

Effect of Educational Strategies on Students with Autism at Al Hadi Institution

أثر الاستراتيجيات التعليمية على الطلاب المصابين بالتوحد في مؤسسة الهادي

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الملخص:

يهدف هذا البحث إلى دراسة فاعلية استخدام الاستراتيجيات التعليمية ذات النتائج القابلة للقياس لدى الطلاب ذوي اضطراب طيف التوحد، وذلك بهدف تحسين أدائهم في المجالات الأكاديمية والسلوكية والاجتماعية والتواصلية من خلال تطبيق أساليب عملية تربوية وسلوكية واجتماعية.

كما يسعى البحث إلى استقصاء آراء خمسة عشر معلماً ممن يدرسون طلاباً من ذوي اضطراب طيف التوحد حول معتقداتهم واتجاهاتهم تجاه تلك الاستراتيجيات، وكيفية إسهامها في تحقيق نتائج تعليمية وسلوكية إيجابية.

بالإضافة إلى ذلك، أجريت مقابلات مع عشرة معلمين لدراسة أثر الاستراتيجيات التعليمية على طلاب التوحد، والتواصل مع تسعة أولياء أمور لديهم أطفال مصابون باضطراب طيف التوحد لاستكشاف العوائق والتحديات التي واجهوها في تلبية الاحتياجات التعليمية لأطفالهم. وقد عبر المشاركون عن عدة محاور تتعلق بالنظام التعليمي، ونهج المعلمين، والمشكلات المالية، وغيرها من الموضوعات الفرعية التي سُنّاقش لاحقاً في الدراسة.

اعتمد البحث على المنهج المختلط (النوعي والكمي)، وحُلّت البيانات التي جُمعت من المقابلات والملاحظات والاستبانات باستخدام برنامج الحزم الإحصائية للعلوم الاجتماعية (SPSS)، - الإصدار 21.

أظهرت النتائج وجود مجموعة واسعة من الاستراتيجيات التعليمية والعلاجية الموجهة للطلاب ذوي اضطراب طيف التوحد، والتي تعالج الجوانب الاجتماعية

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دور أولياء الأمور في العملية التعليمية. وبالإضافة إلى ذلك، أظهرت الملاحظات الصفية للطلاب وخطط التعليم الفردية (IEP) تحسناً ملحوظاً في أدائهم بعد تطبيق مجموعة متنوعة من الممارسات والاستراتيجيات التربوية.

Abstract:

The purpose of this study is to investigate the effectiveness of using educational strategies with measurable outcomes for students with autism spectrum to improve their performance in academic, behavior and social communicational domains by using practical social, behavioral, and academic methods. In addition, to inquire about 15 teachers who teach students with autism, as well as their beliefs and perspectives on those strategies and how to create good learning and behavior outcomes and 10 teachers were interviewed to examine the effect of educational strategies on students with autism and demonstrate with 9 parents who have children with autism the barriers and challenges, they have experienced in meeting the educational needs of those children with ASD who expressed different themes that refer to education system, teachers' approach, financial issues and other subthemes that would be discussed later. The research followed

والتواصلية والسلوكية والأكاديمية، مع اتفاق تام بين المشاركين على الأثر الإيجابي لهذه الاستراتيجيات. كما أظهر المعلمين جميعهم إدراكاً لأهمية هذه الممارسات التربوية وانعكاسها الإيجابي على أداء الطلاب، خاصةً عند تفعيل

a mixed design and analyzed data that was collected from interviews, observations and questionnaires and quantified variations using Statistical Package for the Social Sciences (SPSS) software- version 21.

The findings indicate a wide range of treatment strategies for students on the Autistic Spectrum that address social and communicative, behavioral, and academic needs and total agreement on the positive effect of those strategies. All teachers agreed to the importance and positive reflection of educational strategies on the performance of those students with the participation with parents. Subsequently through observations in classrooms of students with autism and recognizing their IEP that had shown good improvement in their performance after being exposed to different practices and strategies.

Keywords: ASD, IEP, social, behavioral and academic domains, educational strategies, teachers' beliefs and perspectives.

