

Analysis of Teacher Competence in Elementary School Curriculum Development

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Abstract: The development of elementary school curricula is a strategic process in improving the quality of education, the success of which is greatly influenced by teacher competence. Teachers not only play a role as curriculum implementers, but also as curriculum coordinators, developers, and researchers who directly deal with the needs of students and the school environment context. This study aims to examine teacher competence in elementary school curriculum development, including pedagogical, professional, social, and personality competencies, particularly in the context of implementing the Merdeka Curriculum. This study uses a qualitative approach with a library research method, through searching and analyzing books, scientific journal articles, and relevant and up-to-date education policy documents. The results of the study show that teachers' pedagogical and professional competencies are the main foundation in designing learning that is in accordance with the characteristics of elementary school students, while social and personality competencies play an important role in supporting collaboration, innovation, and teachers' readiness to face curriculum changes. However, various challenges in curriculum development were still found, such as teachers' limited understanding of the Merdeka Curriculum philosophy, administrative burdens, and gaps in access to training and supporting facilities. Therefore, systematic and continuous efforts are needed to improve teacher competencies.

Keywords: Teacher competency, development, elementary school, merdeka curriculum

A. Introduction

The learning curriculum is dynamic, adapting to changes and trends over time (OECD, 2019; Voogt et al., 2013). Therefore, it is appropriate that the curriculum undergoes a development process according to needs for improvement (Fullan, 2007). Many parties will be involved in the curriculum development process, including the government (central and regional), education and curriculum experts, schools (principals, teachers, and school committees), parents, community leaders, and the students themselves (Print, 1993; Marsh, 2009). Each has a specific role, from policy development to implementation, evaluation, and support for learning.

As actors in the implementation of learning, schools play a crucial role in curriculum development (OECD, 2019). Principals, teachers, students, and parents are the parties directly involved in implementing the school curriculum, especially in elementary schools (UNESCO, 2020). At the elementary school level, teachers and parents still play a significant

role in learning.

The role of teachers in elementary school curriculum development is crucial (Darling-Hammond et al., 2017). Teachers serve as: 1) implementers; 2) adapters; 3) developers; and 4) researchers (Ira Fatmawati, 2021). As curriculum implementers, the role of teachers is indeed not very broad. However, teachers not only implement the existing curriculum but also adapt it to student needs and the local context (Voogt et al., 2013). Teachers are the ones who understand students most directly, so they can incorporate student needs and characteristics into the curriculum. Teachers are the ones who manage the effectiveness of learning (Shulman, 1987). Teachers can design and implement innovative, relevant, and enjoyable learning to support student understanding (Hattie, 2009). Teachers are also the ones who can implement a meaningful curriculum for students. Without teachers as implementers and developers, the curriculum will be meaningless and ineffective as an educational tool (Fullan, 2007). And in the implementation of Independent Learning, teachers have a central role in developing the quality of learning, designing strategies relevant to 21st-century skills, and facilitating students' learning freedom (OECD, 2019; Schleicher, 2018).

An effective curriculum is one that is relevant for a specific time period (OECD, 2019). It is adapted to current developments and interaction patterns. The current learning process can no longer be implemented as it was 25 years ago. This is because human needs and how they are met have changed. This is also in line with the development of science in the contemporary era. Learning resources are now readily available, so learning can no longer rely solely on a single source (UNESCO, 2020; Zhao, 2012). Students today have greater access to information, so the curriculum must facilitate these habits to prevent students from becoming bored with the activities they undertake at school (UNESCO, 2020; OECD, 2019).

Curriculum development is key to improving the quality of education, and the success of educational policies is reflected in curriculum implementation (OECD, 2019). According to Law Number 20 of 2003 concerning the National Education System, the curriculum is a series of learning plans that include objectives, materials, and teaching methods, and is used as a guide in implementing the learning process to achieve national education goals. The history of the curriculum in Indonesia has recorded various changes, including a revision in 2018 to the Revised 2013 Curriculum and the emergence of the Independent Curriculum (Harwisaputra et al., 2024). Given the extraordinary role of the curriculum development process, efforts are needed to improve teacher competency so that it can be maximized in its implementation.

