



Differentiated instruction in mover kindergarten: A model implementation with *kurikulum merdeka*

Ika Maryani^{1,a*} , Ristiyati^{2,b}, Suyatno^{1,c} 

Email: ^{1*} ika.maryani@uad.ac.id, ² resti77678@gmail.com, ³ suyatno@pgsd.uad.ac.id

^{a,b} Universitas Ahmad Dahlan, Yogyakarta, Indonesia

Article History

Submitted: August 3, 2023
Accepted: August 31, 2023
Published: September 13, 2023
DOI: 10.26555/jecce.v6i1.8775

Published by:
Universitas Ahmad Dahlan

This is an open-access article
under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



*Corresponding author

ABSTRACT

This study formulated a model for differentiated instruction at a kindergarten and described the factors that promoted or inhibited its implementation. A qualitative case study design was employed. The data were gathered through interview, observation, and documentation. The study involved a kindergarten principal, two kindergarten teachers, and 15 students from Aisyiyah Bustanul Athfal kindergarten as the mover school. Researchers were assisted by an interview guideline, an observation guideline, and documentations. Data analysis was performed based on Miles and Huberman's interactive model. The data were validated through source and technique triangulation. Differentiated instruction was conducted using the center learning model, using demonstration, outing-class, and role-playing methods. Factors that facilitated the differentiated instruction implementation at the kindergarten included a supportive, safe, and comfortable learning environment, sufficient resources and materials, students' psychological conditions and preparedness for learning, and the active engagement of school communities inside and outside the school. Factors that promoted the process comprised the scarcity of learning resources, insufficient infrastructure, a shortage of qualified educators, and the psychological well-being of students during the learning process. The instructional media used for the instruction were loose parts and natural materials surrounding the children.

Keywords: differentiated instruction; mover kindergarten; kurikulum

INTRODUCTION

The research was motivated by the significant decline in learning outcomes and the need for effective learning strategies among Indonesian students following the outbreak of the COVID-19 pandemic. The closure of schools followed by the implementation of a limited face-to-face policy resulted in the most significant instances of learning loss in kindergarten and elementary school settings (A. Iskandar et al., 2022; Taimur et al., 2021). The World Bank recently published research findings that indicate a significant loss of study time, ranging from 0.9 to 1.2 years, as well as a decline in reading proficiency by 25-35 points based on the Programme for International Student Assessment (PISA) data. The phenomenon of learning loss has led to a significant proportion of elementary school students in Indonesia, specifically 70%, exhibiting reading proficiency scores that fall below the established minimum proficiency level

(Yarrow et al., 2020). Consequently, this accumulation will impede the attainment of educational goals at subsequent stages. In addition to the implementation of school closures and restrictions on in-person interactions, the primary factor contributing to this issue is the inefficacy of online distance learning.

The success of online distance learning in kindergarten and elementary education is contingent upon the active involvement and support of families and parents. Nevertheless, parents may not always possess the capacity to actively participate in their children's educational endeavors within the home setting (Cho & Ilari, 2021; Novianti & Garzia, 2020; Tabroni et al., 2022). Learning loss refers to a decline in academic knowledge and skills that is attributed to an extended period of remote learning (Donnelly & Patrinos, 2022; Engzell et al., 2021). The cessation of in-person instruction in educational institutions has led to a decline in students' cognitive knowledge, vocational aptitude, and social competencies (Hadie et al., 2021; Hu et al., 2021; Lin & Shek, 2021). The primary determinants encompass the provision of learning resources that entail a cost (Sadeghi, 2019), challenges in seeking guidance from instructors (Ye et al., 2021), interruptions in internet connectivity (Özüdoğru, 2021), and the absence of an established optimal approach to effectively manage online distance learning (Mishra et al., 2020). Educational institutions also encounter challenges associated with constraints in the provision of instructional resources (Cevikbas & Kaiser, 2020). There has been a reduction in the allocated hours for teaching and learning, resulting in inadequate conveyance of subject matter. Additionally, the teaching practicum material poses challenges for instructors. These factors exert a concurrent influence on students.

One possible approach for addressing the case mentioned above involves the reconstruction of the curriculum and learning models that prioritize meaningful and self-directed learning. Differentiated instruction is a pedagogical approach aimed at expediting the attainment of learning goals, thereby enabling educational institutions to mitigate the learning gaps exacerbated by the ongoing pandemic. The utilization of differentiated instruction is advocated due to its inherent benefits in promoting meaningful and student-centered educational experiences (Hasanah et al., 2022; Helmi et al., 2023). The distinguishing feature of the differentiated instructional model resides in its inherent attributes that afford students the ability to navigate their own educational trajectory. Differentiated instruction is an educational approach that highlights the overall well-being and safety of students, both physically and mentally, within the classroom setting (Hasanah et al., 2022).

