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Education for All: Developing Learning Strategies that Prioritize Equity and Accessibility

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Abstract

Inclusive education guarantees the rights of every individual, including children with special needs (ABK), to obtain quality education services without discrimination. Although legal support has been provided through Law No. 20 of 2003 and Law No. 19 of 2011, the implementation of inclusive education at the school level still faces various challenges. This study aims to identify obstacles and formulate inclusive learning strategies based on Universal Design for Learning (UDL) in a blended learning approach. The study was conducted using a descriptive qualitative method at SDN 1 Pulau Rinca, NTT, through observation, interviews, and document studies. The results show that the learning approach is still predominantly lecture-based, without adaptive media and assistive technology support. Teachers have not received UDL training, while facilities and infrastructure do not support the needs of ABK students. However, positive potential emerged in the form of social empathy of regular students towards ABK friends. UDL-based blended learning has been proven to be able to increase student engagement and learning outcomes by providing variations in how to deliver material, express understanding, and encourage active participation. Therefore, the systemic implementation of UDL, teacher training, provision of inclusive facilities, and strengthening collaboration between schools and parents are the keys to creating a more equitable, adaptive, and humane education.

Keywords : *Inclusive Education, Universal Design for Learning, Blended Learning, Children with Special Needs, Educational Justice*

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1. Introduction

Inclusive education truly guarantees the rights of every individual to access quality education services without discrimination. According to Setiawan and Apsari (2019), this model emphasizes equality and non-discrimination by promoting social change and educating the community to be more accepting of diversity, while social workers in schools have a strategic role in bridging schools, families, and related agencies to ensure that the needs of all children are met (Setiawan & Apsari, 2019). Astuti and Ani (2024) stated that the experiences of children with special needs in inclusive schools show the need for supportive policies, tailored services, adjustments to teaching materials, and active parental involvement to eliminate discrimination and create a fair and humane learning environment.

In Indonesia, this principle has gained legal legitimacy through the National Education System Law No. 20 of 2003 and the ratification of the United Nations Convention on the Rights of Persons with Disabilities through Law No. 19 of 2011. Normatively, this regulation confirms the state's commitment to creating a fair, equal, and accessible education system for all citizens, including children with special needs (ABK). However, various empirical studies show that the implementation of this policy at the education unit level still faces significant challenges.

One important finding was presented by Sari and Wiwin (2021), who identified various structural and technical barriers, ranging from low teacher competence in handling students with special needs, limited supporting infrastructure such as ramps and accessible toilets, to the national curriculum that is not fully responsive to the needs of children with special needs. In fact, the availability of special learning media such as Braille books, screen reader technology, and alternative communication aids is still very limited in many public schools, especially in the 3T (frontline, outermost, and disadvantaged) areas. This condition not only

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hinders the learning process of students with special needs, but also strengthens social exclusion in the school environment. Rohimah et al., (2024) outlined a number of obstacles at the elementary level, such as teacher readiness, flexible curriculum, peer and parent awareness, and supportive infrastructure, which are the main prerequisites for inclusive schools to function well. Maimunah et al., (2024) highlighted that the accessibility of disability-friendly buildings and facilities in school and public environments is still far from ideal, even though this has a significant impact on the quality of life of people with disabilities.

In response to these issues, the Universal Design for Learning (UDL) approach has begun to be widely recommended as a learning strategy that upholds the principles of fairness and accessibility. UDL offers a flexible instructional framework through the presentation of varied materials, adaptive assessment methods, and technology integration to accommodate various student learning styles. A study by Wahyuni et al. (2025) showed that the implementation of UDL in a higher education environment was able to increase the academic participation of students with disabilities by up to 20%, reflecting the vital role of this approach in creating an inclusive learning space. This is also reinforced by the R&D research of Yuwono et al. (2023), who developed the UDL-based AJAR MBK application and succeeded in increasing the academic scores of students with disabilities by 15.4% after being implemented.

