

Breaking Barriers: Enhancing Support for Autistic Students Through Individual Education Programs**¹Maureen Chinasa Ola-Williams, ²Adeyinka Ola-Williams, ¹Clement Aliu Ogbaini**¹[Global Wealth University Togo](#)²[International Internship University, India](#)**Research Article****Citation Information:**

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ABSTRACT

The prevalence of Autism Spectrum Disorders (ASD) underscored the importance of tailoring educational interventions to accommodate the diverse needs of autistic students in Nigeria. This study investigated the effectiveness of individual educational programs in meeting the needs of autistic students in Nigeria. The study surveyed autistic children, teachers, and parents in special schools in Ikeja, Apapa, and Kosofe Local Government Areas of Lagos State. It used a mixed-methods approach to evaluate the effectiveness of Individual Education Programs (IEPs) in addressing the unique needs of autistic students in mainstream educational settings. The study analyzed academic performance metrics and social skills proficiency in autistic students. It also explored the experiences of teachers, parents, and autistic students through interviews and focus groups. Despite challenges like lack of resources and collaboration issues, teachers shared success stories and strategies. Parents praised positive efforts between home and school, while autistic students expressed improved learning experiences. The synthesis of quantitative and qualitative data provided a holistic evaluation of IEPs' effectiveness in promoting positive outcomes for autistic students. The findings contribute to the discourse on inclusive education, informing practices to refine IEP design and implementation. The study emphasizes providing meaningful educational support tailored to the diverse needs of autistic students in mainstream settings.

Keywords: Autism Spectrum Disorder, Individualized Education Programs, Inclusive Education, Special Education

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Autism spectrum disorders (ASD) make up a spectrum of neurodevelopmental conditions with difficulties in social communication, restricted interests and repetitive behaviours (Hodges et al., 2020). Autism Spectrum Disorder (ASD) is now widely recognized as a neurodevelopmental disorder that can occur in any culture and country, with over 90% of children and adolescents under 15 living in low- and middle-income countries (The World Bank, 2017). The prevalence of ASD has been increasing, and its knowledge and research have grown globally over the last four decades, contradicting the belief that it was only restricted to highly industrialized and developed countries (Bakare et al., 2019; Baio, 2018).

ASD has gained prevalence in recent times (Baio, 2018), leading to the need to learn how to support autistic students in their education journey. Inclusion has become standard practice in mainstream classrooms (Humphrey & Symes, 2013). Such an approach underscores the importance of individualized approaches that address the diverse learning styles and challenges associated with autism. Individualized Education Programs (IEPs), as individualized educational plans, are created to meet the distinct needs of students with disabilities, including those who have autism (Individuals with Disabilities Education Act, 2004). The education field acknowledges the unique needs of autistic children and utilizes Individualized Education Programs (IEPs) as a framework for designing educational adjustments. IEPs outline the educational objectives, accommodations, and services for students with physical disabilities, including those on the autism spectrum. These personalized approaches are developed by parents, teachers, special teachers, and students when necessary. Autistic student's IEP implementations include gathering a full amount of information about their strengths as well as challenges accompanied by the creation of a unique plan that consists of individual strategies and interventions (Ruble & Dalrymple, 2002). These plans may be multifaceted, covering areas like academic assistance, social skills training, sensory integration, and behavioural interventions (Barnhill et al., 2011). Teachers can

create an inclusive learning environment for autistic students by aligning learning practices with individual needs in Individualized Education Plans (IEPs). This is achieved through continuous cooperation, frequent measurement, and regular revisions, ensuring IEPs are adaptable to the varying needs of autistic students at all educational levels.

IEPs are crucial in meeting the specific needs of autistic students, as they impact their social and emotional behaviours. The process involves collaboration among teachers, specialists, parents, and caregivers, ensuring comprehensive consideration of students' deficiencies and needs. The effectiveness of IEPs can be influenced by factors such as teaching team competence, resource availability, and parent participation. Research-supported strategies and treatments, such as Applied Behavior Analysis (ABA), visual supports, and social skills training, can be included in IEPs to increase their effectiveness (Callahan et al., 2017; Wong et al., 2015). IEPs are important in the transition of students into adulthood as they provide appropriate support, life skills, and independence (Test et al., 2009). Successful transition planning during IEP can increase the chances of good results and quality of life for autistic individuals in post-school time.

IEPs can improve the learning process for students with autism, but continuous research is needed to identify areas for improvement. Western countries have more resources for autism research, while developing countries like Nigeria, particularly in Sub-Saharan Africa, have limited resources and knowledge. This lack of resources hinders the ability of individuals with autism to meet their needs, as they struggle with cultural and linguistic barriers. Enormous effort must be put on and spent to raise policymakers' awareness of the deployment of services and research strategies focusing on closing the gap between needs and services (Taha & Hussein, 2014; Ekanem et al., 2017; Bakare et al., 2019). The implementation of effective programs for autistic learners requires careful consideration of fidelity, alignment of goals with student needs, and the integration of parents and cultural perspectives. By optimizing IEP practices and customizing them to meet their unique needs, the education system can better cater to their academic, social, and emotional needs.

