

Differentiated Instruction: Learning Solutions to Address Student Diversity Through a Constructivistic Theory Approach

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Abstract: This article discusses the implementation of Differentiated Instruction in learning, which aims to meet the different learning needs of students in the classroom with diverse abilities and backgrounds. The increasingly diverse learning in today's classrooms may require teachers to implement differentiated instruction in the classroom to create an effective learning process. This systematic review provides an overview of how differentiated instruction is applied in learning with a constructivistic theory approach. This article uses literature study research method. The result of this research is that Differentiated Instruction allows teachers to customise teaching based on three main characteristics of students: readiness, interest and learning profile. The strategy involves an initial assessment to understand students' ability levels and interests, and designing lessons to suit their needs. This process helps teachers manage diverse classrooms through a personalised approach that encourages active student engagement and meaningful learning experiences. This Differentiated Instruction approach is in line with constructivistic principles that emphasise experiential learning, knowledge development through social interaction and flexibility in structuring learning objectives and tasks. The results show that the implementation of Differentiated Instruction not only motivates students but also improves their ability to understand the subject matter more deeply, which in turn contributes to the overall success of learning. As a recommendation, teachers are advised to improve their competence in designing differentiated learning through specialised training and collaboration with peers. In addition, educational institutions need to provide resources and facilities that support the effective implementation of Differentiated Teaching.

Keywords: Learning, Student Diversity, Differentiated Instruction, Constructivistic Theory,

1. INTRODUCTION

Every student is unique, like a fingerprint, they have their own characteristics. They come with different characteristics, both as innate from birth and environmental influences. These characteristics include cognitive development, talent, interest, attitude, learning motivation, learning style, intelligence, family background, culture, ethnicity, religion, and others. These differences in characteristics are a necessity, which will synergise into a harmony in the learning process in both heterogeneous and homogeneous classes.

Teachers as leaders in the learning process are required to be able to embrace the differences in student characteristics [6]. This is in accordance with the pedagogical competencies that must be mastered by teachers, namely the ability to manage learning, one of which includes understanding students and developing students to actualise their various potentials.

The learning process is inseparable from curriculum development. In an effort to realise education that is more inclusive and responsive to student needs, the Merdeka Curriculum puts forward the concept of *Differentiated Instruction* or differentiated learning [5]. This approach aims to adapt the learning process to the characteristics, interests, and abilities of each student, so that each individual can develop optimally.

In the increasingly diverse world of education, students' needs are never uniform. Each individual has a unique background, interests and ways of learning. This is where *Differentiated Instruction* becomes crucial. Imagine a classroom where every student feels valued and understood. In this context, it allows teachers to tailor teaching methods to the specific needs of each student. This is where *Differentiated Instruction* comes into play, as differentiated learning allows all students to access the same classroom curriculum by providing entry points, learning tasks, and outcomes that are tailored to students' learning needs [3].

Differentiated Instruction can be applied using a constructivistic learning theory approach, because this theory asserts that the acquisition of intellectual skills will be related to the process of finding a balance between what they feel and know on the one hand and what they see a new phenomenon as an experience or problem. So with this approach, teachers can tailor the learning process to match the various needs, interests and learning styles of students. In a *Differentiated Instruction* classroom, students are encouraged to take an active role in their learning.

Differentiated learning is currently in the spotlight and is practised in education. Because it has an impact on improving the quality of the process and student learning outcomes. This is reinforced by research that has a similar discussion with this research. *First: Teachers and their implementation of differentiated instruction in the classroom*, by Suprayogi (2016). The study found that the implementation of

differentiated instruction was high, but still below critical benchmarks. The results of the regression analysis showed that 39% of the variation in the implementation of *differentiated instruction* could be significantly attributed to self-efficacy beliefs, higher constructivist beliefs, and higher class sizes. *Secondly: The principle of developing differentiated instruction in a flexible curriculum as a form of independent learning*, by Mariati Purba (2021). The results of the study are that the learning process is in accordance with the learning objectives, but the skill objectives are not explicitly written, but the worksheets are there. The learning process presented in schools has illustrated the existence of services to the different characteristics of children. *Third: Optimisation of Merdeka Curriculum through differentiated learning: Effectiveness and implementation strategy*, by Umi Nahdiah (2023). The findings of the study are Differentiated learning is effective to be applied in learning. Differentiated learning has a positive effect on learning in terms of learning outcomes and learning processes. Differentiated learning can improve students' academic achievement, positively influence students' motivation, participation, independence, learning concentration, self-confidence, and material understanding.

