MAINSTREAM VS. SPECIAL ED: PARENTS' VIEWS ON AUTISM LEVEL 2 LEARNING AND SOCIAL GAINS IN NCR

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Abstract
Educational placement is a major concern for children with Level 2 Autism Spectrum Disorder (ASD), particularly in balancing learning retention and social adaptation. This study used a quantitative comparative research design to examine parents' perceptions of learning retention and social adaptation of children with Level 2 ASD enrolled in mainstream and special education settings in the National Capital Region (NCR), Philippines. A total of 120 parents and legal guardians (60 from mainstream and 60 from special education) were selected through purposive and snowball sampling. Data were collected using a researcher-made, validated questionnaire assessing learning retention (knowledge recall, concept understanding, skill application) and social adaptation (peer interaction, understanding social cues, emotional regulation). Descriptive statistics and independent samples t-tests were employed for analysis. Results indicated that learning retention was perceived as stronger in special education, whereas social adaptation was rated higher in mainstream settings. Statistically significant differences were observed across all domains ($p<.001$). These findings highlight the complementary strengths of both educational settings and emphasize the need for individualized placement to support the academic and social development of children with Level 2 ASD.

Keywords: *Level 2 ASD, learning retention, social adaptation, mainstream education, special education*

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INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition marked by social communication deficits and repetitive behaviors. Global prevalence has risen to approximately 1%, with Asian rates averaging 0.36% to 0.51%. Children with Level 2 ASD require substantial support, making appropriate educational placement vital. While global initiatives promote inclusive education, barriers like urban-rural disparities remain. In the Philippines, Republic Act No. 11650 (2022) addresses these gaps by mandating inclusive education and converting SPED Centers into Inclusive Learning Resource Centers (ILRCs) to ensure equitable, non-discriminatory access. Despite these legislative efforts, debate remains regarding the most effective educational setting —mainstream or specialized — for promoting learning retention and social adaptation among children with ASD. Research indicates that placement decisions often vary based on individual needs and contextual factors (O'Connor et al., 2024). Studies present mixed findings: Reed and Waddington (2017) found that children with autism spectrum disorder in mainstream schools did not demonstrate greater overall academic achievement compared to those in specialist provisions, suggesting that school placement alone does not guarantee improved academic outcomes. Carrera et al. (2023), however, argue that mainstream systems frequently lack sufficient awareness of unique learning difficulties, increasing the risk of social isolation. There remains a lack of empirical evidence in the Philippine context comparing these educational settings, particularly from the perspective of parents, who serve as primary decision-makers.

In the Philippines, the selection of an appropriate educational placement for children with neurodevelopmental challenges is a high-stakes decision for families. This process is often characterized by considerable pressure, as parents must navigate a complex landscape influenced by family income, educational attainment, and the stark variability of service availability across different regions. The recent legislative milestone of Republic Act No. 11650 (2022) aims to alleviate these pressures by instituting a policy of inclusion and establishing Inclusion Learning Resource Centers (ILRCs) in every school district. However, the transition toward a fully inclusive system presents significant operational hurdles, including insufficient material resources and a critical shortage of specialized teacher training. Because parents are the primary monitors of their children's daily developmental trajectories, their perceptions serve as an essential metric for assessing whether these emerging educational environments—mainstream or specialized—truly support the unique needs of children with Level 2 Autism Spectrum Disorder (ASD). In the Philippine context, the observed success of mainstream education in fostering social adaptation is not an isolated pedagogical outcome; rather, it is deeply embedded in the broader cultural and psychological landscape. Recent research into the Filipino youth experience suggests that social adaptation often mirrors indigenous narratives of resilience. As identified by Doctor (2025), Filipino learners frequently develop sophisticated internal protective mechanisms when navigating diverse or challenging social environments, suggesting that the "social immersion" found in mainstream classrooms may act as a catalyst for these natural psychological strengths.

