

## Enhancing special needs literacy: insights from Indonesian inclusive schools

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### ABSTRACT

The study focuses on the inclusive school's approach to literacy development for special needs students (SNS). The research aims to delve into the inclusive school's methodologies concerning literacy development, particularly tailored to cater to the diverse needs of special education students. The study was conducted in 17 inclusive schools across 3 provinces in Indonesia, all of which have demonstrated remarkable progress in literacy development. This comprehensive investigation involved meticulously surveying these schools to gather insights into their practices and achievements. The findings of the study highlight several patterns in the approach to literacy development in inclusive schools. A comprehensive inclusive literacy development model is proposed, which emphasizes personalized planning, multimodal and experiential learning, differentiated instruction, recognition of achievements, and ongoing professional development. The study's insights are relevant for educators, policymakers, and researchers interested in enhancing inclusive literacy practices for SNS in inclusive school settings schools. The practicality of the curriculum is seen from the aspect of good communication, cooperation, sufficient time, and the ease of understanding the material.

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## 1. INTRODUCTION

Inclusive schooling has emerged as a significant paradigm shift in the field of education, aiming to provide equitable educational opportunities for special needs students (SNS) [1], [2]. Within this context, one crucial aspect of inclusive education is the development of literacy skills among SNS [3]. While there is a growing body of research on inclusive practices and literacy development, there remains a notable gap in understanding the specific approaches employed by inclusive school to address the unique literacy needs of SNS.

Regarding literacy development, the Salamanca Statement emphasized the importance of inclusive literacy practices [4]. The Salamanca Statement, issued in 1994 during the World Conference on Special Needs Education, is highly relevant to the study on inclusive schooling for SNS [5] and exploring effective approaches to literacy development. The statement emphasized the importance of inclusive education and advocated for the right of all students, including those with special needs, to be educated in mainstream schools. It called for the

provision of appropriate support and resources to ensure that SNS can fully participate in literacy activities. It stressed the need for a broad and flexible curriculum that caters to the diverse learning needs of students, including those with disabilities, to foster SNS literacy skills effectively [6].

SNS often require tailored and differentiated approaches to their learning, including literacy development. Recognizing that traditional teaching methods may not effectively meet their diverse needs; inclusive schools employ various specialized strategies to address the unique challenges faced by SNS in literacy learning [7]. These methods may include multisensory instruction, which engages multiple senses to enhance learning and retention, and individualized support that considers the specific strengths and weaknesses of each student [8]. Additionally, accommodations such as modified texts, visual aids, and assistive technologies are utilized to promote accessibility and comprehension.

Meanwhile, previous studies have underscored the fundamental importance of literacy for all students [9], [10], including those with SNS there remains a notable gap in the literature regarding the integration of media, understanding of learning processes, and assessment of student outcomes within this population. Despite the recognition of literacy as a cornerstone of academic success and societal participation, there's a lack of comprehensive exploration into how various forms of media can effectively support literacy development for SNS students.

Inclusive schools recognize that literacy is a universal right and aim to ensure that all students, regardless of their abilities or challenges, have access to quality literacy education. However, it is essential to acknowledge that SNS may require additional support and different instructional approaches to effectively develop their literacy skills. For example, some SNS may benefit from multisensory instruction, which integrates auditory, visual, and kinesthetics elements to enhance their understanding and retention of literacy concepts. This approach allows students to engage with the material through various modalities, making the learning experience more interactive and meaningful.

Moreover, inclusive schools provide individualized support to SNS, considering their specific learning profiles and adapting instructional techniques accordingly. These individualized supports involve personalized learning plans, targeted interventions, and ongoing progress monitoring [11]. Individualized support ensures that SNS receive the necessary accommodations, modifications, and scaffolding to participate fully in literacy activities and make progress at their own pace. On the other hand, despite the limited representation, some schools or Islamic schools have taken steps to actively support and cater to the needs of SNS. Recognizing the importance of inclusive education and the right to education for all, these schools have made efforts to ensure that SNS can benefit from their educational programs [12]. Inclusive schools strive to create an environment that accommodates and supports the unique learning requirements of SNS [13]. Inclusive schools provide individualized education plans, specialized teaching methodologies, and additional support from trained professionals to address the diverse needs of students with disabilities. These schools understand that every student, regardless of their abilities, has the right to access religious education and literacy development within an Islamic framework.

Understanding and addressing this gap in research is of paramount importance for educational stakeholders, knowing about literacy for SNS. Such knowledge can inform the design and implementation of evidence-based practices that support the literacy development of SNS, ultimately leading to enhanced educational outcomes and improved quality of life. It is raised the question how do inclusive school approach the process of literacy development for SNS, including instructional strategies, accommodations, and individualized support?