Since there are not many studies that use *differentiated instruction* to overcome the problem of student diversity, the author will conduct the research. The urgency of this research is to create a more effective and meaningful learning experience with *differentiated instruction*. This research can explore how the differentiated approach can help students who have diverse potential. Seeing the diverse backgrounds, the author took the research with the title *Implementation of Differentiated Instruction: A Learning Solution for Diverse Students through a Constructivistic Theory Approach*. With the *Differentiated Instruction* learning implemented, it is able to answer all its needs in the learning process and is in accordance with the mandate of the Merdeka Belajar National Curriculum in order to carry out educational transformation for the creation of superior humans.

2. THEORETICAL REVIEW

2.1 Differentiated Instruction

Differentiated instruction is a way for teachers to meet the needs of each learner because differentiated learning is a teaching and learning process where learners can learn subject matter according to their abilities, preferences, and needs so that they are not frustrated and feel like failures in their learning experience [4].

Deunk et al. [16] introduced the term differentiated instruction and defined it as "an organised yet flexible way to proactively adapt teaching and learning to meet children's needs and help them achieve maximum growth as learners." Teachers use a variety of teaching strategies to tailor learning content, processes and products to students' readiness levels, interests and aptitudes [17]. Instead of being described as a single teaching strategy, differentiated instruction is a set of varied teaching strategies and initiatives that provide students

with multiple opportunities for learning and meaning construction [18]. It can be a way of thinking (lens) that teachers should have when planning, implementing and reflecting on teaching and learning in their classrooms to provide inclusive education for all students.

In differentiated learning, teachers must understand and realise that there is not just one way, method, or strategy to learn a subject matter. Teachers need to organise learning materials, activities, daily assignments both in class and at home, and final assessments according to the learners' readiness to learn the materials, their interests or preferences in learning, and how to deliver the lessons that suit their learners' learning profiles.

On the other hand *Differentiated Instruction* is differentiated learning, here it is explained that "differentiated learning means that teachers will create different levels of expectations for task completion within a lesson or unit" [13]. They emphasise the importance of helping schools create an environment where all learners can succeed; for inclusion to be successful, all students must benefit. Differentiated learning is as important for students who find school easy as it is for those who find school difficult. All students benefit from the availability of a variety of methods and support, and the right balance between challenge and success.

Differentiated instruction is a modified curriculum where all children can learn in one class with different levels of ability. This approach is carried out in the teaching-learning process in the classroom with different abilities of children in the class.

2.2 Learner Diversity

Learner diversity is a condition where there are differences from various racial, ethnic, cultural, gender, social class, and religious groups [1]. There are several conditions of learner diversity, as follows:

1. **Individual Differences in Psychic Aspects**
Individual psychological differences include various aspects such as intellectual, emotional, social, and moral. This diversity occurs in accordance with the stages of human development which are influenced by factors such as maturation, readiness, rhythm, and pace of individual development, as well as the influence of the surrounding environment. Heredity and genetics also play a role in creating differences and diversity between individuals. However, these limitations do not have to hinder progress. To understand the psychological state of students, teachers need to know their backgrounds and collect complete data about each student. This will help teachers understand the diversity in the classroom and make the right learning decisions, without making students feel marginalised because of their different backgrounds[6].
2. **Individual Differences in Physical Aspects**
In terms of physical aspects, differences between individuals are very easy to observe, such as

differences in height, facial expressions, or body proportions that are influenced by genetic factors. However, environmental factors also influence these physical differences. One of the problems that often arise is bullying, which often occurs due to physical differences between students. Bullying usually occurs between larger students and smaller or weaker students. Bigger students often feel stronger and have the power to hurt their smaller friends, for example by teasing, threatening, or even forcing them to do certain tasks, such as doing homework[1].

