

Integrating Deep Learning Approaches in Primary School Language Education Curriculum: Enhancing Language Skill Development

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Abstract—This study aims to explore how students understand language skills within the context of deep learning integration, how they can apply or improve their language skills using deep learning techniques, and how they can reflect on and assess their language proficiency in a deep learning-based environment. Using a literature review methodology, the study examines the integration of deep learning approaches in primary school language education, focusing on mindful, meaningful, and joyful learning. These concepts significantly enhance language acquisition, including vocabulary mastery, second language acquisition (SLA), and listening skills. Mindful learning promotes a deeper understanding of vocabulary, supports a holistic approach to SLA, and improves listening by emphasizing context and nuance. Meaningful learning increases student achievement, communication skills, and vocabulary by connecting language learning to real-life experiences, fostering motivation and improving academic performance. In conclusion, the application of deep learning strategies creates an engaging, student-centered learning environment that enhances language skills, promotes greater achievement, and boosts confidence in communication.

Keywords— *Deep Learning; Language Skill; Mindful Learning, Meaningful Learning, Joyful Learning*

I. INTRODUCTION

The integration of deep learning approaches into language education at the primary school level can have a significant positive impact on the development of students' language skills. These technologies enable the creation of personalized, flexible, and interactive learning experiences tailored to the individual needs of each student. This approach not only

enhances student engagement but also supports the improvement of language proficiency while fostering learner autonomy in the learning process [1]. By leveraging this advanced technology, teachers can design more dynamic and effective learning environments that can be adapted to accommodate diverse student learning styles. As research in this field progresses, several studies have demonstrated that the application of deep learning in language education can enhance students' speaking, reading, and writing skills [2]. The evolution of educational practices has paved new pathways for primary school language education, with the integration of deep learning approaches emerging as a promising avenue to enhance the development of students' language skills. This study aims to explore the potential benefits and challenges of incorporating deep learning techniques into the primary school language education curriculum, with a particular focus on the dimensions of deep learning, specifically understanding and application.

The purpose of this research is to explore the benefits and challenges of integrating deep learning techniques into the primary school language education curriculum, with a specific focus on the dimensions of understanding and application of deep learning. This study aims to answer key questions regarding how students understand language skills in the context of deep learning integration, how they can apply or improve their language skills through deep learning techniques, and how they can reflect on and assess their language proficiency in a deep learning-based learning environment. Additionally, this study aims to explore how deep learning can help facilitate students' difficulties in strengthening their language skills, and to provide insights that can support more effective educational policies in the implementation of technology and deep learning methodologies in the classroom.

In this context, several key research questions arise: How do students understand language skills in the context of deep learning integration? How can students apply or improve their language skills through deep learning techniques? Additionally, how can students reflect on and assess their language proficiency in a deep learning-based learning environment?

Deep learning is an approach endorsed by the Ministry of Education and Culture to improve the quality of education in Indonesia. This approach focuses on developing critical thinking skills, problem-solving abilities, and the application of knowledge in everyday life. Additionally, deep learning encourages more interactive methods, such as discussions and collaboration, and leverages technology, including deep learning, to create personalized and adaptive learning experiences tailored to students' needs. Its implementation aims to create an inclusive learning environment, allowing students to learn at their own pace and according to their learning styles.

The Ministry of Education and Culture faces challenges in developing deep learning, including the limitations of teachers who are not yet fully professional, the lack of school facilities such as computers and stable internet networks in remote areas, the changing educational culture, and the limited capacity for developing content and learning resources. To address these challenges, the researcher aims to explore how deep learning can help facilitate students' difficulties in strengthening their language skills.

This article will explore various aspects of integrating deep learning into language education, including the application of language skills such as speaking, listening, reading, and writing. Research highlights the effectiveness of collaborative teaching methods, digital tools, and innovative pedagogical approaches in improving language proficiency. Collaborative strategies like co-planning and team teaching create a language-rich environment that fosters active participation and builds confidence in speaking skills [3]. Additionally, digital tools, including educational applications and online resources, make language learning more flexible and engaging, helping reduce speaking anxiety and improve overall proficiency [4]. Computer-Assisted Language Learning (CALL), when integrated with Communicative Language Teaching (CLT), can further enhance both receptive and productive language skills, though more research is needed on its comprehensive impact [4].

