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IN-DEPTH LEARNING TRAINING AT UPTD SDN 22 SAMPEAN

PELATIHAN PEMBELAJARAN MENDALAM DI UPTD SDN 22 SAMPEAN

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Abstract

Deep learning is an important approach to improving the quality of 21st-century learning, but its implementation in elementary schools still faces various challenges, particularly related to teacher readiness and competency. This study aims to analyze the implementation and outcomes of deep learning training for teachers at the UPTD SDN 22 Sampean. The study used a qualitative approach with a field study design. The subjects were elementary school teachers who participated in the deep learning training. Data were collected through observation, interviews, and documentation, then analyzed using data reduction, data presentation, and conclusion drawing techniques. The results of the study indicate that immersive learning training improved teachers' conceptual understanding and practical skills in developing immersive learning-based teaching materials. Teachers began designing lessons oriented toward conceptual understanding, active student engagement, and reflection on learning. These findings indicate that practice-based training is effective in supporting the implementation of immersive learning in elementary schools. This study recommends the need for ongoing training and implementation support to ensure the sustainability of immersive learning in the classroom.

Keywords : in-depth learning, teaching materials.

Abstrak

Pembelajaran mendalam telah menjadi pendekatan penting dalam meningkatkan kualitas pendidikan abad ke-21; Namun, implementasinya di sekolah dasar masih menghadapi berbagai tantangan, terutama terkait dengan kesiapan dan kompetensi guru. Studi ini bertujuan untuk menganalisis implementasi dan hasil pelatihan pembelajaran mendalam bagi guru di UPTD SDN 22 Sampean. Studi ini menggunakan pendekatan kualitatif dengan desain studi lapangan. Peserta adalah guru sekolah dasar yang mengikuti program pelatihan pembelajaran mendalam. Data dikumpulkan melalui observasi, wawancara, dan dokumentasi, serta dianalisis menggunakan teknik reduksi data, penyajian data, dan penarikan kesimpulan. Temuan menunjukkan bahwa pelatihan pembelajaran mendalam meningkatkan pemahaman konseptual dan keterampilan praktis guru dalam mengembangkan bahan ajar berbasis pembelajaran mendalam. Guru mulai merancang kegiatan pembelajaran yang menekankan pemahaman

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konsep, keterlibatan siswa yang aktif, dan pembelajaran reflektif. Temuan ini menunjukkan bahwa pelatihan berbasis praktik efektif dalam mendukung implementasi pembelajaran mendalam dalam pendidikan dasar. Studi ini merekomendasikan penyediaan pelatihan berkelanjutan dan pendampingan implementasi untuk memastikan keberlanjutan praktik pembelajaran mendalam dalam instruksi di kelas.

Kata Kunci : pembelajaran mendalam, bahan pembelajaran.

1. INTRODUCTION

The development of global education in the 21st century demands a change in the learning paradigm from one that is oriented towards memorization and delivery of material to learning that emphasizes in-depth understanding (deep learning).[1]In-depth learning is seen as an approach that is able to develop high-level, reflective, critical, and applicable thinking skills, so that students not only master knowledge conceptually, but are also able to relate it to real-life contexts.[2]Various international studies confirm that in-depth learning plays an important role in preparing students to face complex and dynamic global challenges, particularly in strengthening 21st-century competencies.[3]

However, the success of implementing in-depth learning is highly dependent on the competence and readiness of teachers as the main implementers of learning in the classroom.[4]In practice, many teachers still face difficulties in translating the concept of deep learning into systematic and contextual learning activities.[5]This is caused by limited conceptual understanding, minimal practical training, and conventional learning habits that are still centered on the teacher.[6]This condition not only occurs at the global level, but also becomes a real challenge in the context of basic education in Indonesia.[7]

Several previous studies have shown that teacher training and professional development are effective strategies for improving the quality of in-depth learning. However, most research focuses on conceptual studies or the implementation of in-depth learning at the secondary and tertiary levels.[8]Research specifically examining immersive learning training for elementary

[1] Saridudin Saridudin, "Transformation of Islamic Religious Education Learning Based on Eight Dimensions of Deep Learning Graduate Profiles to Answer the Challenges of the 21st Century," HASBUNA: Journal of Islamic Education 7, no. 2 (2025): 214–29.

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[7] Emma Rahmawati, "Gamification Integration in Deep Learning-Based Learning in Elementary Schools," TARUNATEACH: Journal of Elementary School 3, no. 2 (2025): 136–46.

