

Inclusive Classrooms for Diverse Minds: A Study on Teachers' Knowledge, Attitudes, and Practices

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Abstract

This study aims to explore the teachers' understanding of neurodiversity and how these attitudes influence the teaching methods of neurodiverse students. The effectiveness of inclusive education strategies is largely influenced by teachers' knowledge and understanding. The study conducted among 72 public school teachers selected by a purposive sampling method and a quantitative research design was adopted in Kunnathunad Taluk, Ernakulam District. Through a structured interview schedule, primary data was collected, and the attitude of teachers was assessed by using the standardized Neurodiversity Attitude Questionnaire (NDAQ). The findings of the study suggested that most of the teachers' exhibit a positive attitude toward children with neurodiversity. Moreover, many teachers use inclusive education methods such as differentiated instruction and Individualized Education Plans (IEPs), scaffolding, peer-mediated learning, and visual aids. These practices support participation and addressing diverse learning needs. The findings further highlight that while teachers show willingness to support inclusive education, gaps in knowledge, specialized training, and institutional support may influence the consistency and effectiveness of inclusive practices. The study emphasizes the importance of strengthening teacher training programmes and enhancing institutional support to ensure effective, inclusive education.

Keywords: Neurodiversity, inclusive education, attitudes, classroom strategies, neurodiverse students, knowledge

Introduction

Inclusive education is globally recognized as a fundamental right and a strategy to ensure all children receive high-quality education, especially those experiencing barriers to learning (UNESCO, 2009). It offers a wide range of opportunities to acquire education for neurodiverse students, and it focuses on increasing participation and reducing the obstacles to learning. To put it another way, it is the practice of educating children with disabilities in classrooms with children without disabilities (Florian & Black-Hawkins, 2011). This inclusive education helps to meet the varied requirements of all the students. The ultimate aim of inclusive education is to meet the needs of physical, mental, and emotional, and also provide an opportunity for those who possess talent or intelligence in a particular field to learn (Ainscow, Booth, & Dyson,

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2006). The proper implementation of inclusive pedagogy largely depends on teachers' understanding of neurodiversity and the challenges faced by neurodiverse students. The startling underdiagnosis of neurodevelopmental disorders is still a major problem in India. Understanding the causes of neurodiversity helps teachers identify students' challenges and take appropriate initiatives. The causes of neurodiversity include genetic and environmental factors. Teachers can identify suitable methods of teaching according to each student's requirements by knowing the factors and acting upon empathy towards students with neurodiversity rather than judgment. However, many teachers in inclusive schools lack knowledge about the reasons behind neurodivergence and how to approach these students positively. Stigma surrounding neurodivergent students is still widespread. With a proper understanding of causes, teachers can challenge misconceptions, support students effectively, and educate parents.

Teachers' perceptions act as a key player in implementing inclusive education, as their attitudes and beliefs greatly influence the management of neurodiverse students in the classroom (Rosenberg et al., 2023). The teachers are more likely to adopt an inclusive approach when they have positive views, resulting in enhanced school achievement for children with diverse needs (Triviño-Amigo et al., 2022). A prominent bias that was identified is deficit thinking, where teachers believe neurodiverse students are inherently less capable of academic success. This includes the attitude that students with neurodiverse conditions are likely to succeed while those without neurodiverse conditions are not (Pohan & Aquilar, 2001). Another common belief is that inclusive education is a burden. Some frustration over additional time, preparation, and classroom management was expressed by teachers required to accommodate students with functional needs. These educators do not want such students in their classrooms. This resistance stems from a fixed mindset and a misunderstanding of an inclusive philosophy, which emphasizes belonging and equity for all students (Ainscow, 2007; Wilson et al., 2016).

Literature Review

Research consistently indicates that the teacher's knowledge is a critical factor in supporting children with neurodiversity in inclusive classrooms. Tah (2025) examined teachers' awareness of inclusive education in Cameroon and found that most educators held a disability-centric view, focusing mainly on placement rather than addressing the diverse needs of neurodivergent students. Limited training opportunities and a lack of policy clarity further contributed to limited knowledge. Similarly, Sigh and Gautham (2024) reported that many teachers possessed partial or inaccurate knowledge of ADHD, Autism, and learning disabilities, often misinterpreting the symptoms, causes, and behavioural issues. Madden (2023) reported that although a majority of the teachers heard about neurodiversity, awareness alone was insufficient to support meaningful inclusion, as many students continued to experience negative classroom outcomes. Collectively, these studies suggest that insufficient professional preparation restricts teachers' understanding of neurodiversity.

