

# A MODEL OF ELEMENTARY SCHOOL TEACHERS' PROFESSIONAL COMPETENCE AS AN EFFORT TO DEVELOP DIGITAL LITERACY

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**Abstract.** This paper is based on the premise that teachers must possess pedagogical competence, personal competence, social competence, and professional competence. These four competencies are holistic and constitute an integrated whole that characterizes professional teachers. The aim of this study is to develop a model of professional competence for elementary school teachers in fostering digital literacy. The research method used is a descriptive method with a literature review approach. The findings indicate that the professional competence of elementary school teachers in building digital literacy is still not optimal. The challenges faced by teachers in implementing professional competence to foster digital literacy include, among others, the limited availability of educational facilities that support the learning process. Efforts made by elementary school teachers to implement professional competence in developing digital literacy include fulfilling the need for adequate educational facilities that are relevant to the demands and conditions of digital era learning. The proposed model of professional competence for teachers in facing the digital era includes: 1) Internet Accessibility; 2) Mobile Devices; 3) Interactive Multimedia; and 4) Digital Learning Platforms.

Keywords: Model, Professional Competence, Elementary School Teachers, Literacy, Digital.

## Introduction

An education system has a close relationship with educators or what we often call teachers. When teachers have adequate and good competence, it can improve the quality of education that is currently running. To face various challenges that are more complex than the previous era, effective development is needed in an educator. Therefore, improving the quality of professional teachers is needed by Indonesia in the 21st century which is called the digital era.

Teachers are one of the most important components in a learning process. Without a teacher, a learning process will not run well. Hasanah Z. & Himami, (2021:9) stated that the task of a teacher is not only to transfer knowledge to students, but a teacher towards students must be able to teach, guide, direct, train, educate, assess, and evaluate students in the learning process, therefore teachers are the spearhead in a learning process, especially for student success.

According to UU Number 14 of 2005 "Teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students in early childhood education through formal education, elementary education, and secondary education." Furthermore, in chapter 10 verse (1) of UU Number 14 of 2005 "Teachers and Lecturers mandate that teachers must have pedagogical competence, personality competence, social competence, and professional competence. The four competencies are holistic and are a unity that characterizes professional teachers." Pedagogical competence is the ability that teachers must have regarding the characteristics of students seen from various aspects such as physical, moral, social, cultural, emotional, and intellectual. Personality competence is a feeling of pride in the task entrusted to him to prepare the quality of the nation's future generation. Social competence is the ability to socialize with the community, in order to implement an effective learning process.

These competencies can be the basic capital in improving the ability to become a professional teacher. It should be noted that education is increasingly developing in accordance with the times. Therefore, the ability of teachers to adapt to the times needs to be done in this 21st century.

Prayogi & Estetika (2019:144) stated that the professionalism of educators in the 21st century is not merely expertise in a particular topic. Rather, they must be experts in finding out together with students, knowing how to collaborate, and experts in accompanying students to find new discoveries in every learning process. Thus, it is necessary to understand together that professional teachers must have other abilities such as abilities in the digital field. Prayogi & Estetika (2019:149) stated that the digital competence of educators is closely related to the ability of educators to use information and communication technology based on pedagogical principles by realizing its two implications for educational methodology. Currently, it can be said that almost all fields, from tourism to education, use digital media. When teachers have good abilities in applying digital media in learning, the learning that takes place will be fun and follow the ever-changing era.

In addition to digital competencies that must be improved, professional teachers in the digital era are also expected to be able to organize learning based on the four pillars of learning recommended by the UNESCO International Commission for Education. The four pillars are: 1. Learning to know, the process of learning to know, understand, and appreciate the ways of acquiring knowledge and education that provide students with scientific knowledge, 2. Learning to be, education must provide provisions for self-development, 3. Learning to do, learning to do or do something to develop skills and abilities. 4. Learning to live together, education provides provisions to be able to live together with the surrounding community so that tolerance is achieved between fellow human beings. When an educator is expected to become a professional teacher in the digital era with various abilities in him, effective guidance is needed for teachers.