The effectiveness of UDL is also evident in the development of blended learning, which is a combination of online and offline learning. Mujiono et al., (2023) found that combining this model with UDL principles was able to produce media and instructional designs that were not only pedagogically valid but also responsive to the needs of both regular students and students with special needs. The use of assistive technology such as text to speech, digital communication boards, and visual monitoring devices also expanded access and strengthened social interaction between students, thus creating a more equal and supportive classroom atmosphere.

The positive impact of inclusive education is not only limited to the cognitive aspect, but also touches on the affective and social dimensions. Research by Aura et al. (2024) revealed that the presence of an inclusive system in schools can increase self-confidence, independence, and the ability to interact socially in students with special needs. Moreover, the implementation of inclusion also contributes to reducing the negative stigma that is often attached to them, thus forming a more inclusive and humanistic school culture. However, implementation challenges remain a critical note. Huda's study (2021) highlighted that policy stagnation often occurs at the practical level, where public infrastructure does not support mobility and accessibility, and education services are not fully integrated across sectors.

Therefore, formulating a learning strategy that prioritizes fairness and accessibility must be done holistically and sustainably. The strategy includes at least five main things: first, improving facilities and infrastructure that are friendly to students with special needs; second, full integration of the Universal Design for Learning framework into the national and local curriculum; third, developing an adaptive technology-based blended learning model; fourth, providing ongoing training for teachers, principals, and assistants; and fifth, strengthening synergy between policy makers, education practitioners, and the community in promoting an inclusive school culture. Thus, every student, regardless of their physical, cognitive, or social background, has the same opportunity to develop and achieve their best potential in a fair and equal national education system.

2. Method

This study uses a descriptive qualitative approach to explore the practices and challenges of inclusive learning at SDN 1 Pulau Rinca, Komodo District, West Manggarai, NTT, a public school in the 3T region that uniquely faces extreme geographical constraints such as the presence of Komodo dragons around the school and minimal laboratory facilities and internet connectivity. Data were collected through semi-structured interviews with inclusive class teachers, assistant teachers, students with special needs, and parents; participant observation during 3–5 learning sessions; and document analysis such as lesson plans, modules, and school policies. The analysis process follows the Miles & Huberman

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model which includes data reduction, presentation, and verification, with validity strengthened through triangulation of sources and techniques, member checking, and audit trails. The research was also carried out with ethical procedures that include permission from the education office, participant consent, anonymity, and the principle of “do no harm”. This approach is expected to produce a comprehensive picture and model of inclusive learning strategies that are applicable to the 3T context.

3. Results and Discussion

The implementation of inclusive education at SDN 1 Pulau Rinca showed an initial enthusiasm to accept all students without discrimination, including children with special needs (ABK). Based on the results of observations for three consecutive days in the inclusive class, it was found that most learning activities were still dominated by lecture methods and open discussions, which were not fully accommodating to the needs of ABK students. Students with intellectual and concentration disabilities seemed to have difficulty following the flow of the lesson, especially when the teacher delivered the material without visual aids or direct practice. In one observation session, an ABK student was seen just staying quiet and not taking notes when the teacher explained a math topic on the board. However, when the teacher changed the method by showing spatial props, the same student showed interest, began to pay attention, even smiled and asked questions. This condition was reinforced through interviews with special assistant teachers, who explained that

> “*The children are very dependent on visual media and concrete activities. If they only talk, they don’t focus. But we don’t have enough media yet, and training for regular teachers is still very limited*.”

In addition to the learning approach, observations also show that classrooms do not yet have facilities that support the needs of children with special needs. There are no ramps for wheelchair users, no hearing aids, braille books, or computers with screen readers. Uniform chairs and tables cannot be adjusted to suit the needs of students' body postures. This has the potential to hinder the active participation of students with special needs in the teaching and learning process. An interview with one of the students with special needs revealed that the teaching method greatly influenced his interest and understanding of the lesson:

> “*If the teacher uses pictures or videos, I like it. But if the teacher writes too fast, I get confused and sometimes don't know what to ask.”*

Meanwhile, parents of students with special needs expressed their concerns about communication between schools and families, which they considered to be still minimal:

> “*We are happy that the child is accepted into a public school, but we don’t know how it will develop. We want a special meeting, not just a general parent meeting*.”