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school teachers, particularly those based in specific school contexts and utilizing hands-on approaches to developing teaching materials, remains relatively limited. This situation indicates a research gap regarding the effectiveness of contextual and applicable immersive learning training at the elementary education level.

The UPTD. SDN 22 Sampean conducted in-depth learning training activities as an effort to improve teacher competency in designing and implementing learning oriented towards students' in-depth understanding. This activity is important to be studied systematically to obtain a real picture of the training results, implementation challenges, and opportunities for developing in-depth learning in elementary schools. Therefore, this study aims to analyze the implementation and results of in-depth learning training at the UPTD. SDN 22 Sampean, specifically in improving teacher understanding and skills in developing in-depth learning-based teaching materials.

2. RESEARCH METHOD

This research used a descriptive qualitative approach with a field study design. This approach was chosen to gain a deep understanding of the implementation of in-depth learning training and its impact on teachers' understanding and practices in developing teaching materials.[9]This research design allows researchers to directly observe the training process, participant interactions, and changes in teacher understanding during the activities in the natural context of the school.[10]

The research subjects were teachers who participated in in-depth learning training activities at the UPTD SDN 22 Sampean.[11]Subject selection was conducted purposively, ensuring that participants were active teachers directly involved in the classroom learning process. All participants underwent a series of training sessions, from conceptual introduction to practical development of in-depth learning-based teaching materials.

The research instruments used included observation guidelines, interview guidelines, and documentation. The observation guidelines were used to record participant engagement, activities during the training, and the application of deep learning concepts in practice.[12]An interview guide was used to explore teachers' perceptions, understanding, and experiences regarding the training implementation. Additionally, documentation in the form of teaching modules, participant-created teaching materials, and training activity notes served as supporting data sources.[13]Data collection was conducted in several stages. First, researchers conducted observations during the in-depth learning training activities, both during the concept

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introduction stage and during the practical stages of developing teaching materials. Second, interviews were conducted with several teacher participants to obtain in-depth information regarding their understanding, challenges, and perceived benefits during the training. Third, documentation was collected by compiling teaching modules, teacher work results, and field study activity notes. All data was collected systematically throughout the training period.[14]

3. RESULT AND DISCUSSION

a. Teaching materials

Teaching materials are all forms used in carrying out teaching and learning activities.[15]Teaching materials can also be defined as materials that students must study as a means of learning. These materials can include material on the knowledge, skills, and attitudes that students must attain related to these core competencies.[16]Teaching materials are an important component in the learning process.[17]Without adequate teaching materials, learning activities will not proceed systematically and effectively. Teaching materials serve not only as learning resources but also as guides for teachers and students in achieving predetermined learning outcomes.[18]

Teaching materials are anything used by teachers or students to facilitate the learning process. They can take the form of reading books, workbooks, or presentations. They can also include newspapers, digital materials, food packages, photographs, live conversations with native speakers, teacher-provided instructions, written assignments, flashcards, or discussion materials between students.[19]Thus, teaching materials can be many things that are considered to be able to increase students' knowledge and/or experience.[20]

Basically, teaching materials are all forms of material, whether in written, visual, audio, audiovisual, or interactive form, which are arranged systematically with the aim of helping students understand the material.[21]In its implementation, teaching materials are often equated with the terms teaching materials or learning resources which are created to achieve learning

[14] Albi Anggito and Johan Setiawan, Qualitative research methodology (CV Jejak (Jejak Publisher), 2018), p. 36.

[15] Engkos Kosasih, Development of Teaching Materials (Bumi Aksara, 2021), p. 1.

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[21] Dhanu Priyo Widodo et al., Development of Teaching Materials (PT. Sonpedia Publishing Indonesia, 2025), p. 2.

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objectives.[22]Meanwhile, Tomlinson emphasized that materials include anything used to facilitate learning, from texts, dialogues, exercises, videos, to project-based assignments.[23]

Teaching materials have a strategic function in supporting successful learning. According to Majid, teaching materials function as:[24]

1) Guidelines for teachers in directing all learning activities, including time management and steps in learning activities.
2) Learning resources for students to understand the material in depth.
3) Evaluation tools to assess student competency achievement.