The purpose of this paper is to provide an overview of the competencies teachers must possess in the curriculum development process in elementary schools, encompassing knowledge, skills, and attitudes. Knowledge is often referred to as pedagogical and professional, skills as social, and attitudes as personality traits. In this context, curriculum development at the elementary school level is crucial. This is because elementary school is the longest learning period and the foundation for all processes of developing understanding, character, and skills. Furthermore, the view that elementary school is the age range of children 6–12 years old has its own unique characteristics. The characteristics of intellectual development in children aged 6–7 years old indicate that their thinking is still relatively concrete. At this stage, children begin to group objects by category, such as

color, shape, and size. Furthermore, children already possess basic reading and writing skills, such as recognizing letters, syllables, and simple words. They also begin to understand how to use language to communicate better (Suryani, 2023).

In the next stage, Piaget's developmental theory explains that elementary school-aged children, generally aged 7 to 11, are in the third stage of cognitive development he proposed, the concrete operational stage. At this stage, children are considered capable of logical reasoning about concrete things, but they are not yet capable of reasoning about abstract concepts (Trianingsih, 2016). The emotional development phase in elementary school-aged children begins at age 6, when children begin to learn applicable rules and regulations. They begin to learn about justice and secrets. Elementary school children begin to understand more complex emotional concepts such as jealousy, pride, sadness, and loss. At age 7, their emotional development begins to internalize feelings of shame and pride (Zakiyah, 2024).

The hallmark of this phase is the increasing intensity of children's relationships with their peers and a decrease in their dependence on their families. In this phase, social relationships and contacts improve, resulting in children enjoying playing and talking more within their social environment. From this explanation, it can be concluded that peers play a crucial role in children's social development, as through them children can learn and gain information about the world outside the family (Murni, 2017). Therefore, a curriculum concept is needed that can accommodate the needs of elementary school students, both nationally and based on local wisdom (OECD, 2019; UNESCO, 2020)

B. Methods

This study employs a qualitative approach with a descriptive research design. Descriptive qualitative methods are approaches that seek to understand phenomena in depth, with the researcher acting as the primary instrument in the process of data collection and analysis. Creswell and Creswell (2018) explain that qualitative research is used to explore and understand meanings derived from individuals or groups regarding social or educational issues. This approach emphasizes the participants' perspectives, process understanding, and the interpretation of meanings from the phenomena being studied.

In its implementation, qualitative research is supported by a theoretical framework that functions as a conceptual foundation to ensure that research findings remain relevant to the empirical facts discovered. Denzin and Lincoln (2018) state that qualitative research is interpretive in nature, meaning that researchers play an active role in interpreting data based on the surrounding social and cultural contexts. Meanwhile, descriptive research aims to provide a systematic, factual, and accurate description of certain social conditions, including the characteristics of a population or the phenomenon under study (Scott, 2017).

The data used in this article are secondary data obtained from various sources, such as academic books, national and international scientific journal articles, previous research findings, and educational policy documents related to curriculum and teacher competencies. The selection of sources was conducted selectively by considering topic relevance, scientific validity, and the recency of references to support a comprehensive analysis.

Data collection techniques were carried out through a systematic literature review. The stages included identifying key themes, searching for relevant references, and organizing data based on the focus of the study, such as curriculum concepts, curriculum development, models and principles of curriculum development, and dimensions of teacher competence in its implementation at the elementary school level.

Data analysis was conducted using descriptive qualitative analysis techniques referring to the interactive analysis model proposed by Miles, Huberman, and Saldaña (2014), which consists of three main stages: data reduction, data display, and conclusion drawing. In the data reduction stage, the researcher selected and simplified data relevant to the research focus. In the data display stage, the information was systematically organized in the form of a narrative description. Furthermore, in the conclusion drawing stage, the researcher interpreted the data using a claim–citation–analysis pattern, in which each statement is supported by scientific sources and followed by critical analysis.

To ensure the validity and credibility of the data, this study employed source triangulation techniques. Denzin (1978) explains that triangulation is a strategy to enhance research credibility by comparing various data sources, theories, or methods. In this study, triangulation was conducted by comparing references from different authors, different time contexts, and both national and international sources. The results of the analysis are then presented in a systematic and logical manner, providing a comprehensive understanding of the importance of teacher competence in elementary school curriculum development.

C. Results and Discussion

Based on a literature review of various books, journal articles, and education policy documents, it is clear that teacher competency plays a crucial role in the successful development and implementation of the elementary school curriculum (OECD, 2019; Darling-Hammond et al., 2017; Shulman, 1987). Teachers are positioned not only as curriculum implementers but also as curriculum aligners, developers, and researchers who directly address student needs and the school's socio-cultural context (Voogt et al., 2013; Fullan, 2007). Findings from various sources indicate that curriculum effectiveness depends heavily on teachers' ability to understand, translate, and adapt the curriculum into classroom learning practices (Kunter et al., 2013).