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Digital transformation in the world of education has brought new challenges for elementary school teachers in developing digital literacy competencies. Digital literacy not only includes the ability to use technological devices, but also involves critical thinking skills in evaluating digital information, as well as pedagogical skills in integrating technology effectively in learning. However, various studies show that elementary school teachers still face a number of problems in developing digital literacy, including:

1. **Low Level of Digital Literacy of Teachers.** Many elementary school teachers do not yet have an adequate understanding of the concept of digital literacy. They have difficulty distinguishing between the technical use of technology and meaningful pedagogical application. Rachman et al. (2023) showed that teachers need intensive training in order to optimally integrate digital literacy into Independent Curriculum-based learning. Without this understanding, technology is only used as a visual aid, not as a means to build students' critical and collaborative thinking skills.
2. **Limited Access and Technology Infrastructure.** Infrastructure problems, especially in 3T areas (underdeveloped/*tertinggal*, frontier/*terdepan*, and outermost/*terluar*), are the main obstacles to the implementation of digital literacy. Suartana et al. (2023) emphasized that limited access to the internet and digital devices causes a gap in digital literacy between schools in urban and rural areas. This hinders teachers' efforts to build digital habits and culture in schools.
3. **Lack of Professional Training and Mentoring.** Training related to digital literacy is generally one-way, not sustainable, and does not address the specific needs of elementary school teachers. Amrizal (2021) noted that the workshop held at SDN 12 Kampung Batu Dalam was indeed able to improve teachers' technical skills in using email and browsers, but did not significantly improve their ability to develop digital teaching tools based on strong pedagogy.
4. **Low Institutional Support and Supervision.** Digital literacy requires a supportive ecosystem, both from the principal, supervisors, and colleagues. However, a study by Rahmawati (2023) in the Journal of Educational Management showed that the majority of elementary school teachers did not receive supervision or feedback on their digital practices in the classroom. This has an impact on stagnation of professionalism and a lack of motivation to innovate.
5. **Technology Anxiety and Conventional Work Culture.** Some elementary school teachers show resistance to technological change due to lack of experience and confidence in using digital tools. Wardani & Budiono (2023) noted that although teachers try to introduce digital literacy in the classroom, many of them are still hesitant to involve students in technology exploration, worried about negative impacts, or technical errors that occur during the learning process.

The purpose of writing this book paper is to analyze and describe 1) A description of teachers' professional competence in building digital literacy; 2) Obstacles faced by teachers in implementing teachers' professional competence in building digital literacy; 3) Efforts made by teachers in facing obstacles to implementing teachers' professional competence through digital literacy; 4) Model of teachers' professional competence in building digital literacy.

#### **Research methods**

This study uses a Library Research approach. According to Mestika Zed in Herman, M., & Nur, M. (2024), Library study or literature can be interpreted as a series of activities related to the method of collecting library data, reading and recording and processing research materials. This library research method is used to formulate the concept of the Elementary School Teacher Professional Competency Model as an Effort to Build Digital Literacy as an innovative key to improving teacher professional competence. The steps in library research according to Kuhlthau in Herman, M., & Nur, M. (2024) are as follows: (1). Topic selection (2). Information exploration; (3). Determining the focus of the research (4). Collection of data sources (5). Preparation of data presentation (6). Preparation of reports

The data sources used as the material for this research are books, journals, and internet sites related to the topic of the Elementary School Teacher Professional Competency Model as an Effort to Build Digital Literacy.

The data collection technique in this study is documentation, namely searching for data on things or variables in the form of notes, books, papers or articles, journals and so on Arikunto in Andriyani S. (2017). While the research instruments in this study are in the form of a checklist of research material classification, writing scheme/map and research note format.

