



Learning Strategies for Children with Down Syndrome in Early Childhood Education

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ABSTRACT

This research is important for identifying effective learning strategies for children with down syndrome in non-inclusive early childhood education (ECE), which currently lacks a dedicated system. This study aimed to study learning strategies in kindergarten. The research employed a descriptive qualitative approach, utilising a case study method. Data collection instruments included observation, interviews, and documentation, with subjects such as teachers, principals, and children with down syndrome. The results show that an individualised approach, multisensory play-based learning, and collaboration between teachers, parents, and therapists effectively increase child engagement and development. The impact of this strategy is to support more inclusive education in non-inclusive schools, although challenges such as limited teacher training and inadequate facilities still need to be addressed.

INTRODUCTION

Children with Special Needs (CSN) are individuals who experience obstacles in one or more of the following areas: physical, intellectual, social, emotional, or a combination of these areas, requiring specially designed educational services. According to Law Number 20 of 2003 concerning the National education system, article 32, students who experience difficulties in participating in learning due to these disorders are entitled to receive special education tailored to their needs. One type of csn is a child with down syndrome, a genetic disorder caused by an excess of chromosome 21 (trisomy 21). Children with down syndrome generally experience developmental delays in physical, language, social, and intellectual aspects (Layyinah et al., 2023).

Down syndrome is caused by a genetic disorder in which an individual has an extra chromosome 21, known as trisomy 21. This condition can be influenced by several risk factors, such as the mother's age at the time of pregnancy, family genetic history, radiation exposure, and viral infections during pregnancy. Mangunsong (2009) explains that the risk of giving birth to a child with down syndrome increases if there is a family history of children with similar conditions. Furthermore, the risk also increases with maternal age, particularly in pregnancies over 35 years old. Amanullah (2022) added that the main factor in the development of down syndrome remains to be seen as the primary cause of this developmental disorder.

Down syndrome has special needs that have unique characteristics, both in cognitive, social, and motor abilities. Therefore, learning strategies implemented in schools must be able to answer their



needs and remain aligned with the educational programs in place in non-inclusive schools. Education for children with special needs, including children with Down syndrome, is a challenge in itself, especially in non-inclusive Early Childhood Education (ECE). Non-inclusive ECE generally lacks a system specifically designed to meet the needs of children with Down syndrome, so the learning approach applied is often not fully in line with their cognitive, social, and emotional development (Nurzahra & Difa, 2024). Early childhood is a critical phase in child development, during which appropriate stimulation has a profound impact on their future abilities. Therefore, when dealing with children with special needs, such as those with Down syndrome, they often require special and different learning strategies from others (Ahmad, 2023).

Meanwhile, the general characteristics of children with Down syndrome include limited intelligence. Their learning capacity, especially in abstract areas such as learning, arithmetic, writing, and reading, is also limited. In addition to limited intelligence, children with Down syndrome also have difficulty caring for themselves, therefore requiring assistance. Children with Down syndrome also have a significant dependence on their parents because they cannot assume responsibility on their own. Therefore, they require constant guidance and supervision (Silitonga et al., 2023).

Education plays a crucial role in shaping the foundation of children's development, including those with special needs such as down syndrome. According to Ki Hajar Dewantara, the father of education, children are born with their unique nature or disposition. Education does not alter a child's inherent nature but instead guides their growth and development. Education plays a vital role in equipping individuals with knowledge that benefits themselves, society, the nation, and the state (Bening & Putro, 2022). Furthermore, education also serves to guide children with negative behaviours or attitudes in developing good character and becoming better individuals (Susanto, 2021).

Inclusive education is an educational program provided by the government for children with special needs, such as physical, mental, emotional, intellectual, social, and other disabilities, during their development. Inclusive education provides a space for children with special needs to learn alongside their peers, but some inclusive schools still lack effective learning programs for children with special needs. This is due to teachers' lack of understanding of learning for children with special needs. Ultimately, the system employed by some inclusive schools falls short of achieving the goals of inclusive education in general (Liani et al., 2021). Children with Special Needs (CSN) have the right to receive an education at the same level as their peers, while still considering their individual needs (Maulidiyah, 2023). The role of parents is crucial in supporting children with special needs, one of which is by providing a safe and inclusive social activity space in the home and community. Parents often allow their children to play with their peers at home as a form of social support and to stimulate independence (Widhiati et al., 2022).