Introduction

This research paper explores the effectiveness of using educational strategies on the performance of students with autism in addition to the barriers and challenges that might face both parents and teachers in their teaching and communicating process.

Problem Statement

Autism has become one of the most frequent childhood ailments, the second most frequent developmental condition after mental retardation, ((Center for Disease Control and Prevention & Autism Society of America)). Autism is a lifetime neurobiological disorder and is not curable (Centers for Disease Control (2014). However, because it is not known to what extent do the educational strategies affect the performance of students with autism in Lebanon due to the lack of studies concerning this issue although many studies and researches in other countries worldwide were done to show that impact, this research is conducted to show how with early intervention and specific treatment strategies, children that are affected with autism can make improvements in daily living skills, learning and development. According to the Centers for Disease Control (2014), the rate of children afflicted with autism may increase.

Subsequently, to show what are some of the challenges and barriers that might face the educators and parents of students with autism. That being said, proper interventions and remediation must begin at the elementary school level immediately so that children with autism can learn to live independent and successful lives as adults.

Significance of the Study

The increasing prevalence of autism, alongside the critical need for early intervention, emphasizes the importance of research in this field. This study aims to examine the intervention strategies provided by schools and the additional support parents perceive as necessary. The findings are intended to guide school administrators, special education directors, and teachers in delivering effective services to children with autism while balancing the needs of other students.

This study emphasizes social, behavioral, and academic teaching strategies that educators can implement in both general and special education settings to facilitate skill development. It also explores gaps in current interventions and identifies strategies to create more supportive and inclusive learning environments (Manti et al., 2013; Muchetti, 2013). According to

de Bruin (2013), such research can enhance school experiences, participation in inclusive education, independence, employability, and social interactions for children with ASD (p. 542).

Further investigation contributes to improving the overall quality of life for individuals with autism. Teachers are very important in helping kids learn social, behavioral, and intellectual skills that will help them now and in the future. By exploring the experiences and perspectives of parents and teachers, this study seeks to understand the effectiveness of educational interventions, the challenges of their implementation, and their broader impact on children, families, and educators.

Research Questions:

The following research questions will guide this mixed method study:

Q1: How effective can educational practices be in addressing the social, linguistic, behavioral, and academic needs of children with autism in cycles one and two?

Q2: What obstacles and difficulties have parents of children with autism and special education teachers encountered in addressing the educational requirements of students with ASD?

Hypothesis

H₀: Integrated educational strategies do not significantly improve the academic, behavioral, and communicative outcomes of students with autism.

H₁: Integrated educational strategies significantly improve the academic, behavioral, and communicative outcomes of students with autism.

Objectives

1. To find out what teaching methods Al Hadi Institution uses with pupils with autism.
2. To evaluate their impact on students' academic, social, and behavioral performance.
3. To explore the challenges faced by teachers and parents in implementing these strategies.

Review of Literature

The past and present of autism

The term "autism" first appeared in 1911 when Swiss psychiatrist Eugen Bleuler used it to describe a set of symptoms previously associated with schizophrenia. Autism was not recognized as a distinct condition until 1980, separating it from childhood schizophrenia. Dr. Leo Kanner (1943) was the first person to say that autism is a social and emotional condition in kids. He talked about traits like

having good intellectual skills but not wanting to be around other people. Around the same time, Hans Asperger (1944) identified a form of autism in children with average intelligence who experienced social and communication challenges. During the 1970s, research on twins by Folstein and Rutter (1977) emphasized the significant genetic component of autism. Legal and educational frameworks also evolved, including the Individuals with Disabilities Education Act (IDEA) of 1975, which ensured free and public education for children with disabilities, and later amendments promoting inclusion in the Least Restrictive Environment (IDEA, 2004).

Educational and Social Interventions for ASD

Education is now considered the most effective intervention for children with autism, encompassing not only academics but also socialization, adaptive skills, language, communication, and behavioral support. Effective strategies for enhancing social and communicative abilities include video modeling, visual cues, priming, social stories, and peer-mediated interventions. Video modeling allows children to learn and generalize social behaviors by observing others, while visual supports

aid comprehension, transitions, and independent task completion. Priming prepares students for upcoming activities, reducing anxiety and improving engagement. Social Stories and peer-mediated interventions help children anticipate social situations and promote interaction with peers, fostering inclusion and skill development (Nikopoulos & Keenan, 2007; Machalicek et al., 2008; Cole, 2015).