Extensive scholarly investigations have been undertaken to explore the concept of differentiated instruction, with particular emphasis on the examination of teacher knowledge, beliefs, and implementation, as well as their impacts on students (Stollman et al., 2019). The learning approach has been positively received by educators as it effectively identifies student needs by considering various factors such as learning readiness, interests, and learning styles (Hirza et al., 2022; Novita Sarie, 2022). The incorporation of differentiated instruction within the classroom setting has been found to yield numerous advantageous outcomes in terms of students' academic advancement and psychosocial growth (Olimov, 2020). At the kindergarten level, differentiated instruction is implemented by offering projects referred to as differentiated projects (DP). Employing DP with comprehensive intervention produced superior results compared to the alternative approach (Dijkstra et al., 2016). The teacher's cognitive comprehension of differentiated instruction significantly impacts its implementation in the classroom.

Numerous scholarly investigations conducted in Indonesia have examined the implementation of differentiated instruction within the *Merdeka* curriculum across different educational tiers. However, a dearth of scholarly inquiry pertaining to kindergarten settings has been observed. The literature search yielded studies examining the application of differentiated instruction in elementary schools, specifically utilizing inquiry models, to enhance students' numeracy skills (Rahmah et al., 2022) and mathematical proficiency (Aprima & Sari, 2022). Previous studies conducted in elementary schools have primarily focused on examining the existing body of literature pertaining to the concept of differentiated instruction. Research has been conducted at the junior high school level to investigate the implementation of differentiated instruction in mathematics (Evendi et al., 2023), religious studies (Simbolon, 2022), and the Indonesian language (D. Iskandar, 2021). However, other studies have primarily focused on learning styles as a factor to consider in differentiated instruction (Alhafiz, 2022). Research on differentiated instruction at the senior high school level remains constrained primarily to the domains of science (Manalu et al., 2023; Setiyo, 2022) and mathematics (Surat, 2019). Hence, this study will provide significant insights into the application of differentiated instruction in kindergarten, with a particular focus on the Mover Kindergarten where the *Merdeka* curriculum is being implemented. The primary findings of this study will contribute to the existing body of knowledge in this area.

METHOD

Research Design

The present study employed a qualitative descriptive approach in conducting case study research. Qualitative research utilizes and gathers diverse empirical materials, such as case studies, personal experiences, introspection, life stories, interviews, observations, historical records, interactional data, and visual texts. These sources provide descriptions of routine moments, meanings, and challenges in an individual's life (Aspers & Corte, 2019; Johnson et al., 2020; Williams, 2019). The aforementioned approach encompasses theological, normative, sociological, managerial, and pedagogic dimensions (Moschella & Willhauck, 2018). The present study focused on the normative theological approach employed by educators when teaching scientific disciplines, particularly in terms of the interplay between human beings and their Creator. The sociological approach was employed to examine the collaborative dynamic between the kindergarten principal, teachers, and students, with the aim of fostering a favorable influence on students, specifically in terms of their overall well-being. The utilization of the managerial approach involved the assessment of differentiated instruction, along with the identification of its supporting factors and the development of problem-solving strategies for its implementation. The pedagogical approach encompassed the incorporation of differentiated instructional activities within the educational framework executed by the kindergarten principal and teachers.

Types and Sources of Data

This study involved two distinct categories of data: primary and secondary data. Primary data were gathered using observations, documentation, and in-depth interviews, facilitated by interview guidelines and tape recorders (Hammi, 2017). The employed method of observation was participant observation, wherein the researcher closely monitored and documented the activities of the research subjects (Ciesielska et al., 2017). Documentation in the form of videos or photographs of recorded interviews and observations was considered primary data, whereas secondary data were gathered from schools and other references consisting of documented school policy documents and learning tools. The sample selection takes into account the data requirements. Purposive sampling was used for policymakers, teachers and students. The data were collected from a school principal, two teachers, and fifteen students affiliated with *Aisyiyah Bustanul Athfal* Kindergarten.

Data Collection

The data were gathered via observation, interviews, and documentation. Observations were employed due to the manageable scale of data pertaining to human behavior, work processes, natural phenomena, and the observed respondents (Moser & Korstjens, 2018). During the observations, observers directed their attention towards various elements of learning, such as planning, implementation, evaluation, supporting and inhibiting factors, and the contributions of the participating school towards the achievement of differentiated learning outcomes. The objective was to develop a comprehensive understanding of effective differentiated instructional strategies in early childhood education, with a specific focus on the integration of technology in the current global computing era. The principal was interviewed in relation to learning policies. Data on the various aspects of planning, implementation, evaluation, and the factors that either support or inhibit the implementation of differentiated instruction were collected through interviews conducted with both teachers and students. Documentation was conducted to verify the accuracy of the data obtained through observations and interviews. The analyzed documents included daily journals, attendance lists, supervision books, and official school documents such as the school work program, curriculum, annual program, semester program, teaching modules, assessments, and reflection journals. In this study, the researchers assumed a pivotal role as the primary instrument, so their comprehension of research variables was vital (Clark & Vealé, 2018; Rogers, 2018).

