

Learning Processes of Students with Autism in Indonesian Senior High Schools

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ABSTRACT

This study aims to analyze the learning processes of students with autism at the senior high school level in Indonesia by referring to findings from 20 recent scholarly journals that were systematically reviewed. The review focuses on key components of the learning process, including initial assessment, instructional planning, teaching strategies, classroom management, and support services provided to students with autism in both inclusive education settings and special schools. A descriptive qualitative approach was employed to synthesize data from previous studies and to map prevailing trends in effective instructional practices.

The analysis reveals that successful learning outcomes for students with autism are strongly influenced by flexible curriculum adaptation, the use of visual and structured teaching techniques, collaboration between general education teachers and support teachers, and the provision of consistent and sensory-friendly learning environments. However, the reviewed literature also identifies several persistent challenges, such as limited teacher competence in understanding the characteristics of autism, inadequate inclusive facilities, and the lack of continuous evaluation of individualized education programs. Therefore, this study underscores the importance of enhancing teacher capacity, strengthening inclusive infrastructure, and developing comprehensive monitoring systems to improve the quality of educational services for students with autism at the senior high school level.

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Introduction

Education for students with autism at the senior high school level in Indonesia has continued to develop in line with increasing public and governmental awareness of the educational rights of learners with special needs. The implementation of inclusive education policies, together with the existence of special schools, has expanded access to educational services for students with autism. However, learning processes at the senior high school level present unique challenges due to higher academic demands, increasing expectations for independence, and the complex social-emotional development characteristic of adolescence.

During this developmental stage, students with autism are not only required to engage with more abstract academic content but are also expected to adapt to increasingly complex social environments, including peer interactions, collaborative learning activities, and preparation for transitions to higher education or the workforce. These conditions require teachers and schools to possess comprehensive assessment skills, individualized and flexible instructional planning, structured teaching strategies, and classroom management practices that are responsive to the sensory, cognitive, and behavioral needs of students with autism. Without appropriate pedagogical support, students with autism are at risk of academic underachievement, social isolation, and limited opportunities to reach their full potential.

A growing body of national and international literature suggests that successful learning outcomes for students with autism are influenced by several key factors, including flexible curriculum adaptation, the use of visual and structured instructional approaches, collaboration between subject teachers and special education support teachers, and the availability of therapeutic support services aligned with individual student needs. However, a review of 20 recent scholarly journals also reveals persistent challenges in the implementation of these practices. Commonly reported barriers include limited teacher competence in understanding the characteristics of autism, inadequate inclusive facilities and resources, and insufficient monitoring and evaluation of Individualized Education Programs (IEPs) at the senior high school level.

These findings indicate a significant gap between inclusive education policies at the macro

level and their practical implementation at the school level, particularly in senior high schools where academic and social demands are more complex. Moreover, existing studies have predominantly focused on the education of students with autism at the elementary level, while research that specifically examines learning processes at the senior high school level remains relatively limited, especially within the Indonesian context. This gap underscores the urgency of conducting context-specific research that addresses the distinctive challenges of educating students with autism in secondary education settings.

Accordingly, the novelty of this study lies in its comprehensive examination of the learning processes of students with autism at the senior high school level in Indonesia, integrating critical components such as initial assessment, instructional planning, teaching strategies, classroom management, and the provision of support services. By synthesizing findings from recent literature, this study offers an integrated perspective on both effective practices and ongoing challenges in the education of students with autism at the secondary level.

This study aims to describe the learning processes of students with autism in Indonesian senior high schools and to identify key factors that support or hinder their effective implementation. The findings are expected to contribute theoretically to the field of inclusive education and practically to the development of more adaptive instructional models, strengthened teacher capacity, and evidence-based educational policies that promote inclusive and sustainable educational practices for students with autism at the secondary school level.

Method

Research Design

This study employed a descriptive qualitative approach to obtain an in-depth understanding of the learning processes of students with autism at the senior high school level in Indonesia. This approach was selected to capture the complexity of instructional practices, classroom dynamics, and support services experienced by students with autism within real educational settings.

