

Teacher Perception Analysis of the Implementation of the Deep Learning Curriculum in Improving IT Use at SD Negeri 18 Tungkal Ilir

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Abstract: This study aims to analyze teachers' perceptions of the implementation of the Deep Learning Curriculum in improving Information Technology (IT) use at SDN 18 Tungkal Ilir. A descriptive qualitative method was employed involving five informants, with data collected through observations, interviews, and documentation and analyzed using data reduction, data display, and conclusion drawing. The findings indicate that teachers generally have positive perceptions of the curriculum and acknowledge its contribution to improving IT use in learning. However, several challenges remain, including limited facilities, unstable internet access, insufficient teacher training, and limited technical skills. The findings revealed four major themes. First, teachers perceived that the Deep Learning Curriculum enhanced student engagement and promoted more meaningful technology-supported learning. Second, the curriculum encouraged teachers to improve their digital competencies and adopt innovative instructional strategies. Third, its implementation was constrained by inadequate technological infrastructure, unstable internet connectivity, insufficient professional training, and varying levels of digital literacy. Finally, participants emphasized that sustainable professional development, stronger institutional support, and improved technological facilities are essential to optimize curriculum implementation. The findings can be applied in elementary education, curriculum implementation, teacher professional development, and educational technology integration to support more effective technology-based learning. The novelty of this study lies in its comprehensive analysis of teachers' perceptions by identifying the impacts, barriers, and practical solutions for implementing the Deep Learning Curriculum to improve IT utilization in an elementary school context.

Keywords: *Deep Learning Curriculum; Teachers' Perceptions; Information Technology; Elementary School; Educational Technology; Curriculum Implementation.*

A. Introduction

The rapid development of information technology has significantly transformed the education sector, particularly the teaching and learning process in elementary schools. Technology integration has become an essential strategy for improving learning quality, expanding access to educational resources, and developing students' critical thinking, creativity, collaboration, and communication skills (Yang et al., 2025). In line with this transformation, the Deep Learning Curriculum has been introduced as a learning

approach that emphasizes meaningful learning, deep conceptual understanding, and the practical application of knowledge in real-life situations. The successful implementation of this curriculum largely depends on teachers, as they play a central role in facilitating technology-supported learning (Meng et al., 2023).

Recent national reports indicate that digital transformation remains uneven across Indonesian elementary schools. Many schools, particularly those located in rural and semi-rural areas, continue to experience limited internet connectivity, inadequate digital infrastructure, and insufficient teacher readiness to integrate technology into classroom instruction. Although the Ministry of Primary and Secondary Education has introduced curriculum reforms emphasizing meaningful learning and digital literacy, successful implementation largely depends on teachers' competencies, institutional support, and the availability of technological resources. These conditions demonstrate that examining teachers' perceptions is essential for understanding how curriculum innovation can improve technology utilization in elementary education.

Despite its potential benefits, the implementation of the Deep Learning Curriculum still faces various challenges. Many elementary schools encounter limitations in technological facilities, unstable internet connectivity, inadequate teacher training, and differences in teachers' digital competencies (Tsui et al., 2024). These conditions reduce the effectiveness of technology integration in classroom instruction and hinder the achievement of curriculum objectives. Similar conditions were identified at SDN 18 Tungkal Ilir, where information technology has not been utilized optimally despite the availability of several supporting facilities. The varying levels of teachers' technological competence have also influenced the implementation of the curriculum (Alqasa & Arshad, 2023).

Previous studies have reported that the Deep Learning approach contributes to improving learning quality, students' higher-order thinking skills, and technology integration in education. Other studies have highlighted that teacher competence, digital literacy, institutional support, and technological infrastructure are key factors influencing successful curriculum implementation (Wekerle et al., 2022). However, most existing studies have focused separately on learning effectiveness, teacher readiness, or technology utilization. Only limited attention has been given to examining teachers' perceptions together with the impacts, implementation barriers, and practical solutions for applying the Deep Learning Curriculum, particularly in elementary schools located in rural areas (Adhikari, 2025).

Based on these conditions, a research gap remains regarding the comprehensive understanding of teachers' perceptions of the Deep Learning Curriculum and their influence on information technology utilization in elementary education (Al-Khresheh et al., 2025). Therefore, this study aims to analyze teachers' perceptions of the implementation of the Deep Learning Curriculum in improving information technology use at SDN 18 Tungkal Ilir. It also investigates the impacts of curriculum implementation, identifies the barriers encountered by teachers, and explores practical solutions to support more effective technology-based learning. The findings are expected to provide valuable recommendations for schools, policymakers, and educational stakeholders in

strengthening curriculum implementation and improving teachers' digital competence in elementary education (Huang et al., 2026).

