



EMPOWERING DOWN SYNDROME LEARNERS IN AN INCLUSIVE EDUCATION: BASIS FOR AN INTERVENTION PROGRAM

Ma. Salome Christy J. Lunor,¹ Melinda F. Marquez, PhD²

¹ MAED SPED Student, University of Perpetual Help System DALTA - Las Piñas City

² Associate Professor, University of Perpetual Help System DALTA - Las Piñas City

Article DOI: <https://doi.org/10.36713/epra23142>

DOI No: 10.36713/epra23142

ABSTRACT

This study examined the instructional practices employed by teachers to assist students with Down syndrome in inclusive educational environments, taking into account their demographic and professional backgrounds. The participants, primarily seasoned teachers with extensive training in inclusive education, offered insights into the practical implementation and challenges of inclusive teaching methodologies. Research indicated that teachers utilize several tactics, including assistive technology, differentiated instruction, and peer cooperation. Nonetheless, personalized education surfaced as a domain needs additional enhancement, underscoring the want for more focused support and training. Participants regarded existing inclusive education policies and practices as significantly advantageous for the comprehensive development of learners with Down syndrome, especially in the academic, social, behavioral, and communicative spheres. Notwithstanding the hurdles faced during implementation, these impediments did not substantially undermine teachers' belief in the efficacy of inclusive education. Statistical study revealed significant variations in instructional approaches based on instructors' age, gender, experience, and training exposure, highlighting discrepancies that necessitate addressing through professional development. In light of these findings, the study proposed the "Inclusion Excellence Initiative," a comprehensive intervention program comprising intensive workshops, mentorship, online modules, and resource allocation to improve instructional consistency and quality. The program prioritizes ongoing assessment to guarantee its adaptability to the requirements of both educators and learners. The study emphasizes the necessity of ongoing teacher training, equal access to professional development, and institutional support to enhance inclusive practices. Recommendations encompass the execution of the planned effort and the enhancement of inclusive education policies to guarantee enduring and significant results for students with Down syndrome.

KEYWORDS: Academic Performance, Assessment methods, Awareness on Inclusive Education, Classroom management, Down Syndrome Learners, Inclusive Educational Practices, Inclusive Educational Policies, Individualized Instruction, Learning Environment, Peer Collaboration, Social Inclusion, Support Services, Teachers' Attitude and Preparedness, Teachers' Training on Inclusive Education

I. INTRODUCTION

Inclusive education offers equal learning opportunities for children with and without disabilities, fostering a tolerant, diverse, and appreciative environment. It involves integrating children with Down syndrome into classrooms, using instructional methods, pedagogical strategies, and collaborative support networks. This fosters academic and social development, enhancing empathy and respect.

The United Nations' 2030 Agenda emphasizes the need for inclusive and equitable quality education, particularly for children on the autism spectrum, who often face unique challenges in mainstream schools (Leifler et al., 2020). Despite an increase in enrollment of autistic students over the past two decades, educational staff frequently lack the knowledge and strategies necessary to support these students effectively (Roberts & Webster, 2020). An integrated approach is essential to enhance the capacity of school personnel to create autism-friendly environments and apply evidence-based practices.

Inclusion in education remains a challenge, requiring further data to define what constitutes an inclusive school (Lindner et al., 2022). Recent policy measures in the Philippines, such as the Enhanced Basic Education Act, aim to improve the inclusion of students with disabilities, including those with Down syndrome, although research on this group is limited (Cahapay, 2022). Despite obstacles like inadequate teacher training and resources, efforts are being made to foster inclusive environments through innovative teaching methods and family engagement.

In Thailand, the educational system, influenced by its unique historical context, has made strides in infrastructure and accessibility but still faces issues related to quality and inequality (Rukspollmuang et al., 2024). The country aims to provide tailored education for all learners, including those with disabilities, but urgent initiatives are needed to address resource allocation and teacher supply to ensure favorable educational outcomes (Ra-ngubtook & Bhongsatiern, 2024).



The researcher, a parent of a Down syndrome child, advocates for inclusive education, aiming for equal opportunities for all children, regardless of ability. They believe this environment fosters cooperation, empathy, and respect, ensuring children like theirs can fully integrate into mainstream classrooms.

The Social Model of Disability is a crucial concept that highlights the importance of societal acceptance and understanding of disability. It suggests that people with disabilities face both physical and mental challenges, and that their quality of life is influenced by their environment. This model emphasizes the need for civil rights and policies based on human rights and fairness. It also suggests that disability is not solely defined by the individual but also by structural and social barriers. The theory emphasizes that disability is a result of social attitudes, inaccessibility of environments, and lack of support systems. The Social Disability Model supports inclusive practices, ensuring equity in instructional programs, teacher training, access to assistive technology, and fostering acceptance and peer support. In the long run, it supports the development of learners with Down syndrome in inclusive, supportive, and barrier-free environments.

The study analyzed the impact of inclusive education practices on students with Down syndrome in Thailand. It focused on Sarasas Witaed Suvarnabhumi School, a 72-meter-long facility. The research analyzed teachers' demographics, issues faced in implementing inclusive practices, and their strategies for assisting students with Down syndrome. The findings provided a foundation for creating inclusive educational programs, focusing on academic advancement, social inclusion, learning behavior, and communication. The findings could inform the development of more effective and responsive educational programs for students with Down syndrome.

1.1 Statement of the Problem

1. What is the demographic profile of the respondents in terms of age, sex, number of years in teaching SNED, and training in inclusive education?
2. What is the composite mean on the instructional practices do the teachers use to support learners with Down syndrome in an inclusive environment in terms of Individualized Instruction, Utilization of assistive Technology, Peer Collaboration, and Learning Environment?
3. What is the composite mean on the impact of the current inclusive education practices and policies for Down syndrome learners as perceived by the respondents in terms of Academic Performance, Social inclusion, Learning Behavior, and Communication?
4. Is there a significant difference in the instructional practices used by the teachers to support learners with Down syndrome in inclusive classrooms when grouped according to profile?
5. Is there a significant relationship between the challenges faced by the teachers in implementing inclusive practices for learners with Down Syndrome and the impact of the current inclusive education practices and policies for Down syndrome learners as perceived by the respondents?

