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Analysis of Readiness for Implementing the Deep Learning Approach in Grade V Instruction at SDN Karangtengah 4, Blitar City

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Abstract

Implementing a deep learning approach at the primary school level requires the readiness of various school components to ensure meaningful and student-centered learning. This study aims to analyze the readiness for implementing a deep learning approach in Grade V at SDN Karangtengah 4, Blitar City, examining learning conditions, teacher and student readiness, institutional support, and facilities. A qualitative approach with a case study design was employed. Data were collected through semi-structured interviews, observations, and documentation involving the school principal, Grade V teachers, and students. Data validity was verified through source and technique triangulation, while analysis involved data reduction, presentation, and conclusion drawing and verification. The results indicate that the school is at an initial stage of readiness to implement the deep learning approach. This is evidenced by the principal's and teachers' openness to innovation and students' positive responses to discussions, projects, hands-on activities, and visual media. However, challenges include limited teacher understanding and training, administrative burdens, varying student abilities, and suboptimal supporting facilities. Parental support and available resources serve as potential assets. Therefore, implementation should be conducted gradually through enhancing teacher competence, developing adaptive learning, optimizing facilities, strengthening institutional support, and fostering collaboration with parents.

Keywords: deep learning;implementation readiness; elementary school

1. Introduction

Advancements in science and technology have brought about changes in educational orientation and the learning process. Education can no longer focus merely on a learner's ability to recall and master information; instead, it must provide opportunities to develop critical thinking, creativity, collaboration, communication, and independent learning skills (Reca et al., 2022). Hattie (2020) emphasizes the importance of a learning process that has a tangible impact on students' learning development. Consequently, instruction needs to be designed so that students do not simply receive information but actively engage in constructing understanding and applying knowledge across various life contexts (Ke et al., 2023).

In reality, the learning process in elementary schools still faces challenges stemming from the dominance of teacher centered instruction. Teachers tend to act as the primary source of information, while students largely play the role of material recipients. This situation can limit students' opportunities to explore knowledge, develop critical thinking skills, and independently construct understanding (Woodcock et al., 2023). Astuti (2024) explains that 21stcentury learning emphasizes the development of competencies encompassing character, communication, collaboration, creativity, critical thinking, and social awareness. Aligning with

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this, Fitriyani & F. Nugroho (2022) state that critical thinking, creativity, communication, and collaboration are essential competencies that need to be fostered through the learning process.

One approach relevant to these needs is "deep learning." In this study, the term "deep learning" does not refer to artificial intelligence technology but rather to a pedagogical approach that emphasizes a profound and meaningful understanding of concepts. Suwandi et al. (2023) explain that deep learning actively engages students in grasping meaning, connecting various concepts, and applying knowledge in diverse situations. Thus, learning does not stop at the ability to recall information; instead, it guides students to understand the relationships between concepts and utilize their knowledge to solve problems (Kauffman & M. Hornby, 2020). The deep learning approach focuses on the process by which learners construct understanding. Haryanti (2024) explains that deep learning emphasizes an integrated understanding of concepts, enabling learners to connect the material they study with real life contexts. This type of learning offers opportunities for students to engage in exploration, discussion, problemsolving, projects, collaboration, and reflection on their learning processes (Nissim & Shamma, 2025).

At the primary school level, the implementation of deep learning needs to be tailored to the developmental characteristics of the students. Learning activities can be designed around contextual problems, hands on experiences, simple projects, group discussions, and the use of various instructional media. Sari (2023) explains that project based learning and hands on experiences align with the orientation of the Kurikulum Merdeka (Independent Curriculum), which provides opportunities for students to engage actively in the learning process. Therefore, the deep learning approach offers potential for development at the primary school level through activities that are concrete, contextual, and suited to students' abilities (Rapisa et al., 2026).

However, the successful implementation of a deep learning approach is not determined solely by the learning concepts employed. Teacher readiness is a crucial aspect, as teachers play a pivotal role in designing learning experiences that enable students to think, explore, collaborate, and reflect (Kivirand et al., 2021). Teachers need the ability to design contextual problems, develop projects, pose questions that stimulate thinking skills, implement differentiated instruction, and conduct assessments aligned with both the learning process and outcomes (Wood et al., 2026).

Student readiness must also be considered, given that the deep learning approach demands active participation in learning activities. Variations in abilities, characteristics, and learning needs can influence student engagement in activities requiring exploration and problem solving. Pratiwi (2022) emphasizes the importance of differentiated instruction to accommodate the diverse learning needs of students. Thus, implementing deep learning requires teachers to provide appropriate support so that students with varying characteristics can remain engaged in the learning process (Yada et al., 2022).

In addition to teachers and students, the availability of facilities and infrastructure is a key factor supporting the implementation of instruction. Project based activities, exploration, the use of media, and the utilization of digital resources require facilities that align with instructional needs. While facilities are not the sole determinant of successful instructional innovation, Ningrum & Latifah (2021) explain that the availability of learning resources is

linked to the implementation of active learning. Therefore, the readiness of facilities must be considered as a factor when analyzing readiness for implementing deep learning.