However, not all educational institutions in Indonesia have implemented an inclusive school system. One reason is the limited availability of human resources competent in inclusive education (Sunardi et al., 2011). This situation impacts children with special needs in early childhood (0–6 years), who often do not receive educational services according to their needs. According to the Ministry of Education and Culture (Kemendikbud, 2020), access to inclusive education in Indonesia still faces significant challenges, particularly at the early childhood education level. Therefore, an inclusive approach needs to be developed comprehensively and systematically in early childhood education institutions so that the educational rights of children with special needs can be fulfilled fairly and equitably.

In Indonesia, children with special needs, including those with down syndrome, still face challenges in obtaining appropriate educational services, especially in non-inclusive schools. These schools generally lack learning strategies specifically designed to meet the individual needs of children *with Down syndrome*. This problem is caused by several factors, including a limited number of trained teaching staff, a lack of supportive learning facilities, and a learning approach that remains general and conventional (Rachmawati & Sutarman, 2021).

Children with down syndrome require adaptive and individualised learning strategies, such as visual-based and multisensory approaches, as well as social communication strengthening (Handayani & Syamsudin, 2020). However, most studies discussing learning strategies for children with down syndrome still focus on the context of inclusive schools (Fitriana & Mulyadi, 2023) a notable exception to this trend. Research in non-inclusive early childhood education (ECE) remains very limited. This



indicates a research gap that needs to be addressed, particularly in understanding the most suitable approaches for children with special needs in educational settings that have not yet fully adopted an inclusive system.

This article will discuss learning strategies that can be implemented in non-inclusive schools, particularly in early childhood education (ECE), to support the development of children with down syndrome, as well as the challenges faced in their implementation. With the right strategies, children can have a better learning experience and develop appropriately. Amka (2019) explains the importance of teacher training in addressing the challenges of learning in inclusive schools. Her research emphasises the need for teacher training to support children with special needs, focusing on schools with an inclusive system (Amka, 2019). Meanwhile, according to Pangestu, the implementation of an inclusive education model in regular schools that accept children with special needs emphasises the benefits of social interaction between children with special needs and their peers without special needs. However, her research does not explicitly discuss the learning approach in non-inclusive ECE. Based on the background and literature review presented, this study aims to describe the learning strategies used with children who have down syndrome in non-inclusive schools, as well as to identify the learning models used and the challenges faced by teachers in implementing them at School Sleman.

METHOD

This research employs a qualitative approach, utilising a descriptive case study, to gain a deep understanding of learning strategies for children with special needs, particularly those with down syndrome, in the context of non-inclusive schools. The researcher focused the study on a single location, RA Al-Fitroh Sleman, as a single subject was studied intensively and contextually (Waruwu, 2023). The types of data collected in this study include primary data, namely the results of direct observations of the learning process in the classroom, in-depth interviews with the principal and class teachers who handle children with down syndrome, and documentation in the form of photos and videos of children's learning activities (Waruwu, 2023). Secondary data, including institutional documents such as learning programs, school profiles, child development records, and relevant literature, support understanding of the learning context (Amelia et al., 2024).

The data collection technique in this study employed three methods: participant observation, which involved directly observing children's involvement in learning activities, their interaction patterns with teachers and peers, and the application of learning strategies in the classroom. Observation indicators include children's activeness in following instructions, responses to visual and multisensory media, and social interactions within the classroom environment. In-depth interviews were conducted with school principals and classroom teachers to explore their experiences implementing learning strategies and addressing challenges in the field. Interview indicators included learning strategies used, obstacles encountered when working with children with down syndrome, and forms of collaboration with parents or other support groups. Documentation is carried out by collecting photos, videos, and other documents that support the learning process. This technique aims to strengthen the validity of data obtained from observations and interviews by providing tangible visual and administrative evidence.