Innovative pedagogical approaches, such as digital storytelling, have proven effective in enhancing speaking skills, particularly in second language learning, by improving comprehension, vocabulary, and fluency. Immersive learning experiences and interactive activities, tailored to the developmental needs of elementary students, also promote communication skills and cross-cultural understanding [5]. These studies collectively suggest that integrating diverse teaching strategies—collaborative, digital, and innovative—can create a comprehensive and effective language education framework that caters to various learning needs and preferences.

The integration of deep learning approaches in language skills learning at the primary school level holds great potential to enhance educational practices and inform education policy. By leveraging deep learning, educators can offer more personalized, engaging, and effective language learning experiences. This approach not only improves language proficiency but also encourages critical thinking and problem-solving skills among young learners. Deep learning models can support language acquisition by providing personalized learning pathways and real-time feedback, which enhances student engagement and learning outcomes [6]. The use of AI and deep learning in language education can lead to more interactive and meaningful learning experiences, which are crucial for effective language acquisition [7]. Additionally, structured deep learning teaching models for listening and speaking skills in English have proven to improve students' attitudes, motivation, and problem-solving abilities [3].

In terms of educational policy, it is essential that policies support the integration of digital tools and deep learning methodologies to enhance language education, as these approaches have proven to improve learning efficiency and outcomes [6], [8]. Policymakers should also prioritize investing in teacher training programs focused on the use of deep learning technologies in the classroom to maximize their benefits [1]. However, while integrating deep learning in primary education offers many benefits, it is crucial to address challenges such as the need for adequate digital infrastructure and enhancing teachers' language skill teaching capabilities. Additionally, balancing traditional and modern teaching methods is essential to ensure that all students can take advantage of these technological advancements [8].

II. METHOD

This study uses the literature review method to examine various studies, findings, and theories related to the integration of deep learning approaches in the primary school language education curriculum, with the aim of enhancing students' language skill development. This method is chosen as it allows the researcher to analyze, interpret, and synthesize information from a variety of relevant sources, such as journal articles, books, research reports, and other publications. The first step is to clearly identify the research topic and objectives, with a particular focus on how deep learning can improve language skills among primary school students. Next, the researcher will select and gather relevant literature, ensuring that the sources are up-to-date, reliable, and of high academic quality, primarily sourced from academic databases such as Google Scholar, JSTOR, and ERIC.

The selected literature will then be evaluated for its quality and relevance, categorizing it into topics such as the foundational theories of deep learning, its application in language education, studies on various language skills (speaking, listening, reading, and writing), and the challenges faced in implementing deep learning in primary schools. The researcher will synthesize and analyze these findings to provide a clear understanding of how deep learning can be integrated into primary school curricula to improve language skills. Finally, the study will conclude with insights derived from the

reviewed literature, offering recommendations for educators and policymakers regarding the potential benefits and challenges of integrating deep learning in primary school language education. This literature review method is expected to make a significant contribution to understanding the integration of technology in language education and provide practical recommendations for its implementation in schools.

III. RESULTS AND DISCUSSION

In the rapidly evolving digital era, the integration of deep learning approaches into the primary school language education curriculum has become an increasingly relevant and important topic. This technology holds the potential to enrich the language learning process, enhance students' language skills, and provide a more personalized and interactive learning experience. This study employs a literature review method to explore the application of deep learning in language skill development at the primary school level, distinguishing the key concepts of deep learning, namely mindful learning, meaningful learning, and joyful learning. Each of these concepts offers unique contributions to supporting the development of students' language skills, ranging from listening, speaking, reading, to writing. By harnessing this rapidly advancing technology, it is hoped that a more effective, engaging, and student-centered learning environment can be created, thereby strengthening overall language learning outcomes.

TABLE I. DEEP LEARNING FOR LANGUAGE SKILLS

Mindful Learning	Meaningful Learning	Joyful Learning
1. Vocabulary [9] 2. SLA (Second Language Acquisition) [10] 3. Listening Skills[11]	1. SLA (Second Language Acquisition)[10] 2. Concept (avoiding abstract concept) [7]	1. Student Achievement [12], [13], [14] 2. Communication [13] 3. Vocabulary[15]

In this study, the implementation of mindful learning in language skill acquisition showed positive effects on vocabulary mastery, second language acquisition (SLA) process, and listening skills. In the aspect of vocabulary, the mindful approach helped students not only memorize words but also understand the meaning of words in a broader context. Students were trained to pay attention to word usage, meaning associations, and the nuances embedded in each word they learned. This allowed them to use words more accurately and meaningfully in daily communication. Furthermore, in Second Language Acquisition (SLA), mindful learning provided a holistic approach to language learning. Students were encouraged to be aware of each stage in the language learning process, not rushing towards results, but appreciating the ongoing journey of learning. As a result, students not only mastered the language technically but also experienced deeper emotional and cognitive engagement in the process. Lastly, in listening skills, mindful learning enabled students to listen more actively and attentively. They focused not only on the words spoken but also on the intonation, tone, and broader context of the conversation. This approach led to a deeper

understanding of the information received, as well as reflections that helped reinforce students' comprehension. Overall, the results of this study indicate that mindful learning can enhance the quality of language skill learning by deepening students' understanding and abilities, while providing a more meaningful and effective learning experience.