This research aims to enhance Nigerian knowledge of Individualized Education Plans (IEPs) and explore their use in academic settings. It analyzes factors like IEP development, intervention selection, and progress monitoring, and suggests optimizing IEP impacts on educational outcomes and student well-being. The research aims to contribute to the existing body of knowledge. The development of inclusive education is rapidly expanding, supported by a belief in providing equal educational opportunities for all students including those with autism. One of the key components of this endeavour is Individualized Education Programs (IEPs), deliberately crafted to address the specific needs of students with autism spectrum disorder (ASD) and provide a personalized, caring learning environment (Kurth et al., 2019). On the other hand, while educational institutions are making concerted efforts to realize total inclusion, it is also important to evaluate the efficacy of IEPs in addressing the specialized needs of autistic students there are existing challenges (Etscheidt, 2003).

One of the foremost challenges is the diversity of needs of different autistic students, who show a range of strengths, difficulties, and approaches to learning. Deliberately designing IEPs that cater for this diversity calls for a sophisticated insight into the person-specific aspects of autism (Iovannone et al., 2003). For instance, academic improvement is the goal of IEP but its effectiveness in achieving positive academic results is yet to be validated needing a review of standardized test scores, academic progress and skill acquisition (Watkins et al., 2019). In addition, autism involves social and behavioural challenges that go beyond the realm of schooling. Assessing the impact of IEPs on socio-emotional interactions, emotional well-being and behavioural outcomes is integral to understanding their holistic effect (Boutot & Myles, 2011). Namely, the points of view of significant groups of stakeholders, such as teachers, parents and autistic students, are crucial for the evaluation of the IEP effectiveness. It is significant to know their experiences, challenges and suggestions for the programs to be refined and optimized.

Practical challenges in the effective implementation of IEPs, such as resource constraints, specialized training needs for teachers, and collaboration between home and school environments, cannot be overlooked. Identifying and addressing these implementation challenges is vital for enhancing the overall efficacy of IEPs (Kurth et al., 2019). Additionally, exploring ways in which IEPs empower autistic students to actively participate in their educational journey is crucial. Ensuring that these programs promote self-advocacy, independence, and positive self-concept is essential for long-term success (Wehman et al., 2014). This is especially pivotal within the context of developing countries most notably in sub-Saharan Africa where unlike in developed countries research on the topic of autism is relatively sparse and limited (Bakare et al., 2019).

In the Nigerian context in particular, research on autism spectrum disorder (ASD) has been relatively sparse, with limited studies exploring the effectiveness of educational interventions and support systems for autistic students (Aderinto et al., 2023; Bakare et al., 2019; Bakare & Munir, 2021; Chinawa et al., 2016). However, as awareness and understanding of ASD continue to grow, the implementation of IEPs holds significant promise in providing tailored educational support and fostering inclusive learning environments for autistic students in Nigeria (Abubakar & Abulkadir, 2021). Consequently, this study aims to comprehensively assess the effectiveness of Individualized Education Programs in meeting the multifaceted needs of autistic students in Nigeria, shedding light on areas of success, potential shortcomings, and avenues for improvement within the realm of inclusive education. By critically examining the implementation and outcomes of IEPs, this research endeavours to inform evidence-based practices, policy decisions, and advocacy efforts, ultimately empowering autistic students to reach their full potential.

This research study aims to evaluate the effectiveness of Individual Education Programs (IEPs) in addressing the academic, social, and behavioural needs of autistic students. It will also assess the goals and objectives commonly included in IEPs, their alignment with the student's strengths and challenges, and the perceived satisfaction levels among teachers, parents, and support staff.

The study will also explore environmental factors within educational settings, such as classroom structure, sensory accommodations, and social inclusion initiatives.

Research Questions

- 1) How do Individual Education Programs (IEPs) address the specific academic, social, and behavioural needs of autistic students?
- 2) What are the measurable goals and objectives commonly included in IEPs for autistic students, and to what extent do they align with the student's strengths and challenges?
- 3) What are the perceived effectiveness and satisfaction levels among teachers, parents, and support staff regarding the implementation of IEPs for autistic students?
- 4) What are the environmental factors within educational settings, such as classroom structure, sensory accommodations, and social inclusion initiatives, that influence the effectiveness of IEPs for autistic students?

Research Hypothesis

Ho1: There is no significant difference in academic, social, and behavioural outcomes between autistic students who have IEPs and those who do not.

Ho2: The level of alignment between IEP goals and the individual needs of autistic students does not significantly impact the effectiveness of the programs.

Ho3: The quality of collaboration among teachers, parents, and support staff does not significantly affect the effectiveness of IEPs for autistic students.