Data Triangulation

The data were validated through technique and source triangulation. Source triangulation involves the comparison of data derived from a singular source with data obtained from multiple sources or collected through diverse methods and temporal contexts. The present study cross-validated the data collected through interviews conducted with the school principal with the data obtained from interviews conducted with teachers and students. The technique of triangulation employed in this study involved the systematic comparison of interview data, observational data, and documentation collected at various points in time. The data collected from interviews with informants, observations, and documents was synthesized, considering reliability, dependability, and certainty factors.

Data Analysis

The study's data were analyzed using the interactive qualitative data analysis suggested by Miles and Huberman, which consisted of data reduction, data display, and conclusion drawing and verification (Aman Mezmir, 2020; Miles et al., 2013; Victoria Elliott, 2018).

RESULTS AND DISCUSSION

The Planning of Differentiated Instruction

Differentiated instruction revolves around acknowledging and addressing the diverse learning needs exhibited by students. This phenomenon can be attributed to the fact that students are exposed to diverse environments (Bayumi, 2021). The implementation of differentiated instruction in the classroom is essential for addressing the diverse learning needs of students, encompassing their individual interests, levels of preparedness for learning, and preferred learning styles. The effective execution of differentiated instruction at the research location was impacted by the principal's role. To enhance educational standards at the kindergarten, the principal has implemented policies and programs that prioritize the well-being and success of students. These initiatives included the development of an adaptive curriculum and the implementation of programs aimed at fostering teacher creativity to increase the effectiveness of instruction and maximize learning outcomes. The kindergarten even held a training program where proficient resource individuals were invited to aid teachers in enhancing their creativity and innovation in education.

The findings from the interview conducted with the principal indicated that the principal implemented policies pertaining to differentiated instruction with the aim of enhancing the overall quality of education and facilitating students in attaining their learning objectives. The implementation of differentiated instruction was anticipated to effectively support student well-being in the classroom, irrespective of the variations in their learning styles. The principal's role was oriented towards promoting student progress, and the principal's policy was focused on the development of students in accordance with their individual learning styles. Through the principal's programs and policies, it was expected that the acquisition of knowledge could yield substantial advantages for students in the forthcoming years. We observed the active involvement of the internal and external community members. The school principal consistently engaged in the dissemination of school programs to student guardians, school committees, and foundation administrators. Therefore, the strategies implemented by the school principal garnered endorsement and favorable reactions from the neighboring community.

The results of the interviews with the school principal are consistent with what the chairman and vice chairman of the school committee communicated. According to them, the school's programs thus far have been extremely fascinating and creative. According to them, school programs have been able to support the development of student competencies, where students' accomplishments are aligned with their interests and abilities, and where learning is also aligned with students' readiness levels and learning styles. The school committee admitted that they never received negative responses or complaints from kindergarten parents regarding educational activities. This finding suggests that the school's curriculum can be accepted by all school members.

The Implementation of Differentiated Instruction

The study's findings revealed that teachers at Aisyiah Kindergarten played an active role as learning agents who could develop learning based on their students' learning interests, readiness, and learning styles. They were constantly committed to advancing learning for the benefit of their students. These teachers attempted to comprehend and acquire information about differentiated instruction through autonomous study on the Merdeka Mengajar Platform, collaboration with colleagues, and participation in learning workshops. They also tried to comprehend the principles of differentiated instruction that must be implemented in the classroom and continued to improve these learning activities. In addition, the teachers maintained a commitment to implementing learning that is consistent with the needs of the times, which are always in the students' favor. They sought to provide students with the finest learning opportunities in order to maximize their learning outcomes.

In the execution of differentiated instruction, the teachers conducted engaging, diverse, and stimulating learning activities. In this particular scenario, the educational institution offered students the chance to engage in learning activities with increased levels of participation. The instructional content was disseminated through suitable pedagogical approaches, facilitating enhanced comprehension among students. The teachers could successfully establish a conducive learning environment by cultivating students' interpersonal connections and active participation in various learning activities. The teachers also fostered a culture of peer tutoring among students, thereby promoting mutual motivation. The teachers employed instructional strategies involving various forms of media to enhance the cultivation of students' abilities, inclinations, preparedness for learning, and learning styles. The teachers were also capable of inspiring students through the use of trigger sentences. The findings of this study revealed that

educators at Aisyiah Kindergarten demonstrated a proactive approach in carrying out assessments of learning, thereby enabling them to enhance future learning endeavors.

At the designated research site, educators have successfully incorporated optimal elements of differentiated instruction, including the establishment of positive environmental conditions that effectively foster students' engagement in the learning process and facilitate the cultivation of their competencies. The establishment of a collaborative and conducive learning environment is essential to fostering students' intrinsic motivation to acquire knowledge, thereby facilitating their holistic personal growth and development. The positive learning environment is conducive to the fulfillment of students' prosperity and inner and outer happiness. The findings derived from our observations indicated that engaging learning activities could stimulate students intellectually. **Figure 1** illustrates outside-class activities aimed at familiarizing students with indigenous flora, including ginger, kencur (aromatic ginger), and lempuyang (*Zingiber aromaticum*).