The data analysis technique employed in this study utilises an interactive model analysis, comprising three stages: data reduction, data presentation, and conclusion drawing. Data reduction involves filtering and summarising key data from observations, interviews, and documentation to align with the research focus. The simplified data is then presented in the form of descriptive narratives and direct quotes from informants to illustrate patterns or findings in the field. Furthermore, conclusions are drawn gradually and continuously throughout the research process. To ensure data validity, source triangulation is carried out, namely comparing findings from various data collection techniques (observation, interviews, and documentation) (Amelia et al., 2024). To provide a systematic overview of the research process, a research flowchart has been prepared in diagram form. This diagram visualises the main steps taken by the researchers, from selecting the approach to data analysis, as well as the validation techniques used in the information collection process (Figure 1).

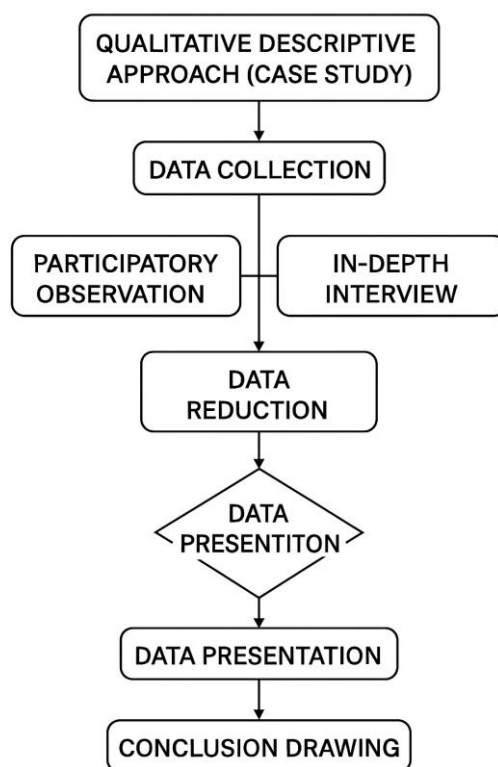


Figure 1. Research Flow of Learning Strategies for Children with Down Syndrome at RA Al- Fitroh Sleman

The flowchart above illustrates that this research employs a qualitative, descriptive case study approach, beginning with data collection through observation, interviews, and documentation. The obtained data were analysed using an interactive model through the stages of data reduction, data presentation, and conclusion drawing. Data validity was strengthened through the use of source triangulation techniques to ensure the accuracy and validity of the findings in the field. With this flow, the research process can run systematically and focus on achieving the set goals.

RESULTS AND DISCUSSION

Individual Approach

Based on observations at school, children with down syndrome exhibit delays in cognitive development. They take longer to grasp basic concepts such as numbers, letters, and shapes. Children with down syndrome at school also exhibit distinctive physical characteristics such as narrow, wider-set eyes and thinner, smaller mouths. Children with down syndrome experience delays and even lag in gross and fine motor skills. They take longer to master basic motor skills. When given writing or drawing assignments, these children *require* teacher assistance, as expressed by the participant below.

"While other children can follow instructions once or twice, children with Down syndrome usually need more repetition. For example, when learning to write letters, we have to help them with lines or dots so they can follow along."

Children with Down syndrome in this kindergarten also exhibit several behaviours that may be influenced by their developmental stage, such as difficulty absorbing classroom learning and high emotionality. They are adaptable and caring toward their peers, but may struggle to adjust to new people. Teachers' actions for children with Down syndrome include providing special attention and adapting learning methods to their needs. This may involve supervising the child during activities by both the primary teacher and the assistant teacher, as well as providing learning tailored to the child's



abilities. Learning for children with down syndrome needs to be tailored to the child's abilities, needs, and interests.