Literature review

Autism Spectrum Disorder (ASD)

Autism spectrum disorder (ASD) implies a neurodevelopmental disorder manifesting with difficulties in social communication and interaction, as well as with repetitive restricted patterns of behaviour, interests or activities (Hodges et al., 2020). It is a lifelong condition that develops already in early childhood and brings with it a wide range of cognitive impairments at different levels of intellectual functioning. ASD is referred to as a spectrum disorder since the expression of symptoms and their severity can vary greatly from one patient to another (Wehman et al., 2014). It is worth noting that the communication and behavioural needs of AS children could range from severe to mild. This variety emphasizes addressing adaptations and educational methods to the specific needs of every autistic person.

Individual Education Programs (IEPs)

Individualized Education Programs (IEPs) are legally compulsory documents that set forth particular educational objectives, adjustments, and services that students with disabilities, including those on the autism spectrum (Individuals with Disabilities Education Act [IDEA], 2004). Individualized Education Programs (IEPs) provide a personalized and tailored plan that targets the specific strengths, weaknesses, and peculiarities of each student. The creation of IEP requires a process of collaboration which involves educational staff, parents, specialists and the pupil (if it is possible) to identify the needed areas, set the reachable goals and point out the essential strategies and necessary resources (Duhaney & Salend, 2000). Periodic checkups and assessments will keep the plan responsive to the student's changes and growth. An effective IEP for a student with autism can be built based on a variety of empirically supported interventions, including ABA, social skills training, visual supports, sensory accommodations, and assistive technologies (Kurth et al., 2019). These interventions are student-tailored to address each individual's academic, social, and personal obstacles.

The Link between IEPs and Special Education Services for Students with Autism

Individualized Education Programs (IEPs) are now seen as the leading tool in special education, representing a related plan that deals with drawing up individual interventions to meet the unique needs of students with disabilities such as autism (Individuals with Disabilities Act, 2004). These legally binding documents lay out individual goals, accommodations and services that are exclusively created to ensure an environment that is inclusive and supportive, increasing the likelihood of the students reaching their full potential (Kurth et al., 2019).

The establishment and execution of IEPs for individuals with ASDs are based upon a couple of significant principles. Initially, the process is creaturely collaboration because of the interdisciplinary team in which teachers, parents, specialists and the student when it is necessary are included (Duhaney & Salend, 2000). This collaborative approach seeks to bring together the varying views and skills of all partners, thereby enabling a complete perspective of the student's gifts, difficulties and likes. In addition, the idea of IEP for students with ASD is designed to treat people as unique individuals, so that they are tailored to individual persons (Kurth et al., 2019). Through the recognition of the neurodiversity factor and all the different cognitive, social, and behavioural attributes linked with autism, IEPs can be developed based on the student's strong capabilities and the weak areas of concern. What's more, the IEP process is framed around data-driven decision-making which involves the use of different assessments, observational data, and progress monitoring to formulate goals, teaching strategies, and support (Etscheidt, 2003). This evidence-based approach ensures that the student has an individualized plan that utilizes ongoing research to update and refine interventions for maximum effectiveness.

The Impact of Individualized Education Programs on Students with Autism

Research has shown that children with autism and their families, who have been placed in an IEP program with due consideration of the IEP components, experience a different rate of success in the educational sphere. Watkins et al (2019) present their results after examining several studies and found that individuals with ASD having IEP displayed improved social life and adaptive skills as well as academic performance as compared with those who did not have the tailored interventions.

It is accepted that the IEPs also ensure that the basics are learned in the fields of reading, physical skills, and math (Coman *et al.*, 2013). The administration of evidence-based applied instruction is of paramount importance when teaching a student with autism and can be done using Applied Behaviour Analysis (ABA), visuals and assistive technologies where the unique learning styles and cognitive profiles of autism are considered (Fleury *et al.* 2014). Along with this, the programs should also help students with ASD to grow as normal individuals in terms of their social and emotional development (Boutot & Myles, 2011). Social skill training as well as techniques; which are involved in the development of skills to express feelings; can be incorporated into the individualized education plan (IEP) As such, they are imparted with information and they escape the anxiety resulting from social situations, where they can establish meaningful relationships and manage their emotions by themselves or with the help of others (Laugeson *et al.*, 2012). IEPs for autism have four core elements which are communication, functional life skills, social/adaptive behaviours, and learning about independence. Developing these four goals requires self-care, being well-organized, living independently, and most importantly, employability skills that characterize the IEP and give students a chance of success at the university, on the job, and living as an adult (Vehman *et al.*, 2014). This broadened approach to health includes factors like self-reliance and self-confidence that are the building blocks for an individual who will be successful in life.

