

RELATIONSHIP BETWEEN UNDERSTANDING THE CONCEPT OF DIFFERENTIATED LEARNING AND TEACHERS' PEDAGOGICAL COMPETENCE IN SPECIAL SCHOOL KARANGANYAR

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Abstract

This study aims to determine the relationship between understanding the concept of differentiated learning and teachers' pedagogical competence at Special School Karanganyar. This study uses correlational quantitative research methods. The subjects of this study were 32 teachers at the Special School Karanganyar. The data collection technique used the Understanding of Differentiated Learning Concepts Test ($\alpha = 0.856$) and the Teacher Pedagogical Competence Scale ($\alpha = 0.913$). Data analysis techniques using Pearson Product-Moment. The results showed a correlation coefficient of 0.756 with a significance value of $p = <0.001$ or ($r_{count} > r_{table}$) $0.756 > 0.3388$ and a significance value of $p < 0.05$. It can be concluded that the hypothesis is accepted, namely that there is a significant relationship between understanding the concept of differentiated learning and teachers' pedagogical competence at Special School Karanganyar. This strong, positive relationship indicates that teachers' understanding of differentiated learning will increase alongside their pedagogical competence. Thus, it can be concluded that teachers' understanding of differentiated learning plays an important role and is strongly related to their pedagogical competence at Special School Karanganyar.

Keywords: differentiated learning concept; teacher; understanding; pedagogical competence.

Abstrak

Penelitian ini bertujuan untuk mengetahui hubungan antara pemahaman konsep pembelajaran diferensiasi dan kompetensi pedagogis guru di SLB Negeri Karanganyar. Penelitian ini menggunakan metode penelitian kuantitatif korelasional. Subjek penelitian ini adalah 32 guru di SLB Negeri Karanganyar. Teknik pengumpulan data menggunakan Tes Pemahaman Konsep Pembelajaran Diferensiasi ($\alpha = 0,856$) dan Skala Kompetensi Pedagogis Guru ($\alpha = 0,913$). Teknik analisis data menggunakan Pearson Product Moment. Hasil penelitian menunjukkan koefisien korelasi sebesar 0,756 dengan nilai signifikansi $p = <0,001$ atau ($r_{hitung} > r_{tabel}$) $0,756 > 0,3388$ dan nilai signifikansi $p < 0,05$. Dapat disimpulkan bahwa hipotesis diterima, yaitu terdapat hubungan yang signifikan antara pemahaman konsep pembelajaran diferensiasi dan kompetensi pedagogis guru di SLB Negeri Karanganyar. Hubungan positif yang kuat ini berarti bahwa pemahaman guru terhadap konsep pembelajaran diferensiasi akan meningkat seiring dengan kompetensi pedagogis mereka. Dengan demikian dapat disimpulkan bahwa pemahaman guru tentang pembelajaran berdiferensiasi memainkan peran penting dan memiliki hubungan yang kuat dengan kompetensi pedagogis mereka di SLB Negeri Karanganyar.

Kata kunci: guru; konsep pembelajaran diferensiasi; kompetensi pedagogic; pemahaman.

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INTRODUCTION

Education is the key to a nation's progress, with an important role in developing the potential of human resources (HR). According to Rahman et al. (2022), national education should include personality development, intelligence, skills, and broad insight. Schools as educational institutions have the responsibility to create a supportive learning environment, so qualified educators are needed.

Teachers are not only in charge of delivering material, but also act as facilitators, motivators, and mentors for students (Kinanti et al., 2023). To perform this role optimally, teachers must have adequate competencies, including a deep understanding of the characteristics of students and the ability to manage effective learning (Wibowo & Hamrin, 2012).

Teacher competencies, including pedagogical competencies, are the main foundation in creating effective learning. Sutrisna & Artajaya (2022) state that experienced teachers should have a higher level of professionalism. Government Regulation No. 13/2015 emphasizes that teachers must have four competencies: pedagogic, personality, professional, and social. Pedagogic competence, which includes understanding the characteristics of learners and managing the learning process, is critical to educational success (Mulyana, 2020).

In the context of special schools (SLB), an understanding of differentiated learning is crucial to meet the unique needs of each learner (Apriana & Hindun, 2023). This approach emphasizes adjusting learning methods, materials, and strategies according to each learner's abilities, interests, and learning styles (Naibaho, 2023). However, its implementation in the field still encounters various obstacles. Observations at Special School Karanganyar, for example, show that some teachers still apply uniform methods for all learners, without considering individual differences. In addition, the high administrative burden often distracts teachers from their main task, which is teaching (Hoesny et al., 2021; Abdiyantoro et al., 2024). Research shows that the gap between theory and practice often hinders teaching effectiveness (Darling-Hammond et al., 2020). This approach emphasizes adjusting learning methods, materials and strategies according to each learner's abilities, interests and learning styles (Naibaho, 2023).

Another issue is the lack of ongoing training for teachers on differentiated learning. Although teacher professional development policies exist, their implementation has been uneven (Hoesny et al., 2021). As a result, many teachers do not fully understand how to implement differentiated learning effectively. In fact, a good understanding of this concept is closely related to teachers' pedagogical competence. Teachers who have high pedagogical competence tend to be better able to design learning that suits the needs of students (Mulyana, 2020).

Considering these problems, this study aims to determine the relationship between understanding the concept of differentiated learning and pedagogical competence of teachers in SLB. Hopefully, the results of this study can provide new insights into the importance of strengthening pedagogical competence in improving the quality of learning for students with special needs.

