

BEKMURAT AIDOS*, DUISSEKEYEVA NURGUL

Kyzylorda University named after Korkyt ata (Kyzylorda, Kazakhstan)

*Address of correspondence: Aidos Bekmurat, Educational program of «Pedagogy, psychology and methods of primary education», Kyzylorda University named after Korkyt Ata, Tole Bi Str., 36, Kyzylorda, 120000, Republic of Kazakhstan, <https://orcid.org/0000-0002-1315-5007>
E-mail address: bekaidos61@gmail.com / Tel.: +77474567106

The Potential of ABA Therapy in Supporting the Development and Correction of Children with Special Educational Needs in Kazakhstan

Abstract

Introduction. This study addresses the potential of Applied Behavior Analysis (ABA) therapy as a developmental and corrective support tool for children with special educational needs (SEN) in Kazakhstan. While ABA has been widely studied internationally, its application within Kazakhstan's inclusive education framework remains limited, creating a gap between global scientific evidence and national practice: methodology *and Methods.* The research employed a theoretical-methodological review, analyzing international behavioral science literature and Kazakhstan's national classification of SEN learners. Sources were selected to evaluate how ABA principles can be adapted for three SEN groups: children with psychophysical impairments, children with specific learning difficulties and behavioral-emotional problems, and children experiencing socio-cultural, linguistic, or economic barriers. *Results.* The review established that ABA has a strong evidence base in autism, intellectual disabilities, and behavior regulation, while also demonstrating promising applications in speech and motor impairments, learning disorders, and culturally diverse populations. Despite this relevance, ABA remains underutilized in Kazakhstan due to limited professional training, insufficient contextual adaptation, and misconceptions about its scope beyond autism. *Scientific novelty.* The study contributes to the expansion of ABA knowledge by contextualizing it within Kazakhstan's SEN classification system and inclusive education agenda. It extends the global discourse by demonstrating ABA's applicability not only as a clinical intervention but also as a pedagogical framework adaptable to diverse learner needs. *Practical significance.* The findings underscore the necessity of localized ABA models, culturally responsive implementation, and integration of behavioral strategies into teacher training programs. This approach can strengthen inclusive practices and improve developmental and learning outcomes for children with SEN in Kazakhstan.

Keywords: applied behavior analysis, inclusive education, special educational needs, Kazakhstan, behavior intervention.

Introduction. The evolution of inclusive education over recent decades has signaled a global shift toward evidence-based, individualized interventions that uphold the rights and developmental potential of all learners, including children with disabilities. Among the most empirically grounded and systematically applied frameworks within special education is Applied Behavior Analysis (ABA), a discipline anchored in the principles of operant conditioning and dedicated to improving socially significant behaviors through systematic observation, measurement, and environmental manipulation (Cooper et

al., 2007). Originating from the experimental analysis of behavior, ABA matured into an applied science through foundational research in the mid-20th century, shaping behavioral interventions across developmental, clinical, and educational domains (Morris et al., 2013).

ABA's methodological rigor lies in its reliance on observable, measurable behaviors and its focus on establishing functional relationships between environmental variables and behavioral outcomes. Core techniques, such as positive reinforcement, shaping, chaining, extinction, and prompting, enable structured skill acquisition and behavioral modification

in diverse populations (Dyer, 2020). Although initially developed and validated within the context of ASD, where interventions like Early Intensive Behavioral Intervention (EIBI) have demonstrated substantial efficacy in promoting cognitive and communicative development (Lovaas, 1987), ABA's scope is increasingly being reconsidered in light of its theoretical adaptability and empirical robustness across various developmental profiles (Matson & Neal, 2009; Lanovaz et al., 2017).

In Kazakhstan, the legal and institutional landscape provides a supportive yet underutilized framework for implementing such behavioral methodologies. Adilet (2002) affirms every child's right to individualized developmental and educational support, while Presidential Decree No. 1143 of 2024 on the Concept for the Development of Inclusive Education reaffirms the national commitment to expanding scientifically grounded, adaptive educational environments (Adilet, 2002; 2024).

The 2019 methodological guidelines developed by the National Scientific and Practical Center for Correctional Pedagogy classify children with special educational needs into three categories:

1. Children with pronounced and complex developmental disorders requiring special (alternative) curricula and intensive long-term support.
2. Children with moderate, often combined impairments who can master adapted general education programs with specialized assistance.
3. Children with milder developmental deviations who study in mainstream schools but still require pedagogical and psychological support to overcome barriers to learning (Yelisseyeva & Yersarina, 2019).