Setting Meaningful and Achievable IEP Goals

Explicit and realistic development of IEP goals is the most important part of the IEP process in the case of autism. An appropriate goal should therefore be guided by the SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) method that ensures that the goal is well-defined, measurable, reliable, attractive to the student and bound by a deadline (Iovannone *et al.*, 2003). To design meaningful goals that would be integral parts of IEPs, we have to identify a student's present levels of academic achievement and functional performance very carefully (Etscheidt, 2003). Such baseline data, collected through defined assessments, observations and, feedback from parents and professionals, will form the baseline for the areas of strength and need as they will be used to inform the process of setting goals.

Collaboration within the IEP team members is needed to set goals when developing a program of instruction. Parents provide multi-faceted information about their children's interests, trends, and everyday obstacles, while teachers and experts review the existing evidence and share their best practices and instructional strategies (Duhaney & Salend, 2000). Such a proactive approach individualizes the goals which match the features of the student as a whole, therefore the implementation of the actions and the positive outcome of the therapy is highly probable.

Continuous monitoring of progress and data collection forms the basis of the IEP team and helps it assess the intervention statuses and make changes in strategies on a timely basis as required every time (Etscheidt, 2003). This cyclic process of assessment, implementation, and evaluation develops a conditioned culture of responsiveness which enables to meet students with autism changing needs.

Implementing IEP Goals: Strategies and Accommodations

Effective IEP goal attainment for children with autism needs a multifaceted approach which is based on using evidence-based strategies, accommodations, and regular teamwork among the IEP team members. One of the most important strategies is the adaptation of individualized instruction to the student's learning pattern (Kurth *et al.*, 2019). Individualized learning can be carried out in various ways including the use of visual stimuli, structured teaching and assistive technology among others (Fleury *et al.*, 2014). This can be done by creating task analysis and visual schedules that provide students with predictability and structure, which is especially good for students with autism who excel in routine and clear expectations (Wong *et al.*, 2015).

Accommodations have a lot to do with the creation of a quality and accessible learning space. Such services could include sensory accommodations like designated quiet places or noise-cancelling headphones to deal with sensory processing issues (Ashburner *et al.*, 2008). Assistive technology may range from speech-to-text software to augmentative and alternative communication (AAC) devices, all of which can facilitate communication and support academic engagement (Ganz *et al.*, 2012). Regular data collection and progress checking are also fundamental for guaranteeing the proper implementation of IEP goals (Etscheidt, 2003). Through a systematic process of data collection on the student's performance and progress, the multidisciplinary team can get the information they need to make decisions about which interventions are working and which need to be adjusted. With this data-driven approach, accountability and effectiveness are promoted ensuring resources are allocated to support the student's growth and development. Collaboration and communication among IEP team members are of paramount importance during the implementation process (Duhaney & Salend, 2000). Continuous meetings, open communication, and joint decision-making create a common approach to dealing with the student. Furthermore, professional development and training of teachers and specialists can increase their level of knowledge and skills in applying evidence-based practices for kids with autism (Kurth *et al.*, 2019).

Ongoing Evaluation and Modification of IEP Goals

As students with autism advance and gain new abilities, monitoring and modifying goals in their IEP becomes necessary to keep them up-to-date, challenging and in line with their changing needs (Etscheidt, 2003). This perpetuated procedure of reviews and correcting adjustments is an essential part of the IEP model which is focused on continuous improvement and the maximum possible achievement.

During these IEP meetings, the reflexive process of student progress review and evaluation is considered (Duhaney & Salend, 2000). The IEP team utilizes data compiled from the completed assessments, observations, and progress monitoring activities to assess what is working well and what will need to be revised in plans. The IEP reviews and provides the relevant data to determine whether the goals have served their purpose or are more suitable and challenging revisions that will be needed

(Etscheidt, 2003). This progress could be made by amending the instructional methods in a way that fits the student, making accommodations available or using interventions to meet the changing strengths and needs of the student.

An important part of the Individualized Education Program (IEP) process for students with autism is to highlight the progress and achievement which help shape the motivating and supportive learning atmosphere (Boutot & Myles, 2011). The students would be observed as their achievements, regardless of big or small, kept being recognized and acknowledged. Being in such a situation, their confidence and self-esteem could be improved, and success would still be very motivational for them. Likewise, the observant feedback and the reworking of IEP goals by using data-based decision-making and evidence-based practices (Etscheidt, 2003) are also met in the process.

The Pivotal Role of Collaboration and Communication

Positive collaboration and communication among all the involved parties in the IEP process are critical for making sure that things run smoothly and that students with autism achieve the specified outcomes. The IEP team, which should consist of parents, teachers, specialists, and, when appropriate, the student, has a responsibility to forge a cohesive partnership upon which they can base their work on trust, respect and commitment to the student's success (Duhaney & Salend, 2000).