Figure 1. Outing class activities introducing students to indigenous flora

Differentiated instruction refers to the instructional approach employed by educators to cater to the diverse needs of students. Teachers, acting as facilitators of learning, utilize various strategies to assess and accommodate students' individual abilities, taking into account their interests, learning preparedness, and preferred learning styles. Teachers at the research site implemented differentiated instruction utilizing the central model, which involved the use of demonstration methods, out-of-class experiences, and role playing. When implementing differentiated instruction, the teachers created an optimal learning environment that could foster a sense of safety and comfort among students. Differentiated instruction was also

implemented through the integration of holistic-integrative activities, which aimed to provide children with a deep understanding (*Haqul Yakin*) or hands-on experiences.

Differentiated instruction is anticipated to afford students the opportunity to enhance their potential in accordance with their individual levels of preparedness, areas of interest, and study profiles (Gheysens et al., 2022). Considering student learning profiles, such as learning styles, has been acknowledged as a proactive approach to address potential learning challenges (Erviana et al., 2017; Maryani, Fatmawati, et al., 2018; Maryani, Husna, et al., 2018). Research indicates that students who receive differentiated instruction exhibit superior learning outcomes compared to students in the conventional teaching method group (O. A. Awofala & O. Lawani, 2020). In conjunction with learning outcomes, differentiated instruction yields other positive effects, including heightened motivation, enhanced student-teacher rapport, and the reduction of the student achievement disparity (Ginja & Chen, 2020).

Factors Promoting and Inhibiting Differentiated Instruction

We found several factors that supported the implementation of differentiated instruction in Aisyiyah Kindergarten. These factors included the establishment of a secure, comfortable, and conducive learning environment for students, the availability of adequate instructional resources, the consideration of students' psychological conditions and readiness for learning, and the active involvement of the school community both within and outside the educational institution. The involvement of community members significantly contributed to the successful implementation of differentiated instruction at the kindergarten. The level of community engagement with the school's activity programs significantly influenced the educational experience and outcomes within the school environment. The impediments to the successful implementation of differentiated instruction primarily stemmed from constraints related to learning resources, insufficient infrastructure, a shortage of teaching personnel, and the psychological state of students during the learning process. At Aisyiyah Kindergarten, the instructional media employed for differentiated instruction included loose parts and natural resources found in the immediate environment surrounding the students. The findings from the interviews conducted with teachers at the research site are presented in **Figure 2**.