Preliminary observations at SDN Karangtengah 4, Blitar City, indicate that Grade V instruction is still dominated by conventional methods such as lectures, question and answer sessions, and practice exercises. Consequently, student engagement in activities that foster deep thinking processes has not yet been fully optimized. Nevertheless, teachers have attempted to use Problem Based Learning (PBL) and Project Based Learning (PjBL) in simplified forms, even though their application was not specifically designed as part of a deep learning framework (Rapisa et al., 2026).

On the other hand, there is potential that can serve as a starting point for implementation. Teachers and school administrators demonstrate openness to instructional innovation (Rusconi et al., 2026). Students also respond positively to activities involving group discussions, projects, hands on practice, and the use of visual media. However, implementation still faces obstacles such as limited teacher training, administrative burdens, disparities in student abilities, and suboptimal supporting facilities. These conditions reveal a gap between the school's potential readiness and its technical readiness to systematically implement a deep learning approach (Reca et al., 2022).

Previous research has addressed 21st century learning, active learning, and deep learning. However, studies regarding readiness for implementing deep learning approaches at the primary school level require further development particularly studies that comprehensively examine readiness across instructional conditions, teacher and student preparedness, institutional support, and facilities and infrastructure. The novelty of this study lies in its multidimensional analysis of readiness to implement a deep learning approach within the context of fifthgrade primary school instruction, thereby providing an overview of the potential, obstacles, and needs of the school prior to the systematic implementation of the approach.

Based on the foregoing, this study aims to analyze the readiness to implement a deep learning approach in Grade V instruction at SDN Karangtengah 4, Blitar City considering instructional conditions, the readiness of teachers and students, institutional support, and facilities and infrastructure as well as to identify obstacles and strategies to support its phased implementation.

2. Method

This study employs a qualitative approach with a case study design. The case study design was selected to gain an indepth understanding of the readiness to implement a deep learning approach within the real world context of Grade V instruction at SDN Karangtengah 4, Blitar City. A case study allows a phenomenon to be examined contextually and thoroughly using various data sources. Clark et al. (2023) explain that case studies can be used to explore phenomena in real life contexts when the researcher has limited control over the phenomenon being studied.

The research site was purposively selected, taking into account that the school is in the early stages of developing instruction that emphasizes deep understanding and active student engagement. The research subjects included the school principal, the Grade V teacher, and Grade

V students. Informants were selected based on their involvement in and knowledge of instructional practices and school conditions.

The research focuses on the conditions of Grade V instruction, teacher readiness, student readiness, institutional support, the readiness of facilities and infrastructure, as well as the obstacles to and potential facilitators of implementing the deep learning approach. Teacher readiness was assessed through their understanding of deep learning, experience in implementing active learning, and ability to develop learning activities. Student readiness was evaluated based on their responses to discussion activities, projects, hands on practice, and learning media. Institutional support was examined through the school's openness to innovation, while the readiness of facilities and infrastructure was assessed based on the resources available to support learning.

Data collection was conducted through semi structured interviews, observations, and document analysis. Interviews were used to explore the informants' experiences, perspectives, readiness, and the challenges they faced. Observations of the instructional process and the condition of facilities and infrastructure were conducted to obtain a factual picture of the ongoing instructional practices. Documentation was used to complement the data obtained from interviews and observations.

The primary research instrument was the researcher, supported by interview guidelines, observation sheets, and documentation. Data validity was verified through source triangulation and technique triangulation. Source triangulation was conducted by comparing information obtained from the school principal, teachers, and students, while technique triangulation involved comparing the results of interviews, observations, and documentation.

Data analysis was performed interactively through the stages of data reduction, data presentation, and conclusion drawing and verification. Research data were selected, grouped, and categorized based on the study's key themes. The data were then presented descriptively to identify patterns and interconnections among the findings. Conclusions were drawn based on data interpretation and verified through a comparison of various sources and data collection techniques.

3. Results and Discussion

3.1 Learning Conditions as a Basis for Readiness to Implement Deep Learning

Observations indicate that the Grade 5 learning process remains dominated by conventional methods such as lectures, question and answer sessions, and practice exercises. Instruction tends to be unidirectional, with the teacher serving as the primary source of information. Consequently, students have limited opportunities to engage in exploration and deep thinking processes. These findings suggest that the implementation of a deep learning approach has not yet been carried out systematically (Shevlin & Banks, 2021).

Nevertheless, there are some instructional practices that exhibit characteristics akin to deep learning. Teachers have attempted to implement Problem Based Learning (PBL) and Project Based Learning (PjBL) in simplified forms. However, these activities have not been systematically designed to encourage students to explore, connect concepts, reflect, and apply knowledge within broader contexts (Rose et al., 2021).