Therefore, this study aims to examine how inclusive schools handle literacy development (media integration, processes, and outcomes) for SNS. Through an intensive case study approach, incorporating observations, in-depth interviews, and questionnaires, this research seeks to provide a comprehensive understanding of the strategies employed by inclusive schools to bridge the literacy gap for SNS. Ultimately, it is hoped that the findings of this study will inform and inspire the implementation of inclusive literacy practices, fostering an environment where all students, including those with special needs, can thrive achievement.

## 2. METHOD

The study case employed in this study on inclusive schooling for SNS and effective approaches to literacy development by steps: preparation of case selection, data collection, data analysis, validity and reliability, and report [14], [15]. The research employed a multi-case study design to investigate the topic of breaking barriers to literacy in inclusive schools across 3 provinces in Indonesia (East Java, Central Java, and Bali). The 17 schools were carefully selected as the cases for this study, encompassing a diverse range of educational levels, including 3 kindergartens, one secondary school, and thirteen elementary schools. The

selection of inclusive schools was intentional to represent various learning environments that cater to students with diverse abilities and needs, as in Table 1.

Table 1. The overview of inclusive schools participating

Type of inclusive school	Province	Number of schools
Kindergarten	East Java	1
	Bali	2
Elementary school	East Java	11
	Central Java	1
Secondary school	East Java	1

The study will employ multiple methods of data collection, including observation, deep interviews, and questionnaires [16]. Observations will involve the researcher actively observing classroom activities, teaching strategies, and interactions between teachers and students. Deep interviews will be conducted with teachers, administrators, and relevant staff members to gain insights into their perspectives, experiences, and approaches to literacy development for SNS. Questionnaires administered to gather information about the perceptions and experiences of students, parents, and other stakeholders.

The collected data will be analysed using qualitative research methods. Observation notes, interview transcripts, and questionnaire responses will be coded and thematically analysed to identify common patterns, themes, and insights related to the approaches, processes, and outcomes of literacy development for SNS in inclusive schools. The analysis will involve organizing, categorizing, and interpreting the data to generate meaningful findings.

The study will address validity and reliability concerns through various means. Triangulation of data from multiple sources (observations, interviews, and questionnaires) will enhance the credibility and validity of the findings. Member checking, where participants review the researcher's interpretations, will be conducted to ensure accuracy. Additionally, the research process will be thoroughly documented, including clear descriptions of the research design, data collection methods, and analytical procedures, enhancing the study's transparency and allowing for potential replication.

### 3. RESULTS AND DISCUSSION

The session results and discussion delve into the multifaceted landscape of literacy development within the contemporary framework of SNS. Through a comprehensive exploration of various facets, including media resources for literacy development, outcomes and achievements in literacy development, challenges in literacy development for SNS, and the model of inclusive literacy development, this section sheds light on the dynamic interplay between media resources, literacy outcomes, and the evolving challenges faced in the digital age. By scrutinizing each subheading, this discourse aims to unravel the intricate mechanisms underpinning literacy enhancement within the expansive realm of social media platforms, while also proposing a model for fostering inclusive literacy development in an increasingly interconnected world.

#### 3.1. Media resources for literacy development

Media resources for literacy development play a vital role in addressing barriers faced by SNS students, including those with low vision, deafness, sensory motor integration challenges, and other disabilities. These resources offer unique opportunities to adapt and accommodate various barriers, ensuring that all students can actively engage in literacy activities and enhance their literacy skills. By offering unique opportunities to adapt and accommodate various barriers, these resources ensure that all students can actively engage in literacy activities and enhance their literacy skills, as in Table 2.

From the data presented, it is evident that most teachers, accounting for 70.6%, predominantly use books or similar printed materials as learning media in the inclusive schools. This traditional approach to teaching with tangible resources like books and papers might be due to their familiarity and ease of use. Interestingly, 23.5% of teachers also incorporate the use of projectors and whiteboards as instructional tools. This suggests a growing adoption of technology in the learning process, enabling teachers to present visual aids and multimedia content to enhance students' understanding and engagement.

The data further shows that a smaller percentage, 11.8% of teachers use cellular phones as a learning medium. This could indicate the integration of mobile technology into the classroom, enabling access to digital learning resources and educational apps. The relatively lower usage might be attributed to limitations in technology access, training, or concerns regarding potential distractions in the classroom. The findings of this study highlight the diverse approaches that teachers employ in their instructional methods, ranging from

traditional to more technologically oriented approaches. It underscores the importance of a multi-inclusive approach, recognizing that different teaching techniques may suit the diverse learning needs of students in inclusive schools [17]. The results suggest that a combination of traditional and technology-based methods can be valuable in creating a well-rounded and inclusive learning environment, catering to the varying abilities and preferences of the students. As technology continues to advance, further research and professional development opportunities for teachers may be beneficial to explore innovative and effective ways to integrate different media and enhance the learning experiences of all students in inclusive settings.