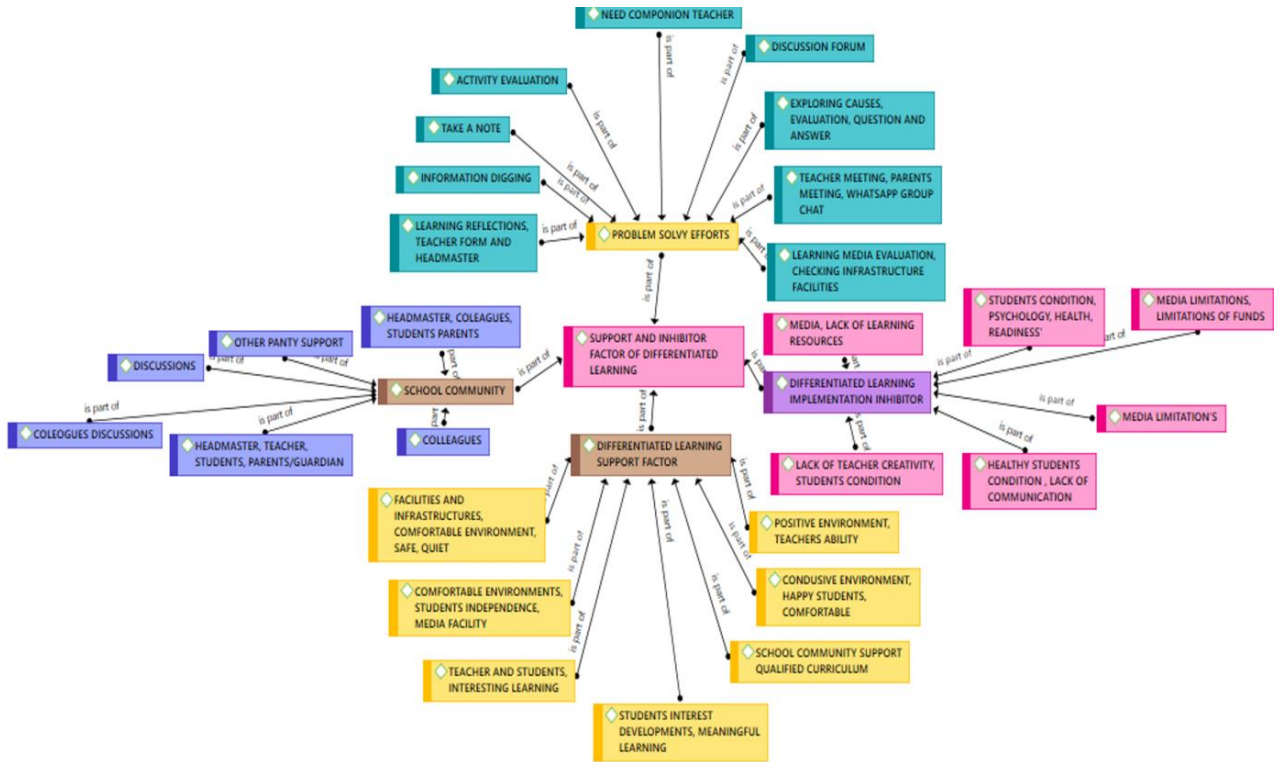


Figure 2. The Results of Teacher Interviews

The successful implementation of differentiated instruction at the research location was impeded by various factors, which can be addressed by taking into account the specific circumstances and needs of the students. To address the challenges associated with learning assessment, the educators at the educational institution took the initiative to jot down brief observations during the instructional session. To address the challenges posed by students with unfavorable psychological states, such as restlessness, illness, fatigue, and anger, the teachers offered motivational support within the classroom setting. This approach aimed to ensure that the academic progress of unaffected students remained uninterrupted despite the presence of peers experiencing psychological distress. The teachers at the kindergarten consistently made sure that students maintained their enthusiasm during educational endeavors. The teachers also attempted to establish a sense of stability within the educational setting in order to maintain an environment that is conducive to the seamless execution of learning assessments. The successful implementation of differentiated instruction, encompassing all stages from initiation to assessment, was contingent upon effective communication and collaboration with all school members. This endeavor was undertaken to collaboratively assess the effectiveness of the differentiated instruction programs that had

been implemented thus far. Furthermore, the educational institution consistently communicated with stakeholders and other school communities.

The implementation of differentiated instruction is hindered by various challenges, including the substantial teaching workload faced by educators, the size of the class, and the allocation of teaching time (Al-Shaboul et al., 2021). Furthermore, a significant challenge is presented by the wide range of teacher philosophies and practices that must be navigated in order to effectively tailor instruction to students' individual interests, levels of preparedness, and unique learning profiles (Butova et al., 2019). The primary obstacle lies in the way educators can effectively evaluate their students in order to inform and shape their instructional practices. There are several factors that contribute to the suboptimal implementation of differentiated instruction. One such factor is the insufficient frequency of implementing this approach, which falls below the recommended level necessary to effectively address the heterogeneity of students and teachers' various competencies in dealing with the challenges (Pozas et al., 2020). The primary obstacles associated with differentiated instruction also encompass insufficient teacher proficiency, limited time to manage heavy workloads, and inadequate time for evaluating student learning (Shareefa, 2020). The challenges encountered by educators in various research locations may exhibit variations. This research has not extensively examined the endeavors undertaken by other schools to address the challenges associated with the implementation of differentiated instruction.

CONCLUSION

The results of the current study showed that the application of differentiated instruction at Aisyiyah kindergarten was conducted through a holistic-integrative approach, thereby enabling children to engage in meaningful and hands-on experiences. At the designated research site, differentiated instruction was carried out using the center learning model, which involved the utilization of demonstration techniques, outing classes, and role-playing exercises. Various factors contributed to the successful implementation of differentiated instruction. These factors encompassed the provision of a conducive environment that might foster a sense of security and comfort among students, the availability of appropriate instructional media, the consideration of students' psychological well-being, their readiness to engage in learning, and the involvement of the broader community both within and outside the school. The implementation of differentiated instruction was hindered by various factors, including limited

availability of learning resources, inadequate infrastructure, insufficient teaching personnel, and the psychological state of students during the learning process. This requires the attention of school principals to make policies and increase the role of the community and parents in collaboration.

ACKNOWLEDGMENT

We would like to thank the Directorate of Research, Technology, and Community Service, the Indonesian Ministry of Education, Culture, Research, and Technology, for supporting this research through a master's thesis research grant in 2023 with the contract numbers 181/E5/PG.02.00.PL/2023, 0423.11/LL5-INT/AL.04/2023, and 051/PPS-PTM/LPPM UAD/VI/2023.