2.3 Constructivistic Theory

Constructivism theory was developed by Jean Piaget and Lev Vygotsky. Piaget argues that knowledge is not passively acquired from the environment, but rather actively constructed by the individual through interaction with the surrounding world [8]. Meanwhile, Vygotsky argued that optimal learning occurs when children are given tasks that are slightly more difficult than what they can do on their own, but can still be completed with the help of others [12].

In constructivism learning theory, there are several strategies in the learning process. Learning strategies according to Slavin are as follows:

- a. *Top-down processing*, constructivism learning, students learn starting from a complex problem to solve, then produce or discover the skills needed.
- b. *Cooperative learning*, which is a strategy used for the learning process, where students will find it easier to comprehensively discover difficult concepts if they discuss them with other students about the problem at hand.
- c. *Generative learning*, this strategy emphasises the active integration between newly acquired material or knowledge with schemata, so that by using a generative learning approach, students are expected to be more adaptive when facing new stimuli [9].

3. RESEARCH METHODS

3.1 Research Methods

In the research "Differentiated Instruction: The Learning Solution In Diversity In The Classroom" the researcher used the library research method. Library research is a type of research used in the collection of information and data in depth through various literatures, books, notes, magazines, other references, as well as the results of previous relevant research, to obtain answers and theoretical basis regarding the problem to be studied [14]. This research examines learning that is tailored to the diversity and needs of students, with the aim of maximising the potential of each student. In this context, desk research utilises literature sources for its research data sources, without conducting field research [14]. In addition, desk research can be used to obtain information necessary for the interpretation of its own findings, including comparisons with the findings of other researchers [4].

3.2 Data Collections Instrument and Technique

In this study, three data collection techniques were used, namely, editing, organising, and finding [14].

1. Editing: researchers re-examine data sources in the form of literature, in terms of completeness, clarity, and harmony between one data source and another. re-examination of the data obtained, especially in terms of completeness, clarity of meaning and harmony of meaning between one another;
2. Organising: organising data sources in the form of literature obtained with the necessary framework;
3. Finding: conducting further analysis of the results of organising data using predetermined rules, theories and methods so that conclusions are found which are the results of answers to problem formulations.

Library research has five data analysis techniques, namely deductive, inductive, interpretative, normative, and historical [14]. The analysis techniques will be described as follows:

1. Deductive; thinking that starts from general facts and then draws a special conclusion.
2. Inductive; taking a conclusion from a concrete situation to abstract things, or from a special understanding to a general understanding.
3. Interpretative; interpreting a meaning into a normative meaning.
4. Comparative; comparing the object of research with a comparative concept.
5. Historical; analysing past events to find out why and how they happened.

4. RESULT

4.1 Implementation of Differentiated Instruction in Learning

For many teachers, the uncertainty of how to manage a differentiated classroom grows into a difficulty [8]. Although managing a differentiated classroom is not always easy, it can still be solved with differentiated instruction. With differentiated instruction, teachers can implement according to students' talents and interests.

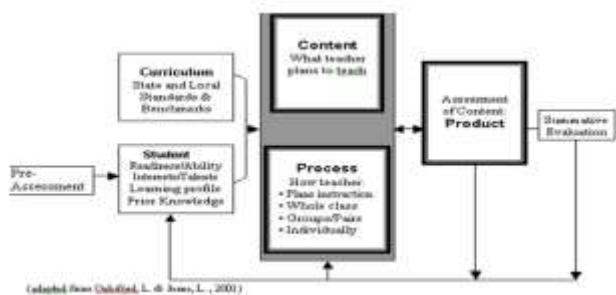
Managing a class with diverse students is a challenge in itself, there are several classroom management strategies with these conditions. This is revealed by Tomlinson in his book entitled *How To Differentiate Instruction In Mixed-Ability Classrooms*. *Firstly*: Have a strong rationale for differentiating instruction based on students' readiness, interests, and learning profiles. This can be done by frequently exchanging ideas with students and parents. *Second*: teachers can start implementing differentiated instruction gradually and according to their comfort and confidence levels. Some teachers may already be familiar with adjustments in teaching, and with a little guidance, they can move faster in implementing differentiated instruction. On the other hand, less experienced or less confident teachers may need to move slowly (see figure 1).