Table 2. The summary of media resources and learning survey

Aspect	Criteria	Percentage (%)
Learning media	Books/paper	70.6
	Projector/whiteboard	23.5
	Cellular phone	11.8
Environmental learning	Inside classroom	52.9
	Outside classroom	17.6
	In nature	5.9
	Combination	58.8
Learning activities	Regular students + SNS	94.1
	Collaboration SNS	11.8
	Group	11.8
	Individual	29.4
Delivering of literacy	Same as regular students	29.4
	Individual program	41.2
	Same with theme	5.9
	Combination	41.2

The data on environmental learning locations provides valuable insights into how teachers are incorporating the environment as a context for learning in the inclusive schools. Inside the classroom, 52.9% of the environmental learning activities take place. This likely involves the use of classroom resources, such as books, videos, and other instructional materials, to introduce environmental concepts and topics. While learning within the classroom offers a controlled and familiar environment, it may sometimes limit students' direct interaction with nature. Outside the classroom, 17.6% of environmental learning occurs. This indicates that some teachers are taking students outside the confines of the classroom to explore and experience the immediate surroundings, such as school gardens, playgrounds, or nearby outdoor spaces. This approach allows students to have a more direct interaction with their environment, fostering hands-on learning experiences. In nature, 5.9% of environmental learning activities take place. This likely involves field trips or excursions to natural settings, such as forests, parks, or natural reserves. Learning in nature provides a rich and immersive experience, allowing students to connect with nature firsthand and understand its complexities and interconnections.

Remarkably, the data shows that 58.8% of teachers opt for a combination of environmental learning approaches, incorporating elements from inside the classroom, outside the classroom, and in nature. This blended approach allows for a comprehensive and well-rounded environmental education experience. The results suggest that while classroom-based learning remains prevalent, there is a notable effort by teachers to explore beyond the confines of the classroom and incorporate outdoor and nature-based learning opportunities. Such diverse approaches to environmental learning can have numerous benefits, including increased student engagement, improved understanding of environmental concepts, and the development of a deeper appreciation for nature and sustainability [18]. The data on learning activities involving collaboration among regular students and SNS provides insights into how technology is being utilized in the learning process within the inclusive schools.

An overwhelming majority, 94.1% of the learning activities, involve collaboration between regular students and SNS. This suggests that teachers are leveraging social networking platforms or online communication tools to foster interaction and collaboration among students. Integrating SNS into the learning process can facilitate group discussions, knowledge sharing, and peer-to-peer learning beyond the physical classroom setting. This approach harnesses the familiarity and comfort that students often have with social media, making learning more engaging and relatable to their daily lives. Interestingly, 11.8% of the learning activities are focused on collaboration among SNS platforms themselves. This might indicate that some teachers are encouraging students to use various SNS tools independently or in smaller groups to explore and learn collaboratively. This approach can be particularly beneficial for students who may be more introverted or prefer to interact in smaller settings.

Additionally, 11.8% of the learning activities involve group-based collaboration. Group learning allows students to work together on projects, assignments, or discussions, fostering teamwork, and

communication skills. Collaborative group activities can be an effective way to build a sense of community within the classroom and encourage diverse perspectives and problem-solving approaches. On the other hand, 29.4% of the learning activities are conducted individually. This indicates that despite the emphasis on collaboration, teachers still recognize the importance of individualized learning experiences. Individual activities can cater to students' unique learning styles and preferences, providing them with the opportunity to focus on their specific strengths and areas of interest.

The results suggest a balanced and varied approach to learning activities, encompassing both collaborative and individualized methods. While technology, particularly SNS, plays a significant role in facilitating collaboration, the data indicates that teachers understand the importance of striking a balance between group work, individual tasks, and the use of technology in the learning process. It is worth noting that the integration of technology into the learning environment requires thoughtful planning, digital literacy training for both teachers and students, and consideration of privacy and safety concerns associated with online interactions. By promoting a diverse array of learning activities that include both collaboration and individual work, teachers cater to different learning preferences and create a more inclusive and dynamic learning environment that prepares students for the challenges and opportunities of the digital age.