REFERENCES

- Al-Shaboul, Y., Al-Azaizeh, M., & Al-Dosari, N. (2021). Differentiated instruction between application and constraints: Teachers' perspective. *European Journal of Educational Research*, 10(1), 127–143. <https://doi.org/10.12973/EU-JER.10.1.127>
- Alhafiz, N. (2022). Analisis Profil Gaya Belajar Siswa untuk Pembelajaran Berdiferensiasi di SMP Negeri 23 Pekanbaru. *Jurnal Cakrawala Ilmiah*, 1(5), 1133–1141. <http://bajangjournal.com/index.php/JCI>
- Aman Mezmir, E. (2020). *Qualitative Data Analysis: An Overview of Data Reduction, Data Display and Interpretation*. 10(21). <https://doi.org/10.7176/RHSS/10-21-02>
- Aprima, D., & Sari, S. (2022). Analisis Penerapan Pembelajaran Berdiferensiasi Dalam Implementasi Kurikulum Merdeka Pada Pelajaran Matematika SD. *Cendikia : Media Jurnal Ilmiah Pendidikan*, 13(1), 95–101. <https://doi.org/10.35335/CENDIKIA.V13I1.2960>
- Aspers, P., & Corte, U. (2019). What is Qualitative in Qualitative Research. *Qualitative Sociology*, 42(2), 139–160. <https://doi.org/10.1007/S11133-019-9413-7/METRICS>
- Bayumi, et al. (2021). *Penerapan Model Pembelajaran Berdiferensiasi* (Rahmadani Herlambang (ed.); Pertama). Deepublish.
- Butova, A., Dubskikh, A., Kisel, O., Lomakina, Y., & Potrikeeve, E. (2019). Differentiated Approach As a Factor on Development of Students' Professional Communicative Competence. *Amazonia Investiga*, 8(19), 287–297.
- Cevikbas, M., & Kaiser, G. (2020). Flipped classroom as a reform-oriented approach to teaching mathematics. *ZDM*, 52(7), 1291–1305. <https://doi.org/10.1007/s11858-020-01191-5>
- Cho, E., & Ilari, B. S. (2021). Mothers as Home DJs: Recorded Music and Young Children's Well-Being During the COVID-19 Pandemic. *Frontiers in Psychology*, 12(637569), 1427. <https://doi.org/10.3389/FPSYG.2021.637569/BIBTEX>
- Ciesielska, M., Boström, K. W., & Öhlander, M. (2017). Observation methods. *Qualitative Methodologies in Organization Studies*, 2, 33–52. https://doi.org/10.1007/978-3-319-65442-3_2/COVER
- Clark, K. R., & Vealé, B. L. (2018). Strategies to Enhance Data Collection and Analysis in Qualitative Research. *Radiologic Technology*, 89(5), 482CT-485CT. <http://www.radiologictechnology.org/content/89/5/482CT.full>

- Dijkstra, E. M., Walraven, A., Mooij, T., & Kirschner, P. A. (2016). Improving kindergarten teachers' differentiation practices to better anticipate student differences. *Educational Studies*, 42(4), 357–377. <https://doi.org/10.1080/03055698.2016.1195719>
- Donnelly, R., & Patrinos, H. A. (2022). Learning loss during Covid-19: An early systematic review. *Prospects*, 51(4), 601–609. <https://doi.org/10.1007/S11125-021-09582-6/TABLES/3>
- Engzell, P., Frey, A., & Verhagen, M. D. (2021). Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the National Academy of Sciences of the United States of America*, 118(17), e2022376118. https://doi.org/10.1073/PNAS.2022376118/SUPPL_FILE/PNAS.2022376118.SAPP.PDF
- Erviana, V. Y., Maryani, I., Fatmawati, L., Wangid, M. ., & Mustadi, A. (2017). Factors That Influence Learning Difficulties of Elementary School Students In The Special Region of Yogyakarta. *Proceeding the 1st International Conference on Education Innovation (ICEI)*. <http://proceeding.icei.conference.unesa.ac.id/index.php/icei2017/article/view/174/155>
- Evendi, H., Rosida, Y., Zulfarhan, D., & Negeri, S. (2023). Pembelajaran Berdiferensiasi dalam Pembelajaran Matematika di Kurikulum Merdeka SMPN 4 Kragilan. *Joong-Ki: Jurnal Pengabdian Masyarakat*, 2(2), 181–186. <https://doi.org/10.56799/JOONGKI.V2I2.1454>
- Gheysens, E., Coubergs, C., Griful-Freixenet, J., Engels, N., & Struyven, K. (2022). Differentiated instruction: the diversity of teachers' philosophy and praxis to adapt teaching to students' interests, readiness and learning profiles. *International Journal of Inclusive Education*, 26(14), 1383–1400. <https://doi.org/10.1080/13603116.2020.1812739>
- Ginja, T. G., & Chen, X. (2020). Teacher educators' perspectives and experiences towards differentiated instruction. *International Journal of Instruction*, 13(4), 781–798. <https://doi.org/10.29333/iji.2020.13448a>
- Hadie, S. N. H., Tan, V. P. S., Omar, N., Nik Mohd Alwi, N. A., Lim, H. L., & Ku Marsilla, K. I. (2021). COVID-19 Disruptions in Health Professional Education: Use of Cognitive Load Theory on Students' Comprehension, Cognitive Load, Engagement, and Motivation. *Frontiers in Medicine*, 8, 1775. <https://doi.org/10.3389/FMED.2021.739238/BIBTEX>
- Hammi, Z. (2017). "Implementasi Google Classroom Pada Kelas Xi Ipa Man 2 Kudus." In *skripsi*. Universitas Negeri Semarang.
- Hasanah, E., Suyatno, S., Maryani, I., Badar, M. I. Al, Fitria, Y., & Patmasari, L. (2022). Conceptual Model of Differentiated-Instruction (DI) Based on Teachers' Experiences in Indonesia. *Education Sciences* 2022, Vol. 12, Page 650, 12(10), 650. <https://doi.org/10.3390/EDUCSCI12100650>
- Helmi, A. M., Fauziati, E., & Muhibbin, A. (2023). Movers Teacher Perceptions of Sensory Learning Styles and Their Implementation in Product Differentiated Learning. *Jurnal Paedagogy: Jurnal Penelitian Dan Pengembangan Pendidikan*, 10(2), 389–400. <https://doi.org/10.33394/JP.V10I2.6880>
- Hirza, B., Septra Nery, R., Elfira Yuliani, R., Supriadi, A., Desvitasari, T., Khairani, N., Matematika, P., Muhammadiyah Palembang, U., Negeri, S., & Negeri Sumatera Selatan, S. (2022). Peningkatan Hasil Belajar Matematika Siswa Melalui Pembelajaran Berdiferensiasi dalam Mewujudkan Merdeka Belajar. *Jurnal Pendidikan Matematika RAFA*, 8(2), 22–32. <https://doi.org/10.19109/JPMRAFA.V8I2.14770>
- Hu, X., Chiu, M. M., Leung, W. M. V., & Yelland, N. (2021). Technology integration for young children during COVID-19: Towards future online teaching. *British Journal of Educational Technology*, 52(4), 1513–1537. <https://doi.org/10.1111/BJET.13106>
- Iskandar, A., Nofirman, Fatmawati, E., Bangkara, B. M. A. S. A., & Damayanto, A. (2022). Understanding Learning Loss After 2 Years of Distance Learning Responding to School