Data Collection

Data were collected through multiple qualitative techniques to ensure a comprehensive depiction of the learning process. In-depth interviews were conducted with general education teachers, special education support teachers, and other relevant educational personnel involved in teaching students with autism. These interviews aimed to explore participants' perspectives on assessment practices, instructional planning, teaching strategies, classroom management, and support services.

In addition, direct classroom observations were carried out to document teaching–learning interactions, student engagement, instructional adaptations, and classroom management strategies implemented for students with autism. To strengthen the empirical findings, document analysis was also conducted. The analyzed documents included Individualized Education Programs (IEPs), lesson plans, and student assessment records, which provided contextual and procedural evidence of instructional practices.

Data Analysis

Data analysis followed the interactive model proposed by Miles and Huberman, consisting of data reduction, data display, and conclusion drawing and verification. Data reduction involved organizing and coding interview transcripts, observation notes, and documents to identify key themes related to the learning process of students with autism. The reduced data were then systematically displayed in thematic matrices to facilitate pattern recognition and comparison across data sources. Conclusions were drawn through continuous interpretation and verification to ensure coherence and analytical rigor.

To ensure the credibility and trustworthiness of the findings, several validation strategies were employed. Source and technique triangulation were used by comparing data obtained from interviews, observations, and document analysis. Member checking was conducted by confirming preliminary interpretations with selected participants to ensure accuracy. In addition, peer debriefing was carried out through discussions with fellow researchers to enhance analytical reflexivity and reduce subjective bias.

The qualitative design adopted in this study allows for a contextualized and nuanced

understanding of the learning processes of students with autism at the senior high school level. By integrating multiple data sources and systematic analytical procedures, this method provides a robust foundation for interpreting instructional practices and identifying challenges and opportunities in inclusive and special education settings..

Result and Discussion

Result

This section presents the findings derived from qualitative data collected through in-depth interviews, classroom observations, and document analysis. Data were analyzed using the interactive model of Miles and Huberman, resulting in several key themes that describe the learning processes of students with autism at the senior high school level in Indonesia.

Initial Assessment as the Basis for Instructional Decisions

The findings indicate that initial assessment plays a central role in shaping learning processes for students with autism. Teachers and support staff reported that assessments covering academic skills, communication abilities, behavioral patterns, and sensory needs were essential for understanding students' learning profiles. Observational data showed that classrooms in which instruction was guided by comprehensive assessment results demonstrated higher levels of student engagement and fewer disruptive behaviors.

Document analysis of Individualized Education Programs (IEPs) revealed variability in assessment practices. While some IEPs were developed based on detailed and regularly updated assessments, others relied on limited academic descriptions, which constrained instructional planning.

Curriculum Adaptation and Individualized Education Programs

Curriculum adaptation emerged as a key theme across interviews and document reviews. Teachers described adjusting learning objectives, simplifying instructional content, and prioritizing functional competencies to accommodate students' needs. These adaptations were consistently documented in IEPs and lesson plans, particularly in inclusive classrooms.

Observations indicated that students responded more positively when instructional goals were individualized and clearly communicated. Adapted curricula were associated with improved task completion, increased participation, and reduced behavioral challenges.

Use of Visual and Structured Instructional Strategies

Visual and structured instructional strategies were widely implemented in classrooms serving students with autism. Teachers reported frequent use of visual schedules, pictorial cues, task sequencing, and structured routines. Classroom observations confirmed that these strategies enhanced students' focus, reduced anxiety, and facilitated smoother transitions between activities.

Students demonstrated greater independence and clarity in task execution when instructions were presented visually rather than verbally. Structured teaching also contributed to more predictable classroom environments.

Sensory-Friendly Classroom Management

Findings from classroom observations highlight the importance of sensory-sensitive classroom management. Teachers implemented strategies such as adjusting lighting, reducing noise levels, organizing seating arrangements, and providing calm or quiet areas. These adjustments helped students regulate emotions and maintain engagement during lessons.

Teachers noted that predictable routines and consistent classroom structures contributed to emotional stability and minimized behavioral escalation among students with autism.

Collaboration Among Teachers and Support Personnel

Collaboration between general education teachers, special education support teachers, therapists, and counselors was identified as a crucial factor in effective learning implementation. Interview data revealed that regular communication and coordinated planning improved consistency in instructional and behavioral support.