The data on delivering literacy in inclusive schools provides valuable insights into how teachers are tailoring literacy instruction to meet the diverse needs of students with varying learning abilities. Interestingly, 29.4% of the literacy delivery is the same as that used for regular students. This suggests that some teachers are employing a universal approach to literacy instruction, providing all students with the same learning materials and strategies. While this approach may work for some students with mild learning differences, it may not fully address the unique needs of students with more significant challenges. On the other hand, 41.2% of the literacy delivery is based on individualized education program (IEP). This approach recognizes the importance of personalized learning and individualized educational plans for students with special learning needs.

Then 5.9% of the literacy delivery is aligned with the theme of the learning topic. This might indicate that some teachers are integrating literacy instruction into broader thematic units, connecting reading, and writing activities to other subject areas. Thematic approaches can make literacy learning more meaningful and engaging for students, as they see the practical applications of their literacy skills in various contexts. Furthermore, 41.2% of the literacy delivery involves a combination of the 3 mentioned approaches. This indicates that some teachers are adopting a holistic and flexible approach to literacy instruction, incorporating elements of universal methods, individualized plans, and thematic connections.

The results highlight the importance of differentiated instruction in literacy delivery, where teachers adapt their teaching methods to address the specific strengths and challenges of each student. IEPs play a critical role in empowering SNS, ensuring that they receive the necessary support to thrive academically. Moreover, these findings are integrating with literacy instruction into thematic learning units fosters cross-curricular connections [19] and helps students see literacy as an essential tool for acquiring knowledge in various subjects.

However, it is essential to consider the challenges and opportunities associated with each approach. For instance, learning in nature might require careful planning, safety considerations, and logistical arrangements. Integrating a combination of approaches allows for flexibility and adaptability to different learning environments and student needs. As environmental education continues to evolve, ongoing support, training, and collaboration among educators can further enhance the effectiveness of these diverse learning methods, ultimately promoting a more environmentally conscious and informed generation, as in Figure 1.

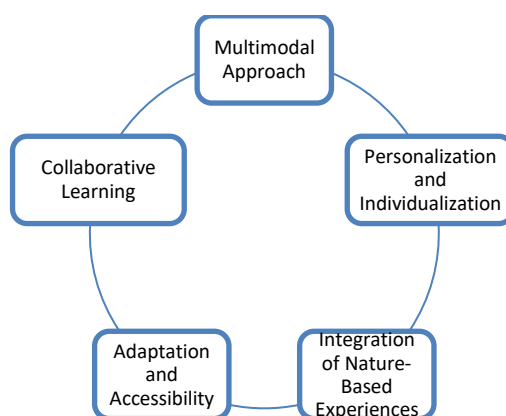


Figure 1. Media resources for literacy development strategy

The findings indicate that inclusive schools adopt a multimodal approach to literacy development for SNS. These findings correlate with approach utilizes various media resources, both traditional and digital, to engage students in different modes of communication and learning [20]. The use of printable and electronic media, books, boards, and technological devices suggests a diverse range of materials and tools used to cater to different learning styles and preferences. The availability of cellular phones, tablets, and liquid crystal display (LCD) projectors, combined with nature-based experiences, suggests a focus on tailoring literacy activities to the specific needs and interests of each SNS or personalization and individualization strategy. This personalization can foster engagement, motivation, and meaningful connections to the content.

The inclusion of nature-based experiences, such as observing trees, grass, and animals, and recalling those observations, suggests a pattern of integrating outdoor and experiential learning into literacy development. This approach provides students with a multisensory and holistic learning experience [21], connecting literacy skills with real-world contexts and fostering a deeper understanding of language and communication in integration of nature-based experiences. The findings highlight of adapting media resources and materials to ensure accessibility for SNS. The use of technology, such as cellular phones and tablets, can provide customizable features and adaptive tools, allowing students with diverse abilities to engage in literacy activities effectively. Additionally, the availability of printable materials and the use of boards can provide tactile and visual supports, promote inclusivity and accommodate different learning preferences. The research supports a pattern of collaborative learning opportunities facilitated by the media resources [22]. The use of interactive technologies, such as LCD projectors and digital devices, can support group activities, shared reading experiences, and collaborative discussions and activities. This collaborative approach can enhance social interactions, peer learning, and communication skills among SNS.

The study's findings emphasize the significance of tailored instruction in literacy, where teachers adjust their methods to suit each student's needs. Individualized programs are crucial for empowering SNS academically. Integrating literacy into thematic learning enhances cross-curricular connections and underscores literacy's role in acquiring knowledge across subjects. In summary, the study reveals that tailored instruction and diverse media resources enhance literacy development for SNS, fostering engagement and collaboration in learning activities.