Third: Time-differentiated activities to support student success. Some students can manage group or independent work for long periods of time. Others have a lower capacity to sustain group or independent work. The aim is to help all students to sustain group and independent tasks for longer than they initially feel comfortable in learning. *Fourth:* Involve students in discussing class procedures and the process of forming discussion groups. This also helps them develop a sense of belonging in the classroom [11].



(Figure 1. Source: Tomlinson 2001)

The steps in implementing differentiated learning are to maximise each student's ability and the success rate of each student, where the teacher will assist in the learning process. The steps are explained according to the following chart.



In the picture above explains the process of implementing Differentiated instruction, namely by first the teacher conducts an initial (*assessment*) or conducts (*pre-test*) with the aim of knowing the extent of the ability of each child, so that the teacher can plan to modify the level to design and curriculum readiness of children's interests, children, based on interests or learning styles and knowledge that children have gained before (*Prior Knowledge*). Each child will achieve different standards. This is very important for teachers to do, because this way teachers can find out the level of children's abilities [7].

The relationship with the chart above is that in the preparing stage of differentiated learning, we must first know the purpose of students' learning in the classroom and then

conduct an assessment. Assessment in this case is not synonymous with testing, but the meaning of assessment in differentiated instruction is the stage of gathering information to develop goals in guiding the learning. The premise of the assessment is that every student is different. They differ in their *readiness* to receive the *learning* content to be taught, their *interests* and their *learning profile*. These three things will be assessed to facilitate the implementation of differentiated instruction in learning [11].

The important points that teachers will get in assessing the level of *readiness*, *interest* and *learning profile* are as follows.

1. *Readiness*, by assessing students' readiness levels, teachers will know what level of achievement and understanding students have reached.
2. *Interest*, every student is different, the differences can be in terms of hobbies, likes and dislikes of the students in the class. By assessing each student's interests, teachers will be able to find out how students can maintain their motivation to learn.
3. *Learning Profile*, by knowing how the learning profile of each student is about learning styles, multiple intelligences and also social/emotional factors, the teacher will be able to know how to learn how to learn children so that learning will be more effective.

With these assessments in place, learning can be carried out by making connections between teaching and students' experiences, fostering student autonomy, making effective use of strategic grouping, and providing research-based teaching of cognitive strategies. A truly differentiated classroom is one in which learners are understood to be constantly growing and changing as they participate in a variety of literacy events [10].

4.2 Implementing Differentiated Instruction in Learning as a Solution to Diversity through a Constructivistic Theory Approach

Differentiated Instruction and constructivistic learning theory have a close relationship as both focus on the understanding that each student learns in a unique way and requires an approach that suits their individual needs. One strategy in implementing Differentiated Instruction involves students working in small groups or independently. By using these strategies, teachers can more easily reach individual students and tailor activities or processes to their needs[11].

The following strategies can be used during differentiated instruction, including:

- a. *Tiered assignment*. An assignment designed to instruct different students according to their level of readiness, even if the content and learning objectives are the same.
- b. *Compaction of material*. Another strategy that focuses on student readiness, taking into account students' mastery of previous material.
- c. *Student Interest*. This strategy focuses on two things, students' readiness and interest, by choosing topics that are based on students' interests will motivate them to explore

- more. This is in accordance with previous research that the learning provided by the teacher is reflected in the teacher's efforts to provide students with code-focused and meaning-focused instruction based on student needs [19].
- d. Grouping. This strategy focuses on students' readiness, interest and learning profile. It also allows for the formation of different groups of students depending on the task and/or learning content. Sometimes students are placed in groups based on readiness, other times they are placed based on interest and/or learning profile. Thus, this strategy allows students to work with different peers, depending on the point of view in the grouping. The above description is in accordance with previous research from Connor et al. [20] found that synergising a good classroom learning environment with more whole-class and small-group comprehension instruction using questions and graphic organizers can support students' learning and reading comprehension.
 - e. Learning Contract. This strategy begins with an agreement between the teacher and students on the skills required and the components needed for the assignment. Each student identifies a method to complete the task.