Document analysis showed that schools with structured coordination mechanisms, such as regular meetings and shared documentation systems, were better able to implement individualized learning plans effectively.

Discussion

The findings of this study provide insight into how learning processes for students with autism at the senior high school level are shaped by interconnected instructional and organizational factors. The prominence of initial assessment aligns with contemporary educational perspectives that emphasize individualized understanding as the foundation of effective instruction. Comprehensive assessment enables teachers to align instructional strategies with students' actual capabilities and needs, thereby reducing mismatches between curriculum demands and learner readiness.

Curriculum adaptation and the use of Individualized Education Programs reflect principles of differentiated instruction, which advocate flexibility in content, process, and expected outcomes. The findings suggest that curriculum adaptation at the senior high school level is not merely a modification of academic content, but a strategic process that integrates functional skills, learning readiness, and long-term developmental goals.

The widespread use of visual and structured instructional strategies supports theoretical frameworks such as structured teaching and visual learning preferences commonly associated with autism. Visual supports and predictable routines reduce cognitive load and anxiety, enabling students to engage more effectively with learning tasks. These findings reinforce the importance of instructional clarity and environmental structure in secondary education settings.

Sensory-friendly classroom management further highlights the role of environmental factors in shaping learning experiences. Consistent with sensory integration perspectives, the findings indicate that excessive sensory stimulation can interfere with emotional regulation and learning engagement. By contrast, classrooms that proactively address sensory needs create conditions that support sustained attention and emotional stability.

Finally, collaboration among teachers and support personnel underscores the systemic nature of inclusive education. Effective learning for students with autism requires coordinated efforts across instructional, behavioral, and therapeutic domains. The findings suggest that fragmented support structures limit the effectiveness of interventions, whereas collaborative practices promote coherence and continuity in learning experiences.

Overall, the results emphasize that successful learning processes for students with autism at the senior high school level depend on holistic, integrated approaches that combine individualized assessment, adaptive instruction, supportive environments, and collaborative professional practices.

Conclusion

This study provides a comprehensive synthesis of the growth and developmental processes of children with Down Syndrome across cognitive, emotional–social, and physical–motor domains. The findings indicate that developmental delays in children with Down Syndrome are systematic and interconnected, with impairments in one domain often influencing functioning in others. Cognitive challenges related to executive functioning and language development, emotional regulation difficulties, and motor delays associated with hypotonia and balance limitations collectively shape children's developmental trajectories.

The integrative analysis highlights that, despite inherent biological constraints, developmental outcomes for children with Down Syndrome are highly responsive to environmental support and targeted intervention. Multisensory learning approaches, structured educational strategies, therapeutic interventions, and consistent family involvement emerge as critical factors in promoting developmental progress. These findings reinforce international developmental theories that emphasize the dynamic interaction between biological characteristics and contextual influences.

Overall, this study underscores the importance of holistic and collaborative approaches in supporting the development of children with Down Syndrome. Educational, therapeutic, and family-based interventions should be designed in an integrated manner to address multiple developmental domains simultaneously. By adopting theory-informed and inclusive practices, stakeholders can better support children with Down Syndrome in achieving optimal development and realizing their full potential.