### 3.2. Instructional strategies and approaches

Addressing the unique learning needs of students with SNS requires thoughtful and targeted instructional strategies. These students often benefit from tailored approaches that consider their individual strengths, challenges, and learning profiles. Differentiated instruction and personalized learning experiences are just a few of the strategies that can empower SNS students to develop their literacy skills, enhance comprehension, and foster active engagement in the classroom, as in Table 3.

Table 3. Literacy strategies and approaches

Aspect	Criteria	Percentage (%)
Literacy learning for SNS	Related to IEP	58.8
	Refer to goal of literacy	23.5
	Refer to class competencies	23.5
Literacy strategies	Picture-based	35.3
	Something touchable	35.3
	Something hearing	35.3
	Reading aloud	35.3
	Video-based	47.1
	Writing activities	35.3
	Drawing activities	23.5
Assessment and monitoring	Flexibility	35.3
	Portfolio	35.3
	Sustainability	35.3

The data on literacy learning activities in inclusive schools provides insights into how teachers are designing and implementing literacy instruction to meet the specific needs and goals of their students. Remarkably, 58.8% of the literacy learning activities are directly related to IEP. This indicates that a significant portion of the literacy instruction is tailored to meet the individualized learning needs of students with diverse abilities and learning challenges. Teachers can address their specific strengths, weaknesses, and learning goals, providing personalized support to enhance their literacy development through aligning literacy activities with students' IEPs.

Another notable finding is that 58.8% of the literacy learning activities are geared towards achieving the overall goal of literacy. This suggests that a substantial focus is placed on developing fundamental reading, writing, and communication skills, which are essential for academic success and lifelong learning. By prioritizing the goal of literacy, teachers ensure that students acquire the foundational skills necessary to thrive in various subject areas and in their daily lives. Then 23.5% of the literacy learning activities are based on referring to class competencies. This approach likely involves aligning literacy instruction with specific learning objectives and standards set for the class or grade level.

Moreover, the significant focus on achieving the overall goal of literacy demonstrates the commitment of inclusive schools to ensure that all students have the opportunity to become proficient readers, writers, and communicators. The data on literacy strategies used in inclusive schools provides valuable insights into the diverse and multi-sensory approaches that teachers employ to enhance students' literacy skills. Picture-based strategies are employed by 35.3% of the teachers. The use of pictures can be an effective way to support reading comprehension, particularly for visual learners. Pictures can help students make connections between words and their meanings, aiding in vocabulary development and overall reading understanding. Similarly, 35.3% of teachers use something touchable as a literacy strategy. Providing students with tangible objects or manipulatives can be beneficial for tactile learners. This hands-on approach allows students to physically interact with the materials, which can deepen their understanding and engagement with the literacy content.

Another 35.3% of teachers use something hearing as a literacy strategy. This likely involves incorporating auditory elements such as storytelling, audiobooks, or phonics activities. Auditory learning can be effective for students who learn best through listening and verbal instruction. Reading aloud is also used by 35.3% of teachers as a literacy strategy. Reading aloud to students can improve their listening skills, expose them to different text structures and language patterns, and model fluency and expression in reading. Video-based strategies are utilized by 47.1% of teachers. Videos can be a powerful tool for presenting information and narratives, making complex concepts more accessible, and enhancing students' visual and auditory learning experiences. Writing activities are used by 35.3% of teachers as a literacy strategy. Writing exercises, such as journaling, creative writing, and writing responses to texts, can strengthen students' writing skills, promote self-expression, and consolidate their understanding of literacy concepts. Drawing is used by 23.5% of teachers as a literacy strategy. Drawing allows students to visually represent their ideas, make connections between text and images, and stimulate creativity in expressing their thoughts.

The combination of visual, auditory, tactile, and kinaesthetic strategies acknowledges the importance of engaging multiple senses in the learning process, which can enhance memory retention and overall comprehension. The data on assessment and monitoring strategies used in inclusive school's sheds light on the diverse approaches that educators employ to evaluate students' progress and ensure their learning needs are met effectively. Flexibility in assessment is utilized by 35.3% of teachers. This approach suggests that teachers are adopting various assessment methods that can accommodate the individual needs and learning styles of their students. By being flexible in their assessments, educators can provide students with different ways to demonstrate their understanding and knowledge, catering to diverse abilities and preferences.

Portfolio assessment is also used by 35.3% of teachers. Portfolios are a collection of students' work over time, which can include various forms of assessments, projects, and reflections. Portfolio assessment offers a holistic view of students' progress and achievements, allowing teachers to assess their development in multiple areas and gain deeper insights into their learning journeys. Sustainability in assessment is employed by 23.5% of teachers. This suggests that some educators are focusing on developing assessment methods that are sustainable and can be maintained over the long term. Sustainable assessment practices ensure continuity in tracking students' progress and enable educators to make informed decisions about instructional strategies and interventions.

