, it is imperative that teachers develop these pedagogical skills. Also, a teacher who is competently skillful in pedagogy will be able to turn the challenging distance mode of instruction into a purposeful and inspiring learning mode. These results offer conclusive arguments that teaching methodologies are not merely an item on the teaching profession's menu but a crucial ingredient in the enhancement of education quality, especially in complicated and competitive urban environments.

Besides digital literacy and teaching skills, the research emphasized the need for continuous training to enhance the teaching competency. The teachers who took part in the training felt it quite beneficial to upgrading their knowledge, refining their skills, and remaining abreast with the latest changes in curriculum and learning technology. Teachers who regularly participate in training feel better prepared to face changes in education policy and are able to implement more innovative and tailored learning methods in the classroom. Training that is practical, applicable, and aligned with real-world challenges is highly appreciated because it directly impacts the quality of teaching. The interviewed principals also admitted that an ongoing training has a key role in maintaining the professionalism of teachers and increasing their confidence in the learning process. A few teachers even showed the will to share the knowledge obtained in the training with the colleagues and to become members of the teacher learning communities in their schools. Nevertheless, teachers also mentioned that the efficiency of the training largely depends on the material's pertinence, the way of delivery, and the organizer's commitment. Incorrectly conceptualized or unmotivatingly delivered training is considered to have little impact on learners. Consequently, the issue of designing properly targeted, permanent, and teachers' practice-oriented training programs is imperative. These results emphasize the significance of institutional and political support for educators in terms of access to appropriate professional training, especially for urban-area teachers who are dealing with the dynamics and complications of 21st-century education.

CONCLUSION

This research has been carried out and its results show that among others digital literacy, pedagogical skills, and continuous training have a positive impact on teacher competence. The power of digital literacy is a tool to make the learning process more effective and attractive for the teacher which

consequently will keep the teacher updated with the latest technology in the field of education. Likewise the pedagogical skills increase the teachers' ability to effectively plan and manage the learning process that meets the needs of the students and reflects their participation. Furthermore, training has continually shown to be a valuable tool for teachers to update their knowledge, improve their skills and keep their professionalism in the education world which is full of changes. From these results, the school and education authorities should take it seriously to provide real and continuous training and be the first to use technology in learning effectively. Besides, it is really important to make the mentoring program pedagogical more effective and develop a school culture that is supportive of changes and the cooperation of teachers. This way, the development of teacher skills will be not only long-lasting but will also be compatible with the changing nature of modern education.

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