B. Methods

This study employed a descriptive qualitative research design based on the constructivist paradigm to explore teachers' perceptions of the implementation of the Deep Learning Curriculum in improving Information Technology (IT) use at SDN 18 Tungkal Ilir, Banyuasin Regency, South Sumatra, Indonesia. The research was conducted over six months, from December 2025 to May 2026.

The participants consisted of five informants, including one principal and four elementary school teachers selected through purposive sampling based on their direct involvement in curriculum implementation and technology-supported learning. Data were collected through classroom observations, semi-structured interviews, and document analysis using observation sheets, interview guidelines, and supporting school documents as the primary research instruments (Sitthiworachart et al., 2022).

The study followed three research stages: pre-research, data collection, and reporting. Data analysis was conducted using the interactive qualitative analysis model, including data reduction, data display, and conclusion drawing, while data credibility was ensured through source and method triangulation. This study was not experimental and did not involve surveys, questionnaires, simulation models, or statistical software. Likewise, no specific hardware or commercial software was used because the research focused on obtaining in-depth qualitative information regarding teachers' experiences and perceptions under natural school conditions (Sitthiworachart et al., 2022).

Interview transcripts were analyzed through an open coding process to identify meaningful statements related to teachers' experiences. Similar codes were subsequently grouped into broader categories and synthesized into major themes representing teachers' perceptions, implementation impacts, challenges, and proposed solutions. To ensure the trustworthiness of the findings, member checking, source triangulation, and method triangulation were conducted. The coding process was independently reviewed to improve analytical consistency and reduce researcher bias.

C. Results and Discussion

The findings of this study indicate that teachers generally have positive perceptions of the implementation of the Deep Learning Curriculum in improving the use of Information Technology (IT) in learning activities. The participants acknowledged that the curriculum encourages more meaningful, student-centered, and technology-supported learning experiences. Teachers perceived that integrating technology into classroom instruction helped students become more active, motivated, and engaged during the learning process. The curriculum also provided opportunities for teachers to adopt innovative teaching strategies and utilize digital resources that were previously underused in conventional classroom practices (Almufarreh & Arshad, 2023).

Teachers explained that the implementation of the Deep Learning Curriculum shifted the learning process from teacher-centered instruction toward student-centered learning. Instead of relying solely on lectures and textbooks, teachers encouraged students to explore digital learning resources, participate in collaborative discussions, and complete project-based activities supported by information technology. This learning approach enabled students to construct knowledge independently while improving their digital literacy and problem-solving skills. Consequently, teachers believed that the curriculum contributed positively to the quality of classroom instruction (Pokhrel, 2024).

The findings also revealed that the use of information technology increased significantly after the implementation of the curriculum. Teachers reported using presentation software, educational videos, online learning platforms, interactive quizzes, and digital teaching materials more frequently than before. Technology was no longer viewed merely as a supporting tool but as an essential component of the learning process. The availability of digital learning resources enabled teachers to explain abstract concepts more effectively and provided students with opportunities to access learning materials both inside and outside the classroom (Zou et al., 2025).

Another important finding concerns teachers' professional development. The implementation of the curriculum motivated teachers to improve their digital competencies and explore new teaching methods. Many teachers independently learned how to operate educational applications, create digital learning media, and integrate technology into lesson planning. This finding suggests that curriculum innovation can stimulate continuous professional learning among teachers. Increased confidence in using technology also encouraged teachers to become more creative in designing classroom activities that matched students' learning needs (Mhlongo et al., 2023).

Despite these positive perceptions, the study identified several challenges affecting curriculum implementation. The most frequently reported challenge was the limited availability of technological infrastructure. Several classrooms lacked sufficient digital devices, and internet connectivity was often unstable, making it difficult to conduct technology-based learning consistently. Teachers indicated that technical problems frequently interrupted classroom activities and reduced learning effectiveness. These findings suggest that technological infrastructure remains a fundamental requirement for successful curriculum implementation (Ngoasong, 2022).

Tabel 1. Summary of Major Themes and Key Findings on Teachers' Perceptions of the Deep Learning Curriculum Implementation

Major Theme	Main Findings
Teachers' Perception	Positive perception toward the Deep Learning Curriculum
Educational Impact	Increased student engagement, meaningful learning, and IT integration
Challenges	Limited infrastructure, unstable internet, inadequate training, unequal digital competence
Supporting	School leadership, collaboration, institutional commitment

Major Theme	Main Findings
Factors	
Proposed Solutions	Continuous training, infrastructure improvement, collaborative professional learning

Table 1 summarizes the four major themes generated through qualitative analysis. The findings indicate that teachers generally perceived the curriculum positively because it encouraged student-centered learning and greater utilization of information technology. Nevertheless, successful implementation depended on several supporting factors, including adequate infrastructure, continuous professional development, collaborative school leadership, and institutional commitment.