The data reflects a commitment to fostering inclusive assessment practices that align with the principles of personalized learning and individualized support. The flexibility in assessment methods acknowledges that students have unique learning profiles, and one-size-fits-all approaches may not adequately capture their true abilities and progress. The presence of IEPs suggests of personalized planning and support for each SNS [23]. IEPs are tailored plans that outline specific learning goals, accommodations, and instructional strategies based on the individual student's needs and abilities. The findings indicate a commitment to providing individualized attention and addressing the unique challenges faced by each student.

*"Every year, the parents of SNS students are invited to collaborate in arranging and creating individual programs that encompass syllabi, learning activities, and specific learning targets, including literacy goals for SNS students." (The special education teachers/MI/CJ)*

The findings suggest of utilizing experiential and hands-on learning approaches. Strategies such as learning by doing, drawing, making posters, and engaging in group activities indicate a focus on active participation and tangible experiences. This approach allows SNS to actively engage with the content, making it more meaningful and memorable. These findings correlate with strategies like reading aloud, writing, and telling stories are promoting language development and expression [24]. These activities provide opportunities for SNS to practice their reading, writing, and oral communication skills. By engaging in these activities individually or in groups, students can enhance their language abilities and express their thoughts and ideas.

Next, displaying posters or simple writings suggests a focus on showcasing and celebrating students' work. This practice provides opportunities for SNS to share their achievements, build confidence, and receive recognition for their efforts. Displaying posters also promotes a sense of pride and ownership in their literacy development. The last, ongoing assessment, and progress monitoring. The findings may indicate ongoing assessment and progress monitoring to inform instructional decisions and individualized support. These findings also match with assession approach ensures that interventions and accommodations are responsive to students' changing needs and promote continuous growth [25]. Teachers regularly assess students' literacy skills, monitor their progress, and adjust instruction accordingly for SNS.

### 3.3. Outcomes and achievements in literacy development

The data on the achievement of literacy development in inclusive schools reveals the various ways teachers recognize and celebrate students' progress in their literacy skills. These outcomes and achievements reflect the culmination of students' efforts and the impact of effective instructional practices, as in Table 4. Saved work is acknowledged by 41.2% of teachers. Saving students' work, such as completed writing assignments or reading responses, indicates that teachers value and preserve students' efforts and accomplishments. This recognition can be motivating for students, as they see their work being valued and acknowledged. Displayed work is recognized by 35.3% of teachers. Displaying students' literacy-related work in the classroom or school environment not only showcases their achievements but also creates a positive and supportive learning atmosphere. Seeing their work on display can boost students' confidence and pride in their literacy development.

Table 4. Achievements in literacy development

Aspect	Criteria	Percentage (%)
The works of SNS	Saved work	41.2
	Displayed work	35.3
	Collected work	47.1
	Appreciation reward	76.5
Literacy focus	For improvement	29.4
	On shortcomings pursued	52.9
	Reinforcement	41.2
	Exploring strength	52.9

Collected work is celebrated by 47.1% of teachers. Collecting students' work into portfolios or folders highlights their progress over time and allows teachers and students to reflect on their growth. This practice emphasizes the importance of continuous learning and improvement in literacy skills. Appreciation rewards are used by 76.5% of teachers. Rewarding students for their literacy achievements with appreciation and recognition can be highly motivating. It reinforces the idea that their efforts in literacy development are valued and encourages them to continue their growth in this area.

The data shows that teachers in inclusive schools are proactively adopting various strategies to celebrate and acknowledge students' achievements in literacy. These practices are crucial for fostering a positive learning environment where students feel supported and encouraged to improve their literacy skills. The use of portfolios and collections of work demonstrates a commitment to ongoing assessment and progress monitoring. Appreciation rewards play a significant role in reinforcing positive behaviours and attitudes toward literacy learning. Students who feel appreciated for their efforts are more likely to be engaged and enthusiastic about further developing their literacy skills.

Overall, the data suggests that teachers in inclusive schools are dedicated to creating a culture of literacy celebration and recognition. By employing diverse methods to acknowledge students' achievements, educators can nurture a growth mindset, promote a love for learning, and support the continuous development of literacy skills in all students. The fact that one of the students received national and



international medals for their poster and comics highlights the acknowledgment of their talent and skills. This recognition can boost their self-esteem, motivation, and confidence in SNS literacy abilities [26].