References

- Agustia, I., Mulyasisma, Zhalila, & Hijriati. (2025). Evaluasi strategi pengajaran guru untuk anak autis di sekolah inklusi. *Jurnal Warna*, 9(1), 29–41. <https://doi.org/10.52802/warna.v9i1.1399>
- Bogdashina, O. (2016). *Sensory perception in autism spectrum disorders*. Jessica Kingsley Publishers.
- Fatimah Azzahra Putri Bactiar, U., Aenika, J. N. A., Putri, I. M., & Fahmi, Z. (2023). Keterampilan bersosialisasi siswa autis di sekolah inklusi SD Suryo Bimo Kresno, Semarang. *Jurnal Kajian Ilmu Pendidikan (JKIP)*, 4(2). <https://doi.org/10.55583/jkip.v4i2.890>
- Hidayati, B. M. R., Anggraeni, N. A., & Sugianto. (2024). Humanisasi pembelajaran berbasis metode TEACCH pada anak autis. *IDEA: Jurnal Psikologi*, 8(1), 58–71. <https://doi.org/10.33830/ptjj.v22i2.2848.2021>
- Hoirun Nisak, N., & Harsiwi, N. E. (2024). Analysis of characteristics of children with special needs autism in inclusive schools at SD Muhammadiyah 1 Bangkalan. *ALENA: Journal of Elementary Education*, 2(2), 160–169. <https://doi.org/10.59638/jee.v2i2.210>
- Kuder, S. J., Accardo, A., & Woodruff, J. (2021). *College success for students on the autism spectrum: A neurodiversity perspective*. Routledge. <https://www.routledge.com/College-Success-for-Students-on-the-Autism-Spectrum-A-Neurodiversity-Perspective/Kuder-Accardo-Woodruff/p/book/9781642670257>
- Latifah, P., Susilawati, G., & Budiman, A. (2024). Strategi pembelajaran pendidikan inklusi anak berkebutuhan khusus autis di SDN Negara Serang. *Jurnal Kajian Ilmiah Interdisipliner (JKII)*, 8(2).
- Puput Riani, P., Pertiwi, R. P., & Andini, N. A. (2024). Problematika proses pembelajaran anak berkebutuhan khusus (autis) di Kelas III SD Negeri 1 Tugu Harum. *JEMARI: Jurnal Edukasi Madrasah Ibtidaiyah*, 3(2). <https://doi.org/10.30599/jemari.v3i2.924>
- Puteri, S. A., Sekarningrum, B., & Lesmana, A. C. (2025). Pembentukan kesadaran neurodiversitas dalam pendidikan inklusi berbasis alam melalui tinjauan interaksionisme simbolik di Sekolah Alam Bandung. *Ganaya: Jurnal Ilmu Sosial dan Humaniora*, 8(3), 505–520. <https://doi.org/10.37329/ganaya.v8i3.4757>
- Rieskiana, F. (2021). Peran sekolah inklusi terhadap tumbuh kembang anak autisme. *JEA (Jurnal Edukasi AUD)*, 7(2), 61–71. <https://doi.org/10.18592/jea.v7i2.4625>
- Rustandar, A., & Widinarsih, D. (2023). Metode dan media pembelajaran untuk pendidikan inklusi bagi penyandang autis di Indonesia. *Jurnal Pendidikan Kebutuhan Khusus*, 7(1), 38–56. <https://doi.org/10.24036/jpkk.v7i1.743>
- Sastra Wijaya, F., Haturosidad, A., & Saputra, N. (2024). Pengaruh pendidikan inklusi pada tingkat kemampuan interaksi sosial anak autis di sekolah dasar. *Jurnal Multidisiplin Inovatif*, 8(1).
- Setiawi, A. P., Lede, Y. K., Bitu, Y. S., Making, S. R. M., & Patty, E. N. S. (2024). Dampak pendidikan inklusif terhadap siswa dengan kebutuhan khusus. *Journal on Education*, 6(4). <https://doi.org/10.31004/joe.v6i4.6062>
- Sundari, F. S., & Supena, A. (2023). Efforts to teach social interaction to autism students in inclusive elementary schools. *Pedagonal: Jurnal Ilmiah Pendidikan*. <https://journal.unpak.ac.id/index.php/pedagonal/article/view/4443>
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
- Wisti Christyastari, & Rusmawan. (2023). Interaksi sosial siswa autis di sekolah inklusi Yogyakarta: Studi kasus. *JPI Citra Bakti: Jurnal Pendidikan Inklusi*, 1(2). <https://doi.org/10.38048/jpicb.v1i2.2406>
- Wulandari, A. E., Baharuddin, M. I., Saputra, M. I., & Hijriah, U. (2023). Pendidikan inklusif pada anak berkebutuhan khusus di Indonesia: Tinjauan literatur analisis bibliometrik. *Action Research Journal Indonesia (ARJI)*, 7(1). <https://doi.org/10.61227/arji.v7i1.262>
- Zubaidah, R. (2025). Pendidikan inklusif bagi penyandang autis di TK Buah Hati Jambi. *Jurnal Literasiologi*, 14(4). <https://doi.org/10.47783/literasiologi.v14i4.997>