6. Based on the findings of the study. What intervention Program may be proposed?

2. REVIEW OF RELATED LITERATURE

Research indicates that mid-career educators aged 30–50 exhibit enhanced commitment, adaptability, and assurance in executing inclusive educational strategies for students with intellectual disabilities, including Down Syndrome. This results from their integrated theoretical understanding, practical proficiency, and continuous professional growth, enabling them to adeptly meet the varied requirements of their pupils (Alnahdi et al., 2023; Al-Shammari, Z., & Mintz, J. (2022).

Moreover, research conducted by Srivastava and Kumar (2022) reveals that male and female educators often demonstrate differing levels of preparedness and attitudes regarding inclusive education, with female teachers generally showing enhanced empathy and responsiveness towards students with special needs. Nonetheless, their research underscores that with adequate training, both male and female educators can participate equally in inclusive practices.

This finding is supported by Manzoor et al. (2021), who underscore the necessity of gender-sensitive training for educators in special and inclusive education, asserting that varied educator viewpoints enhance program design and execution. Forlin and Sin (2021) conclude that educators engaged in ongoing training in inclusive education are significantly more inclined to adopt affirmative inclusive attitudes and implement effective teaching strategies for students with intellectual disabilities, including those with Down Syndrome. De Boer et al. (2023) further substantiate that systematic and repetitive training, especially those integrating practical strategies and collaborative methods, markedly bolster teachers' confidence, proficiency, and preparedness in managing inclusive classrooms, thereby enhancing educational outcomes for students with special needs.

Studies have consistently shown the advantages of inclusive education for students with Down Syndrome and other cognitive disabilities. Florian and Spratt (2021) demonstrated that inclusive education practices focusing on differentiation, co-teaching, and customized planning correlate with improved reading and numeracy outcomes for children with cognitive impairments. Brown and Lee (2022) similarly discovered that children with Down Syndrome demonstrated sustained academic progress in inclusive settings, especially when afforded scaffolded instruction and peer-assisted learning opportunities. Recent meta-analyses corroborate these findings, indicating that inclusive environments enhance academic performance, motivation, and engagement, all of which are crucial for sustained learning success (Nguyen & Hall, 2023).

Lindsay and McPherson (2021) determined that children with Down Syndrome in mainstream settings demonstrate improved peer connections and diminished behavioral issues as a result of heightened social exposure and interaction. Koster et al. (2022) contended that social inclusion is enhanced when educational institutions promote cooperative learning, peer mentoring, and inclusive extracurricular activities. Moreover, Alfakhouri et al. (2023) noted that inclusive education fosters a



more tolerant school atmosphere, while also emphasizing the ongoing difficulties in completely eliminating stigma and social stereotypes.

Lynch and Irvine (2021) indicated that inclusive classrooms utilizing visual calendars, organized peer interactions, and diverse tasks improve behavioral outcomes and promote increased independence in students with Down Syndrome. Zahoor and Malik (2022) similarly contended that motivation and engagement are significantly improved in inclusive environments, especially when students receive regular positive reinforcement and meaningful involvement in classroom activities. McCabe and Gallagher (2023) underscored the importance of inclusive policy frameworks in influencing school culture and teacher attitudes that promote good behavioral modeling and social-emotional development for children with exceptional needs.

Communication development is a crucial aspect enhanced by inclusive education. Avramidis and Butterworth (2022) discovered that engagement in collaborative activities within inclusive environments enhances both expressive and receptive communication abilities via peer modeling and reciprocal relationships. Lee and Choi (2023) shown that classrooms utilizing assistive technology and structured communication aids significantly improve verbal expressiveness and self-assurance in children with intellectual disabilities, especially those with Down Syndrome.

De Boer et al. (2021) emphasized that inclusive classrooms promote both academic and social growth in students with Down Syndrome, particularly when educators excel in adaptive teaching and peer-mediated education. Alquraini and Gut (2020) observed that inclusive practices improve communication, behavior, and self-esteem in children with developmental delays, crediting these results to ongoing policy support and teacher collaboration. Smith and Daniels (2024) found that inclusive educational environments boost motivation and autonomy in children with Down Syndrome, attributing these improved learning behaviors to structured routines, assistive technologies, and supportive peer interactions.

The conclusion is corroborated by the research of Garrote et al. (2021), which highlighted that teacher training and years of experience are critical determinants of effective inclusive teaching practices, especially for children with intellectual disabilities like Down syndrome. Sreckovic et al. (2020) discovered that instructors with formal training in inclusive education had markedly greater confidence and proficiency in adapting Instruction to accommodate diverse requirements, including using assistive technologies and differentiated techniques. Alasim and Paul (2023) indicated that gender and Age may affect receptiveness to inclusive approaches, with younger and female educators typically demonstrating greater empathy and adaptability in fostering classroom inclusion.

The study by De Boer and Pijl (2021) supports the finding that although teachers encounter numerous challenges, especially regarding resource allocation and classroom management, these difficulties do not consistently align with their belief in the effectiveness of inclusive practices, suggesting a distinction

between practical limitations and philosophical endorsement. Al-Shammari, Z., & Mintz, J. (2022) contended that teacher commitment and a favorable school climate could alleviate the adverse effects of implementation obstacles, enabling educators to uphold elevated expectations for inclusive outcomes. Mereku and Agyei (2023) noted that educators in well-supported workplaces frequently express greater satisfaction and effectiveness despite encountering systemic challenges, indicating that external support systems and administrative endorsement serve a mitigating function.

II. RESEARCH METHODOLOGY

Research Design

The study utilized a descriptive quantitative research design to analyze traits, behaviors, and trends, thereby identifying patterns and relationships within the data. This approach facilitated decision-making and validated existing theories by examining the characteristics of the population and the phenomena under investigation (Vale, 2023). A self-made, validated survey questionnaire was employed to gather and analyze numerical data, aiming to understand ideas, opinions, and experiences, as well as to inform new research directions (Bhandari, 2021).