*“We take great pride in celebrating the remarkable achievement of one of our SNS, who recently earned a silver medal in a national poster competition. This outstanding accomplishment serves as a powerful motivation for our teachers to continue creating and implementing effective literacy programs. It demonstrates the tangible impact of our efforts in supporting the literacy development of all students, regardless of their unique needs and challenges. Such achievements validate the importance of inclusive education and further inspire us to create an environment where every student can thrive and excel in their literacy journey.”* (Coordinator SNS teacher/MTs/EJ).

The data on literacy focus in inclusive schools provides valuable insights into how teachers are approaching literacy instruction to support students' learning and development. For improvement, 29.4% of teachers focus on areas that need improvement in students' literacy skills. This suggests that teachers are identifying specific challenges or weaknesses in their students' literacy abilities and tailoring their instruction to address those areas. By targeting areas for improvement, teachers can provide targeted support and interventions, helping students make progress in their literacy development. On shortcomings that should be pursued, 52.9% of teachers direct their attention to addressing specific shortcomings in literacy. This focus likely involves identifying particular literacy challenges that students are facing and implementing targeted strategies to overcome them. By pursuing the resolution of these shortcomings, teachers aim to provide effective support that enables students to strengthen their literacy skills and become more proficient readers and writers.

Reinforcement on the result is emphasized by 41.2% of teachers. This suggests that teachers are acknowledging and reinforcing the progress and achievements that students have made in their literacy skills. Celebrating successes can be highly motivating for students, encouraging them to continue putting effort into their literacy development. Exploring strengths is the focus for 52.9% of teachers. This approach involves identifying and building on students' existing literacy strengths. By recognizing and leveraging these strengths, teachers can create a positive and empowering learning experience that capitalizes on students' abilities and fosters a sense of confidence in their literacy skills.

The data reveals a well-rounded and thoughtful approach to literacy focus in inclusive schools. Teachers are adopting diverse strategies that address both areas for improvement and students' existing strengths. By considering both aspects, teachers can create a comprehensive and individualized literacy development plan that caters to each student's unique needs. The emphasis on pursuing shortcomings and exploring strengths demonstrates a balanced approach to literacy instruction. By identifying and addressing areas of challenge while capitalizing on areas of strength, teachers can create a supportive and inclusive learning environment that promotes growth and development in all students.

Additionally, the reinforcement of students' progress and achievements acknowledges their efforts and hard work. Positive reinforcement can boost students' self-esteem and motivation, encouraging them to continue investing in their literacy learning. All the practices highlight the importance of recognizing students' achievements, fostering creative expression, cultivating a literacy culture, and promoting personal growth and motivation. By fostering a supportive and inclusive environment, inclusive schools can facilitate meaningful literacy outcomes and empower SNS to reach their full potential.

### 3.4. Challenges in literacy development for SNS

Challenges in literacy development for students with SNS present a unique set of obstacles that require careful consideration and targeted support. Navigating the intricacies of reading, writing, and language acquisition can be a complex journey for SNS students, often demanding tailored instructional strategies, individualized interventions, and collaborative partnerships between educators, specialists, and families. The challenges in literacy development for SNS are: variability in individual needs, lack of varied strategies, limited facilities and resources [7], teacher competence and professional development, and individualized instruction and differentiated approach [27]. The variability in the individual needs of SNS, particularly in relation to their intellectual abilities (IQ), are wide. Each student may require a different level of support and specific strategies to facilitate their literacy development. This highlights the importance of personalized approaches and individualized support to address the unique challenges faced by each student.

A lack of diverse strategies in supporting the literacy development of SNS indicate a need for a broader range of instructional approaches, methods, and resources to cater to the diverse learning profiles of SNS. The findings emphasize the importance of employing multiple strategies to meet the unique needs and abilities of individual students. Limited facilities and resources as a barrier to effective literacy development could include a lack of appropriate technological resources, educational materials, assistive technologies, or

accessible learning environments. The limited availability of these resources hinders the implementation of inclusive literacy practices and impede students' access to engaging and effective learning opportunities [28]. Without adequate resources such as assistive technologies, specialized instructional materials, and accessible learning environments, SNS students may face significant barriers to participation and engagement in literacy activities.

Other challenges related to teacher competence and the need for ongoing professional development. Teachers may face difficulties in effectively addressing the diverse learning needs of SNS and implementing appropriate instructional strategies. The findings underscore the importance of continuous teacher training and support to enhance their knowledge, skills, and confidence in inclusive literacy instruction. Individualized instruction and a differentiated approach to address the challenges and barriers in literacy development are other issue for SNS challenge. SNS require tailored support and accommodations that consider their unique needs, abilities, and learning styles. The findings emphasize the importance of adapting instruction to meet individual needs, promoting inclusivity, and fostering meaningful literacy experiences.