Existing reviews suggest that both personal and systemic factors shape teachers' attitudes toward children with neurodiversity. Reyes et al. (2025) explored that many educators described how their experience in an equitable classroom reshaped their perspectives, cultivating an underlying significance of empathy, patience, and adaptability in addressing

learner diversity. However, Shari and Vranda (2016) suggested that educators had a favourable attitude towards learning disability, but they possess a pessimistic attitude towards diverse classrooms. Moreover, educators who have higher qualifications possess a more positive perception compared to those with lower educational qualifications. Chowdhury et al. (2024) revealed that negative social perceptions, which include stigma and misconceptions, significantly shaped teachers' attitudes and practices for inclusive education. Dawyer (2022) argued that adopting varied approaches for neurodiversity that balance individual strengths and environmental factors can reduce judgmental attitudes towards neurodiversity. Dyosini (2025) suggested that, whether they had the willingness to support neurodiverse students, they encountered major obstacles due to a lack of training, limited resources, and difficulty in identifying neurodiverse conditions like ADHD and sensory processing disorders.

Reviews highlight that teachers employ various inclusive classroom practices to support neurodiverse students, though implementation remains uneven. Yoro et al. (2020) revealed that teachers used various support strategies, including cooperative learning, peer learning, ability grouping, extensive use of visual aids, oral assessments, ability grouping and curriculum differentiation. These strategies enabled students with NDDs to participate and understand lessons. Griffiths and Leach (2022), teachers used UDL informed by a Universal neurodiversity perspective, inclusive pedagogy provides not only equitable opportunities but also a more effective learning environment for all children in the classroom, regardless of diagnosis or label. Qian and Rong (2023) revealed that equitable education supports not just students with diverse needs but also benefits typical students by promoting empathy, mutual respect, and collaborative skills. These studies highlight that the practices of inclusive teaching are effective for teaching neurodiverse students.

Terlich et al. (2024) examined the impact of neurodiversity focused training and found that increased knowledge significantly increases confidence and supportive classroom behavior. Lieflier et al. (2024) reported that discrepancies between teachers' perceived inclusive practices and students' experiences, suggesting that not only a favourable attitude ensures effective implementation. Additionally, Shi (2024) emphasized that educators who move away from medicalized deficit perspectives are more likely to implement differentiated and inclusive teaching strategies.

Methodology

Objectives of the study

1. To explore teachers' understanding & attitudes about children with neurodiversity.
2. To examine the influence of teachers' attitudes on their classroom practices towards inclusion.

A quantitative research design was adopted by this study to analyse the teachers' understanding, attitudes, and inclusive classroom practices related to children with neurodiversity. The focus of the research is on identifying prevailing attitudes among teachers and analyzing the influence of inclusive educational practices. The study's target population consisted of school teachers who taught neurodiverse students in public schools in the Kunnathunad Taluk of Ernakulam

District, Kerala. Educators with a minimum of one year of teaching experience with neurodiverse children were considered eligible to be participants in the study. To select the respondents, the study employed a purposive sampling method who met specific inclusion criteria. In total, 72 educators who teach in public schools were selected for this study. Primary data collected using a structured interview schedule, teachers' attitude towards neurodiversity was assessed using the Neurodiversity Attitude Questionnaire, a standard tool to measure the beliefs and perceptions towards neurodiversity. The data collected were coded, tabulated, and analysed using the IBM Statistical Package for the Social Sciences (SPSS). To analyse the teachers' understanding and attitudes, the techniques of descriptive statistics, such as distribution of frequencies and percentages, were used.