The research focused on developing evidence-based recommendations for enhancing educational programs in inclusive classroom settings, specifically regarding the impact of current practices and policies on the academic, social, and developmental needs of students with Down syndrome. The quantitative data collected through the questionnaire enabled statistical analysis to assess research questions and identify patterns in responses.

Population and Sampling

The seventy-five (75) special education educators at Sarasas Witaed Suvarnabhumi School in Bang Phli Yai, Bang Phli District, Samut Prakan, Thailand, were referred to as the study's general population. To identify the sample respondents, the study used purposive sampling, which is a non-probability sampling technique.

Respondents of the Study

Seventy-five (75) receiving teachers from Sarasas Witaed Suvarnabhumi School in Bang Phli Yai, Bang Phli District, Samut Prakan, Thailand, participated in the survey as responders. As the study's main participants who had adopted inclusive education, these educators assessed the development of students with Down syndrome in an inclusive setting.

Statistical Treatment

The study analyzed data using frequency and percentage distributions, weighted mean, and weighted mean to understand difficulties in implementing inclusive practices for students with Down syndrome. It also examined instructional strategies, perceptions of the effects of inclusive education methods and policies on students' academic success, social inclusion, learning behavior, and communication. Paired T-tests were conducted to compare instructional strategies and Pearson r to determine a significant correlation between difficulties encountered and perceptions.



Ethical Consideration

The researcher followed ethical standards during the investigation, obtaining permission from the School Director of Sarasas Witaed Suvarnabhumi School, and ensuring data

anonymity and security. They confirmed the absence of potential biases and ethical concerns in data collection and analysis, and accurately cited all sources used in the study.

III. RESULTS AND DISCUSSION

Respondents' profile regarding Age, Sex, Number of years in teaching SNED, and Training in Inclusive Education?

Table 1 Demographic Profile of the Respondents in terms of Age

	Frequency	Percent
21-30	18	24.0
31-40	30	40.0
41-50	22	29.3
51 and above	5	6.7
Total	75	100.0

Table 1 exhibits the age distribution of the 75 participants in the study regarding empowering learners with Down Syndrome within an inclusive educational framework. The typical age range among respondents is 31–40, consisting of 30 persons, representing 40% of the overall sample. Subsequently, there are 22 respondents aged 41–50, constituting 29.3%. The youngest age group, 21–30, comprises 18 participants (24%), while only five responders (6.7%) are aged 51 and older. The data indicates that most respondents are in their prime working age and presumably engaged in the education industry or associated domains.

The study primarily focuses on experienced teachers and professionals in inclusive education, particularly those with Down Syndrome, but may show diminished involvement due to retirement or other administrative positions. The younger

respondents indicate emerging professionals' participation in inclusive practices.

The study by Alnahdi et al. (2023) indicates that mid-career instructors, generally aged 30–50, exhibit greater dedication and flexibility to inclusive education frameworks than their younger or older peers. These educators typically possess theoretical understanding and practical expertise to assist learners with intellectual disabilities, including individuals with Down Syndrome. Research by Al-Shammari, Z., & Mintz, J. (2022) demonstrates that educators in their 30s and 40s exhibit increased confidence in executing inclusive practices attributed to ongoing professional development and classroom experience.

Table 2 Demographic Profile of the Respondents in terms of Sex

	Frequency	Percent
Male	43	57.3
Female	32	42.7
Total	75	100.0

Table 2 shows the sex distribution of the 75 participants in the study. Among the total participants, 43 are male, representing 57.3%, and 32 are female, constituting 42.7%. This signifies a moderate gender disparity among the respondents, with males constituting the majority by around 14.6%.

This implies that Sex could impact attitudes, pedagogical methods, or advocacy strategies in inclusive classrooms. Studies indicate that gender disparities can influence levels of empathy, attitudes toward inclusivity, and the execution of special education techniques. Consequently, the marginally increased male representation may have influenced the findings in ways that emphasize professional interactions, expectations, or obstacles from a predominantly male perspective.

The study by Srivastava and Kumar (2022) indicates that male and female teachers frequently display varying degrees of preparedness and attitudes regarding inclusive education, with female educators typically showing greater empathy and responsiveness toward students with special needs, such as those with Down Syndrome. The study indicates that male and female instructors may equally engage in inclusive behaviors with sufficient training. Manzoor et al. (2021) underscore the significance of gender-sensitive training for special and inclusive education educators, noting that varied educator views enhance program design and execution.



Table 3 Demographic Profile of the Respondents in terms of the Number of years in teaching SNED

	Frequency	Percent
1 - 3	7	9.3
4 - 6	24	32.0
7 - 9	35	46.7
10 - 12	9	12.0
Total	75	100.0

Table 3 illustrates the respondents' teaching experience in Special Needs Education (SNED). A majority, 35 of 75 respondents (46.7%), possess 7 to 9 years of experience; subsequently, 24 respondents (32.0%) possess 4 to 6 years of experience teaching SNED. Nine respondents (12.0%) had 10 to 12 years of experience, whereas only seven (9.3%) had 1 to 3 years of experience. The data reveal that most respondents (78.7%) have a minimum of 4 years of SNED experience, indicating a group with substantial expertise in inclusive education environments with learners with Down Syndrome.

The large percentage of responders possessing 4 to 9 years of teaching experience indicates a mature and highly experienced group of teachers involved in SNED. Their prolonged engagement in inclusive settings provides them with practical strategies, flexible teaching techniques, and an understanding of the varied requirements of learners with Down Syndrome. This indicates that the study's conclusions are based on the lived experiences of professionals with extensive engagement in

special education settings. The comparatively smaller cohort with 1–3 years of experience may represent recent entrants to the profession, whose viewpoints could illuminate emerging issues or deficiencies in early teacher preparation programs.