While the first group has traditionally been the focus of targeted special education interventions, the second and third categories – which comprise the majority of children integrated into general education environments – often lack methodologically sound, evidence-based correctional strategies. Current support models emphasize monitoring and general guidance, but do not provide a structured behavioral framework capable of addressing specific learning and behavioral challenges.

This represents a critical gap in practice that ABA therapy is uniquely positioned to address. Given its emphasis on skill-building, individualized planning, and measurable outcomes, ABA can offer a scalable and adaptable intervention model for children across all three SEN categories in Kazakhstan. Particularly for the second and third groups, where professional consensus on effective methods remains underdeveloped, ABA provides a theoretically robust, research-backed approach that aligns with international standards of inclusive and corrective education. Moreover, Kazakhstan's growing institutional emphasis on inclusive practice highlights the urgency of expanding the methodological toolkit available to educators and school-based support teams. ABA's ecological validity, generalization strategies, and strong outcome evidence make it a compelling candidate for broader implementation provided adaptations are culturally and ethically aligned with the local context (Dyer, 2020; Cooper et al., 2007).

Accordingly, this article undertakes a comprehensive theoretical and methodological review of ABA therapy's applicability in the corrective and developmental education of children with special educational needs in Kazakhstan. By integrating seminal behavioral science literature with national legal mandates and pedagogical priorities, the review aims to articulate both the potential and limitations of ABA as a corrective tool across the full spectrum of SEN categories. The overarching research question guiding this inquiry is: What is the potential of ABA therapy in supporting the development and correction of children with special educational needs in Kazakhstan's inclusive education system?

Materials and Methods. This study employed a theoretical-methodological review design, focusing on the qualitative analysis of both international behavioral science literature and national educational policy documents from Kazakhstan. The purpose of the review was to identify the potential applications of Applied Behavior Analysis (ABA) therapy in supporting children with special educational needs (SEN) and to evaluate the relevance of

these methods within Kazakhstan's inclusive education framework.

The review was based on two main groups of sources:

1) International literature: peer-reviewed journal articles, systematic reviews, and foundational ABA texts addressing interventions across autism spectrum disorder (ASD), intellectual disabilities, speech and sensory impairments, motor difficulties, and emotional-behavioral disorders.

2) National sources: Kazakhstan's legislative acts, ministerial guidelines, and the 2019 methodological guide by the National Scientific and Practical Center for Correctional Pedagogy, which provides a classification of SEN categories.

The primary data collection tools consisted of electronic databases and institutional repositories. Searches were conducted using databases such as Scopus, Web of Science, Google Scholar, and regional academic portals. Keywords included combinations of "Applied Behavior Analysis", "ABA therapy", "special educational needs", "inclusive education", "Kazakhstan", "learning difficulties", and "behavioral intervention".

The literature search covered the period 1980-2024, with emphasis on the most recent two decades to ensure contemporary relevance. Sources were selected through a two-step process:

- initial screening of titles and abstracts to identify studies related to ABA and SEN.

- full-text review to determine alignment with the aims of the study, particularly for applicability beyond autism and within inclusive education contexts.

Inclusion criteria were: (1) studies presenting behavioral frameworks (e.g., DTT, NET, FBA); (2) research with empirical or systematic evidence of ABA applications; (3) national policy and methodological documents directly relevant to Kazakhstan.

Exclusion criteria were: (1) studies focusing solely on medical or pharmacological treatment; (2) reports based on anecdotal evidence without behavioral grounding; (3) sources lacking direct relevance to educational or corrective contexts.

A qualitative thematic analysis approach was applied. Selected literature was analyzed to identify recurring themes regarding ABA's effectiveness, adaptability, and limitations. The analysis proceeded in three steps:

1. Categorization of findings according to Kazakhstan's SEN groups:

Group I: Children with physical and mental impairments (intellectual disability, motor impairments, speech and hearing disorders, emotional regulation problems).

Group II: Children with specific learning difficulties and behavioral/emotional issues (dyslexia, ADHD, aggression, or anxiety).

Group III: Children whose challenges stem from social, linguistic, or economic conditions (migrants, children from at-risk families, or non-native speakers).

2. Comparison of international evidence with national policy and practice in Kazakhstan.

3. Synthesis of theoretical and practical insights to articulate the potential role of ABA in Kazakhstan's inclusive education system.

This structured methodology allowed for a comprehensive understanding of how ABA therapy can be adapted and implemented for diverse learner populations in Kazakhstan.