The study results show that pedagogical competence is the primary foundation for elementary school curriculum development (Hattie, 2009; UNESCO, 2020). Teachers who have a deep understanding of the developmental characteristics of elementary school-aged students are able to design learning that is appropriate to their concrete thinking stage, emotional needs, and social development. This competence is reflected in teachers' ability to analyze learning needs, design student-centered learning, and implement meaningful and contextual learning (Shulman, 1987). In the context of the Independent Curriculum, teachers' pedagogical competence is increasingly required to implement differentiated learning and continuous formative assessment (Tomlinson, 2014).

In addition to pedagogical competence, professional competence is also a crucial factor in curriculum development (OECD, 2019; Kunter et al., 2013). Studies show that teachers who master the structure and components of the curriculum, such as learning outcomes,

learning objectives, and teaching modules, tend to be better able to develop relevant and flexible learning tools (Voogt et al., 2013). However, several studies reviewed indicate that some teachers still experience difficulties in understanding the philosophy of the Independent Curriculum and in developing innovative teaching tools (Fullan, 2007). This indicates that continuous improvement of teachers' professional competence through applicable training and intensive mentoring is still needed (Darling-Hammond et al., 2017).

Teachers' social competence also plays a significant role in elementary school curriculum development (UNESCO, 2020; Vangrieken et al., 2015). Studies show that teachers' involvement in collaborative work, whether with fellow teachers, principals, parents, or the community, can enrich the curriculum development process. Through effective communication and collaboration, teachers can integrate local wisdom values and the needs of the surrounding environment into the school curriculum (Fullan, 2007). This aligns with the principle of relevance in curriculum development, which emphasizes the alignment of educational programs with the needs of students and the community.

Meanwhile, teacher personality competencies play a role in shaping their professional attitudes, commitment, and work ethic in implementing the curriculum (Day & Gu, 2010). Studies show that teachers who are open to change, innovative, and motivated by lifelong learning tend to be better prepared to face the dynamics of curriculum change (OECD, 2019). These personality competencies are a key supporting factor in overcoming resistance to curriculum change, which is still found among some teachers.

Further discussion shows that in practice, elementary school curriculum development still faces various challenges, such as teachers' limited understanding of the new curriculum, high administrative burdens, limited facilities and infrastructure, and disparities in access to training, particularly in certain regions (OECD, 2019). These challenges impact the suboptimal role of teachers as curriculum developers and researchers. Nevertheless, the literature review also reveals good practices, where teachers are beginning to innovate through the development of teaching modules, the use of digital technology, and the implementation of project-based learning, in line with the spirit of the Independent Curriculum (Ertmer & Ottenbreit-Leftwich, 2010).

Thus, the results of this study confirm that elementary school curriculum development cannot be separated from the comprehensive improvement of teacher competencies, encompassing pedagogical, professional, social, and personality competencies (Darling-Hammond et al., 2017; Kunter et al., 2013). These four competencies are interrelated and must be developed in a balanced manner to enable teachers to optimally carry out their roles in designing, implementing, and evaluating the curriculum. Therefore, systemic support from the government, schools, and education stakeholders is needed to create a sustainable and contextual teacher competency development ecosystem (OECD, 2019; UNESCO, 2020).

Teacher Competence in Elementary School Curriculum Development

Research results indicate that teacher competence plays a central role in elementary school curriculum development (Kunter et al., 2013). Competence, encompassing pedagogical, professional, social, and personality aspects, has been shown to influence teachers' ability to plan, implement, and evaluate the curriculum effectively. This finding confirms that curriculum quality is highly dependent on the capacity of teachers as the primary actors in

the learning process.

This finding aligns with Mulyasa's opinion (Mulyasa, 2013), which states that teacher competence is a combination of knowledge, skills, and attitudes reflected in teachers' professional performance. Without adequate competence, the curriculum cannot be implemented optimally, even if it has been systematically designed.

Teacher Pedagogical Competence and Its Relevance to Student Characteristics

Research results indicate that elementary school teachers generally have a basic understanding of student developmental characteristics. Teachers are able to adapt learning to the cognitive and emotional developmental stages of elementary school-aged children, particularly those at the concrete operational stage. However, the implementation of fully student-centered learning has not been consistently implemented.