- Closure Policy during Covid-19. *International Journal of Mechanical Engineering*, 7(2), 3647–3655.
- Iskandar, D. (2021). Peningkatan Hasil Belajar Siswa pada Materi Report Text Melalui Pembelajaran Berdiferensiasi di Kelas IX.A SMP Negeri 1 Sape Tahun Pelajaran 2020/2021. *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)*, 1(2), 123–140. <https://doi.org/10.53299/JPPI.V1I2.48>
- Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A Review of the Quality Indicators of Rigor in Qualitative Research. *American Journal of Pharmaceutical Education*, 84(1), 138–146. <https://doi.org/10.5688/AJPE7120>
- Lin, L., & Shek, D. T. L. (2021). Serving Children and Adolescents in Need during the COVID-19 Pandemic: Evaluation of Service-Learning Subjects with and without Face-to-Face Interaction. *International Journal of Environmental Research and Public Health 2021, Vol. 18, Page 2114*, 18(4), 2114. <https://doi.org/10.3390/IJERPH18042114>
- Manalu, A., Sitorus, P., & Harita, T. H. (2023). Efek Model PBL dengan Strategi Pembelajaran Diferensiasi terhadap Pemahaman Konsep dan Keterampilan Proses Sains Siswa SMA. *Edukatif: Jurnal Ilmu Pendidikan*, 5(1), 159–172. <https://doi.org/10.31004/EDUKATIF.V5I1.4630>
- Maryani, I., Fatmawati, L., Erviana, V. Y., Mustadi, A., & Wangid, M. N. (2018). *Model Intervensi Gangguan Kesulitan Belajar*. K-media.
- Maryani, I., Husna, N. N., Wangid, M. N., Mustadi, A., & Vahechart, R. (2018). Learning Difficulties of the 5th Grade Elementary School Students in Learning Human and Animal Body Organs. *Jurnal Pendidikan IPA Indonesia*, 7(1), 96–105. <https://doi.org/10.15294/JPII.V7I1.11269>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2013). *Qualitative data analysis*. Sage.
- Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100012. <https://doi.org/https://doi.org/10.1016/j.ijedro.2020.100012>
- Moschella, M. C., & Willhauck, S. (2018). *Qualitative research in theological education : pedagogy in practice*. SCM Press. https://books.google.com/books/about/Qualitative_Research_in_Theological_Educ.html?id=3Q99DwAAQBAJ
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, 24(1), 9–18. <https://doi.org/10.1080/13814788.2017.1375091>
- Novianti, R., & Garzia, M. (2020). Parental Engagement in Children's Online Learning During COVID-19 Pandemic. *Journal Of Teaching And Learning In Elementary Education*, 3(2), 117–131. <https://doi.org/10.33578/JTLEE.V3I2.7845>
- Novita Sarie, F. S. (2022). Implementasi Pembelajaran Berdiferensiasi dengan Model Problem Based Learning pada Siswa Sekolah Dasar Kelas VI. *Tunas Nusantara*, 4(2), 492–498. <https://doi.org/10.34001/JTN.V4I2.3782>
- O. A. Awofala, A., & O. Lawani, A. (2020). Increasing Mathematics Achievement of Senior Secondary School Students through Differentiated Instruction. *Journal of Educational Sciences*, 4(1), 1. <https://doi.org/10.31258/jes.4.1.p.1-19>
- Olimov, S. (2020). The Differentiation of Education is an important factor of Pedagogical Technology. *European Journal of Research and Reflection in Educational Sciences*, 8(11), 161–165. www.idpublications.org
- Özüdoğru, G. (2021). Problems faced in distance education during Covid-19 Pandemic. *Participatory Educational Research*, 8(4), 321–333. <https://doi.org/10.17275/PER.21.92.8.4>