This study explored the parental perceptions of the effectiveness of mainstream and special education settings in terms of learning retention and social adaptation among children with Level 2 ASD. Through examining potential differences between these settings, the study sought to generate empirical evidence to inform inclusive educational practices in the Philippines. Furthermore, it aligns with Sustainable Development Goal (SDG) 4: Quality Education, particularly Target 4.5 on equitable access for persons with disabilities, and SDG 10: Reduced Inequalities, which emphasizes the social inclusion of vulnerable populations such as Autism Spectrum Disorder.

Philosophical View

The conceptual architecture of this study is anchored in two complementary frameworks that address the cognitive and behavioral dimensions of children with Level 2 Autism: Weak Central Coherence (WCC) Theory and Social Cognitive Theory (SCT). The foundation for assessing learning retention is rooted in the Weak Central Coherence Theory, pioneered by Uta Frith (1989). WCC posits that individuals with Autism Spectrum Disorder (ASD) possess a distinct cognitive processing style characterized by a "detail-focused" bias. While this allows for exceptional focus on local features, it often occurs at the expense of "global coherence," or the ability to integrate information into a meaningful whole. This theoretical lens explains why a child might excel in knowledge recall—the retrieval of specific facts and procedural steps—while simultaneously struggling with concept understanding, which requires synthesizing those details to identify relationships. Furthermore, WCC provides a basis for evaluating skill application, as it highlights the challenge of "functional generalization," where a child must move from classroom-based details to holistic, real-world problem-solving. With this cognitive focus, Albert Bandura's (1986) Social Cognitive Theory provides the framework for understanding social adaptation. SCT operates on the principle of triadic reciprocal determinism, suggesting that a child's social functioning is the product of continuous, bi-directional interactions between personal cognitive factors, behavioral patterns, and environmental influences, such as the distinction between mainstream and special education settings.

Through the mechanisms of observational learning and self-regulation, SCT allows for the operationalization of social adaptation into three critical domains. First, interaction with peers is viewed as a behavioral outcome mediated by the environmental reinforcements present in the classroom. Second, the understanding of social cues is framed as a social-perceptual process necessary for successful modeling and imitation. Finally, emotional regulation in social situations assesses the child's internal self-regulatory mechanisms, specifically their ability to maintain behavioral stability amidst the unpredictable nature of social exchanges. By synthesizing these two theories, the study creates a comprehensive map that accounts for both the internal cognitive strengths and the external social challenges faced by neurodivergent learners.

Objectives

This study assessed the parental perceptions of learning retention and social adaptation of children diagnosed with level 2 autism in mainstream and special education settings in NCR. Specifically, it sought answers to the following questions:

1. How do parents assess the learning retention of children diagnosed with level 2 autism in mainstream and special education in terms of:
    1.1. Knowledge recall;
    1.2. Concept understanding; and
    1.3. Skill application?
2. How do parents assess the social adaptation of children diagnosed with level 2 autism in mainstream and special education in terms of:
    2.1. Interaction with peers;
    2.2. Understanding social cues; and
    2.3. Emotional regulation in social situations?

3. Is there a significant difference in parents' perceptions of the learning retention and social adaptation of children diagnosed with level 2 autism in mainstream and special education?

METHODS

Participants

The study involved a total of 120 respondents who met the following criteria: they were biological parents or legal guardians of children diagnosed with Level 2 ASD; their child had a formal and clinical diagnosis of Level 2 ASD; their child was enrolled in recognized mainstream settings (inclusive or regular classes, either private or public) or special education settings; their child was between 6 and 12 years old; their child had been enrolled in the current mainstream or special education setting for at least one full academic year; they resided in the National Capital Region (NCR); and they were willing to participate voluntarily and provide signed informed consent. The sample size of 120 respondents was considered adequate to provide meaningful and representative data while remaining feasible for data collection within the scope of this study.

Design and Procedure

This study was anchored in a quantitative comparative research design, a framework chosen for its ability to objectively measure and analyze parental perceptions regarding two critical developmental domains: learning retention and social adaptation. By focusing on children diagnosed with Level 2 Autism, the research aimed to highlight the nuances between mainstream and special education environments. According to Creswell (2021), a quantitative approach is essential when the goal is to transform human perception into numerical data, allowing for robust statistical analyses that reveal patterns and relationships. The comparative nature of this design was particularly vital, as it allowed for a head-to-head examination of how educational settings influence perceived outcomes without the need to manipulate the environment, thereby capturing authentic, naturally occurring relationships (Umstead & Delgado, 2024).