Results. This section presents a structured synthesis of findings from international scholarly literature and Kazakhstan's national methodological guidelines regarding the potential application of ABA therapy for children across the three officially defined categories of special educational needs (SEN). Each subsection details the alignment between ABA strategies and the educational-corrective needs of children in the respective group, with emphasis on instructional, behavioral, communicative, and contextual dimensions.

ABA is an effective approach for supporting children with intellectual and developmental disabilities (IDD). A systematic review by Ho et al., (2021) found that ABA-based interventions improved communication, social, and daily living skills in young children with IDD, even in the absence of autism. The review highlighted those strategies such as reinforcement, prompting, and structured teaching produced consistently positive outcomes across multiple

developmental areas. Further, Lucock et al., (2019) emphasized that ABA can be adapted for individuals with intellectual disabilities who also face age-related cognitive decline, showing the flexibility of behavior analytic methods across the lifespan. These findings support the use of ABA not only for behavior management but also for long-term learning and adaptive development. Newer approaches, such as AI-assisted ABA systems, offer promising directions for improving precision and accessibility. Ghafghazi et al., (2021) suggested that combining artificial intelligence with ABA may help personalize interventions in real time, which could be especially useful in schools with limited resources and professional support. Together, these studies suggest that ABA is a structured, adaptable, and evidence-based method that aligns well with the needs of Group I children in Kazakhstan, those with complex psychophysical impairments requiring individualized correctional education.

ABA is one of the most widely studied and evidence-based approaches for children with ASD. Over the past several decades, a large number of research studies and clinical trials have confirmed the effectiveness of ABA in improving communication, behavior, and learning outcomes for children with autism. As a result, ABA has become a leading model for early intervention and developmental support in many countries.

In the context of Kazakhstan, however, ABA is still in the early stages of formal recognition and implementation. According to Kosherbayeva et al., (2024), children with autism often face delays in diagnosis and limited access to qualified intervention specialists. While some parents and private centers apply ABA strategies, there is no systematic integration of ABA into the national education system. One of the key recommendations from recent policy studies is to adapt ABA therapy to the Kazakhstani cultural, linguistic, and institutional context, making it more accessible and relevant to local families and educators. To achieve this, Kazakhstan must invest in training programs for teachers, psychologists, and special educators. Schools need to become spaces where ABA methods are

not only applied with fidelity but also taught as part of professional development. By building institutional capacity and creating Kazakh language resources, Kazakhstan can move toward inclusive, evidence-based education for children with ASD and related emotional or self-regulation difficulties. In summary, while ABA for autism is well supported by international research, Kazakhstan now faces the important task of developing localized ABA models, creating educational infrastructure, and preparing professionals who can apply these methods effectively within the national education system.

Although Applied Behavior Analysis (ABA) has gained wide acceptance for addressing the developmental needs of children with autism and intellectual disabilities, its application to children with speech, hearing, and visual impairments remains significantly underrepresented in both international scholarship and Kazakhstani educational practice. Despite its proven flexibility and data-driven structure, ABA's use in these populations is often limited by modality-specific barriers and a lack of interdisciplinary integration.

For children with speech and language impairments, ABA methods are commonly paired with augmentative and alternative communication (AAC) tools to build functional communication. Interventions such as mand training, tact instruction, and prompt fading are often used in combination with systems like speech-generating devices (SGDs). Rispoli et al., (2010) and Shillingsburg et al., (2019) have demonstrated that SGDs can effectively support expressive communication in children with developmental disabilities, facilitating both spontaneous and contextually appropriate speech acts. Moreover, Byiers and Reichle (2015) argue for the integration of behavior analytic frameworks in AAC instruction to ensure that communication goals remain functional, socially relevant, and measurable – core ABA principles that align well with the needs of children in Group I and II of Kazakhstan's SEN classification.

In the context of hearing impairments, ABA interventions have been applied with

adaptations such as gesture-based modeling, visual schedules, and sign-supported instruction. These strategies promote rule-following, behavior regulation, and routine acquisition in inclusive classroom settings. However, the research base in this area remains modest, and effective application often depends on collaboration with specialists in deaf education who can tailor ABA methods to fit the child's primary communication modality (Byiers & Reichle, 2015).

Children with visual impairments face additional challenges in ABA-based instruction due to the inherently visual nature of many behavioral supports, such as picture cues and token systems. Nonetheless, adaptations using tactile prompts, auditory stimuli, and verbal discriminative cues have shown promise. Clark-Bischke and Crowley (2011) emphasize that ABA principles can be successfully modified to teach academic, orientation, and self-care skills to students with visual impairments when supported by proper environmental modifications. In one example, Desrochers et al., (2014) applied background music as an antecedent modification to reduce problem behaviors in an adolescent who was blind with multiple disabilities, highlighting the potential of ABA's functional approach even in complex cases.