"We usually supervise these children closely while they are playing or studying. They can get easily distracted or frustrated when they are struggling, so we need to be there and help them stay focused." (Interview with the Assistant Teacher)

The school's approach to identifying these issues includes evaluating the child's cognitive and motor development through direct observation and formal assessment. The kindergarten employs a tailored learning approach tailored to the individual needs of children with down syndrome, employing interactive and engaging methods, and providing clear and structured instructions to help children learn optimally.

Multisensory Game Based Learning

In contrast, when learning is facilitated by media such as pictures, flashcards, and puzzles, these children retain information more easily and engage with it. Children with down syndrome at school tend to be more interested in imaginative activities, such as lego, than in academic assignments. Appropriate learning for children with *Down syndrome* often involves play-based learning, as provided by schools, such as *puzzles* or Lego sets (Figure 2). These games can help children develop problem-solving skills. Furthermore, interactive activities involving classmates or teachers, such as throwing a ball, can improve motor skills. This includes engaging them in activities with tangible materials, such as sand, water, or other objects. Based on observations, one effective method is diversified learning, where teachers adapt teaching materials and strategies based on students' interests, talents, and needs. This allows students to learn at their own pace, thereby increasing motivation and learning outcomes.



Figure 2. Children Playing with Lego

The learning model used by teachers in schools is the classical learning model. Regular students and students with special needs participate in one class. The teacher's teaching strategy begins with explaining the learning material and the play activities that will be carried out that day. The teacher provides three or more games in different corners of the classroom, and the children can choose which games they want to play. This also applies to the children with special needs in the class. Based on interviews with the principal, researchers found that the school already uses an independent curriculum, and its learning model partially utilises loose parts, implementing corner and group learning models. Therefore, there is no distinction between normal children and children with special needs. Play methods have also been shown to be effective in enhancing the cognitive and language abilities of children with down syndrome.

"One of the most effective learning strategies we implement at Aschool is through play. Children, especially those with special needs such as Down syndrome, are more receptive to



learning materials when presented in the form of games. From our experience, the games most favoured by children with developmental disabilities and Leasides being fun, these two games are also beneficial in improving their cognitive abilities, such as solving problems, recognising shapes and colours, and practising concentration."

Collaboration between Teachers, Parents, and Therapists

The teacher's primary role in learning is to be a facilitator and companion. They provide direct guidance with patience. They also use simple language when communicating—language that is easy for children to understand, using everyday terms. They also provide emotional support and motivation, for example, by praising a child's efforts with phrases like "good job," "MasyaAllah," and "very good," among others. They employ a positive approach and refrain from harsh punishment. In addition to the teacher's role, collaboration between teachers and parents is also crucial for effective learning. Parents communicate with teachers by discussing their child's progress and any challenges they are facing. Parents also receive and accept suggestions from teachers about learning that can be implemented at home.

"At Al-Fitroh Kindergarten, we always strive to create a comfortable classroom atmosphere that supports the children's learning process, especially for children with special needs such as Down syndrome. We believe that comfort is key to optimal learning for children. Therefore, before starting learning activities, we always make preparations first. One way is by requesting the child's health data and therapy results from parents."

Based on the interview above, teachers at school also strive to create a comfortable classroom atmosphere for learning. The classroom atmosphere is designed to support effective and enjoyable learning while accommodating the diverse needs of children. Teachers also collaborate with parents to provide therapy for children with down syndrome. This therapy includes physical therapy, which helps develop gross motor skills such as sitting, crawling, and walking. Speech and language therapy is also provided to train and support communication through speech, enabling children to engage in two-way communication. Therefore, children can carry out activities independently and respond to their conversation partners. In activities, children with Down syndrome show good development, interacting more easily with friends and teachers at school. Children can also eat and drink independently without the assistance of teachers or parents.