Prastowo added that teaching materials also function as a means of indirect communication between teachers and students, especially when learning is carried out independently or technology-based.[25]

The main objective of developing teaching materials is to ensure that the learning process can take place more effectively and efficiently according to the characteristics of the students and the context of the learning environment.[26]Teaching materials aim to foster learning motivation, strengthen conceptual understanding, and facilitate student involvement in the learning process.[27]

b. Deep Learning

Deep learning In the context of education, it refers to a learning approach that emphasizes in-depth understanding, the interconnectedness of concepts, and the application of knowledge to real situations.[28]Unlike surface learning approaches that focus on memorizing and repeating information, deep learning is oriented towards mastering in-depth concepts and developing critical thinking skills.[29]In an elementary school setting, deep learning aims to help students understand the reasoning behind a concept,[30]how the concepts relate to their life context, and how they can apply them to solve real problems.[31]

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[22]Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, Guide to the Development of Teaching Materials (Jakarta: Directorate General of Primary and Secondary Education, 2021), p. 15.

[23] Ina Magdalena et al., "Analysis of teaching materials," Nusantara 2, no. 2 (2020): 311–26.

[24] Moh Sabir Abd Majid, "Curriculum and Learning," Introduction to Education, 2024, p. 17.

[25] Hani Atus Sholikhah, "Development of Teaching Materials in the Digital Era," Development of Teaching Materials: Theory and Practice, 2024, 127.

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[28] Zaka Hadikusuma Ramadan et al., Deep Learning Approach in Elementary Schools (Theory and Application) (Greenbook Publisher, 2025), p. 4.

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[30] Nanang Aria Sandika et al., Deep Learning in Higher Education: Strategies, Methods, and Implementation (Pradina Pustaka, 2025), p. 7.

[31] Nadia Nadawina et al., Implementation of Deep Learning in Education in Indonesia (Star Digital Publishing, 2025), p. 3.

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According to Hattie and Donoghue, deep learning involves higher cognitive activities, such as analyzing, evaluating, and creating.[32]It engages students emotionally and cognitively, making them more motivated to learn. This definition emphasizes that deep learning is not just about what students learn, but also how they learn it.[33]This process includes understanding, reflecting, and transforming knowledge into relevant and applicable insights in various contexts.[34]In addition, this approach helps students develop a growth mindset, namely the belief that their abilities can continue to develop through continuous effort and learning.[35]

The fundamental difference between surface learning and deep learning lies in the depth of student engagement in the learning process. Surface learning focuses on mastering superficial facts and information.[36]Students with this approach tend to memorize material for exams, without understanding the deeper meaning of what they're learning. For example, students who study mathematics using a surface learning approach might simply memorize formulas without understanding how and why they're used. This approach often results in fragile and easily forgotten understanding because students don't see the relevance of the material to their lives.[37]

In contrast, deep learning involves a deep understanding of core concepts and their interrelationships. In this approach, students not only memorize information but also relate new knowledge to what they already know, critically analyze it, and apply it to solve problems.[38]For example, students who use a deep learning approach in learning mathematics will understand the logic behind formulas and be able to apply them in everyday life contexts, such as calculating a family budget or measuring the area of a playground.

The implementation of deep learning in elementary schools has a significant impact on students' cognitive, emotional, and social development. At this age, students are at a critical stage of development that influences how they understand the world around them. By

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[33] Dhimas Tribuana et al., Deep Learning (Serasi Media Teknologi, 2025), p. 2.

[34] Darmawan Utomo and Theodora Florencia Utomo, Deep Learning Basic Theory and Implementation with Python and Keras: Diandra Kreatif (Penalicious, 2025),

[35] Yeni Nuraeni et al., "The Role of Teachers in Implementing Deep Learning Strategies to Improve Critical Thinking in Elementary School Students," Journal of Social and Humanities Education 4, no. 3 (2025): 6185–93.

[36]Mei Li Khong, Surface and Deep Learning: a Blended Learning Approach in Preclinical Years of Medical School, Khong and Tanner BMC Medical Education (2024) 24:1029.

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[38]Salsabila Amalia, The Effect of Deep Learning on the Learning Motivation of Grade 1 Students of SDS Muhammadiyah 01 Binjai, JUMI: Multidisciplinary Journal of Science Volume 1, Number 1, July 2025 Edition, 103-113.

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implementing a deep learning approach, students learn not only to memorize information but also to deeply understand it and apply it to their daily lives.[39]

This research yielded several key findings related to the implementation of in-depth learning training for teachers at the UPTD SDN 22 Sampean. The findings were obtained from observations, documentation of teaching materials, and participant reflections during the training.