Results and Discussion

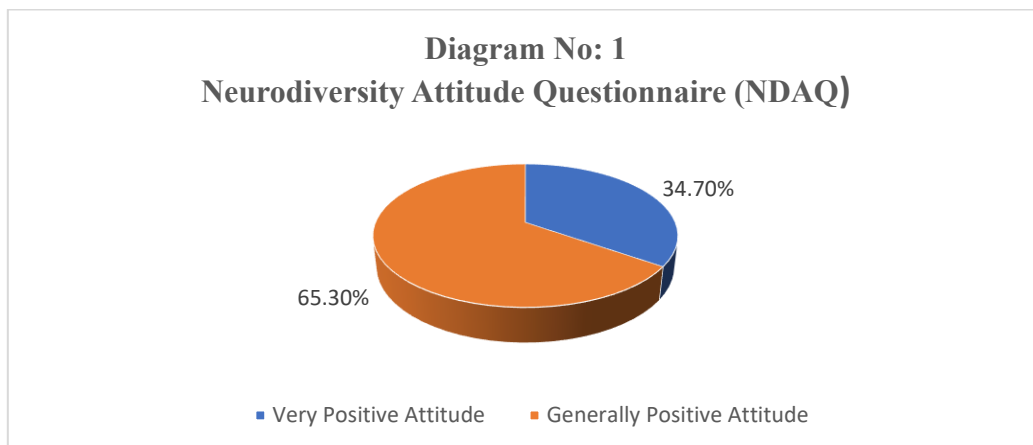
Table no. 1: Demographic Details

Demographic details	Category	Percent
Age	20 - 29	55.6%
	30 - 39	29.2%
	40 - 49	13.9%
	50 - 59	1.4%
Gender	Male	12.5%
	Female	87.5%
Highest Educational Qualification	B. Ed in Teaching	18.1%
	M. Ed in Teaching	62.5%
	B. Ed in Special Education	6.9%
	M. Ed in Special Education	1.4%
	M. Phil	4.2%
	Ph.D	6.9%
Years of Teaching Experience	1-3 years	22.2%
	3-5 years	44.4%
	5-7 years	12.5%
	7-10 years	12.5%
	10 years & above	8.3%
Area of Residence	Urban	88.9%

	Rural	11.1%
Current Level of Teaching	Primary school (1-5)	27.8%
	Middle school (6-8)	54.2%
	High School (9-10)	12.5%
	Higher Secondary (11-12)	5.6%
Approximate Number of Neurodiverse Students in Class	1-3 students	79.2%
	4-6 students	20.8%

A significant proportion of teachers were relatively young and in the early to mid-stages of their professional careers, with more than half of respondents (55.6%) in the 20-29 age group and 29.2% in the 30-39 age group. In line with the gender distribution frequently seen in public school teaching, female teachers made up just 12.5%. Just 11.1% of respondents were from rural origins, whereas the vast majority (88.9%) lived in metropolitan settings. Most teachers had a master's degree in teaching (62.5), followed by a bachelor's degree in teaching (18.1%). A smaller percentage held advanced academic degrees, such as an M.Phil. or Ph.D., or a formal qualification in special education. In terms of teaching experience, the largest percentage of respondents (44.4%) had three to five years of experience, indicating moderate professional exposure to inclusive classroom settings. Middle school teachers accounted 54.2% and primary school teachers 27.8%. Most respondents (79.2%) reported having one to three students with diverse needs in their class; 20.8% reported having four to six.

Younger teachers may be more receptive to inclusive education, and this also suggests that their lack of formal training in a neurodiverse classroom. Teachers with advanced degrees in special education may have a higher understanding. The overlapping professional and demographic characteristics show that although educators may show a desire for inclusive education, equitable implementation necessitates specialized training, institutional support, and policy - level interventions to strengthen inclusive practices in a variety of educational contexts.



The results of the Neurodiversity Attitude Questionnaire (NDAQ), teachers' attitudes towards children with neurodiversity are generally positive. While 34.7% of respondents reported having a very optimistic attitude. Although the percentage of extremely positive opinions suggests room for additional strengthening of confidence, advocacy, and depth of understanding about neurodiverse learners, this demonstrates a favourable orientation toward neurodiversity among instructors, suggesting acceptance of inclusive principles. Schuch et al (2024), who created and validated the neurodiversity attitude questionnaire, revealed that a more enthusiastic attitude towards neurodiversity was a meaningful association with a higher level of knowledge and a lower level of stigma, providing additional evidence of the connection between knowledge and attitudes of teachers. According to their findings, educators with a better grasp of neurodiversity are more likely to progress from widespread acceptance to fervent advocacy, underscoring the necessity for professional development to enhance the quality of their views.