However, from the results of observations in the school environment, students' social interactions showed positive dynamics. Several regular students appeared to help students with disabilities without being asked by the teacher. In one observation moment, when a student with disabilities was left behind in copying an assignment, two of his friends helped to record and explain the teacher's instructions. This shows that social inclusion is starting to form naturally, although it has not been structurally supported by a special learning program. However, follow-up interviews with class teachers revealed limited understanding of the Universal Design for Learning (UDL) concept. The teacher stated:

> “*We actually want to help all children learn according to their abilities, but there is no special training. The curriculum is also not flexible, all targets are still uniform*.

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The results of the study show that although schools have opened access for students with special needs, pedagogical approaches, facilities, and policy support have not fully supported the implementation of fair and accessible education. Strengthening of UDL-based learning strategies, provision of assistive technology, ongoing teacher training, and intensive communication forums between schools and families are needed. With this approach, the goal of education for all that prioritizes justice can be realized more concretely.

The results of the study indicate that the implementation of inclusive education at SDN 1 Pulau Rinca has marked a positive initial step in opening access to education for all students, including those with special needs (ABK). However, this still faces obstacles, in-depth analysis shows that schools have not provided a truly fair and accessible learning environment. Isnawati et al., (2023) found that the five main obstacles are limited teacher competence, inadequate infrastructure, social stigma, low institutional readiness, and socioeconomic inequality are the root of the problem of injustice in access to inclusive education. Not only at SDN 1 Pulau Rinca, this finding was also found at SDN 33 showing that physical accessibility such as ramps, toilets and disability-friendly classrooms have not met service standards, even though there is synergy between teachers, principals, parents, and students in building a conducive climate (Widya & Rifma, 2020). The absence of these facilities not only hinders the physical mobility of ABK students, but also becomes a form of penalty in their participation in class, creating structural injustice that limits their learning potential. Komarudin & Kaeni (2023) confirmed that weak school management, inflexible curriculum, low number and quality of special assistant teachers, and minimal increase in operational budget and facilities are the main obstacles to the implementation of inclusion. This statement is supported by the findings of Jogbakci et al., (2025) who revealed that many inclusive schools in Indonesia still do not have basic facilities such as ramps, braille books, and adequate adaptive technology. The absence of these facilities not only hinders physical mobility, but also penalties for students with special needs in participating in learning, a form of structural injustice that hinders their potential to develop. Many schools still do not provide learning aids such as braille books or adaptive technology such as screen readers and hearing aids (Melinda et al., 2024).

In the learning process, the dominance of lecture methods without media variations makes it difficult for ABK students to engage. In the context of blind students, the lecture method delivered verbally and rhythmically has been shown to improve concentration compared to visual methods (Berliana et al., 2025). However, this finding is only relevant for special visual needs, and lectures alone are not sufficient for ABK students with various other types of needs such as autism, learning difficulties, or physical disabilities who require visual, kinesthetic, or adaptive technology media. For example, autistic students are more receptive to media such as interactive audiovisuals, as evidenced by Ramadania et al. (2020) who found that the use of audiovisual media significantly improved Indonesian language learning outcomes in autistic children. Mar'atullatifah & Ratnasari (2023) also showed that the application of Augmented Reality (AR) technology in learning can improve the attention and understanding of autistic students because of its interactive and interesting three-dimensional aspects. Students with physical disabilities or physical needs, Hiswanti et al. (2025) emphasized the importance of adaptive communication, which includes the use of body language, visual media, and role play strategies, to form effective two-way relationships in inclusive learning. For students with disabilities or physical needs, Hiswanti et al. (2025) emphasized the importance of adaptive communication, which includes the use of body language, visual media, and role play strategies, to form effective two-way relationships in inclusive learning. Not only that, learning for children with special needs requires adaptive technology and special aids such as talking calorimeters, accessible thermometers, and tactile Lego modules can increase the involvement of blind students in lessons, which is evidence that assistive technology enriches their learning experience (Suwahyo et al., 2022).