The conclusion is corroborated by the research of Ametepee and Agbenyega (2021), indicating that educators with greater experience in Special Needs Education demonstrate enhanced proficiency in differentiating Instruction and addressing varied classroom requirements. Their research highlights that continuous engagement in inclusive education enhances teacher efficacy, particularly in addressing the needs of students with intellectual disabilities such as Down Syndrome. Zhang et al. (2022) contend that seasoned special educators exhibit greater confidence and efficacy in executing individualized education plans (IEPs) and promoting inclusive classroom participation, highlighting the importance of practical experience in formulating successful intervention programs.

Table 4 Demographic Profile of the Respondents in terms of the Number of the Training in Inclusive Education

	Frequency	Percent
None	1	1.3
1-3	7	9.3
4-6	39	52.0
7-10	28	37.3
Total	75	100.0

Table 4 demonstrates the respondents' level of training in inclusive education. Most respondents, 39 out of 75 or 52.0%, had participated in 4 to 6 training sessions. Subsequently, 28 responders (37.3%) indicated participation in 7 to 10 training sessions. Meanwhile, seven respondents (9.3%) attended one to three training sessions, while only one (1.3%) indicated no training. The results reveal that 97.3% of respondents have received some training in inclusive education, with 89.3% participating in four or more sessions, indicating a knowledgeable and professionally developed cohort of educators included in the study.

This implies that most respondents are aware of inclusive education principles and actively participate in ongoing professional development related to inclusive teaching methodologies. This training is essential for properly meeting the distinct learning requirements of students with Down Syndrome. The frequency of teachers participating in 4 to 10 training sessions indicates a system or organization that

prioritizes and invests in teacher development. The minimum number of untrained educators indicates that, although the system is predominantly complete, there may still be deficiencies or accessibility concerns for a tiny minority that require resolution through inclusive professional development initiatives.

The conclusion is corroborated by the research of Forlin and Sin (2021), indicating that educators who participate in ongoing training in inclusive education are considerably more inclined to embrace inclusive attitudes and employ practical teaching methodologies for students with intellectual disabilities, including Down Syndrome. The research conducted by de Boer et al. (2023) underscores that systematic, repetitive training, especially incorporating practical techniques and teamwork, bolsters educators' confidence and proficiency in overseeing inclusive classrooms. These findings correspond with the existing data, indicating that high-frequency training enhances



teacher readiness and improves educational outcomes for special needs students.

Research has consistently demonstrated the effectiveness of individualized and adaptive instructional methods in aiding individuals with Down Syndrome. Katz and Giannasca (2021) confirmed that tailored material and varied pacing significantly enhance the learning engagement and outcomes of students with Down Syndrome. Jackson and Evans (2023) found that customized learning plans markedly improve academic performance and socio-emotional growth, especially when supported by ongoing assessments and adaptive teaching methods. This finding is corroborated by Alnahdi (2020), who demonstrated that the incorporation of assistive technologies, including speech-generating devices, visual aides, and tablet-based applications, significantly improves communication, engagement, and academic achievement in inclusive environments. Alnahdi underscored that teacher preparedness and training are essential for maximizing the advantages of these technologies. Sargent and Carbonneau (2022) discovered that, despite improvements in access to assistive technologies, a continual barrier exists due to teachers' inadequate awareness and confidence in effectively use these tools.

Carter et al. (2021) revealed that structured peer-mediated treatments, such as peer tutoring and buddy systems, significantly improve academic and social outcomes for

adolescents with Down Syndrome. Park and Kim (2022) substantiated this by demonstrating that the effective integration of peer-assisted learning approaches cultivates a sense of belonging and mitigates stigma in classroom environments. Furthermore, Forlin and Chambers (2021) underscored that inclusive classrooms must be intentionally structured to address the sensory, cognitive, and socio-emotional requirements of students with Down Syndrome, integrating components such as visual aids, tranquil spaces, and reduced distractions to enhance learning. Al-Azawei et al. (2022) emphasized the importance of Universal Design for Learning (UDL) in creating flexible and accessible educational settings that meet the diverse needs of all learners, asserting that these modifications significantly improve student engagement and success.

Alquraini and Gut (2020) argued that children with intellectual disabilities, including Down Syndrome, get optimal outcomes when educational strategies encompass individualized planning, technological integration, supportive peer relationships, and accessible learning environments. Smith and Thomas (2023) similarly found that the consistent use of these instructional areas results in quantifiable enhancements in both academic achievement and social involvement among adolescents with special needs.

Composite Mean on the instructional practices do the teachers use to support learners with Down syndrome in an inclusive environment regarding Individualized Instruction, Utilization of assistive Technology, Peer Collaboration, and Learning Environment.

Table 5 Composite Mean on the instructional practices do the teachers use to support learners with Down syndrome in an inclusive environment regarding Individualized Instruction, Utilization of assistive Technology, Peer Collaboration, and Learning Environment

	Mean	Std. Deviation	Verbal Interpretation
Individualized Instruction	2.94	0.20	Agree
Utilization of Assistive Technology	3.02	0.20	Agree
Peer Collaboration	2.95	0.22	Agree
Learning Environment	2.97	0.23	Agree
INSTRUCTIONAL PRACTICES USED BY THE TEACHERS TO SUPPORT LEARNERS WITH DOWN SYNDROME IN AN INCLUSIVE ENVIRONMENT	2.97	0.11	Agree

**Legend: 4 3.50 - 4.00 Strongly Agree 3 2.50 - 3.49 Agree
 2 1.50 - 2.49 Disagree 1 1.00 - 1.49 Strongly Disagree**

Table 5 summarizes teachers' teaching methods across four principal domains: Individualized Instruction, Utilization of Assistive Technology, Peer Collaboration, and Learning Environment aimed at aiding students with Down Syndrome. All categories obtained a verbal interpretation of "Agree," with overall mean scores varying from 2.94 to 3.02. The domain with the highest rating was Utilization of Assistive Technology, scoring 3.02 (SD = 0.20), indicating that teachers substantially

incorporate technology resources to assist children. Subsequently, the Learning Environment (M = 2.97, SD = 0.23) and Peer Collaboration (M = 2.95, SD = 0.22) are tightly aligned. Individualized Instruction attained the lowest composite mean of 2.94 (SD = 0.20), although it was still categorized as "Agree." The composite mean for instructional methods is 2.97, accompanied by a low standard deviation of



0.11, signifying excellent response consistency and modest implementation of inclusive tactics in the classroom.