Behavioral and Academic Interventions for ASD

Behavioral approaches, such as Applied Behavior Analysis (ABA), Pivotal Response Training (PRT), and Early Intensive Behavioral Intervention (EIBI), focus on shaping desired behaviors, reducing problem behaviors, and teaching new skills. Strategies like adult proximity and structured teaching have been shown to improve classroom engagement and generalization of skills. Academic interventions include adapted shared reading, detailed instruction, and the use of computers to enhance motivation and learning outcomes. Eclectic approaches, such as the TEACCH program, integrate social, behavioral, and academic strategies tailored to each child's needs, emphasizing structure, visual supports, and communication

tools. These interventions collectively improve social skills, reduce repetitive behaviors, and facilitate participation in learning, leading to better educational and life outcomes for children with autism (Schopler et al., 1995; Muchetti, 2013; Boyd et al., 2011).

Individualized Intervention and Early Intensive Programs

Al Hadi Institution stresses that every kid with autism has a distinct profile and communication style, requiring customized intervention approaches that address the requirements of both the child and the family. Early intervention is critical for enhancing cognitive, social, and communicative development. Highly structured educational programs based on Applied Behavior Analysis (ABA) principles are considered the gold standard for early treatment, focusing on the development of communication, social, play, and academic skills. National guidelines recommend delivering such programs year-round for at least 25 hours per week. ABA strategies, such as functional analysis and functional communication training (FCT), are widely implemented at Al Hadi to reduce disruptive behaviors while improving social and communication skills.

Age and Ability-Based Classification and Strategies

Al Hadi Institution categorizes children with autism not only by age but also by ability into three sections: Habilitative Level (ages 3–6 or children with critical cases), Academic Stage 1 (ages 6–9), and Academic Stage 2 (ages 10–12). In the Habilitative Level, strategies include play therapy to develop social interaction skills, the Name Game for learning self-introduction and peer names, emotion cards to recognize and express feelings, and calm-down drawers with tactile toys to manage sensory overload and stress. At Academic Stage 1, children engage in activities like aromatherapy-based exercises for social problem-solving, grounding techniques to maintain focus, incorporating special interests into lesson plans to increase engagement, and the “Just Like Me” activity to foster peer connections.

Advanced Strategies for Older Children

At Academic Stage 2, interventions become more sophisticated, including autism awareness activities such as bulletin boards, the DIR (Developmental, Individual Differences, Relationship-Based) model to address social-emotional, cognitive, and motor development

through floor time and play, and the Picture Exchange Communication System (PECS) for augmentative communication. While PECS effectively supports communication, it requires teacher guidance and attention to ensure correct use. These strategies are complemented by structured teaching approaches that can be applied across all levels, depending on the child's abilities and learning objectives.

Structured Teaching Practices

Structured teaching at Al Hadi leverages the strengths of children with ASD to enhance independence and engagement. Four key components are used: physical structure, visual schedules, work systems, and visual supports. Physical structure organizes the classroom into clearly defined areas, helping children anticipate activities. Visual schedules provide sequences of tasks using objects, photos, or icons, improving comprehension and reducing reliance on verbal instructions. Work systems guide children through tasks step by step, promoting independence and task completion. Visual supports give tangible cues to facilitate understanding of multi-step activities, enabling students to focus on key steps and apply learned skills in real-

life contexts, such as setting a table or identifying recyclable items.

Role of Families

Raising a child with autism spectrum disorder (ASD) presents numerous challenges for families, yet parents can play a pivotal role in their children's education. By learning strategies to support and guide behavior, parents can positively influence their child's development. Access to accurate information about ASD, evidence-based teaching methods, and community support enables families to participate effectively in their child's learning journey. Parents are often the first to notice developmental concerns and advocate for diagnosis, interventions, and tailored educational resources, which significantly benefits the child's overall progress (Gallagher, 2001). While some families cope well, others experience considerable stress due to the complex demands of supporting a child with ASD (Bristol et al., 1988; Harris, 1994).