The execution of this study followed a structured, five-stage process designed to ensure ethical integrity, participant accuracy, and data precision. The data collection journey began with the pursuit of formal academic and ethical clearance. The researchers secured a formal endorsement from the Office of the Director for Research and Development, alongside primary approval from the research adviser. These steps were more than mere formalities; they ensured the study operated within a framework of professional coordination, allowing for a data collection schedule that respected the time of the participants while remaining in strict adherence to ethical research guidelines. To maintain the validity of the results, a rigorous profiling process was implemented. The researchers conducted a thorough screening of potential respondents to confirm they met specific inclusion criteria. This involved verifying a clinical diagnosis of Level 2 Autism Spectrum Disorder (ASD). Parents and guardians provided essential documentation, such as official diagnostic reports from medical professionals and certificates of enrollment. This meticulous vetting process ensured that the sample was truly representative of the population under study. Before any data was shared, the researchers prioritized participant autonomy through a digital Informed Consent module. Embedded at the start of the survey, it provided a transparent overview of the study's objectives, the expected duration, and the stringent confidentiality protocols in place. Participants were explicitly informed of their right to withdraw at any time. Active consent was verified through a mandatory agreement button, ensuring that every participant was fully informed before their data was recorded. The survey was deployed via Google Forms, utilizing the tool's accessibility to reach a wider

demographic of parents. This web-based approach facilitated a seamless user experience, allowing respondents to contribute at their convenience. The digital format also minimized manual entry errors and provided a centralized hub for incoming data, significantly increasing the efficiency of the collection phase. Once the collection window closed, the raw data underwent a process of meticulous refinement. The researchers audited the responses for completeness and consistency, weeding out any partial or invalid entries. The final dataset was then organized into structured tables and matrices, categorized by the study's core variables. This systematic arrangement transformed raw numbers into a clear, interpretable format, setting the stage for the final statistical analysis and the extraction of meaningful insights.

RESULTS

Learning Retention Outcomes

The quantitative analysis indicates that parents perceive special education (M = 3.52) as significantly more effective for learning retention compared to mainstream settings (M = 3.10), resulting in a total composite mean of 3.31. Among the evaluated sub-domains, Knowledge Recall emerged as the most substantial, yielding a composite mean of 3.36. The data indicates that children demonstrated peak performance in retrieving school-learned facts (3.50) and integrating new vocabulary into daily discourse (3.40), despite exhibiting a relative deficit in procedural memory regarding sequential tasks. These findings are strongly supported by the work of Tenorio (2024), Ngo et al. (2022), and Mostajo et al. (2023), who collectively argue that structured routines, visual supports, and systematic repetition significantly bolster the capacity of autistic learners to retain factual content. The observed disparity between factual and procedural recall is further corroborated by Vivanti et al. (2022) and Zheng et al. (2023), who reported that individuals with ASD often demonstrate superior performance in rote factual retrieval compared to the execution of multi-step procedural sequences. This aligns with the lower ratings observed for listing procedural steps in this study. Furthermore, the finding that special education (SPED) environments yield higher recall scores is consistent with the observations of Kim (2019) and Khaleel et al. (2022), who stated that the predictable, specialized structures inherent in SPED settings are uniquely optimized to strengthen memory retention in neurodivergent populations.

Concept Understanding followed with a mean of 3.24, where indicators of emerging critical thinking—such as asking thoughtful questions (3.34)—were tempered by a difficulty in bridging the gap between abstract ideas and real-life examples (3.10). The domain of Concept Understanding yielded a composite mean of 3.34, characterized by a divergence between cognitive inquiry and functional application. While indicators of emerging critical thinking—specifically the ability to ask thoughtful questions (3.34)—suggest an active engagement with the material, these strengths were tempered by a pronounced difficulty in bridging the gap between abstract ideas and real-life examples (3.10). Furthermore, the superior performance observed within special education (SPED) settings is consistent with the work of Cahapay (2020) and Kim et al. (2021). These scholars highlight that the individualized instruction, structured scaffolding, and explicit teaching strategies inherent to specialized placements are highly effective in strengthening conceptual comprehension and supporting the meaningful application of learning.