#### **Results and Discussion**

Professional competence of teachers in building digital literacy in Elementary Schools, seen from aspects that reflect professional competence of teachers, it is known that most teachers have developed professional competence of teachers, because of the nine indicators that reflect professional competence of teachers, namely: mastering the foundations of education; understanding the field of educational psychology; mastering subject matter; being able to apply various methodologies and learning strategies; being able to design and utilize various media and learning resources; being able to carry out learning evaluations; being able to compile learning programs; being able to implement supporting elements: and being able to carry out research and scientific thinking to improve performance. However, there are some teachers who have not maximized their development of one of the indicators of professional competence of teachers. This is indicated by the teacher's understanding that this is no longer his era, the teacher assumes that the thoughts of young teachers are more relevant to current conditions and times. Of course, this is very contrary to the condition of the digital era, so that teachers are required to always respond to technological developments and educational trends. Some teachers are also busy with various additional tasks outside of their duties as teachers, so that in carrying out developments related to their professional duties in this digital era, teachers are required to continue to be adaptive to

technological advances that tend to be less than optimal. The lack of educational facilities that support the Learning Process is another factor that makes it less than optimal in developing teacher professional competence. The results above are in line with Suparlan's statement (in Imah C. 2018).

The minimum competencies that teachers must have include: mastering the material, methods and assessment systems, but if it is not based on mastery of the teacher's personality and other skills, the teacher will not be able to carry out his duties professionally. "If teachers master and implement these competencies in the learning process, both inside and outside of school, then the teacher is expected to be an effective teacher, a teacher who is able to carry out his professional duties well in facing the digital era. The results of the study above are in line with the results of research conducted by Liu Baker & Milman (2014) entitled "Technological innovation in twenty first Century multicultural teacher preparation". In this study, it discusses the professionalism of digital era teachers as shown by the formation of the concept of diversity and pedagogical approaches, supporting the achievement of digital era learning objectives.

Obstacles in implementing the professional competence of elementary school teachers in building digital literacy include additional tasks assigned to teachers outside their main duties as teachers, so that teachers are unable to develop professional competence in facing the digital era optimally. The lack of optimal teacher motivation to develop themselves is an obstacle in optimizing the implementation of teacher professional competence. In addition, the suboptimal function of teacher professional organizations such as the Teacher Working Group (KKG) at the cluster and sub-district levels is another obstacle that has an impact on the less than optimal implementation of teacher professional competence in facing the digital era. The lack of educational facilities that support the Learning Process is also an obstacle in implementing teacher professional competence in facing the digital era. This is in line with Uzer's opinion in Saripundin (2014: 71), that: "The less than optimal development of teacher professional competence is due to weaknesses in the teachers themselves, including the low level of teacher professional competence such as teacher mastery of material and teaching methods is still below standard and the lack of teacher work motivation in improving their professional competence." The results of this study are also in line with research conducted by Nurkholis Yuliejantiningih, and Sunandar in 2017 entitled Effectiveness of Continuous Professional Development for Teachers. The results of the study showed that there were several factors that made it less than optimal in developing teacher professional competence.

The efforts made by teachers to optimize the implementation of professional competence in building digital literacy include equalizing additional tasks assigned to teachers and providing appreciation for additional tasks assigned, both morally and materially. Studies on the Teachers and Lecturers Law Number 14 of 2005 and Government Regulation No. 19/2017 and providing motivation from the principal to teachers to develop themselves by participating in training that supports teacher professional competence are carried out as other efforts to optimize the development of teacher professional competence in facing the digital era. Learning supervision is also carried out as a parameter in the development of teacher professional competence which will later be used as a reference in efforts to optimize the development of teacher professional competence. Participation in Teacher Working Group (KKG) activities at the school, cluster, and sub-district levels and the fulfillment of the need for adequate educational facilities that are relevant to the demands and current learning situations are expected to be improved through planning, management and utilization of available funds, both from self-help and government subsidies, so that the development of teacher professional competence in facing the digital era can be optimized.