This finding aligns with Piaget's theory (Piaget, 1972), which states that children aged 7–11 are in the concrete operational stage, requiring contextual learning based on real experiences. Furthermore, Hamalik emphasized that teacher pedagogical competence is the foundation for designing meaningful learning experiences (Hamalik, 2013). Therefore, teacher pedagogical competence is crucial for the success of the curriculum in addressing students' learning needs.

Teacher Professional Competence in the Implementation of the Independent Curriculum

Research results indicate that teachers understand the basic structure of the curriculum and are able to develop learning tools such as syllabi, teaching modules, and lesson plans. However, limitations remain in the development of authentic assessments and the implementation of differentiated learning, particularly in the context of the Independent Curriculum.

These findings support Kunandar's opinion that teacher professional competence relates not only to mastery of material but also to the ability to develop and adapt the curriculum to real-world classroom conditions (Kunter et al., 2013). Sukmadinata also emphasized that teachers are essentially curriculum planners and developers at the operational level (Fullan, 2007). Therefore, strengthening teacher professional competence is crucial for the successful implementation of the Independent Curriculum.

Teacher Social Competence in Curriculum Development

Research results indicate that teachers have collaborated with school principals, colleagues, and parents to support curriculum development. This collaboration contributes to adapting the curriculum to the needs of students and the school environment. However, broader community involvement remains limited.

This finding aligns with Suparlan's opinion that curriculum development is a collective responsibility involving various stakeholders (Vangrieken et al., 2015). Teacher social competence is a crucial factor in bridging the interests of schools, parents, and the community so that the developed curriculum has social and contextual relevance.

Teacher Personality Competence as a Foundation for Curriculum Development

Research results indicate that teachers demonstrate a sense of responsibility and commitment to their profession, as well as a readiness to adapt to changes in curriculum policies. Teachers also demonstrate a willingness to improve their competencies through training and independent learning, although learning innovations have not been implemented consistently.

These findings align with Sudarwan Danim's opinion that teacher personality competence is reflected in professionalism, integrity, and exemplary behavior (Day & Gu, 2010). Strong personality competence encourages teachers to be open to change and utilize the curriculum as a vehicle for developing student character.

The Role of Teachers in Curriculum Development

Research results indicate that teachers' roles in curriculum development are still predominantly as implementers, while their roles as adapters, developers, and researchers are not yet optimal. Teachers tend to implement the established curriculum, but their involvement in research-based curriculum development and evaluation is still limited.

These findings support Murray Print's opinion that teachers should not only act as curriculum implementers but also as curriculum developers and researchers (Voogt et al., 2013). Teacher involvement in classroom action research and learning reflection is crucial to ensuring the curriculum remains relevant and adaptive to students' needs.

Challenges in Developing Teacher Competence

The research also found that limited access to training, administrative burdens, and infrastructure disparities are the main challenges in improving teacher competency (OECD, 2019). These conditions impact teachers' less-than-optimal role in curriculum development.

These findings align with Hamid's opinion that curriculum development requires systemic support from both the government and educational institutions (Fullan, 2007). Therefore, improving teacher competency must be carried out sustainably through applicable training, professional mentoring, and strengthening teacher learning communities (Darling-Hammond et al., 2017).

D. Conclusions

Based on the results of the literature review, it can be seen that the implementation of the Independent Curriculum in elementary schools still faces significant challenges, particularly related to teacher competency and preparedness. Teacher competency, encompassing pedagogical, professional, social, and personality aspects, plays a significant role in determining the success of the curriculum's implementation, but the integration of these four aspects has not been fully and consistently realized in learning practices. Teachers still encounter obstacles in understanding the philosophy of the Independent Curriculum, implementing differentiated learning, and utilizing technology and digital media, especially in schools with limited infrastructure. Furthermore, the training provided by the government is considered normative and insufficiently applicable, thus not fully addressing teachers' technical needs in implementing the new

curriculum. Nevertheless, some teachers are beginning to show positive responses and innovate in their learning, indicating the potential for change if supported by appropriate training and mentoring.

As a recommendation, synergy is needed between the government, educational institutions, and all stakeholders to improve the quality and intensity

of applicable and sustainable training for teachers. Providing adequate facilities, access to technology, and learning resources must also be a priority, especially in underdeveloped regions.

Furthermore, collaboration between teachers, principals, supervisors, parents, and the education community needs to be strengthened to create an inclusive and supportive learning environment. Teachers are also encouraged to continuously develop their competencies through independent learning and sharing best practices. With these steps, it is hoped that the implementation of the Independent Curriculum will be more optimal and have a positive impact on improving the quality of education in Indonesia.

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