Table 1. Changes in Teachers' Understanding of In-Depth Learning

Aspect	Initial Conditions	Condition After Training
Conceptual understanding	Limited to method	Understanding oriented
Learning objectives	General	Specific and meaningful
Learning strategies	Teacher-centered	Student-centered
Learning reflection	Rarely done	Integrated

The table above shows that the training had a positive impact on teachers' conceptual understanding. The main findings demonstrate a shift in teachers' perspectives on learning, from simply delivering material to emphasizing students' thinking processes and conceptual understanding. Furthermore, the results of the practical training materials development were analyzed to assess teachers' ability to operationalize in-depth learning. The following table displays the characteristics of the teaching materials developed by teachers during the practical sessions.

Table 2. Characteristics of In-Depth Learning-Based Teaching Materials

Component	Key Findings
Learning objectives	Leading to conceptual understanding
Learning activities	Exploratory and discursive
Evaluation	Assessing processes and outcomes
Reflection	Explicitly stated

The table above shows that teachers are beginning to be able to design teaching materials that encourage active student engagement. Teaching materials no longer focus solely on content, but are designed to stimulate exploration, discussion, and reflection as integral parts of learning.

The results of this study indicate that the immersive learning training conducted at the UPTD SDN 22 Sampean had a positive impact on teachers' conceptual understanding and practical skills in designing learning. This improvement was evident in changes in how teachers interpreted immersive learning, the formulation of more meaningful learning objectives, and the development of teaching materials that encouraged active and reflective student engagement. These findings indicate that practice-based training plays a strategic role in bridging the gap between immersive learning concepts and their implementation in the classroom.

The findings of this study align with previous studies, which found that teacher professional development through structured training can improve the quality of teaching

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practices and teachers' pedagogical understanding. Several international studies have confirmed that in-depth learning cannot be effectively implemented without the support of practice-oriented and contextualized training. However, this study expands on these findings by demonstrating that in-depth learning training at the elementary school level, particularly through hands-on practice in developing teaching materials, can foster a more concrete paradigm shift in teacher learning.

In terms of theoretical contribution, this study strengthens the conceptual framework of deep learning by positioning teacher training as a key element in the implementation of this approach in primary education. This research demonstrates that deep learning is not only related to classroom instructional design but is also strongly influenced by systematic and ongoing teacher professional development processes. Thus, this study contributes to enriching the study of the relationship between teacher training and the implementation of deep learning in primary education contexts.

The practical implications of this research suggest that schools and education policymakers need to design teacher training programs that are not solely theoretical but also emphasize hands-on practice and reflection. Immersive learning training combined with the development of instructional materials has been shown to help teachers apply concepts operationally. Furthermore, the results of this study can serve as a reference for other elementary schools in designing similar training programs tailored to their teachers' contexts and needs.

However, this study has several limitations. First, it was conducted in a single educational institution, so the results cannot be broadly generalized. Second, this study used a descriptive qualitative approach without quantitative measurements of the training's impact on student learning outcomes. Therefore, future research is recommended to involve more schools and combine qualitative and quantitative approaches to obtain a more comprehensive picture.

The novelty of this research lies in its focus on practice-based in-depth learning training in the development of teaching materials at the elementary school level within a specific school context. Unlike previous research, which has focused primarily on conceptual in-depth learning or at the secondary and tertiary levels, this study offers empirical evidence on the effectiveness of contextual and applicable training for elementary school teachers. Thus, this research provides a new perspective on the development of in-depth learning through a teacher training approach oriented toward real-world practice.

4. CONCLUSION

This study aims to analyze the implementation and outcomes of in-depth learning training at the UPTD SDN 22 Sampean in improving teachers' understanding and skills in developing in-depth learning-based teaching materials. The results indicate that the structured, practice-based training improved teachers' conceptual understanding and encouraged changes in teaching practices toward more meaningful, learner-centered learning.

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Deep learning training has been shown to assist teachers in formulating understanding-oriented learning objectives, developing learning activities that encourage exploration and reflection, and integrating process assessment into learning. Thus, the objective of this study was achieved, demonstrating that deep learning training significantly contributes to improving the pedagogical competence of elementary school teachers.

Based on these findings, it is recommended that immersive learning training be implemented on an ongoing basis, accompanied by classroom implementation support. Future research is recommended to involve more educational units, use a mixed approach (qualitative and quantitative), and examine the impact of immersive learning on learning outcomes and student competency development. Further research could also explore more adaptive and sustainable teacher training models to support the implementation of immersive learning in elementary schools.

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