Teacher competency also emerged as a significant challenge. Although teachers demonstrated positive attitudes toward technology integration, their levels of digital competence varied considerably. Some teachers were confident in using digital applications, while others experienced difficulties operating learning platforms and developing digital instructional materials. Differences in technological skills influenced the quality of classroom implementation and created disparities in learning experiences among students. Therefore, continuous professional development remains essential to ensure that all teachers possess adequate digital competencies (Islam, 2025).

The findings further indicate that limited professional training constrained teachers' ability to implement the curriculum effectively. Most participants expressed the need for more intensive workshops, mentoring programs, and practical training related to the Deep Learning Curriculum and educational technology. Existing training activities were considered insufficient to address the diverse technological challenges encountered during classroom implementation. Continuous guidance from educational authorities and school leaders was therefore regarded as an important strategy for strengthening teachers' instructional competencies (Nyaaba, 2024).

Another challenge identified in this study was unequal student access to technology. Not all students possessed personal digital devices or stable internet connections at home. As a result, some students experienced difficulties completing technology-based assignments outside school hours. This situation limited the effectiveness of digital learning activities and highlighted the importance of considering students' socioeconomic conditions when implementing technology-supported education. Schools therefore need to develop flexible learning strategies that accommodate differences in students' access to technological resources (Tammets et al., 2022).

School leadership played a significant role in supporting curriculum implementation. Teachers emphasized that administrative support, collaborative planning, and institutional commitment positively influenced the adoption of technology-based learning. The principal encouraged teachers to share experiences, exchange teaching materials, and participate in collaborative discussions regarding instructional improvement. Such collaboration created a supportive professional environment that facilitated curriculum implementation and promoted continuous improvement in teaching practices (Amiri, 2025).

Based on the findings, several practical strategies can be proposed to improve the implementation of the Deep Learning Curriculum. First, schools should strengthen technological infrastructure by providing adequate digital devices, improving internet connectivity, and ensuring access to digital learning resources. Second, educational authorities should organize sustainable professional development programs focusing on digital pedagogy, curriculum implementation, and instructional technology. Third, collaborative learning communities among teachers should be strengthened to encourage knowledge sharing and innovation in classroom practices. Finally, policymakers should formulate supportive educational policies that promote equitable access to technology and reduce disparities among schools (Abildinova et al., 2024).

The findings of this study contribute to the understanding of teachers' perceptions regarding curriculum innovation and technology integration in elementary education. Positive teacher perceptions indicate that successful curriculum implementation depends not only on curriculum design but also on teachers' readiness, institutional support, technological infrastructure, and continuous professional development. The interaction among these factors determines whether curriculum innovation can effectively improve learning quality (Mundiri et al., 2024).

Compared with previous studies, this research provides a more comprehensive perspective by simultaneously examining teachers' perceptions, the educational impacts of curriculum implementation, the barriers encountered during implementation, and practical strategies for improvement within a single qualitative framework. While many previous studies have concentrated on technology integration or curriculum implementation independently, this study demonstrates that these dimensions are closely interconnected and should be addressed simultaneously to achieve sustainable educational improvement (Fuad et al., 2022).

Overall, the implementation of the Deep Learning Curriculum has demonstrated considerable potential for improving information technology utilization in elementary schools. Although several obstacles remain, teachers' positive perceptions indicate strong readiness to embrace educational innovation when supported by adequate infrastructure, institutional commitment, and continuous professional development (Simanjuntak et al., 2022). These findings provide valuable insights for school administrators, educational policymakers, and curriculum developers seeking to strengthen technology-based learning and improve the quality of elementary education in Indonesia.

D. Conclusions

This study concludes that the implementation of the Deep Learning Curriculum has positively influenced the use of Information Technology (IT) in teaching and learning at SDN 18 Tungkal Ilir. The findings demonstrate that teachers generally have positive perceptions of the curriculum because it encourages meaningful learning, enhances student engagement, and promotes the integration of digital technology in classroom activities. However, several challenges, including limited technological infrastructure, inadequate teacher training, varying levels of digital competence, and unstable internet

access, continue to affect its implementation. Therefore, strengthening technological facilities, providing continuous professional development, and enhancing institutional support are essential to optimize curriculum implementation. Overall, the objectives of this study have been achieved by identifying teachers' perceptions, examining the impacts of curriculum implementation, exploring existing barriers, and proposing practical strategies to improve Information Technology utilization in elementary education.

Despite these contributions, this study has several limitations. The research involved only five participants from one elementary school, limiting the generalizability of the findings. Future studies should include larger samples, multiple schools, and mixed-method or quantitative approaches to obtain broader empirical evidence regarding the implementation of the Deep Learning Curriculum. Further research may also investigate the relationships among digital leadership, teacher digital competence, and students' learning outcomes in different educational contexts.

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