This is in line with the opinion of Indah and Aswatun H (2020:78) "ways that can be done to improve teacher professional competence can be through 1) Teacher Work Strengthening (PKG), 2) Teacher Working Group (KKG), and 3) teachers can actively participate in the Indonesian Teachers Association (PGRI) organization". The results of this study are also in line with research conducted by Nurkholis Yuliejantiningih, and Sunandar in 2017 entitled Effectiveness of Continuous Professional Development for Teachers. The results of the study showed that the implementation of Continuous Professional Development was carried out in four forms, namely: (a) Structured activities in the form of trainers, workshops, seminars and others. (b) Mentoring for each teacher or principal carried out by the facilitator. (c) Through learning communities such as activities in KKG or MGMP and (d) independent activities carried out by each teacher and induction or internship programs by novice teachers to senior teachers.

The Importance of Digital Literacy in Learning. Rachman et al. (2023) emphasized that the development of digitalization of education requires teachers to develop digital literacy in learning. Through training and mentoring, teachers can design innovative learning based on digital literacy, which has been proven to increase their understanding and knowledge in designing innovative learning. Strengthening Teachers' Digital Literacy Competencies. Suartana et al. (2023) stated that digital literacy is the knowledge and ability to use digital media, communication tools, or networks to find, assess, use and create information. Skills and understanding related to digital literacy need to be provided early on so that children avoid the negative impacts of technology and can optimally utilize the potential of using technology to support learning.

The professional competency model of teachers in building digital literacy has made technology the most important part of the learning process. We can observe the rapid development of technology in terms of; (1) Internet Accessibility: The Internet has become one of the most important discoveries in the digital era. Increasingly widespread internet accessibility allows teachers and students to access various educational resources online. Information, learning materials, and educational tools are readily available, allowing unlimited access to knowledge and information; (2) Mobile Devices: Advances in mobile device technology such as smartphones and tablets have changed the way we access information and interact with technology. Mobile devices provide flexibility for teachers and students to learn anywhere and anytime. Educational applications and platforms that can be accessed via mobile devices also facilitate

technology-based learning; (3) Interactive Multimedia: The development of Technology, Information and Communication has enabled the use of interactive multimedia in learning. Teachers can use video, audio, images, animations, and other interactive elements to explain concepts more clearly and interestingly. This helps improve student understanding and enriches the learning experience; (4) Digital Learning Platform: Digital learning platforms provide a virtual environment that allows teachers and students to interact and collaborate in learning. These platforms allow the use of features such as discussion forums, online assignments, digital exams, and virtual classes. This supports electronic collection, assessment, and feedback. The development of information and communication technology has provided great potential in increasing the effectiveness and efficiency of learning. However, challenges such as the digital divide, the tendency to misuse technology, and the importance of digital skills needed to optimize the use of technology, also need to be addressed in the implementation of innovative learning models in the digital era.

The teacher's professional competency model characterized by the implementation of innovative learning models encourages active collaboration between students. This involves cooperation, discussion, and interaction between students in creating better understanding. This collaboration can occur directly or through an online learning platform. This model is designed to optimize the student learning experience by utilizing technology and approaches that are in accordance with the demands of the times. The goal is to increase student motivation, understanding, involvement, and skills in learning. The characteristics of innovative learning models refer to new and creative learning approaches and strategies in facilitating the student learning process which are characterized by; (1) Active and Participatory: Innovative learning models prioritize the active role of students in learning. Students are encouraged to participate directly in the learning process, such as exploring, creating, and discussing. Teachers act as facilitators or guides in supporting students in developing understanding and skills; (2) Student-Centered: Innovative learning models place students as the main focus of learning. Learning is focused on the needs, interests, and abilities of students. Teachers strive to understand students individually and facilitate learning that is in accordance with their characteristics and learning styles; (3) Use of Technology: Innovative learning models integrate technology into the learning process. Technology is used to expand access to information, enhance interaction and collaboration, and enrich the learning experience. This can involve the use of mobile devices, online learning platforms, educational applications, interactive multimedia, and other technological support tools. This is in line with the opinion of Budianti et al., (2022) who stated that through collaborative efforts involving educators, educational institutions, government, and other related parties, it is hoped that the implementation of innovative learning models can be a strong foundation for improving the quality of education in the digital era. By strengthening the professional competence of teachers, we can ensure that our students are ready to face the challenges and opportunities offered by an increasingly connected world and evolving technology. The results of this study are also in line with research conducted by Lestari D. W. and Kurnia H. in 2023 entitled Implementation of Innovative Learning Models to Improve Teacher Professional Competence in the Digital Era. The results of the study indicate that the implementation of innovative learning models is an important step in improving the professional competence of teachers in the digital era. In an era dominated by information and communication technology, teachers need to face challenges and take advantage of opportunities offered by technological developments to improve the quality of learning. In this article, we have discussed the development of information and communication technology, its impact on education, the challenges faced by teachers in the digital era, the concept and characteristics of innovative learning models, and the professional competence of teachers in the digital era. Innovative learning models offer a more responsive, collaborative, and adaptive approach, allowing teachers to increase student engagement, expand access to learning resources, and develop students' technological, collaborative, and creative skills.