Parental Involvement Strategies

Research highlights several ways families can actively engage in supporting children with autism. Techniques such as individualized problem-solving, in-home training, and instructional sessions have proven

beneficial. For instance, teaching parents to implement Pivotal Response Training (PRT) as part of ABA programs has been shown to improve parent-child interactions, reduce stress, and enhance communication (Koegel et al., 1996). Epstein (1991) delineated six critical characteristics of parental involvement: effective parenting, communication with educators, volunteering within the educational institution, facilitating learning at home, engaging in school decision-making, and working with the community. Moreover, parents can also apply structured instructional approaches like TEACCH at home, extending learning beyond the classroom (Ozonoff & Cathcart, 1998).

Role of Teachers

Teachers play a critical role in facilitating learning for students with ASD, but they often face challenges due to social and communication difficulties inherent to these students (Boutot, 2010; Emam & Farrell, 2010). To promote independence and academic success, educators must adopt innovative instructional strategies tailored to individual needs. Research indicates that teachers frequently experience stress when managing the diverse needs of children with autism, while teaching assistants

often perceive these responsibilities more positively (Parsons & Lewis, 2009). Supporting teachers through training and resources is essential to maintain effective teacher-student relationships and foster positive learning outcomes.

Collaboration Between Parents and Teachers

Effective collaboration between families and educators is vital for maximizing student outcomes. Parents often bring knowledge of home strategies and high expectations, which can sometimes conflict with classroom realities or teacher perceptions. Despite its recognized importance, true collaboration is often limited due to logistical challenges, time constraints, or differing perspectives on parental roles (Abel, 2012; Epstein & Dauber, 1991; Margaritoiu & Eftimie, 2011). Research emphasizes the need for professional development programs that train teachers to communicate effectively with families, understand the stresses they face, and foster meaningful engagement in their child's education.

Summary and Recommendations

Students with ASD commonly experience difficulties in social, behavioral, and academic domains, and a variety of evidence-based strategies

have proven effective in addressing these challenges, including ABA, PRT, TEACCH, video modeling, social stories, and structured computer-based learning. Structured and visually supported teaching methods maximize learning and skill generalization, particularly when interventions are individualized and implemented across natural settings. Collaborative partnerships between families and teachers, supported by training programs and workshops, are essential to improving student engagement, academic success, and social development. Continued research and implementation of best practices hold the potential to enhance the quality of life and educational outcomes for children with autism (de Bruin et al., 2013; Busby et al., 2012; Unal & Unal, 2014).

Methodology

The study involved three participant groups:

Teachers: 15 teachers completed a survey on their beliefs and practices; 10 of these also participated in in-depth interviews.

Students: One student from each grade (1 through 6) was selected for focused observation, totaling 6 students. Their progress was tracked via Individualized Education Plans (IEPs).

Parents: 9 mothers of children with ASD participated in interviews to share their experiences and challenges.

Data Collection Instruments:

Teacher Questionnaire: Collected demographic data and information on teachers' knowledge of ASD, awareness of strategies, and their perceived effectiveness.

Interviews (Teachers & Parents): Semi-structured interviews provided qualitative data on teaching methods, challenges, and personal experiences.

Observations: The researcher observed the 6 focus students in their classrooms over approximately three months (March to May). Data from their IEPs—including diagnostic, October, February, April, and final evaluations—were analyzed to measure progress in four key domains.

Data Analysis & Ethics

Quantitative Analysis: Data from the teacher surveys and student IEP evaluations were analyzed using the Statistical Package for the Social Sciences (SPSS). A Paired Samples t-test was used to compare student performance before and after the intensive application of educational strategies, determining

if the observed improvements were statistically significant.

Qualitative Analysis: Interview transcripts from teachers and parents were analyzed using Thematic Analysis. This process involved transcribing, coding, and identifying recurring themes and patterns in the participants' responses.

Ethical Considerations: The study received approval from the university's Institutional Review Board (IRB). Consent was obtained from Al Hadi Institution, and all participants were informed about the study's purpose. Anonymity and confidentiality were maintained for all participants.