Meaningful learning in language skills acquisition is closely related to the deep understanding and relevance of the material being learned in real-life contexts. In this regard, Second Language Acquisition (SLA) plays a significant role, as learning a second language involves not only memorizing rules or vocabulary but also understanding the language in the context of communication that is relevant to everyday situations. Meaningful learning prioritizes real-life experiences, such as speaking with native speakers or writing about topics of personal interest, which makes students more motivated and emotionally engaged. Furthermore, effective language learning must integrate listening, speaking, reading, and writing skills simultaneously so that students can develop comprehensive language abilities.

On the other hand, in meaningful language instruction, it is essential to avoid abstract concepts that may be difficult for students to grasp. Language teaching should focus on concrete concepts that can be directly applied in daily life. For example, instead of merely teaching complex grammatical theories, language teaching is more effective when it introduces sentence structures commonly used in daily conversations or tasks like writing emails or discussing topics relevant to students' experiences. In this way, students can relate the language they are learning to their personal experiences, which in turn deepens their understanding and enhances their ability to communicate effectively.

Meaningful learning in language skills acquisition significantly enhances student achievement, communication, and vocabulary mastery. In terms of student achievement, meaningful learning fosters deeper engagement by allowing students to apply their language skills in real-world contexts. This approach encourages students to see the practical value of what they are learning, which in turn increases motivation and boosts academic performance. When students can directly connect their language learning to everyday interactions—such as conversing with native speakers or understanding authentic materials—they are more likely to feel a sense of accomplishment and demonstrate greater progress in their language proficiency.

Regarding communication, meaningful learning emphasizes real-life communicative experiences that go beyond theoretical knowledge. By engaging students in practical tasks such as discussions, presentations, or written exercises related to their personal interests or real-world scenarios, they not only learn grammar and vocabulary but also develop the ability to use the language effectively in various contexts. This approach ensures that students are not just memorizing linguistic structures but are also able to express ideas confidently and competently in different communicative settings. Furthermore, meaningful learning in language education enhances vocabulary acquisition by introducing words and phrases that are relevant to students' personal experiences. Teaching vocabulary through

contextualized, real-life situations helps students retain and understand the meaning of words more effectively. Instead of simply memorizing lists of words, students are encouraged to actively use vocabulary in conversations and writing, which facilitates deeper retention and more accurate usage in communication.

In conclusion, the application of meaningful learning in language instruction significantly improves student outcomes by making the learning process more relevant and engaging. Students not only achieve better academic results but also become more capable communicators with a richer and more applicable vocabulary, which together support their overall language development.

IV. CONCLUSIONS

In conclusion, this study highlights the significant potential of integrating deep learning approaches into primary school language education, emphasizing the concepts of mindful learning, meaningful learning, and joyful learning. By incorporating these principles, language acquisition processes, including vocabulary mastery, second language acquisition (SLA), and listening skills, can be greatly enhanced. Mindful learning fosters a deeper understanding of vocabulary, enabling students to grasp words in broader contexts and use them more effectively. It also encourages a holistic approach to SLA, where students appreciate the learning journey and develop emotional and cognitive engagement. Moreover, mindful learning enhances listening skills by helping students focus on not just the words spoken, but the broader context and nuances of communication.

Meaningful learning, on the other hand, significantly improves student achievement, communication skills, and vocabulary development. By connecting language learning to real-life situations and experiences, students are more motivated and engaged, which leads to better academic performance. Practical, contextualized tasks help students use the language effectively, making their learning more relevant and applicable. This approach also strengthens their vocabulary acquisition by emphasizing the use of words in authentic contexts, ensuring deeper retention and more accurate usage.

Ultimately, the study demonstrates that deep learning, when applied thoughtfully through mindful and meaningful learning strategies, can create a more effective, engaging, and student-centered language learning environment. This not only enhances students' language skills but also strengthens their overall learning experience, fostering greater achievement and a more confident approach to communication.

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