- Pozas, M., Letzel, V., & Schneider, C. (2020). Teachers and differentiated instruction: exploring differentiation practices to address student diversity. *Journal of Research in Special Educational Needs*, 20(3), 217–230. <https://doi.org/10.1111/1471-3802.12481>
- Rahmah, S., Dalila, A. A., Liliawati, W., & Setiawan, A. (2022). Pendekatan Pembelajaran Diferensiasi dalam Model Inkuiri terhadap Kemampuan Numerasi Siswa. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 6(2), 393–401. <https://doi.org/10.23887/JIPP.V6I2.50838>
- Rogers, R. (2018). Coding and Writing Analytic Memos on Qualitative Data: A Review of Johnny Saldana's The Coding Manual for Qualitative Researchers. *The Qualitative Report*, 23(4), 889–893. <https://go.gale.com/ps/i.do?p=AONE&sw=w&issn=10520147&v=2.1&it=r&id=GALE%7CA537982900&sid=googleScholar&linkaccess=fulltext>
- Sadeghi, M. (2019). A Shift from Classroom to Distance Learning: Advantages and Limitations. *International Journal of Research in English Education*, 4(1), 80–88. <https://doi.org/10.29252/IJREE.4.1.80>
- Setiyo, A. (2022). Penerapan pembelajaran diferensiasi kolaboratif dengan melibatkan orang tua dan masyarakat untuk mewujudkan student's well-being di masa pandemi. *Bioma : Jurnal Ilmiah Biologi*, 11(1), 61–78. <https://doi.org/10.26877/BIOMA.V11I1.9797>
- Shareefa, M. (2020). Using differentiated instruction in multigrade classes: a case of a small school. <https://doi.org/10.1080/02188791.2020.1749559>, 41(1), 167–181. <https://doi.org/10.1080/02188791.2020.1749559>
- Simbolon, Z. (2022). Implementasi Metode Diferensiasi Dalam Refleksi Pembelajaran Pendidikan Agama Islam Di SMPN 1 Tantom Angkola. *GUAU: Jurnal Pendidikan Profesi Guru ...*, 2(3), 161–168.
- Stollman, S., Meirink, J., Westenberg, M., & van Driel, J. (2019). Teachers' interactive cognitions of differentiated instruction in a context of student talent development. *Teaching and Teacher Education*, 77, 138–149. <https://doi.org/10.1016/J.TATE.2018.09.003>
- Surat, I. M. (2019). Penerapan metode pembelajaran diferensiasi progresif berbantuan LKS untuk meningkatkan aktivitas dan prestasi belajar matematika siswa kelas X MIPA 3 SMA Taman Rama Denpasar tahun pelajaran 2019/2020. *Widyadari : Jurnal Pendidikan*, 20(2). <https://doi.org/10.5281/zenodo.3517974>
- Tabroni, I., Irpani, A., Ahmadiyah, D., Agusta, A. R., Girivirya, S., & Ichsan. (2022). Implementation and strengthening of the literacy movement in elementary schools pasca the Covid-19 pandemic. *Multicultural Education*, 8(01), 15–31. <https://doi.org/10.52593/SVS.02.1.02>
- Taimur, S., Sattar, H., & Dowd, E. (2021). Exploring Teachers' Perception on Successes and Challenges Associated with Digital Teaching Practice During COVID-19 Pandemic School Closures. *Pedagogical Research*, 6(4), em0105. <https://doi.org/10.29333/pr/11253>
- Victoria Elliott. (2018). Thinking about the Coding Process in Qualitative Data Analysis. *The Qualitative Report*, 23(11), 2850–2861. <https://www.proquest.com/docview/2155621346?pq-origsite=gscholar&fromopenview=true>
- Williams, G. (2019). *Applied Qualitative Research Design*. Scientific e-Resources. https://books.google.com/books/about/Applied_Qualitative_Research_Design.html?id=ueLEDwAAQBAJ
- Yarrow, N., Masood, E., & Afkar, R. (2020). Estimates of COVID-19 Impacts on Learning and Earning in Indonesia. In *Estimates of Covid-19 Impacts on Learning and Earning in Indonesia*. World Bank, Washington, DC. <https://doi.org/10.1596/34378>
- Ye, Y., Wang, C., Zhu, Q., He, M., Havawala, M., Bai, X., & Wang, T. (2021). Parenting and Teacher–Student Relationship as Protective Factors for Chinese Adolescent Adjustment During COVID-19. *School Psychology Review*, 51(2), 187–205. <https://doi.org/10.1080/2372966X.2021.1897478>