Based on this, the implementation of Blended learning based on Universal Design for Learning (UDL) is an optimal solution for students with special needs (ABK) because it designs flexible, inclusive learning that can be accessed by various learning needs. UDL offers multiple means of expression, namely the freedom for students to show understanding

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through writing, speaking, presentations, video creations, or interactive assignments (Li et al., 2024). In blended learning, students are provided with various options such as voice recordings for the blind or demonstration videos for the physically disabled according to their learning styles and physical and cognitive competencies. This is in line with the study of Mujiono et al., (2023), which shows that the implementation of blended learning based on Universal Design for Learning (UDL) can improve the quality and participation of students in inclusive classes. Without the presence of visual aids, videos, or audio, the principle of multiple means of representation which is the core of UDL is not realized. Wahyuni et al., (2025) found that the systematic implementation of UDL can increase the involvement and learning outcomes of students with disabilities by up to 20%, a finding that raises a sense of urgency for implementing UDL at the practical level. Interview results showed that teachers had not received formal training related to UDL and only relied on self-taught learning (Susilowati & Elga, 2024). This is consistent with the findings of Hidayati (2023) who stated that the biggest obstacles to UDL in inclusive classes were the lack of teacher competence and minimal access to training. Without ongoing training interventions, equitable learning strategies will only become jargon, not systemic practices.

However, the culture of social inclusion has begun to grow, regular students help their friends with special needs when doing assignments, indicating the maturity of collective empathy values. Fitriyani & Wibowo (2021) stated that collaborative strategies such as peer tutoring not only strengthen conceptual understanding but also deepen social intelligence among regular and special needs students. By integrating this social potential into the learning structure, SDN 1 can create a more organic and effective inclusion model. Meanwhile, the lack of formal communication with parents of students creates a gap in monitoring learning progress. Maslahah et al., (2023) emphasized that collaboration between schools and parents is very important to support the Individualized Education Program (IEP) for special needs students. If schools fail to facilitate a space for dialogue and evaluation with parents, then learning strategies cannot be fully inclusive and responsive. At SDN 1, the participation of parents of special needs students is also still limited. Parents feel less involved in their child's education process and highlight the lack of communication forums between teachers and families. The success of inclusive education depends not only on the quality of teaching in the classroom, but also on the sustainability of communication and collaboration between school and home. When schools fail to provide intensive communication space with parents, monitoring of children's development is not optimal, and support from home cannot be directed appropriately.

4. **Conclusions**

Inclusive education is a concrete form of fulfilling the right to education for all citizens, including children with special needs (ABK). Although it has been legally regulated through various national and international regulations, its implementation at the education unit level still faces serious challenges, especially in the 3T region. Findings at SDN 1 Pulau Rinca show that learning is still dominated by conventional lecture methods without being supported by visual media, adaptive technology, or differentiation approaches that are in accordance with the characteristics of ABK students. Barriers such as limited teacher competence, the absence of disability-friendly facilities, an inflexible curriculum, and minimal training and communication with parents are the main obstacles to realizing truly fair and accessible education.

However, the implementation of blended learning based on Universal Design for Learning (UDL) has emerged as a strategic solution that can address the complexity of these needs. UDL offers an adaptive instructional framework through the principles of multiple means of representation, expression, and engagement, so that it can accommodate the diversity of student learning styles. In practice, this model combines the power of technology, multisensory approaches, and social interactions that enrich the learning experience of students with special needs. Previous studies have shown that the implementation of UDL in a blended learning system significantly increases academic participation, learning motivation, and social engagement. Therefore, to realize a truly inclusive and equitable education

system, it is necessary to fully integrate UDL into the national curriculum, provide ongoing teacher training, provide assistive technology, and strengthen collaboration between schools, parents, and communities.

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