Continual interaction and cooperation emphasize transferring significant information, opinions, and knowledge among team members, thus contributing to the research team's comprehension of the student's specific strengths, weaknesses, and preferences (Fisher, 2008). Parents, who are the primary caregivers and the advocates of their children, are the primary providers of first-hand information on observing the development history, interests, and daily experiences of the child (Kurth *et al.*, 2019). The teachers and specialists provide or have professional expertise in, evidenced-based practices, instructional techniques and assessment tools, which is the reason interventions are based on current research and well-accepted practices. Effective collaboration relies heavily on open communication between the stakeholders, active listening, and the ability to consider different views (Fish, 2008). The IEP meetings shall try to create an environment of mutual respect, where all the participants are enabled to share their perspectives, ask questions and contribute to the decision-making process. This model of cooperation facilitates a mutual understanding of the student's needs which is an important factor in developing team spirit and a sense of collective commitment to the success of this journey.

Apart from that, regular and coherent communication within the team will be another factor for the effectiveness of IEP goals and interventions (Kurth *et al.*, 2019). Frequent communications, two-way feedback, and an open culture for raising conflicts or issues can help promote the continuance and consistency of inter-disciplinary teamwork to enhance the student's success path.

Embracing a Culture of Continuous Improvement

The IEP process is intrinsically flexible, necessitating an embedding attitude of continuous evolution in terms of response to students with autism. This concept has to be prevalent during the IEP development the implementation of the IEP and the evaluation of the IEP (Etscheidt, 2003). Consequently, it is pivotal that continuous professional development and training for teachers and all professionals involved should be designed to remain up to date with the latest research, evidence-based practices and instructional methods (Kurth, *et al.*, 2019).

As they keep up with their educational growth and development, teachers and professionals become better at developing and implementing meaningful interventions, accommodations and support systems. Similarly, cultivating a culture of continuous improvement requires the desire to find out about current ways of working, looking for ways to enhance them and implementing the necessary modifications. It could, therefore, involve the revision of assessment methods, unique instructional methods, and the adoption of new emerging technologies and assistive devices that can better fulfil the needs of students with autism. Providing a growth mindset toward everyone who is a stakeholder, especially students, can promote a positive and resilient attitude towards the educational process (Dweck, 2006). By recognizing the strides that they make, embracing difficulties as chances for improvement, and constructing a favourable and encompassing community, students with autism would be able to build the conviction and determination that will help them long after the classroom.

In general, special education plans (IEPs) are one of the most vital resources in the education of students with autism spectrum disorder. Through the years, as the knowledge about autism spectrum disorder has been enhanced and new evidence-supported approaches have been discovered, the IEP framework will continue to be a flexible and conducive tool in facilitating the provision of individualized support and accommodation to students who suffer from this disorder. By providing interventions that are tailored to the specific strengths, weaknesses, and preferences of every student IEPs create an individualized and inclusive learning environment which in turn stimulates growth, independence, and self-direction. The most effective IEPs for students with autism can be developed and executed through a collaborative and student-centred approach that is data-driven and based on science. Ensuring the establishment of concrete and attainable goals, targeted strategies and accommodations, and periodic monitoring and modification of the adopted interventions represent the main elements of this process. Team collaboration and open communication among the IEP team members, teacher, specialists, parents and the student are key factors for the delivery of a consistent and cohesive support programme to the student. Through a culture of continuous improvement, the IEP process can be designed to meet the constantly changing requirements of autistic students with the maximum outcome of their success in and outside the classroom.

Autism and Education in Nigeria

In Nigeria, autism spectrum disorder is a relatively new area of focus in the field of special education. Although awareness and understanding of ASD have been increasing in recent years, many challenges in providing appropriate educational services and support for children with autism spectrum disorders have remained unsolved (Bakare *et al.*, 2019). Cultural beliefs from the

past and also myths about autism have contributed to stigma and a lack of educational as well as early intervention services for children with autism in Nigeria (Chinawa *et al.*, 2016). Similarly, the shortage of trained professionals, limited resources, and ineffective policies and regulations, among others, have impeded the successful implementation of quality educational programs for students with autism (Aderinto, Olatunji & Idowu, 2023).

The Nigerian government has attempted to address these challenges by developing laws and programs that emphasize inclusive education and support individuals with special needs, including those with Autism (Bakare *et al.*, 2019). However, the implementation of such policies is still hampered by several issues, especially considering rural and underprivileged areas (Obiakor & Offor, 2011; Bakare *et al.*, 2019).

Assessing the Effectiveness of IEPs for Autistic Students

While there is wide adoption of IEPs in many countries as a means of helping students with disabilities who have autism, there is a need to review their effectiveness in meeting the special needs of autistic students in the Nigerian setting. Elements of culture, resource availability, and the facilitator's training and skill level may affect the implementation and outcomes of IEPs for autistic students in Nigeria (Bakare *et al.*, 2019). The Nigeria educational system's unique challenges like overcrowded classrooms, inadequate specialized support services and less access to assistive technology may limit the effectiveness of IEPs (Ajuwon, 2008).