This situation indicates that while the school has some initial experience with active learning, a gap remains between current practices and the characteristics of deep learning. Therefore, the implementation of deep learning can be advanced by optimizing the active learning practices already employed by teachers and steering them more systematically toward fostering deep and meaningful understanding (Chambers & Forlin, 2021)

3.2 Teacher Readiness

Interview results indicate that teachers are open to and motivated to develop more active learning approaches. While teachers have attempted to implement PBL and PjBL, their understanding of "deep learning" approaches remains limited particularly regarding the phased design of projects, the development of cross concept analytical tasks, the formulation of questions that foster deep thinking, and the implementation of learning reflection (Alnahdi & Schwab, 2021).

This situation reveals a disparity between psychological readiness and pedagogical readiness. Psychologically, teachers possess the willingness to innovate; however, from pedagogical and technical standpoints, they still require competency development. Limited training opportunities and heavy administrative workloads also constrain teachers' ability to design innovative learning practices. Research findings suggest that teachers tend to rely on familiar strategies because they require less preparation (Brigham et al., 2021).

Consequently, fostering teacher readiness requires more than just a theoretical introduction to deep learning concepts. Teachers need practical training and mentoring in designing exploratory activities, inquiry driving questions, contextual projects, differentiated instruction, reflective practices, and authentic assessments (Ahrbeck & Felder, 2020).

3.3 Learner Readiness

Research findings indicate that students responded positively to learning activities involving hands on practice, group discussions, simple projects, and the use of visual media. One such activity involved constructing miniature houses using ice cream sticks. Student engagement in these activities demonstrates a capacity for tasks requiring precision, collaboration, creativity, and step by step completion (Gierczyk & Hornby, 2021).

Students also reported finding it easier to grasp the material when participating in discussions with peers. This suggests that peer interaction is a strategy that can be developed to foster deep learning. Furthermore, the use of visual media was found to aid student comprehension. These findings align with Ramadhani et al. (2020), who emphasize that visual media can clarify concepts and create more meaningful learning experiences (Lopes & Oliveira, 2021).

However, there are variations in learning abilities among students; some require more intensive guidance and simplified instructions. This indicates that implementing a deep learning approach requires the inclusion of differentiated learning strategies. This aligns with Pratiwi (2022), who emphasizes the importance of tailoring instruction to meet students' specific learning needs.

3.4 Readiness og Facilities and Infrastructure

Observations indicate that the school possesses basic facilities such as classrooms, teaching aids, and various visual media that can support learning. However, these existing facilities have limitations when it comes to supporting project based activities and exploration that require digital devices, diverse learning resources, or more flexible spaces (Yada et al., 2022).

These findings suggest that limited facilities do not constitute an absolute barrier to initiating the implementation of deep learning. Teachers can still utilize available facilities through activities such as discussions, contextual problem solving, environmental exploration, and simple projects. Nevertheless, facility development remains necessary to expand the range of learning activities.

Thus, the state of facilities and infrastructure is currently at an initial stage. While the school possesses basic facilities, these require optimization and gradual development to meet the specific needs of deep learning implementation

3.5 Institutional and Parental Support

Research findings indicate that the school is open to instructional innovation. This positive attitude serves as a foundation for implementing a deep learning approach. However, institutional support still needs to be realized through more concrete programs, such as teacher training, mentoring, the development of learning communities, and the provision of priority facilities (Wang et al., 2025).

Based on interviews with teachers, parental support for learning activities is also considered quite good. Communication between teachers and parents takes place via parent association groups to share information regarding learning activities, assignments, projects, and students' learning challenges. These data suggest a potential for collaboration between the school and families in supporting learning (Ke et al., 2023).

However, since parents were not included as direct informants in the study, findings regarding parental support should be understood as teachers' perceptions of parental involvement rather than the results of direct interviews with parents.

3.6 Obstacles and Strategies for Deep Learning Implementation

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However, since parents were not included as direct informants in the study, findings regarding parental support should be understood as teachers' perceptions of parental involvement rather than the results of direct interviews with parents.

4. Conclusion

Based on the research findings, it can be concluded that SDN Karangtengah 4 in Blitar City is at an initial stage of readiness to implement the deep learning approach in Grade V instruction. This readiness is evidenced by the openness of the principal and teachers to instructional innovation, as well as the students' positive response to activities involving discussion, projects, hands on practice, and the use of visual media. Teachers have already incorporated elements of active learning through Problem Based Learning (PBL) and Project Based Learning (PjBL), although these have not yet been systematically designed as deep learning experiences.

Implementation readiness requires further strengthening. Teachers need improved understanding, training, and mentoring to design deep learning instruction. Variations in student abilities necessitate the application of adaptive and differentiated teaching strategies. Meanwhile, while basic facilities and infrastructure are available, further development is needed to support exploratory and project based activities. Institutional support and parental involvement represent potential assets that can be optimized to bolster implementation.

Thus, readiness to implement the deep learning approach is a multidimensional condition involving the preparedness of teachers and students, institutional support, and facilities. Implementation should proceed in a gradual and sustainable manner, leveraging the school's existing strengths while addressing aspects that currently pose challenges.

Conclusions can be generalizing findings according to research problems, can also be in the form of recommendations for next steps.

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