METHOD

This study uses a correlational quantitative approach to determine the relationship between understanding the concept of differentiated learning and the pedagogical competence of teachers in Special school Karanganyar. The research population is teachers who teach in the SLB. The sampling technique uses a census sample or total sample, that is, the number of samples is the same as the

population (Arikunto, 2014). Data collection using tests and scales must be validated and reliable (Sugiyono, 2020) on the Test of Understanding the Concept of Differentiated Learning (30 items) and the Teacher Pedagogical Competence Scale (30 items). Data analysis used Pearson Product Moment correlation using SPSS version 27.

RESULTS AND DISCUSSION

The Pearson Product Moment correlation test results show a significant relationship ($p = < 0.001 < 0.05$), indicating a positive relationship between understanding the concept of differentiated learning and teacher pedagogical competence. The positive correlation coefficient ($r = 0.756$) indicates that the higher the teachers' understanding of the concept of differentiated learning, the higher their pedagogical competence. Thus, increasing understanding of the concept of differentiated learning contributes significantly to improving teachers' pedagogical competence.

The findings of this study are supported by the results of Pertiwi's research (2024), which found a positive relationship between teacher pedagogical competence and teacher understanding of distance learning, with a correlation value of $0.286 > 0.284$. This means that teachers who have good pedagogical competence tend to be more effective in managing and delivering material, so that students can understand learning more optimally. This is in line with the results of Maulidya & Ulfah's research (2023), which showed a good correlation ($r_{xy} = 0.401, p = 0.002 < 0.05$) between teacher competence and understanding of student subject matter at Bina Pangudi Luhur Jakarta High School. Improving teachers' understanding of subject matter also contributes to improving pedagogical competence.

Izza & Adi's (2023) research supports this finding, reporting that 92% of teachers understood the basic concepts of differentiated learning, indicating a high awareness of the importance of this strategy in the learning process. Widaningsih (2024) also found that pedagogical competence had a 70.4% effect on the implementation of differentiated learning, which strengthens the evidence that these two variables influence each other. In addition, Emilda et al. (2015) confirmed a significant relationship between teachers' understanding of pedagogical competence and teaching ability, with a contingency coefficient of $C = 0.5$ and $C_{max} = 0.81$. Alda's research (2024) also shows significant results, where teachers' mastery of planning, implementation, use of media, and learning resources can support optimal concept understanding.

Agustinawati & Mulyati (2023) stated that teachers' in-depth understanding of the concepts and practices of differentiated learning is needed for optimal implementation in the classroom. Teachers with high pedagogical competence are able to understand the diversity of learning styles of students and design appropriate learning strategies (Suhartono, 2020). Nugroho & Listyarini (2021) also emphasized that understanding the concept of differentiated learning is not only limited to theory, but must be applied flexibly according to the classroom context.

In line with this, the pedagogical content knowledge theory proposed by Shulman (in Sarkar et al., 2024) also emphasizes that teachers need to have a deep understanding not only of the teaching

material, but also of the method of delivery. Teachers who master pedagogical competence well will be more able to adapt and implement differentiated learning strategies effectively, so that students' understanding of the material can increase significantly. The results of this study are also consistent with several previous studies that emphasize the importance of teachers' conceptual understanding in developing pedagogical competence. For instance, research conducted by Pertiwi (2024) demonstrated a positive relationship between teacher pedagogical competence and teachers' understanding of learning concepts, indicating that teachers with stronger conceptual knowledge tend to exhibit better pedagogical practices. Similarly, Maulidya and Ulfah (2023) found a significant correlation between teacher competence and understanding of subject matter ($r_{xy} = 0.401, p < 0.05$), suggesting that mastery of educational concepts contributes to teachers' ability to design and implement effective learning. Furthermore, Izza and Adi (2023) reported that 92% of teachers had a good understanding of the basic concepts of differentiated learning, reflecting a high level of awareness regarding the importance of adapting instruction to students' diverse needs. These findings collectively reinforce the present study, which demonstrates that a deeper understanding of differentiated learning concepts is associated with higher pedagogical competence.

In addition, several studies have highlighted the reciprocal relationship between pedagogical competence and the implementation of differentiated learning. Widaningsih (2024) found that pedagogical competence contributed 70.4% to the successful implementation of differentiated learning, indicating that competent teachers are more capable of applying differentiated strategies effectively in the classroom. Agustinawati and Mulyati (2023) further emphasized that teachers need a comprehensive understanding of differentiated learning principles and practices to optimize classroom instruction. This finding is also supported by the Pedagogical Content Knowledge (PCK) theory, which argues that effective teaching requires an integration of content knowledge and pedagogical skills. Teachers who possess strong pedagogical competence and a deep understanding of differentiated learning are better equipped to adapt instructional methods to students' varying characteristics and learning needs, thereby enhancing the quality and effectiveness of the learning process. Consequently, the present study provides additional empirical evidence that strengthening teachers' understanding of differentiated learning concepts is an important strategy for improving pedagogical competence and promoting more inclusive and effective classroom practices. Thus, this study reveals a strong correlation between understanding the concept of differentiated learning and teachers' pedagogical competence. This confirms the importance of improving teachers' understanding of differentiated learning concepts to support the development of optimal pedagogical competence and effective learning implementation in the classroom.

CONCLUSION

This study shows that there is a significant relationship between understanding the concept of differentiated learning and the pedagogical competence of teachers in Special School Karanganyar. This strong positive relationship means that teachers' understanding of the concept of differentiated learning will increase along with their pedagogical competence. Thus it can be concluded that teachers' understanding of differentiated learning plays an important role and has a strong relationship with their pedagogical competence in Special School Karanganyar.

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