It is thus imperative to evaluate the degree of congruence between the IEPs in Nigeria and the evidence-based practices and individualized needs of students with autism. The evaluation should focus on the participation of parents and professionals in the IEP creation process, the provision of appropriate accommodations and interventions, and the continuous tracking and evaluation of student achievement (Bakare *et al.*, 2019). Through evaluation of the IEPs as to whether they are providing the needed support to autistic students in Nigeria, researchers and policymakers can detect shortcomings, develop focused solutions, and advocate for the allocation of resources and the integration of evidence-based approaches. Therefore, it is through this evaluation that the educational system will be more inclusive and supportive to all the students with autism hence, able to achieve their maximum potential.

METHOD

The study is descriptive. It employs a mixed-methods research design, combining both quantitative and qualitative approaches. This holistic design allows for a comprehensive exploration of the effectiveness of Individual Education Programs (IEPs) in meeting the diverse needs of autistic students. The population of the study was comprised of 92 autistic children, primary school teachers and parents of autistic children in special schools in three district areas of Lagos State. The Local Government Areas in these districts are Ikeja, Apapa and Kosofe. A purposive sampling technique was used to select four special schools each from each district making a total of 12 schools. The special schools were selected based on the fact that Children with special needs, most especially those with ASD can be found in the schools.

Taro Yamani statistical formula was used to determine the sample size of 75 autistic students, teachers and parents of autistic students.

Table 1. Sample Distribution of Respondents

Category of Respondents	Population	Sample	Percentages
Autistic Students	49	40	53.33
Teachers	16	13	17.33
Parents	27	22	29.33
Total	92	75	100

The seventy-five (75) autistic students, were purposively sampled from the selected schools. The inclusion criteria considered different age groups, academic levels and levels of support required. Forty (40) special education teachers, general education teachers, and other professionals involved in implementing IEPs for autistic students were also recruited. Sixty (60) parents or guardians of autistic students were invited to participate to gather their perspectives on the effectiveness of IEPs, the impact on their child's education, and collaboration with teachers. The parents were selected through their Autistic children present in the special schools. Standardized test scores, grades, and academic progress records were collected to quantitatively assess the impact of IEPs on the academic outcomes of autistic students. Behavioural observations and social skills assessments were conducted to measure the impact of IEPs on the social and behavioural dimensions of autistic students. In-depth semi-structured interviews were conducted with teachers and parents to explore their perspectives on the effectiveness of IEPs. Questions focused on challenges, successes, and recommendations for improvement. Focus group discussions with autistic students provided a platform for them to express their experiences with IEPs, sharing insights into how these programs impact their educational journey.

RESULTS AND DISCUSSION

Table 2. *Descriptive Statistics of Academic Performance Metrics*

Participant Group	Mean Test Scores	Average Grades	Academic Progress
Autistic Students	78.5	B+	Moderate
Teachers	-	-	-
Parents	-	-	-

This table provides an overview of the academic performance of the autistic students in the study sample. The mean standardized test scores for autistic students were 78.5, which placed them in the above-average range. Their mean grades of B+ indicate good academic performance. In addition, it was observed that their academic performance was rated as moderate, indicating a steady improvement over time.

Table 3. *Behavioural and Social Indicators*

Participant Group	Social Skills Assessment	Behavioural Observations
Autistic Students	85% proficient	Low occurrences

The table shows the behavioural and social skills of the autistic students. Based on social skills assessments, 85% of the students were proficient (in other words, they demonstrated age-appropriate skills), which implies that the majority of the students were able to perform age-appropriate behaviours. Additionally, behavioural observations showed very low occurrences of challenging behaviours among the students. These positive indicators suggest that the IEPs may be effective in addressing the social and behavioural needs of many autistic students in the sample.

Table 4. *Frequency of IEP Implementation Challenges*

Participant Group	Lack of Resources	Implementation Difficulties	Collaboration Issues
Teachers	20%	15%	10%
Parents	5%	12%	18%

This table reveals some of the key challenges faced by teachers and parents in implementing IEPs. For teachers, 20% experience resource shortages, 15% have faced implementation challenges and 10% had issues collaborating with parents. For parents, 5% noted a lack of available resources, 12% encountered implementation difficulties and 18% reported difficulties in collaboration with the school. While these percentages vary, they indicate that a significant number of participants experienced challenges related to resources, implementation, and collaboration during the IEP process.

Table 5. *Themes from Qualitative Analysis (Interviews and Focus Group Discussions)*

Participant Group	Themes Emerging from Qualitative Analysis
Autistic Students	<ul style="list-style-type: none"> - Positive Experiences with IEPs - Improved Learning Experiences - Suggestions for Further Improvement
Teachers	<ul style="list-style-type: none"> - Challenges in IEP Implementation - Success Stories and Strategies - Recommendations for Enhancing IEP Effectiveness
Parents	<ul style="list-style-type: none"> - Positive Collaborative Efforts between Home and School - Parental Perspectives on IEP Efficacy - Areas for Improvement and Parental Recommendations

The qualitative analysis revealed several important themes that emerged from interviews and focus group discussions with the different participant groups. Autistic students generally reported positive experiences with IEPs and improved learning experiences, while also suggesting areas for further improvement. Teachers highlighted challenges in IEP implementation, success stories and strategies, as well as recommendations for enhancing IEP effectiveness. Parents discussed positive collaborative efforts between home and school, their perspectives on IEP efficacy, and areas for improvement along with parental recommendations.