The Impact of Learning Strategies on Children's Engagement and Development

The learning strategies implemented at school, including an individualised approach, multisensory play-based learning, and collaboration between teachers, parents, and therapists, have significantly impacted the development of children with down syndrome. Research shows that these strategies can improve children's memory, motor skills, communication, and social interaction. Based on interviews and observations, children became more engaged and responsive to the lessons delivered by teachers. For example, when given media like Lego, puzzles, and ball-throwing games, children were able to complete the activities with greater focus. Children also showed a strong interest in imagination-based activities and multisensory materials, such as sand and water. Physical play, such as building with blocks, playing with balls, and participating in group games, can help develop gross and fine motor skills in children with down syndrome. Furthermore, children become increasingly independent in carrying out daily activities, such as eating and drinking, without the need for assistance from teachers or parents.



Figure 3. Children Playing Loose Parts in Multisensory Learning Activities in Class
(Field Documentation, 2025)

"Children are now better able to focus during lessons, especially if they are given games that suit their interests. Even some children who were previously passive can now play with friends and speak to the teacher, albeit with some stuttering." (Classroom Teacher Interview)

Collaboration with parents, such as providing physical and speech therapy, also accelerates children's language and communication development. Children are better able to respond to instructions, express their desires, and interact effectively in social settings.

"We always recommend that parents regularly take their children to speech and physical therapy. The results are quite visible; children are better able to name objects, verbally request things, and even sing along with their friends. This greatly aids their learning process in the classroom."

This learning strategy also boosts children's self-confidence. When teachers offer praise, children exhibit positive expressions and are more willing to try new things. The friendly, open, and supportive classroom atmosphere allows children to feel comfortable in the school environment, even though the school itself may not be inclusive. Although there are several challenges, including limited teaching time, a lack of teacher training, and the absence of special assistant teachers, observations indicate that learning strategies tailored to children's needs have a positive impact on the learning process.

Learning evaluation is conducted continuously through teacher observations, discussions with parents, and input from therapists. Evaluation results indicate that game-based learning, an individualised approach, and effective collaboration can improve children's independence, motor and cognitive skills, communication and language skills, and social interaction with peers. With a consistent and collaborative approach, children with Down syndrome can develop according to their potential, even though they are in a non-inclusive school.

First, based on research conducted, learning approaches using media such as Lego, puzzles, and others can improve memory and conceptual understanding in children with Down syndrome. Children with Down syndrome will be more interested and responsive to the lessons delivered by the teacher. Furthermore, physical play, such as throwing and catching a ball, building with blocks, or assembling Legos, can help develop gross and fine motor skills in children with Down syndrome. A collaborative approach can help children with Down syndrome learn to share and communicate with their peers.

After conducting research, it was discovered that this school has an institutional goal of providing education to children with special needs that aligns with the principles of inclusive education. The goal of inclusive education is to provide early interventions for children with special needs. Identifying the learning needs of children with Down syndrome requires a comprehensive and individualised approach. As part of the process of identifying and monitoring a child's development, schools also refer to the child's health data obtained from parents and medical services. One such



document is a record from the Child Health Book, which includes growth history, physical examination results, and medical follow-up such as TSH and FT4 evaluations, as shown in Figure 5.

Figure 5. T.therapist Notes

Children with special needs have the right to receive the same education as their peers in regular schools. Schools that implement inclusive education for children with special needs have prepared programs in the form of modifications and updates to regular programs (Madyawati & Zubadi, 2020). When providing learning for students with down syndrome, teachers must pay attention to the child's characteristics and abilities, ensuring that the learning provided is both beneficial and meaningful, tailored to the child's needs. According to Murjito, children with special needs with down syndrome are children with special characteristics that are different from those of children in general. These special characteristics can be emotional, mental, or even physical (Nuryati, 2022).

Second, to optimize and maximize the abilities of children with down syndrome, comprehensive management must involve parents, psychologists, teachers, and therapists (Setiawan & Muttaqin, 2023). Furthermore, implementing student-centred, direct learning strategies can increase children's active participation in the learning process. Teachers can utilize thematic learning methods that integrate various subjects around a single theme, making it easier for children to grasp concepts holistically. For example, in Indonesian language learning, teachers can relate material to themes relevant to children's daily lives, thereby increasing their interest and understanding (Maulidiyah, 2023).