Addressing the limitations of this study and their potential impact on the results, it is important to note that while various challenges in literacy development for students with SNS have been highlighted, the specific contexts and demographics of the student population may influence the extent and nature of these challenges. However, further and more nuanced investigations may be necessary to fully understand how factors such as socioeconomic status, cultural diversity, and specific disabilities intersect with these challenges, particularly in different educational settings and geographic regions.

### 3.5. Model of inclusive literacy development

This study offers a comprehensive model of inclusive literacy development. It starts with personalized planning and individualized support to recognition and celebration of achievements. This model emphasizes the importance of personalized planning and individualized support for SNS in literacy development. It involves creating IEPs that outline specific goals, accommodations, and instructional strategies tailored to each student's unique needs and abilities, as in Figure 2.

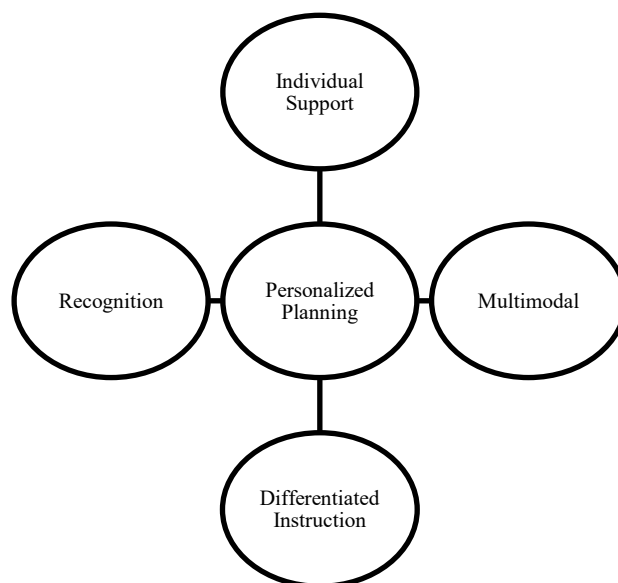


Figure 2. Model of inclusive literacy development

The model incorporates a multimodal and experiential learning approach to literacy development. It recognizes the importance of providing diverse learning experiences using various media resources, hands-on activities, and real-world connections. This approach engages students in active, meaningful, and multisensory learning, promoting comprehension, engagement, and retention of literacy skills. The differentiated instruction and accommodations to address the diverse needs of SNS is also be part of the model. It recognizes that students require tailored supports, adaptive technologies, and modified materials to access and engage with literacy activities effectively. Differentiated instruction ensures that instruction is responsive to individual strengths, challenges, and learning preferences.

The highlights of recognizing and celebrating SNSs' achievements in literacy development are multi-fold and profoundly impactful. It involves displaying student work, creating a culture of literacy, and acknowledging accomplishments through certificates, awards, or public recognition. This recognition fosters self-esteem, motivation, and a sense of pride in their literacy abilities. By implementing this comprehensive inclusive literacy development model, inclusive schools can create a supportive and enriching learning environment that meets the diverse needs of SNS. This model emphasizes personalized planning, multimodal and experiential learning, collaboration, differentiated instruction, recognition of achievements, and ongoing professional development to foster inclusive literacy practices and facilitate meaningful outcomes for SNS.

This study delves into the implementation of a comprehensive model for inclusive literacy development is not correlated with the study of framework collaboration to integrate students with support plans [11]. While both studies underscore the importance of individualized support and tailored strategies for students with diverse needs, this model extends beyond teacher education to encompass a holistic approach to literacy instruction. This model benefits inclusive literacy development by providing personalized support, promoting diverse learning experiences, accommodating individual needs, celebrating achievements, and fostering a supportive learning environment.

#### 4. CONCLUSION

The conclusion revealed effective approaches and strategies employed inclusive schools, including the use of diverse media resources, nature-based activities, personalized planning, multimodal learning, collaboration, differentiated instruction, and individualized support. Furthermore, the implementation of nature-based activities allowed students to connect their literacy learning with real-world experiences, fostering a deeper understanding and appreciation for the subject matter. The suggestion for next researcher can be conducted comparative studies to compare the effectiveness of different instructional strategies, approaches, and accommodations in inclusive literacy development.

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This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

#### CONFLICT OF INTEREST STATEMENT

The authors declare that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### INFORMED CONSENT

This study did not involve human participants or identifiable personal data.

#### ETHICAL APPROVAL

This study did not involve human participants or animal subjects.




## DATA AVAILABILITY

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.




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