Singh and Gautam (2024) discovered that a significant number of educators had little to no understanding of neurodevelopmental disorders like ADHD, autism, and learning difficulties, and they frequently held false beliefs that had an impact on how they taught. Despite this, when given sufficient resources and training, teachers showed a desire to support inclusive education. This study is similar to the present study, which reveals that although favourable attitudes are apparent, knowledge and training limitations may prevent them from translating into consistently inclusive actions.

Table No. 2: Teaching Methods used in the Classroom

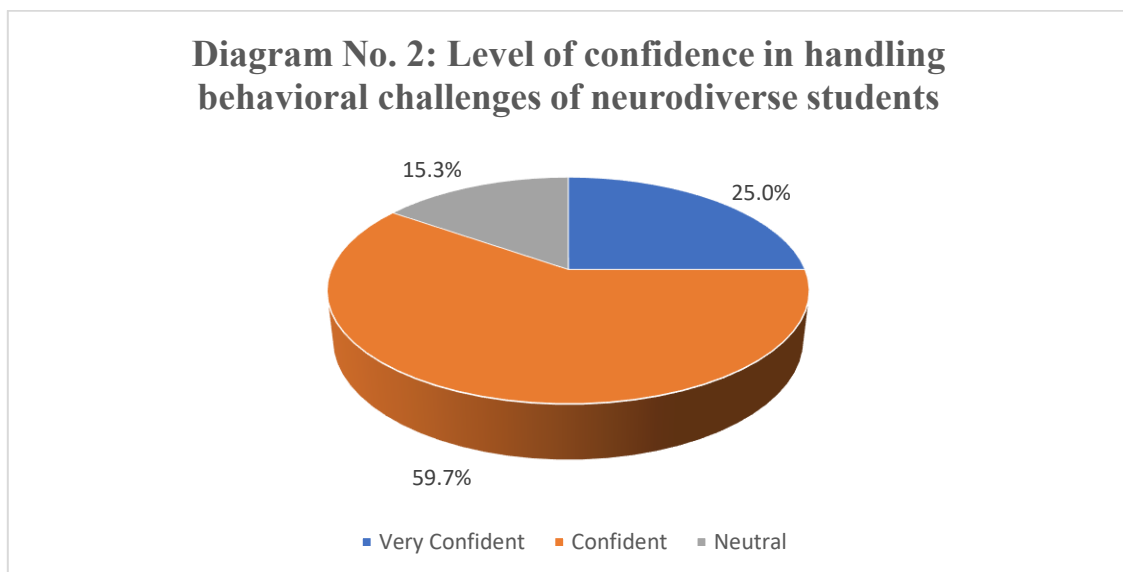
Sl no.	Methods	Yes	No
1.	Differentiated instruction (Modifying lesson plans)	67 (93.1%)	5 (6.9%)
2.	Individualized Education Plans (IEPs)	67 (93.1%)	5 (6.9%)
3.	Peer-mediated and cooperative learning	59 (81.9%)	13 (18.1%)
4.	Visual aids, routines, and task breakdowns	58 (80.6%)	14 (19.4%)
5.	Scaffolding with step-by-step guidance	62 (86.1%)	10 (13.9%)
6.	Universal Design for Learning (UDL)	60 (83.3%)	12 (16.7%)
7.	Hands-on or multisensory activities	46 (63.9%)	26 (36.1%)

According to the findings, most educators actively support neurodiverse children by implementing inclusive teaching practices. According to 93.1% of respondents, differentiated instruction and individualized education plans (IEPs) were the most used strategies, demonstrating instructors' attempts to modify instruction to Universal design for learning (UDL) principles (83.3%) and scaffolding through step-by-step coaching (86.1%) further show

understanding of structured and flexible instructional approaches that improve classroom accessibility.