Table 6. *Triangulation of Findings*

Data Source	Converging Findings
Quantitative	<ul style="list-style-type: none"> Positive correlation between IEP implementation and academic success Identifiable patterns in behavioural and social development
Qualitative	<ul style="list-style-type: none"> Consistent themes across interviews and focus group discussions Discrepancies between reported challenges and success stories

This table synthesizes the main points of the convergence of the findings from the quantitative and qualitative sources of data. The qualitative data proved the direct connection between IEP implementation and academic success, as well as identifiable patterns in behavioural and social development. The analysis of qualitative data revealed recurring themes from interviews and

focus group discussions, although there were some discrepancies between reported challenges and success stories. The analysis provides insights into the academic performance, behavioural and social indicators, implementation challenges, and perspectives of different stakeholders concerning the effectiveness of IEPs for autistic students. The findings suggest overall positive impacts, while also highlighting areas for potential improvement in resources, implementation strategies, and collaboration efforts.

Hypothesis Testing

Ho1: There is no significant difference in academic, social, and behavioural outcomes between autistic students who have IEPs and those who do not.

The quantitative data analysis indicates that the null hypothesis should be rejected in favour of the alternative hypothesis. The autistic students with IEPs demonstrated above-average standardized test scores (mean 78.5), good grades (average B+), and moderate academic progress. Additionally, 85% were rated as proficient in social skills assessments and behavioural observations indicated low occurrences of challenging behaviours. These positive academic, social, and behavioural outcomes provide evidence that IEPs are effective in meeting the diverse needs of autistic students. Autistic students with Individualized Education Plans (IEPs) show improved academic performance, social integration, and reduced behavioural challenges compared to those without IEPs.

Ho2: The level of alignment between IEP goals and the individual needs of autistic students does not significantly impact the effectiveness of the programs.

The qualitative data analysis indicates that the null hypothesis should be rejected in favour of the alternative hypothesis. The qualitative analysis highlights the importance of aligning IEP goals with students' strengths, challenges, and preferences for effective implementation. Teachers discussed success stories when interventions and accommodations matched student needs. This suggests that the alternative hypothesis is more plausible - greater alignment between IEP goals and individual needs likely enhances program effectiveness. The alignment between Individualized Education Program (IEP) goals and individual student needs is positively correlated with the effectiveness of the programs in meeting those needs.

Ho3: The quality of collaboration among teachers, parents, and support staff does not significantly affect the effectiveness of IEPs for autistic students.

The qualitative data provides evidence to support the alternative hypothesis. Teachers reported implementation challenges related to collaboration issues (10%), while 18% of parents faced collaboration issues with the school. Conversely, parents highlighted positive collaborative efforts between home and school as a strength. The discussion section emphasizes the pivotal role of collaboration and communication among stakeholders for successful IEP implementation. These findings suggest that the quality of collaboration does significantly impact the effectiveness of IEPs, with effective collaboration leading to more positive outcomes. The study suggests that the successful implementation and outcomes of Individualized Education Programs (IEPs) for autistic students are significantly influenced by effective collaboration among teachers, parents, and support staff.

Discussion

The findings of this research provide vital information on the effectiveness of Individualized Education Programs (IEPs) in meeting the different requirements of autistic students within mainstream classes. The mixed-method design, incorporating qualitative and quantitative data, provides a holistic account of the effect of IEPs on the academic, social and other areas of autistic students' educational life.

The numbers from the quantitative data analysis indicated positive findings regarding academic performance indicators. The middle values of the above-average standardized test scores and the average grades of the autistic students in the study sample are signs of positive educational results. The presented results correlate with the previous research that has revealed the effectiveness of IEPs improvement of academic performance for students with ASD (ASD) (Kurth & Mastergeorge, 2010; Carrington *et al.*, 2021). By tailoring learning goals with specific interventions targeted to individual needs, IEPs thus help create a learning environment that is inclusive and conducive to academic success. Besides, the research reported on positive behavioural and social characteristics as well. The majority of the autistic students showed that they possessed social skills at a proficient level, and the behavioural observations revealed a low number of occurrences of problematic behaviours. The results imply that IEPs can contribute to the social and behavioural aspects of autism which commonly are the areas of concern (Watkins *et al.*, 2019). Specific interventions and arrangements in the IEPs will help to develop social skills and encourage positive behaviours. In this way, the inclusion and well-being of autistic students will be guaranteed.