Implementation of learning strategies for children with down syndrome must involve various parties, including educators, parents, and therapists. Educators in kindergarten must be trained to understand and apply strategies appropriate to the characteristics of children with down syndrome. The use of flexible and creative learning approaches can support children's optimal development. Continuous evaluation of the learning program implemented at school is crucial to ensure children's success in learning. Evaluation can be conducted through direct observation, child development assessments, and input from parents and the therapy team. Based on this evaluation, better learning strategies can be developed to ensure children with Down syndrome reach their maximum potential.

Dick and Carey state that a learning strategy is a combination of materials and procedures used together to deliver learning outcomes to children. A child-centred learning strategy is characterised by materials tailored to the child's needs and development, learning methods that utilise thematic development, media and learning resources that enrich the learning environment, and classroom management that is open and respectful (Hasanah, 2018).

Based on the research conducted, it was found that this institution does not have a dedicated teacher to handle children with special needs. The kindergarten has several types of children with special needs attending the school, including hyperactivity, cerebral palsy, and down syndrome. The school's response to children with special needs begins with identifying and collecting data on these children. After that, the identified data is analyzed. After understanding the details of the children with special



needs, the teachers plan methods, services, and infrastructure for learning. Efforts to provide services for children with special needs aim to offer learning opportunities that enable them to feel valued and not neglected.

Inclusive schools are committed to adapting learning systems, providing supportive facilities, and ensuring that teachers play a role in motivating and offering constructive guidance to children with special needs. This policy is implemented through the provision of inclusive education in regular schools, which enables children with special needs to learn alongside their peers of the same age (Pratiwi, 2016). However, the implementation of inclusive education faces various challenges, such as limited resources, a lack of training for educators, and social stigma against children with special needs. Therefore, collaborative efforts are needed between the government, schools, and the community to overcome these obstacles and ensure that existing policies can be implemented effectively for the welfare and optimal development of children with special needs.

Regarding language barriers and delays identified in children with down syndrome, including difficulties with the accurate articulation and pronunciation of sounds. The words spoken are very short; even a single word can be understood. There are others, but it is challenging to engage in conversations, especially when one lacks strong speaking skills and a well-developed vocabulary. Speech is difficult to understand, unable to form simple sentences, and sometimes only says one syllable. Speech and language disorders occur in down syndrome, where the child is only speak and sometimes pointing on objects around him to be studied, this is influenced by problems with the respiratory tract, sinuses, narrow oral cavity, severely arched palate with a thick tongue, etc., which results in a child having difficulty manage it in the mouth (Nurzahra & Difa, 2024). The development of normal children and children with Down syndrome has different characteristics. Children with down syndrome find it more challenging to respond to the stimuli provided. These problems manifest in several ways, such as learning difficulties and difficulties with adjustment or adaptive skills. Learning difficulties in children are caused by below-average intellectual functioning. While a typical child has an average IQ of 100, a child with Down syndrome typically has an IQ of 70 or lower. Apart from having greater learning delays compared to normal children, children with down syndrome also have difficulty adjusting to their environment (Qonitah, 2020).

The role of teachers in educating children with down syndrome is to provide inclusive and structured learning environments that cater to the unique needs of these children. Individual learning requires teachers to adapt learning methods to the child's specific needs, such as utilizing visual aids or incorporating game-based learning. Using repetitive methods, children with down syndrome require repetition of material to understand and remember information well. Praise and positive reinforcement are given to each child for their achievements to increase motivation and self-confidence. Collaborating with parents and other professionals, regular meetings are held to discuss the child's progress, challenges faced, and strategies that can be implemented at home and school. Social skills development facilitators teach social skills such as sharing, working in groups, and communicating with peers to help children interact effectively in social environments (Dzulfadhilah, 2014).

Teachers in inclusive learning emphasized their ability to manage the classroom during the learning process. Teachers must possess the competency to manage classes and learning, understand students with diverse needs, and implement effective educational practices. Teachers must also be able to make learning fun and engaging through various media (Hidayati, 2017). Through play, children can learn in a fun and interactive way, which helps them understand new concepts and improve communication skills. For example, the use of video-based games can help improve children's language skills and concentration (Amaliyah et al., 2024). Through these activities, children can learn to solve problems and develop their fine motor skills. Additionally, puzzles can help improve the concentration of children with special needs, including those with down syndrome. (Marta, 2017) .