The use of visual aids, routines and task breakdown (80.6%) as well as peer-mediated and cooperative learning (81.9%) were also often employed suggesting a focus on predictable classrooms environments and collaborative learning. However, a much lesser percentage of teachers (63.9) used hands-on or multisensory activities, indicating potential limitations relating to the resource, training or time needed for regular implementation. These results are consistent with previous research highlighting inclusive instructional design as a crucial enabler of involvement from neurodiverse learners. According to Nwachukwu et al. (2024), by considering a variety of cognitive styles rather than focusing on deficiencies, diversified instruction and UDL-based methods support strengths-based learning. Alignment with inclusive and neurodiversity-affirming instructional frameworks is noticeable in the high adoption of these practices in this study.

According to Yoro et al. (2020) and Singh and Gautam (2024), instructors routinely employ curriculum differentiation, cooperative learning, and visual aids, but this successful application is typically constrained by a lack of support from the institution and training. Madden (2023) also highlights the necessity for structural improvements and ongoing professional advancement in addition to inclusive strategies. As per current research, instructors show a strong commitment to inclusive practices, but to guarantee consistency and efficacy in classroom implementation, more structural support and training are required.



The findings from diagram no. 2 indicate that majority of teachers reported feeling confident in handling behavioural challenges of neurodiverse students. Around 59.7% of educators revealed that they were confident, while 25% stated that they were confident in managing such challenges. However, 15.3% of teachers reported a neutral level of confidence, suggesting that some teachers may still experience uncertainty when dealing with behavioural difficulties associated with neurodevelopmental conditions. Overall, the results suggest that most teachers demonstrate a reasonable level of confidence in supporting neurodiverse students, although a small proportion may require additional guidance and training.

These findings align with previous literature reviews, which emphasize the significance of teachers' training and experience in developing confidence in inclusive classrooms. For instance, Terlich et al. (2024) found that teachers' confidence in supporting neurodivergent students significantly increased after receiving targeted training related to mental health and neurodiversity. Similarly, Dyosini (2025) reported that while teachers were willing to support neurodiverse students, many initially felt overwhelmed because of limited training and resources, highlighting the significance of professional development opportunities.

Conclusion

The present study explored teachers' knowledge, attitudes, and classroom practices toward children with neurodiversity in inclusive settings. The findings showed that most teachers hold generally positive attitude towards neurodiversity. A considerable number of respondents expressed moderate to positive perceptions, reflecting the increasing need and awareness of neurodiversity in the school environment. The study also suggested that the most widely used methods are to educate the neurodiverse students. Practices such as differentiated instruction, Individualized Education Plans (IEPs), scaffolding techniques, Universal Design for Learning (UDL), peer-mediated learning, and the use of visual aids are commonly used. These methods demonstrate teachers' efforts to adapt their teaching activities to create more inclusive spaces in educational institutions. A very few teachers reported that hands-on multisensory activities were ineffective because of limited resources, insufficient training, and practical challenges.

Another important finding of this research is that many teachers feel confident in managing behavioural problems of neurodiverse students. Simultaneously, a small proportion of teachers expressed neutral levels of confidence, suggesting that some educators may still require additional guidance and training when addressing behavioral problems. The demographic profile shows that the majority of the teachers are early stage in their careers. While this may contribute to openness toward inclusive practices and highlights the necessity of training and support related to neurodiversity and inclusive pedagogy.

Overall, the study highlights a positive shift towards neurodiversity and inclusive educational practices. Meanwhile, the findings point out certain gaps in training resources and institutional support that may affect the consistent implementation of inclusive practices. The study's findings suggest that they have important implications for educational institutions, policymakers and social work professionals. Schools can promote inclusion by organizing regular training programs that enhance the knowledge of teachers about neurodiversity. It will lead to an attitude change among educators and implement more inclusive teaching strategies in classrooms. Government policies should focus on improving inclusive infrastructure, providing access to assistive aids, and strengthening the support system within schools. Collaboration between schools, community organizations, and NGOs can further create supportive environments that promote acceptance and participation of neurodiverse students.

Future research can build upon this study by including large samples and exploring different educational settings. Moreover, future studies also examine the attitudes and influence of parents, peer groups, and school administration towards inclusive education. Such research

would contribute to inclusive educational policies and ensure that the neurodiverse students receive equitable opportunities to learn, participate, and succeed in the education system.

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