It implies that teachers actively strive to implement inclusive teaching methods in several aspects. Nonetheless, the uniformity in moderate scores across all domains indicates that these initiatives may not yet be entirely complete or thoroughly ingrained. Although assistive technology is the most widely employed, the comparatively lower score in tailored Instruction indicates possible difficulties in customizing content to address varied learner requirements. This is especially vital for children with Down Syndrome who frequently gain from specialized assistance. These findings emphasize the necessity for ongoing professional development, classroom resources, and administrative support to improve the depth and regularity of inclusive educational practices. Intervention strategies from this data should enhance teacher competency in all areas, especially in individualized education and collaborative teaching methods.

The study by Katz and Giannasca (2021) corroborates that customized teaching practices, including differentiated content and variable pace, markedly improve the learning engagement and outcomes of students with Down Syndrome. Jackson and Evans (2023) discovered that tailored learning plans significantly enhance academic achievement and socio-emotional development when complemented by continuous evaluations and adaptive Instruction.

The conclusion is corroborated by Alnahdi's (2020) study, which indicates that assistive technology, including speech-generating devices, visual aids, and tablet-based applications, substantially enhances communication, engagement, and academic achievement in inclusive environments. Alnahdi underscores that teacher preparedness and training are crucial for optimizing the advantages of these instruments. Sargent and Carbonneau (2022) discovered that despite advancements in access to assistive technologies, a continual obstacle exists due

to instructors' insufficient awareness and confidence in efficiently utilizing these tools.

The study by Carter et al. (2021) demonstrates that structured peer-mediated treatments, such as peer tutoring and buddy systems, markedly enhance academic and social results for adolescents with Down Syndrome. A study by Park and Kim (2022) demonstrates that the effective integration of peer-assisted learning methodologies cultivates a sense of belonging and mitigates stigma in classroom settings.

The study by Forlin and Chambers (2021) supports the idea that inclusive classrooms must be deliberately designed to meet the sensory, cognitive, and social-emotional requirements of learners with Down Syndrome, incorporating visual aids, quiet areas, and minimized distractions. Furthermore, Al-Azawei et al. (2022) underscore the significance of universal learning design (UDL) in establishing adaptable, accessible educational settings that accommodate the varied requirements of all learners. Their findings confirm that adapting learning environments to accommodate individual requirements considerably enhances student engagement and accomplishment, aligning with this table's moderate yet suboptimal scores.

Alquraini and Gut (2020) assert that kids with intellectual disabilities, including Down Syndrome, achieve optimal outcomes when educational strategies incorporate personalized planning, technological integration, supportive peer interactions, and accessible venues. Likewise, Smith and Thomas (2023) discovered that the regular use of these instructional domains results in quantifiable enhancements in academic performance and social engagement among students with exceptional needs.

Composite Mean on the Impact of the current inclusive education practices and policies for Down syndrome as perceived by the respondents in terms of Academic Performance, Social inclusion, Learning Behavior, and Communication

Table 6 Composite Mean on the Impact of the current inclusive education practices and policies for Down syndrome as perceived by the respondents in terms of Academic Performance, Social inclusion, Learning Behavior, and Communication

	Mean	Std. Deviation	Verbal Interpretation
Academic Progress	2.95	0.22	High Impact
Social Inclusion	2.99	0.26	High Impact
Learning Behavior	3.03	0.27	High Impact
Communication	3.00	0.29	High Impact
IMPACT OF CURRENT INCLUSIVE EDUCATION PRACTICES AND POLICIES FOR DOWN SYNDROME LEARNERS	2.99	0.13	High Impact

Legend: 4 3.50 - 4.00 Very High Impact 3 2.50 - 3.49 High Impact
 2 1.50 - 2.49 Moderate High Impact 1 1.00 - 1.49 Low impact



Table 6 indicates an overall mean score of 2.99 and a standard deviation of 0.13, demonstrating that respondents perceive present inclusive education practices and policies to significantly impact Down syndrome learners across four primary domains: academic progress, social inclusion, learning behavior, and Communication. The highest mean score was recorded in learning behavior ($M = 3.03$, $SD = 0.27$), signifying that inclusive education has significantly enhanced students' classroom engagement, motivation, and autonomy. Social inclusion exhibited a mean of 2.99 ($SD = 0.26$), closely corresponding with communication ($M = 3.00$, $SD = 0.29$) and academic development ($M = 2.95$, $SD = 0.22$). The data indicate a generally equitable and persistent positive influence across all assessed domains, underscoring the efficacy of inclusive education methods for students with Down syndrome.

Implementing inclusive education policies and practices yields significant developmental benefits for learners with Down syndrome, encompassing academic, social, and behavioral dimensions. The elevated impact ratings across all categories underscore that, when adequately supported, inclusion fosters a fairer learning environment in which kids with Down syndrome can flourish. These findings support the ongoing implementation and institutionalization of inclusive techniques, including tailored Instruction, collaborative learning, structured routines, communication aids, and positive behavior interventions. Furthermore, they emphasize the necessity for teachers' ongoing professional development to maintain and enhance the effectiveness of inclusion across all educational dimensions.

The conclusion is corroborated by the research of Florian and Spratt (2021), which indicates that inclusive education strategies emphasizing differentiation, co-teaching, and tailored planning are associated with enhanced reading and numeracy performance in students with cognitive impairments. Research by Brown and Lee (2022) shows that students with Down syndrome exhibited continuous academic improvements in inclusive environments, particularly when offered scaffolded Instruction and peer-assisted learning. Recent meta-analyses further validate that inclusive environments improve academic abilities, motivation, and engagement, elements essential for enduring learning success (Nguyen & Hall, 2023).