Results and Discussion

The analysis of parent interviews revealed four major themes regarding the barriers they face:

Developmental and Educational

Awareness and Support:

Lack of Community Awareness: Widespread stigma and misunderstanding of autism, often confused with other conditions like Down syndrome.

Lack of Parental Knowledge and Support: Parents feel ill-equipped and desperate for training and guidance on how to help their children at home.

Need for Family and Community

Support: Support groups and organizations provide crucial emotional and informational resources.

The Education System:

Inaccessibility to Schooling: Finding an appropriate school placement is extremely difficult, with few specialized options available.

Long Waiting Lists: Children often wait for years to get a spot in a suitable school, delaying critical intervention.

Need for More Facilities: There is a severe shortage of schools and resources to meet the growing number of children with ASD.

Parent Interviews & Teacher

Interviews (Challenges)

Capabilities of Teachers with

Specialized Training:

Inadequate Teacher Training: Parents reported that many teachers lack the specific skills and knowledge needed to effectively educate children with autism.

Teachers' Negative Approach: Some parents reported instances of neglectful, aggressive, or maltreating behavior from teachers.

Financial Needs:

High Costs: The financial burden is immense, covering private schooling, therapies, and sometimes

needing to relocate to a more suitable environment.

Difficulty Coping: Many families struggle to afford the necessary services, with some unable to access speech therapy or other interventions.

Teacher Interview Results

(Challenges):

Interviews with teachers identified three overarching themes for barriers to learning:

Student Behaviors and Abilities: Anxiety, sensory issues, attention difficulties, and social-communication deficits directly impact a student's ability to engage in learning.

Academic Environment: Large class sizes, limited resources, and a lack of structure can hinder effective support. The importance of visual schedules and a predictable routine was emphasized.

Teacher Skills and Qualities: Teachers stressed the need for deeper knowledge of ASD, the importance of understanding each child individually, and the value of strong relationships with both students and their parents.

Teacher Questionnaire &

Observations

The teacher questionnaire provided the following insights:

Qualifications: 40% held a Bachelor's in Special Education, 13% a Master's, 20% a Technical Superior (T.S.), and 27% other certificates.

Knowledge of ASD: The majority (10 out of 15) demonstrated excellent knowledge of autism characteristics.

Strategy Awareness and Use: All teachers reported being aware of, having used, and believing in the effectiveness of a wide range of strategies (including Peer Tutoring, Visual Schedules, Social Stories, PMI, ABA, PECS, Priming, and Video Modeling).

Recommended Strategies: When asked for the most effective strategy, teachers most frequently recommended Social Stories, followed by PECS and the TEACCH approach.

Observations - General Findings:

Classroom observations and IEP analysis showed **remarkable improvement** across all six students in the four key domains: Language/Communication, Cognitive/Academic, Social/Behavioral, and Sensory-Motor skills. Students showed progress in reading, writing, following instructions, self-care, social interaction, and emotional regulation after consistent application of tailored educational strategies.

Quantitative Analysis of Student Performance

To statistically validate the observations, a Paired Samples t-test was conducted for each student across all four domains. The test compares the mean scores from the diagnostic evaluation (before) to the final evaluation (after). The results were consistent and overwhelmingly positive across all six grades.

Example from Grade 1:

L a n g u a g e /
Communication: p-value = 0.000

Cognitive Skills: p-value = 0.000

Social/Behavioral: p-value = 0.000

Sensory-Motor: p-value = 0.001

Interpretation: In all cases, the p-value was less than 0.05. This means the probability that the improvement happened by chance is extremely low. Therefore, the null hypothesis (H_0)—that educational strategies have no effect—is rejected. The data provides statistically significant evidence that the use of integrated educational strategies led to a substantial improvement in student performance.

This pattern was repeated for each of the six students, confirming the effectiveness of the interventions.

Research Question 1 (Student Progress)

The findings from the observations, IEP analysis, and statistical tests provide a powerful and conclusive answer to the first research question. The use of educational strategies is highly helpful and beneficial in meeting the requirements of children with autism at Al Hadi Institution.

The study demonstrates that a multi-faceted approach, incorporating strategies like ABA, TEACCH, PECS, Social Stories, and visual supports, leads to significant, measurable gains. The Paired t-test results for all students in all domains (all with p-values of 0.000 or 0.001) offer robust quantitative proof that these strategies are effective in improving performance academically, behaviorally, and communicatively.