### **Conclusions and Recommendations**

Based on the discussion that has been described in the previous chapter, several conclusions can be drawn according to the problems studied, as follows: The professional competence of elementary school teachers is reviewed from the aspects of mastering the foundations of education, understanding the field of educational psychology, mastering subject matter, being able to apply various methodologies and learning strategies, being able to design and utilize various media and learning resources, being able to carry out learning evaluations, being able to compile learning programs, being able to implement supporting elements, being able to carry out research and scientific thinking to improve performance that has been developed well by teachers. However, there are aspects that need to be improved, namely the ability and motivation of teachers to develop themselves in building digital literacy.

Obstacles faced by elementary school teachers in implementing professional teacher competencies in building digital literacy are as follows: a) Additional tasks assigned to teachers are not equal and outside their duties as educators. In addition, obstacles occur due to less than optimal motivation to develop themselves in facing the digital era; b) The function of professional teacher organizations such as the Teacher Working Group (KKG) at the cluster and sub-district levels is not optimal; c) Lack of educational facilities that support the Learning Process.

Efforts made by elementary school teachers in implementing professional teacher competencies to build digital literacy are as follows: a) Equalizing additional tasks assigned to teachers and providing appreciation for additional tasks assigned both morally and materially. Study of Law on Teachers and Lecturers Number 14 of 2005 and Government Regulation No. 19/2017 and Providing motivation from the principal to teachers to develop themselves by participating in training that supports professional teacher competencies in facing the digital era. Teacher supervision is also carried out as another effort to optimize the development of professional teacher competencies; b) Involving teachers in Teacher

Working Group (KKG) activities at school, cluster and sub-district levels; c) Fulfillment of the need for adequate educational facilities that are relevant to the demands and learning situations of the digital era is expected to be improved through planning, management and utilization of available funds, both from self-help and government subsidies.

The professional competency model of elementary school teachers in building digital literacy is as follows: (1) Internet Accessibility: The Internet has become one of the most important inventions in the digital era. Increasingly widespread internet accessibility allows teachers and students to access various educational resources online; (2) Mobile Devices: Advances in mobile device technology such as smartphones and 10 tablets have changed the way we access information and interact with technology; (3) Interactive Multimedia: The development of ICT has enabled the use of interactive multimedia in learning. Teachers can use video, audio, images, animations, and other interactive elements to explain concepts more clearly and interestingly; (4) Digital Learning Platform: Digital learning platforms provide a virtual environment that allows teachers and students to interact and collaborate in learning. This platform allows the use of features such as discussion forums, online assignments, digital exams, and virtual classes.

The professional competence of elementary school teachers in building digital literacy is a crucial aspect in improving the quality of learning in today's digital era. The following are recommendations obtained from the conclusions above: 1) The Importance of Digital Literacy in Learning; 2) Strengthening Teachers' Digital Literacy Competencies; 3) Teacher Strategies are Needed in Implementing Digital Literacy; 4) Improving Competence Through Workshops; 5) Integration of Digital Literacy in Building 8-Dimensional Graduates.

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