The conclusion is corroborated by the research of Lindsay and McPherson (2021), indicating that kids with Down syndrome in mainstream environments exhibit enhanced peer relationships and reduced behavioral problems due to

heightened social exposure and interaction. Koster et al. (2022) asserted that social inclusion is optimized when schools actively foster cooperative learning, peer mentoring, and inclusive extracurricular activities. Additionally, Alfakhouri et al. (2023) observed that inclusive education could promote a more tolerant school culture while emphasizing the persistent obstacles in completely eradicating stigma and social stereotypes.

The conclusion is corroborated by the research of Lynch and Irvine (2021), which indicates that inclusive classrooms employing visual schedules, peer interaction, and varied assignments enhance behavioral outcomes and foster greater independence in learners with Down syndrome. Zahoor and Malik (2022) asserted that motivation and engagement are markedly enhanced in inclusive environments, particularly when students receive consistent positive reinforcement and substantial participation in classroom activities. Furthermore, McCabe and Gallagher (2023) emphasize the significance of inclusive policy frameworks in influencing school culture and teacher attitudes that foster good behavioral modeling and social-emotional learning for kids with special needs.

The conclusion is corroborated by the research conducted by Avramidis and Butterworth (2022) discovered that inclusive environments, in which students with Down syndrome participate in group work, enhance expressive and receptive Communication through modeling and reciprocal interactions with peers. Lee and Choi (2023) evidenced that inclusive classrooms employing assistive technology and organized communication aids markedly enhanced verbal expression and confidence in children with intellectual disabilities, especially those with Down syndrome.

The conclusion is corroborated by the research conducted by de Boer et al. (2021), which highlighted that inclusive classrooms foster not only academic and social development in students with Down syndrome, particularly when educators are proficient in adaptive teaching and peer-mediated Instruction. Alquraini and Gut (2020) noted that inclusive practices enhanced Communication, behavior, and self-esteem in children with developmental delays, crediting the results to sustained policy support and teacher collaboration. Smith and Daniels (2024) discovered that inclusive educational settings enhance the motivation and autonomy of students with Down syndrome, correlating enhanced learning behaviors with organized routines, assistive technologies, and peer engagement.



Significant difference in the instructional practices used by the teachers to support learners with Down syndrome in inclusive classrooms when grouped according to profile

Table 7 Test of significant difference in the instructional practices used by the teachers to support learners with Down syndrome in inclusive classrooms when grouped according to profile

	t	df	Sig. (2-tailed)	Decision	Remark
Sex - Instructional Practices Used by the Teachers to support Learners with Down Syndrome in an Inclusive Environment	-27.094	74	0.000	Reject	Significant
Age - Instructional Practices Used by the Teachers to support Learners with Down Syndrome in an Inclusive Environment	-7.509	74	0.000	Reject	Significant
Number of Years in Teaching - Instructional Practices Used by the Teachers to support Learners with Down Syndrome in an Inclusive Environment	-3.693	74	0.000	Reject	Significant
Trainings Attended in Inclusive Education - Instructional Practices Used by the Teachers to support Learners with Down Syndrome in an Inclusive Environment	3.482	74	0.001	Reject	Significant

Table 7 demonstrates statistically significant differences in the instructional practices employed by teachers when supporting learners with Down syndrome, categorized by Sex ($t = -27.094$, $p = 0.000$), Age ($t = -7.509$, $p = 0.000$), years of teaching experience ($t = -3.693$, $p = 0.000$), and participation at inclusive education training ($t = 3.482$, $p = 0.001$). All p-values are below the conventional significance threshold of 0.05, leading to the rejection of the null hypotheses for each variable. This signifies that teacher characteristics and professional development experiences significantly affect their application of instructional strategies for learners with Down syndrome. The strong t-values and sustained significance indicate significant disparities in instructional practices among teacher subgroups.

It implies that personal and professional factors, including Age, Sex, teaching experience, and exposure to inclusive education training, influence instructional behavior and effectiveness in inclusive classrooms. Teachers trained in inclusive education are statistically more inclined to employ effective, evidence-based practices for supporting learners with Down syndrome. Similarly, disparities in Age and teaching experience may indicate discrepancies in familiarity with contemporary inclusive pedagogies or responsiveness to student

requirements. This underscores the pressing necessity for tailored and continuous professional development for educators, particularly in inclusive teaching strategies. Moreover, inclusive education policies must prioritize equitable access to training to ensure that all teachers, irrespective of their backgrounds, are adequately equipped to cultivate inclusive learning environments.

The conclusion is corroborated by the research of Garrote et al. (2021), which highlighted that teacher training and years of experience are critical determinants of effective inclusive teaching practices, especially for children with intellectual disabilities like Down syndrome. Sreckovic et al. (2020) discovered that instructors with formal training in inclusive education had markedly greater confidence and proficiency in adapting Instruction to accommodate diverse requirements, including using assistive technologies and differentiated techniques. Alasim and Paul (2023) indicated that gender and Age may affect receptiveness to inclusive approaches, with younger and female educators typically demonstrating greater empathy and adaptability in fostering classroom inclusion.



Correlation between the challenges faced by the teachers in implementing inclusive practices for learners with Down Syndrome and the Impact of the current inclusive education practices and policies for Down syndrome learners as perceived by the respondents

Table 8 Correlation between the challenges faced by the teachers in implementing inclusive practices for learners with Down Syndrome and the Impact of the current inclusive education practices and policies for Down syndrome learners as perceived by the respondents

		Challenges Faced by the Teachers in Implementing Inclusive Practices for Down Syndrome Learners
Challenges Faced by the Teachers in Implementing Inclusive Practices for Down Syndrome Learners	Pearson Correlation	0.111
	Sig. (2-tailed)	0.344
	N	75

Table 8 demonstrates that the Pearson correlation coefficient ($r = 0.111$) signifies a negligible positive correlation between the difficulties encountered by educators in executing inclusive practices and the perceived effectiveness of existing inclusive education practices and policies for students with Down syndrome. The p-value of 0.344, exceeding the conventional significance threshold of 0.05, indicates that the link lacks statistical significance. Consequently, we do not reject the null hypothesis and determine that there is no significant relationship between the obstacles teachers face and the perceived efficacy of inclusive practices and policies for learners with Down syndrome.