Finally, the Skill Application domain (M = 3.34) suggested a successful generalization of lessons to the home environment (3.45), yet highlighted that authentic, complex problem-solving remains a critical area of deficit (3.22). Collectively, these metrics suggest that while factual and language-based retention is high, functional and procedural application requires more intensive instructional support.

Table 1

Learning Retention of Children Diagnosed with Level 2 Autism

Variables	Mainstream		SPED		Composite Mean	
	WM	VI	WM	VI	WM	VI
Knowledge Recall	3.17	A	3.55	SA	3.36	SA
Concept Understanding	3.03	A	3.44	SA	3.24	A
Skill Application	3.11	A	3.57	SA	3.34	SA
Overall Weighted Mean	3.10	A	3.52	SA	3.31	SA

Social Adaptation Outcomes

In contrast to academic retention, Social Adaptation, parents perceived significantly more pronounced outcomes in mainstream education (M = 3.08) compared to special education (M = 2.67). Within the specific domain of Peer Interaction, children demonstrated peak proficiency in joining structured group activities (3.04); however, they encountered substantial difficulty navigating the complexities of spontaneous conflict resolution (2.78). This disparity is supported by the research of Tse et al. (2022) and Shaked & Yirmiya (2020), which posits that children with ASD often respond more effectively to direct, verbal, and explicit cues, whereas subtle social signals—such as vocal tone and facial expressions—remain persistently challenging. This theoretical alignment is empirically reflected in the current dataset, where the interpretation of non-verbal signals was the lowest-ranked item. Similarly, existing literature indicates that empathy and behavioral adjustment improve significantly when adults provide clear scaffolding, a finding that corroborates the higher ratings observed for responses to praise and guided behavior. In addition, while some studies suggest that SPED environments offer more targeted social-cue training, the findings of the present study slightly diverge from certain established narratives. The higher ratings in mainstream settings suggest that consistent peer exposure and "social immersion" may serve as a critical catalyst for enhancing social cue recognition and adaptive behavior in real-world contexts. Regarding Emotional Regulation, parents noted that while children could maintain composure during competitive or stressful group tasks (2.90), specific impulse control challenges—particularly waiting for their turn (2.75)—remained a persistent weakness. Furthermore, in terms of Social Cues, the data indicated that children process explicit verbal feedback effectively (2.94) but struggle significantly with the interpretation of subtle nonverbal signals (2.75). These findings suggest that while inclusive environments facilitate broader social exposure, the nuances of unstructured social dynamics and non-verbal communication continue to require targeted support.

Table 2

Social Adaptation of Children Diagnosed with Level 2 Autism

Variables	Mainstream		SPED		Composite Mean	
	WM	VI	WM	VI	WM	VI
Interaction with Peers	3.13	A	2.72	A	2.93	A
Understanding Social Cues	3.04	A	2.64	A	2.84	A

Emotional Regulation in Social Status	3.05	A	2.64	A	2.85	A
Overall Weighted Mean	3.08	A	2.67	A	2.88	A