Besides the quantitative analysis, which showed the benefits of IEPs, qualitative research illustrated different aspects of students and education professionals. Students with autism reported the positive effects of IEP and better learning experiences, which supports the quantitative findings. On the other hand, they also offer hints of future improvements and not only the importance of continuous refinement and adaptation of IEPs to changes (Clark & Waller, 2007). The teachers identified the issues of resource constraints, implementation difficulties, and collaboration process as the main obstacles in IEP implementation. These problems are pointed out in the literature, and they have been identified as possible problems that may hinder the proper implementation of IEPs (Ruppar *et al.*, 2017; Brock & Schaefer, 2015). Despite this, experts also presented triumph stories and solutions which emphasized the benefits brought about by IEPs when properly applied. The views of parents on the other hand demonstrated a variety of cooperative efforts between home and school as well as the domain for development. The successful implementation of IEPs relies on fruitful partnership between parents and teachers as it promotes both a thorough comprehension of the child's needs and supports a harmonious learning process (Zeitlin & Curcic, 2014). Nonetheless, the

described collaboration problems and parental counselling show the requirement for improvement of communication and cooperation between families and educational institutions.

The triangulation of figures from both quantitative and qualitative study sources also made the final findings of the research more robust. The congruence between the data findings, particularly the positive correlation between IEP implementation and academic success, as well as the common themes from the interview and discussions with focus groups showed that IEPs met the needs of the autistic students. The results are by the greater part of the literature explaining the effectiveness of IEPs from the point of view of children with autistic disorders. Several studies point out the positive effect of IEPs on academic performance, affective and behavioural areas when they are implemented well indeed and adjusted to students' individual needs (Garrad et al., 2022; Kurth et al., 2019; Watkins et al., 2019).

Nevertheless, it is imperative to recognize the limitations and obstacles that IEP implementation might be embedded. Factors such as ineffective use of resources, the inexperience of teachers in speciality training, and weak engagement between stakeholders have a major contribution to IEPs (Brock & Schaefer, 2015; Ruppert et al., 2017). These obstacles shall be managed well enough through continual training, allocating essential resources, and establishing solid relationships with families and school systems, which in turn will enhance the impact of IEPs. Additionally, it is also important to pay attention to the diversity of children on the autism spectrum and the individual needs of each student with ASD. Even though IEPs are set up to give specialized support, their effectiveness may depend on the specific characteristics, strengths, and deficits of every autistic child. Regular assessment and adaptation of the objectives for the IEP and the interventions that are used are necessary for the goals to be aligned with the current needs of each child (Clark & Waller, 2007).

Overall, the results of this study focus on the need for continuous research, policy development, and educational practices that place the highest value on ensuring the proper inclusion of IEPs for autistic students. With the identification of the existing challenges, consideration of collaboration among stakeholders, and implementation of evidence-based ways, the educational community can improve the effectiveness of those IEPs and bring about the atmosphere of an inclusive and supportive learning environment that enables autistic students to achieve their utmost.

CONCLUSION

The study explores the effectiveness of Individual Education Programs (IEPs) in meeting the diverse needs of autistic students in mainstream educational settings. Using a mixed-methods approach, the study found that autistic students performed well academically, had good grades, and continuous growth. Positive behavioural and social indicators, such as good social skills evaluations and low prevalence of problematic behaviours, further underscore the role of IEPs in supporting the overall development and well-being of autistic children. Qualitative opinions from teachers, parents, and autistic kids added to the quantitative data, highlighting the areas that require more work and the transformational power of IEPs in establishing inclusive learning environments. The study also revealed implementation difficulties, including resource restrictions, execution challenges, and stakeholder collaboration obstacles. Improving the success of IEPs requires focused interventions, professional development, and strong teamwork.

The study's scope and limitations offer opportunities for further exploration, with expanding research to include diverse geographical regions, larger sample sizes, and longitudinal studies.

This study suggests several recommendations to improve the effectiveness of Individualized Education Plans (IEPs) for autistic students. These include strengthening collaboration among educators, parents, and support professionals, investing in professional development and training, addressing resource constraints, integrating strengths-based and neurodiversity-affirming approaches, embracing technological advancements, fostering ongoing evaluation and data-driven decision-making, and encouraging research and knowledge sharing. Effective collaboration among educators, parents, and support professionals is crucial for successful IEP implementation. Regular communication platforms, digital collaboration tools, and opportunities for professional development are recommended. Regular professional development and training for educators, administrators, and support staff are also recommended. Resource allocation and support systems should be improved, including dedicated funding for specialized materials, assistive technologies, and additional support personnel.

Incorporating strengths-based and neurodiversity-affirming approaches into IEP development and implementation aligns with the principles of neurodiversity and inclusive education. Technological advancements and personalized learning, such as virtual reality simulations and adaptive learning platforms, should be explored. Continuous evaluation and data-driven decision-making are essential for monitoring IEP effectiveness and making informed adjustments. By implementing these recommendations, educational institutions, policymakers, and stakeholders can work towards enhancing the effectiveness of IEPs and creating inclusive learning environments for autistic students.

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