This implies that despite the difficulty teachers have in executing inclusive education, these obstacles do not inherently reduce their acceptance of the beneficial effects of inclusive education policies and practices on children with Down syndrome. This may indicate that institutional support mechanisms, a collaborative school culture, or intrinsic teacher motivation enable educators to deliver inclusive services despite implementation obstacles effectively. Nonetheless, it is conceivable that educators recognize the theoretical advantages of inclusive education yet are hindered by practical constraints in realizing ideal results. Consequently, although obstacles persist, they are not regarded as impediments to the primary objectives of inclusive education.

The study by De Boer and Pijl (2021) supports the finding that although teachers encounter numerous challenges, especially

regarding resource allocation and classroom management, these difficulties do not consistently align with their belief in the effectiveness of inclusive practices, suggesting a distinction between practical limitations and philosophical endorsement. Al-Shammari, Z., & Mintz, J. (2022) contended that teacher commitment and a favorable school climate could alleviate the adverse effects of implementation obstacles, enabling educators to uphold elevated expectations for inclusive outcomes. Mereku and Agyei (2023) noted that educators in well-supported workplaces frequently express greater satisfaction and effectiveness despite encountering systemic challenges, indicating that external support systems and administrative endorsement serve a mitigating function.

Based on the findings of the study. What intervention Program may be proposed?

Rationale

The proposed Intervention Program, "Inclusion Excellence Initiative," is based on the study's findings, which indicated statistically significant differences in instructional approaches utilized by teachers according to Sex, Age, teaching experience, and training in inclusive education. These gaps emphasize the vital desire for a standardized, focused strategy to guarantee that all teachers, regardless of background, are uniformly prepared to assist learners with Down syndrome effectively. The effort seeks to address instructional imbalances and foster equitable, high-impact, inclusive practices within the teaching field through varied professional development, peer mentorship, and resource support.

Proposed Intervention Program: "INCLUSION EXCELLENCE INITIATIVE"

Component	Activity Description	Target Participants	Estimated Cost	Timeline
1. Inclusive Teaching Workshop Series	3-day intensive training on evidence-based instructional practices for Down syndrome	All teachers (regardless of Sex, Age, or experience)	PHP 120,000	Quarterly
2. Peer Mentoring Program	Pair less experienced/untrained teachers with	Teachers with less than 5 years of	PHP 40,000	Biannual



	experienced/highly trained teachers	experience or no training		
3. Gender-responsive Instructional Training	Session on equitable practices and addressing gender-related teaching disparities	Male and female teachers	PHP 30,000	Annual
4. Inclusive Pedagogy Online Modules	Self-paced digital course on differentiated Instruction and UDL for learners with DS	Teachers are unable to attend in-person sessions	PHP 50,000	Continuous
5. Age-sensitive Professional Development	Tailored sessions (e.g., tech for younger, reflective practice for older teachers)	Teachers who are less than 35 years old and greater than 50 years old	PHP 35,000	Annual
6. Instructional Strategy Resource Kit	Printed and digital toolkits with visual aids, behavior supports, and lesson plans	All classroom teachers with Down syndrome	PHP 75,000	One-time
7. Monitoring and Evaluation	Regular review, feedback collection, and impact measurement of instructional practices	School Heads, SpEd Coordinators	PHP 20,000	Biannual

IV. CONCLUSION

The study shows that most teachers, who are typically working-age and experienced in educating special needs students, agree on the importance of inclusive classroom strategies like personalized instruction and assistive technology. However, there is a need for more consensus on customizing instruction for different skill levels and adapting classroom configurations. The study also highlights the need for improved instructional practices, including stigma reduction and refined tactics.

The study concludes that most teachers are experienced and professionally involved in inclusive education, particularly for students with Down syndrome. However, there is a need for continuous training, professional experience, and demographic knowledge to improve inclusive education initiatives. The use of assistive technology is also highlighted as a challenge in delivering personalized instruction. Inclusive education policies significantly improve the development of students with Down syndrome, particularly in academic performance, social interaction, conduct, and communication skills. Personal and professional factors influence teachers' instructional practices in inclusive classrooms. Despite challenges, teachers still trust in the benefits of inclusive education, indicating strong institutional support and dedication to diversity. The proposed "Inclusion Excellence Initiative" aims to improve teachers' ability to assist students with Down syndrome through specialized training, resource allocation, and mentorship.

The study recommends strengthening professional development programs for teachers, improving pre-service training, providing personalized instruction, and supporting assistive technology in inclusive classrooms. It also emphasizes strengthening inclusive education policies, providing continuous professional development opportunities, and enhancing institutional support to address practical issues in implementing inclusive education. The "Inclusion Excellence Initiative" should be implemented in educational institutions, ensuring consistent evaluations and feedback to improve inclusive pedagogical methods.