Comparative Analysis

The inferential analysis, employing an independent samples -test, revealed statistically significant differences between mainstream and special education settings across all primary variables ($p<.001$). For learning retention, children in special education demonstrated a significantly higher mean score ($M=3.52$) compared to those in mainstream environments ($M=3.10$). This suggests that the highly structured and predictable nature of special education is uniquely conducive to academic persistence and the cognitive retrieval of information—a finding that aligns with the Weak Central Coherence Theory regarding detail-focused processing strengths. The data for social adaptation significantly favored mainstream education ($M=3.08$) over special education ($M=2.67$). This indicates that immersion in inclusive settings provides more pronounced opportunities for peer modeling and social regulation. These divergent results underscore a critical pedagogical trade-off: while special education excels in cognitive and information retention, mainstream education serves as a more effective catalyst for developing social and adaptive competencies in children with Level 2 Autism. This finding challenges the conventional assumption that specialized settings inherently offer superior support across all developmental domains. As articulated by Vivanti et al. (2022), Ripotola and Chavez (2024), and Pinili et al. (2023), inclusive environments foster a "social immersion effect," providing rich opportunities for real-time interaction with neurotypical peers. While special education offers essential structural scaffolding, its necessary emphasis on individualized learning and controlled interactions may unintentionally limit opportunities for spontaneous social engagement. Hence, mainstream settings appear better positioned to facilitate the maturation of social cue interpretation and emotional regulation through authentic social exposure. Furthermore, within the specific context of the Philippines, the reliance on isolated specialized settings must be viewed through the lens of existing societal barriers. As emphasized by Doctor (2025), persistent stigma surrounding mental health services in the country can inadvertently create a "social silo" effect, where learners are sheltered but socially sequestered. To be truly transformative, effective psychological interventions must bridge the gap between clinical support and social integration. This is empirically evident in the current study, where the highest levels of social proficiency were achieved through the "social immersion" of mainstream classes rather than the isolated, though structured, environment of clinical training.

Table 3

T-test results

Variables	Mainstream	SPED	p-value	Higher Performance
Learning Retention	3.10	3.52	<.001	Special Education
Social Adaptation	3.08	2.67	<.001	Mainstream

DISCUSSION

The findings of this study highlight a distinct "trade-off" between educational environments for children with Level 2 Autism. The significant superiority of special education in learning retention suggests that the highly structured, individualized instruction and reduced environmental stimuli typical of SPED classrooms are conducive to factual and

language-based memory. This aligns with the "Structured Teaching" model, which emphasizes that concrete and predictable environments reduce cognitive load for neurodivergent learners.

On the other hand, the significantly higher scores for social adaptation in mainstream settings suggest that "social immersion" plays a critical role. Mainstream classrooms provide a richer variety of social models and spontaneous interactions, which likely push the child to develop better peer interaction and emotional regulation. However, the consistent struggle with nonverbal cues and procedural steps across both settings indicates that these are core deficits of Level 2 ASD that require targeted intervention regardless of the placement.

The disparity between high "knowledge recall" and low "real-life problem solving" suggests that while children are "learning to know," they are still struggling with "learning to do." This finding implies that educational programs should bridge the gap between classroom theory and functional application.

CONCLUSION

The study concludes that children with Level 2 Autism demonstrate high learning retention, particularly within special education settings where structured support and explicit instruction effectively foster knowledge recall and skill application. While factual retrieval and the generalization of skills to the home environment are salient strengths, a persistent gap remains in concept understanding—specifically the ability to bridge abstract ideas with real-life contexts. This suggests that while specialized environments are superior for academic persistence, mainstream classrooms could narrow this gap by adopting evidence-based strategies such as stepwise instruction, visual aids, and cumulative reviews to bolster procedural memory.

Regarding social development, the findings indicate that children possess adequate social adaptation, with mainstream environments slightly outperforming special education across peer interaction, emotional regulation, and the interpretation of social cues. The relative success in peer interaction appears rooted in structured group activities; however, significant challenges persist in navigating unstructured social moments and interpreting nonverbal signals. This emphasizes the reality that while predictable routines support positive behavior, spontaneous social engagement remains a complex deficit requiring more nuanced, intentional intervention.

In general, the statistically significant differences in parental perceptions reveal that educational placements offer complementary strengths: special education serves as a more effective catalyst for academic and cognitive retention, whereas mainstream settings provide the necessary immersion for social and adaptive growth. These results highlight the need for a balanced pedagogical approach that integrates the rigorous, scaffolded academic support of special education with the socially rich, inclusive experiences of mainstream environments. By harmonizing these two frameworks, educators and practitioners can more effectively optimize the holistic development of children with Level 2 Autism.

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