This strategy will allow students to work at a pace that suits individual abilities, is based on students' learning styles, and helps students work independently. The focus of this strategy is readiness and learning profile [11]. This is in accordance with the results of previous literature that the implementation of differentiated learning has great potential to improve the quality of education [15].

Three student characteristics that guide differentiation are: readiness, interest, and learning profile. We know that students learn better if the task matches their skills and understanding of a topic (readiness), if the task arouses curiosity or passion in students (interest), and if the task encourages students to work in a way they prefer (learning profile) [11]. The three readiness can be applied in learning through constructivistic approach, as follows:

- a. This approach is relevant to constructivistic learning theory which emphasises that learning occurs effectively when students actively construct knowledge based on prior experience and understanding. In a constructivistic framework, the teacher acts as a facilitator who provides *scaffolding* to help students bridge the gap between the knowledge they have and the new skills they want to achieve. For example, in literacy learning, teachers can assign texts of different difficulty levels to groups of students based on their readiness, while providing support such as guiding questions or small group discussions. In this way, students are encouraged to be in the zone of proximal development (ZPD), where they can complete tasks that are slightly more difficult than what they can do independently, but still possible to achieve with guidance. This approach not only increases student engagement, but also ensures meaningful and relevant learning according to their needs.
- b. Student interests: Interest refers to topics that students want to explore or that will motivate them. The student

interest stage in *differentiated instruction* aims to link learning to topics, activities or approaches that trigger students' curiosity and intrinsic motivation. In constructivistic learning theory, students' active engagement is very important, and interest is one of the main drivers in creating relevant and meaningful learning. Teachers can capitalise on students' interests by offering choices in tasks or topics that match their preferences. For example, in science learning, students may choose to research certain natural phenomena that interest them, such as storms, volcanoes or marine ecosystems. By designing these interest-based projects, students actively construct knowledge through meaningful exploration, research and hands-on experience. This approach also allows students to see the connection between classroom learning and their daily lives, which strengthens engagement and understanding. The application of this strategy within a constructivistic framework supports personalised and experiential learning, while encouraging ownership of the learning process.

- c. Students' learning profiles: This includes how fast students learn (fast or slow learners), learning styles (visual, auditory, or kinesthetic learners), and grouping preferences (individuals, small groups, or large groups). In social studies learning, the application of student learning profiles can be done by identifying and adjusting the approach used to suit the different ways students process information. Based on constructivistic learning theory, students construct their knowledge through direct experience and interaction with their surrounding environment. For example, for more visual students, teachers can use concept maps, pictures or videos to explain topics such as the role of geography in the development of a civilisation. For kinesthetic students, teachers can invite them to do a simulation or role-play, such as acting out the role of a trader in the world trade routes in the past. In addition, for auditory students, group discussions and podcasts can be effective tools in understanding social concepts. By adapting teaching methods based on students' learning profiles, teachers can ensure that each student is involved in the knowledge construction process according to their strengths and styles, creating more meaningful and in-depth learning.

The above description is in line with previous literature that Differentiated learning is a philosophy and pedagogical approach in which teachers design and plan their learning based on readiness levels, interests, learning profiles, personal characteristics, and other factors that can affect learning [21]. Therefore, learning is customised accordingly, in response to the variability and diversity of learners.

5. CONCLUSION

The implementation of *Differentiated Instruction* in learning provides an effective solution to address student

diversity in the classroom. By identifying and customising instruction based on students' readiness, interests and learning profiles, DI ensures that every student gets a learning experience that suits their needs and potential. This process requires an initial assessment to understand students' ability levels, their interests, and their different ways of learning, which is then used to design personalised learning. While the challenges of managing a diverse classroom remain, this approach allows teachers to provide a more inclusive and effective learning experience.

The relationship between *Differentiated Instruction* and constructivistic learning theory is clear, as both emphasise the importance of active learning experiences based on prior experience and knowledge. In this case, teachers act as facilitators who support students to construct their knowledge through relevant and meaningful activities. The implementation of differentiated instruction that considers students' readiness, interests and learning profiles not only increases students' engagement and motivation, but also encourages them to engage more deeply in the knowledge construction process. Thus, *Differentiated Instruction* based on constructivistic principles can create more dynamic, effective and adequate learning for the diversity in the classroom.

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