Educational games, role-playing games, and gross motor skills have been proven effective in stimulating children's enthusiasm and engagement in learning activities. Play is a way to develop children's potential into various abilities and skills that will be useful in the future. Front. Through play, children gain valuable experiences and understand the world around them. Through play stimulation, children are equipped to complete the developmental tasks they encounter, laying a strong foundation for overcoming life's challenges in the future. Learning through play is one of the most effective methods for children with special needs. This method enables children to learn in a fun and engaging way while



developing various skills and abilities (Ajidharma, 2024).

Social interactions during play contribute to children's social and emotional development, which in turn increases their participation in learning. (Rizqi & Ulya, 2024) . According to Rizqi (2024), the importance of providing appropriate sensory motor stimulation to improve fine and gross motor skills, sensory integration, and self-awareness in children with down syndrome is emphasized. Collaboration between educators, parents, and other professionals is also essential in identifying and meeting children's learning needs. Sharing information and experiences can help design effective learning strategies that are responsive to children's development. Furthermore, an inclusive and supportive learning environment encourages children's active participation in various activities, thereby increasing their motivation and self-confidence. With a holistic and coordinated approach, the learning needs of children with down syndrome can be identified and optimally met, enabling them to reach their full potential in both academic and social aspects.

Moreover, explained in full, including reducing limitations in children's growth and development and maximizing their opportunities to participate in everyday activities. Efforts to prevent more severe conditions in irregular development so that children can grow and develop their abilities (Bening & Putro, 2022). Designing learning for children with down syndrome in non-inclusive environments requires an adaptive and individualized approach. Even in regular schools, educators must adapt their teaching strategies to meet each child's unique needs. One practical approach is individualized learning tailored to the child's ability and developmental level. Teachers can provide direct tasks and encourage children to imitate speech or actions, such as writing letters and numbers with dots, colouring, or creating mosaics. This approach enables children to learn at their own pace and within their ability (Farida & Yuniarni, 2015).

Educational games, role-playing games, and gross motor skills are effective in stimulating children's enthusiasm and engagement in learning activities. Social interactions during play contribute to children's social and emotional development, which in turn enhances their participation in learning (Rizqi & Ulya, 2024). The learning strategy for children with down syndrome emphasises an individualised approach tailored to the needs and abilities of each child. This finding is consistent with research demonstrating the importance of individualised, interactive, and play-based learning strategies for the practical education of children with down syndrome.

CONCLUSION

Based on observations and interviews, it can be concluded that children with down syndrome exhibit delays in cognitive, motor, and language skills. Nevertheless, they possess quite good social skills and can adapt to their surroundings, especially when approached in an enjoyable and adequate manner. Game-based learning media, such as puzzles, Lego, and interactive activities, have proven highly effective in increasing their engagement and learning abilities. The learning strategies implemented by teachers emphasise an individual and flexible approach, adapting teaching methods to the children's needs and interests. Teachers also use simple communication, provide positive reinforcement, and create a comfortable and inclusive classroom atmosphere.

Furthermore, teachers collaborate with parents to gain a deeper understanding of the children's conditions and provide appropriate therapies, such as physical and speech therapy. Although not yet officially an inclusive school, school has strived to provide inclusive education services despite various limitations, such as the lack of a dedicated assistant teacher and limited facilities. Teachers face challenges such as a lack of specialised training, limited time, and the need to manage a heterogeneous class. However, with a play-based learning approach, classroom adjustments, and collaboration between teachers and parents, the learning process can be more effective. Overall, the success of educating children with down syndrome depends heavily on collaboration among all parties, the use of creative and adaptive teaching strategies, and a supportive learning environment. Play-based learning and a fun, thematic approach are key to helping children with down syndrome reach their full potential, both academically, socially, and emotionally.

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