Research Question 1 (Specific Student Gains)

The qualitative data from IEPs illustrates what these statistical improvements look like in practice:

Academic/Cognitive: Students showed progress in reading words and texts, writing, counting, sorting, categorizing, and understanding concepts.

C o m m u n i c a t i o n / Language: Students expanded their vocabularies, began using simple sentences, responded to questions,

and used systems like PECS to make requests.

Social/Behavioral: Students developed self-help skills (handwashing, dressing), learned to follow classroom routines, began interacting with peers, and expressed their feelings more appropriately.

Sensory-Motor: Students improved fine and gross motor skills, body awareness, and their ability to handle sensory input.

This confirms that a structured, individualized, and strategic educational intervention is a powerful tool for developing the skills of students with ASD.

Research Question 2 (Parent Challenges)

The second research question revealed a complex set of barriers faced by parents, which can be summarized as:

Systemic Failures: An under-resourced and inaccessible education system with long waiting lists and a severe shortage of appropriate schools.

Financial Hardship: The crippling cost of private education, therapies, and related expenses, which excludes many families from necessary services.

Societal Stigma: A lack of public awareness and understanding of autism, leading to mislabeling, judgment, and isolation.

Insufficient Support: A desperate need for more training and guidance for parents themselves, as well as better-trained teachers within the school system.

These challenges create a stressful and often disheartening journey for parents, who must become fierce advocates for their children in the face of systemic obstacles.

Research Question 2 (Teacher Challenges)

The challenges reported by teachers align with and complement those of the parents:

Student-Centered Challenges: Teachers identified the core characteristics of autism (anxiety, sensory issues, communication difficulties) as primary barriers to learning, requiring constant adaptation and support.

Resource and Structural Limitations: Large class sizes, a lack of teaching assistants, and insufficient material resources make it difficult to provide the individualized attention that students with ASD require.

Need for Professional Development: Teachers expressed a need for more specialized training in autism-specific strategies and for more opportunities to collaborate with parents and other professionals.

The convergence of parent and teacher perspectives underscores that the challenges are multifaceted, involving the child, the family, the school, and society at large.

Conclusion & Implications

Conclusion:

This study successfully achieves its two main objectives. First, it provides compelling evidence, both quantitative and qualitative, that the application of integrated educational strategies (such as ABA, TEACCH, and Social Stories) has a profoundly positive effect on the academic, behavioral, and social-communicative performance of students with autism at Al Hadi Institution. The null hypothesis is rejected.

Second, it illuminates the significant barriers faced by parents and teachers, including financial strain, an inadequate education system, lack of community awareness, and insufficient teacher training and resources.

Implications:

The findings have several key implications:

For School Administrators: Invest in ongoing, high-quality training for teachers in evidence-based practices for ASD.

For Policymakers: Advocate for policies that increase funding for

special education, create more school placements, and support community awareness campaigns to reduce stigma.

For Teacher Training Programs: Incorporate more comprehensive coursework and practical experiences related to autism and family collaboration.

For Parents and Support Groups: Use these findings to advocate for systemic changes and increased support services.

Recommendations & Final

Summary

Recommendations:

Based on the study's conclusions, the following actions are recommended:

Increase Resources: The Lebanese government and private sector should invest in expanding the number of public and private schools with specialized programs for students with ASD.

Enhance Teacher Training: Mandatory and ongoing professional development in autism-specific strategies should be provided for all special education teachers.

Support Families: Establish and fund support centers that provide parents with training, counseling, and financial assistance.

Promote Public Awareness: Launch national

awareness campaigns to increase understanding and acceptance of autism.

Foster Collaboration: Develop structured programs to improve communication and collaboration between schools and families.

Final Summary:

This thesis demonstrates that with the right educational strategies, students with autism in Lebanon can

achieve significant growth. However, this potential is currently hindered by a system struggling with resource limitations, lack of awareness, and insufficient support for teachers and families. By implementing the recommended changes, stakeholders can work towards creating an educational environment where every child with autism has the opportunity to thrive academically, behaviorally, and socially.

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