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*Research/Review*

# Implementation of Deep Learning Approach in Indonesian Education

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**Abstract**: The current Education Curriculum in Indonesia uses a deep learning approach. This is done to create deeper and more meaningful learning. With this, it is to increase student motivation so that students are more interested in participating in learning, with this creating critical thinking students. This article discusses the implementation of the deep learning approach in Education in Indonesia. Where the deep learning approach has three elements, namely meaningful learning, mindful learning and joyful learning.

**Keywords**: Implementation, Deep Learning, Education.

## 1. Introduction

The development of the era is happening so fast, so we must also be able to follow it. This also affects education in Indonesia. The education curriculum in Indonesia has undergone several changes. The education curriculum in Indonesia is currently experiencing innovation, namely with the deep learning approach. Indonesia, digital transformation in the world of education has begun to show progress, especially since the pandemic forced a massive migration to digital platforms. However, the application of Deep Learning in Education in Indonesia is still in its early stages. This makes us have to be more literate in technology in accordance with the development of the era. The deep learning approach is in-depth learning that emphasizes conceptual understanding, reflective skills, and problem solving. Deep Learning is a learning approach that emphasizes deep understanding of concepts and mastery of competencies in a narrower scope of material. Here are three elements in the deep learning approach :

## 2. Meaningful Learning

The Meaningful Learning theory proposed by David Ausubel explains the learning process where teachers help students to relate new concepts to be taught with concepts they have previously understood. The Meaningful Learning learning process aims to make learning more meaningful for students. For example, to introduce learning mathematics in addition, we can add concrete objects.

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### 3. Mindful Learning.

Mindful Learning is often known as metacognition in educational theory. In Mindful Learning, students are encouraged to always be aware of the learning process they are undergoing. This awareness consists of several aspects:

- Awareness of things they have understood or mastered before,
- Awareness of things they have not understood or mastered,
- Awareness of the importance of understanding or mastering the competencies of what they are learning,
- Awareness of the flow of the learning process they are undergoing in order to achieve the understanding or competency they want to achieve,
- Awareness of the progress of understanding or competency after reflecting on the learning process they have gone through,
- Awareness of things that can still be explored further in the next learning process.

With this learning process, it is hoped that students will become more active and can be responsible for the learning process that has been carried out. In carrying out the learning process, teachers must patiently guide students about the importance of awareness in students. this is done from the beginning of learning to the end of the learning process or teaching and learning activities. for example, teachers accustom students to always make their own learning conclusions at the end of the teaching session and reflect on the development of their understanding or competency. Through this reflection process, students can understand their respective strengths and weaknesses, and have clearer targets for subsequent learning.

### 4. Joyful Learning

Joyful Learning emphasizes the importance of creating a positive learning atmosphere so that students can enjoy every part of the learning process.For example, a learning approach through games or interactive activities can make students more enthusiastic about learning. This is important to encourage children to be more actively involved in the learning process and enjoy their learning experience. Moreover, if combined with aspects of meaningful and mindful learning, we hope that students can have intrinsic motivation in learning and ultimately become lifelong learners. With this, it encourages motivation to be more active in learning and increases students' awareness of the importance of learning, so students are happy to always learn in the learning process and can implement it in everyday life.

### Benefits of Implementing Deep Learning in Education in Indonesia

The application of Deep Learning in education in Indonesia is not only aimed at improving students' knowledge. At this time, skills also need to be developed by following the times. According to the World Economic Forum 21st Century Skills, which are divided into three major points, namely Foundational Literacies, Competencies, and Character Qualities.

Deep Learning in the context of education means learning that encourages students to think critically, analyze, integrate knowledge, and build deep understanding.

**Challenges:**

• Limited learning time: A dense curriculum does not provide enough space for in-depth exploration.

• Teacher readiness: Not all teachers are trained to design learning that encourages high-level analysis and reflection.

• Inappropriate assessment: The dominance of memorization assessments and not project-based assessments or problem solving.

• Student motivation: Students are accustomed to surface learning and tend to look for instant ways.

**Meaningful Learning**

Meaningful Learning is learning that links new information with students' previous knowledge in a meaningful way.

**Challenges:**

• Lack of connection between material and students' reality: Teachers often deliver material without linking it to students' real lives.

• Conventional learning approaches: Focus on memorization, not understanding.

• Heterogeneity of student backgrounds: It is difficult to equate students' diverse prior experiences or knowledge prerequisites.

• Limited learning resources: Especially in areas that do not yet have access to technology or contextual literature.

**Mindful Learning**

Mindful Learning involves full awareness in the learning process, attention to detail, and flexibility in thinking.

Challenges:

• High distractions: The presence of gadgets and social media disrupts students' focus.

• Academic stress and pressure: Students learn with the pressure of grades, not out of curiosity.

• Multitasking culture: The habit of doing many things at once reduces the depth of attention.

• Lack of teacher training: Not all teachers know how to apply mindfulness techniques in learning.

**5. Joyful Learning**

Joyful Learning is a fun learning that encourages students' enthusiasm in participating in the learning process.

Challenges:

• Stigma that learning must be serious: Many educators consider fun learning to be ineffective or lacking discipline.

• Limited facilities and resources: Not all schools are able to provide media or learning spaces that support a fun atmosphere.

• Parental perception: Parents sometimes consider a fun approach as a waste of time.

• Rigid curriculum: Limited creativity due to pressure to pursue curriculum completion.

Solutions:

• Continuous teacher training to equip competencies in implementing these approaches.

• Revise the curriculum to be more flexible and project-based or real-life.

• Collaboration with communities and industry to enrich the learning context.

• Wise use of technology to support personalization and interactivity of learning.

• Active involvement of students and parents in learning planning and evaluation

## 6. Conclusion

The implementation of deep learning in Indonesian education is a great opportunity to improve the quality, efficiency, and personalization of learning. Although there are technical and structural challenges, a gradual and collaborative approach between all stakeholders. Collaboration between principals, teachers, and parents is needed, this can pave the way for a more adaptive, inclusive, and data-driven education system. In the future, this technology integration is no longer an option, but a necessity to answer the challenges of the industrial revolution 5.0 and the globalization of education. Therefore, awareness is needed by many parties so that we can produce a young generation that is globally competitive.

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