REFERENCES

1. Alasim, K., & Paul, R. (2023). Exploring teacher characteristics and their impact on inclusive education practices. *Journal of Special Education and Inclusion*, 12(2), 76-89.
2. Alfakhouri, A. M., Alnaim, F. S., & Al-Shammari, Z. (2023). Social inclusion of students with intellectual disabilities: Teachers' and parents' perceptions in inclusive schools. *International Journal of Developmental Disabilities*.
3. Alquraini, T., & Gut, D. (2020). Critical components of successful inclusion of students with severe disabilities: Literature review. *International Journal of Special Education*, 35(2), 34-50.
4. Al-Shammari, Z., & Mintz, J. (2022). Special education teachers' understanding and use of evidence-informed practice in the inclusion of children with SEN in Kuwait: Lessons for teacher education. *Journal of Research in Special Educational Needs*, 22(2), 105-115. <https://doi.org/10.1111/1471-3802.12548>
5. Avramidis, E., & Butterworth, C. (2022). The role of inclusive classroom interactions in developing communication skills among students with Down syndrome. *European Journal of Special Needs Education*, 37(3), 455-470.
6. Brown, T. A., & Lee, S. M. (2022). Enhancing academic achievement of students with Down syndrome through inclusive education practices. *International Journal of Inclusive Education*, 26(4), 512-528.
7. Cahapay, M. B. (2022). Efficacy for inclusion and intervention practices of teachers of children with autism in the Philippines. *International Journal of Didactical Studies*, 3(1), 11438 DOI:10.33902/IJODS.202211438
8. De Boer, A., Pijl, S. J., & Minnaert, A. (2021). Academic and social outcomes of students with Down syndrome in inclusive education: A systematic review. *European Journal of Special Needs Education*, 36(1), 1-19.
9. De Boer, A., Pijl, S. J., & Minnaert, A. (2023). Sustained professional development for inclusive education: Effects on teachers' attitudes and practices. *International Journal of Inclusive Education*, 27(4), 421-437.



10. Florian, L., & Spratt, J. (2021). *Developing inclusive pedagogy: A framework for teacher education*. *European Journal of Teacher Education*, 44(3), 343–360.
11. Forlin, C., & Sin, K. F. (2021). *Developing teacher education for inclusion in Asia-Pacific: Key challenges and strategies*. *European Journal of Special Needs Education*, 36(1), 1–15.
12. Garrote, A., Dessemontet, R., & Opitz, E. M. (2021). *Effects of teacher training and experience on inclusive teaching practices for students with intellectual disabilities*. *European Journal of Special Needs Education*, 36(3), 393–407.
13. Koster, M., Pijl, S. J., & Nakken, H. (2022). *Social participation of students with special educational needs in inclusive settings*. *European Journal of Special Needs Education*, 37(1), 1–15. DOI:10.1080/10349120903537905
14. Lee, Y., & Choi, M. (2023). *Technology-enhanced inclusive practices and communication growth in students with Down syndrome*. *Journal of Research in Special Educational Needs*, 23(1), 88–101.
15. Leifler, E., Carpelan, G., Zakrevska, A., Bölte, S., & Jonsson, U. (2020). *Does the Learning Environment “make the grade”? a Systematic Review of Accommodations for Children on the Autism Spectrum in Mainstream School*. *Scandinavian Journal of Occupational Therapy*, 28(8), 1–16. <https://doi.org/10.1080/11038128.2020.1832145>
16. Lindner, K., Hassani, S., Schwab, S., Gerdenitsch, C., Kopp-Sixt, S., & Holzinger, A. (2022). *Promoting factors of social inclusion of students with special educational needs: perspectives of parents, teachers, and students*. *Frontiers in Education*, 7. <https://doi.org/10.3389/educ.2022.773230>
17. Lindsay, G., & McPherson, A. (2021). *The impact of inclusive education on the social development of children with Down syndrome: A systematic review*. *Journal of Research in Special Educational Needs*, 21(2), 120–132.
18. Lynch, A., & Irvine, L. (2021). *Enhancing behavioral engagement in inclusive classrooms: Practical strategies for learners with Down syndrome*. *Journal of Special Education Practice*, 42(2), 89–101.
19. Manzoor, S., Khalid, R., & Zahidie, A. (2021). *Gender and inclusive education: Exploring teacher perceptions in special needs classrooms*. *International Journal of Inclusive Education*, 25(12), 1339–1355.
20. McCabe, P., & Gallagher, T. (2023). *Inclusive education and behavioral change: Perspectives from teachers of children with developmental disabilities*. *International Journal of Inclusive Education*, 27(4), 456–471.
21. Mereku, D. K., & Agyei, D. D. (2023). *Teacher preparedness and inclusive education: Examining the role of support structures*. *African Journal of Educational Studies*, 9(1), 55–72.
22. Nguyen, L., & Hall, T. (2023). *Inclusive education and academic progress: A meta-analysis of learners with intellectual disabilities*. *Journal of Special Education Research & Practice*, 38(2), 145–160.
23. Ra-ngubtook, W., & Bhongsatiern, J. (2022). *Basic education in Thailand*. In *International Handbook on Education in Southeast Asia* (pp. 1113–1137). Singapore: Springer Nature Singapore.
24. Roberts, J., & Webster, A. (2020). *Including students with autism in schools: A whole school approach to improve outcomes for students with autism*. *International Journal of Inclusive Education*, 26(7), 701–718. DOI:10.1080/13603116.2020.1712622
25. Rukspollmuang, C., Fry, G.W. (2024). *Overview of Education in Thailand*. In: Symaco, L.P., Hayden, M. (eds) *International Handbook on Education in Southeast Asia*. Springer International Handbooks of Education. Springer, Singapore. https://doi.org/10.1007/978-981-16-8136-3_24-1
26. Schwab, S., & Alnahdi, G. H. (2023). *Does the same teacher’s attitude fit all students? Uncovering student-specific variance of teachers’ attitudes towards all of their students*. *International Journal of Inclusive Education*, 28(14), 3502–3517. <https://doi.org/10.1080/13603116.2023.2221235>
27. Smith, J. A., & Daniels, H. R. (2024). *The role of inclusive education in supporting learning behavior and motivation in students with Down syndrome*. *Journal of Inclusive Education Research*, 19(1), 45–62.
28. Sreckovic, M. A., Hume, K., & Able, H. (2020). *Teacher preparedness for inclusive education: Influence of training and years of experience*. *Teacher Education and Special Education*, 43(1), 34–49.
29. Srivastava, M., & Kumar, P. (2022). *Teachers’ gender and its impact on inclusive education readiness in India*. *Journal of Educational Research and Practice*, 12(1), 78–89.
30. Zahoor, M., & Malik, S. (2022). *The effect of inclusive classroom strategies on motivation and learning behavior among children with intellectual disabilities*. *Educational Research International*, 2022, 1–9.