Despite these promising findings, it is clear that ABA for children with sensory impairments remains underdeveloped, both internationally and especially in Kazakhstan. There is currently no structured national model for implementing behavior analytic practices for children with speech, hearing, or visual challenges in inclusive classrooms. Most services remain confined to specialized institutions, and teachers often lack both the training and the resources to adapt ABA tools to these unique learner profiles.

In conclusion, while the foundational principles of ABA, such as reinforcement, stimulus control, and individualized instruction, are inherently adaptable, systematic research, national adaptation, and interdisciplinary collaboration are required to unlock their full potential for children with sensory impairments. Kazakhstan's inclusive education

reform presents an opportunity to pilot and evaluate such adaptations across varied school environments. The application of Applied Behavior Analysis (ABA) for children with motor impairments – such as cerebral palsy, neuromuscular disorders, or physical disabilities affecting mobility and coordination is comparatively limited in both empirical research and practical implementation. Despite this gap, ABA holds theoretical and practical potential when appropriately adapted to meet the functional, educational, and behavioral needs of this population.

Motor impairments typically affect voluntary movement, posture, and sometimes speech or fine motor coordination, but they do not inherently limit cognitive abilities. Thus, children with such conditions often benefit from structured behavioral interventions when these are delivered with careful consideration of physical accessibility, assistive technology, and individual communication needs. ABA can contribute by helping children learn alternative ways to engage in academic, self-help, and social routines – especially when tasks are broken into manageable components through task analysis, and when reinforcement is adapted to their sensory and motor capabilities.

In educational settings, ABA-based strategies may support:

- 1) Participation in classroom routines through shaping and chaining techniques;
- 2) Development of adaptive behavior, such as using assistive devices or requesting help;
- 3) Reduction of escape-maintained behaviors related to task difficulty or physical discomfort;
- 4) Functional communication training (FCT) when motor limitations restrict verbal or gestural expression.

Crucially, the success of ABA with this population depends on interdisciplinary collaboration particularly with physical therapists, occupational therapists, and assistive technology specialists. These professionals can help modify materials and reinforce strategies that align with the child's motor capabilities. For instance, a child unable to perform a pointing response in a standard DTT session may require eye-gaze tracking, switch access,

or customized motor prompts as part of the ABA intervention. In summary, while the evidence base for ABA in motor impairments is still emerging, the flexibility and structure of ABA make it a potentially valuable tool for supporting learning and behavior in this group, particularly when used as part of a team-based, adapted intervention. In Kazakhstan, there is a strong need to pilot ABA-informed programs for children with motor impairments and to incorporate such approaches into inclusive teacher preparation. Children classified under Group II in Kazakhstan's special educational needs (SEN) framework include those with specific learning difficulties (SLDs) such as dyslexia, dysgraphia, and dyscalculia. These children possess average intellectual abilities but struggle with acquiring core academic skills, particularly in reading, writing, and mathematics. Without targeted support, these challenges can lead to persistent academic underperformance, low self-esteem, and disengagement from school.

Although ABA is often associated with behavioral intervention, its structured, data-driven approach has proven increasingly relevant to academic skill acquisition. ABA procedures such as task analysis, prompt fading, and positive reinforcement can help children with SLDs master foundational academic tasks by breaking them into manageable steps and reinforcing correct responses over time. For example, studies on reading disabilities have shown that behaviorally based interventions significantly enhance reading fluency, comprehension, and decoding when they include reinforcement, modeling, and repetition (Galuschka et al., 2014; Roberts et al., 2015). In a study on dyslexic learners, Ooko and Aloka (2021) found that behavior modification techniques, including tangible rewards and verbal praise, led to improved reading engagement and skill retention in inclusive classrooms. These findings suggest that reinforcement strategies rooted in ABA can be effective for reading-related challenges common in Group II learners. Similarly, mathematical learning difficulties, including dyscalculia, can be addressed through structured behavioral instruction. Giordano

et al., (2023) emphasized that cognitive and stepwise instructional programs grounded in repetition and feedback, features central to ABA can improve number sense, arithmetic fluency, and problem-solving strategies in students with persistent math difficulties.

Despite this growing body of international evidence, ABA strategies are rarely integrated into academic instruction in Kazakhstan. Children in Group II often receive generalized psychological support or subject-specific tutoring that does not systematically apply behavior-analytic methods. This gap is further widened by the lack of teacher training in evidence-based academic interventions, such as precision teaching or ABA-informed curriculum adaptation. In sum, ABA offers a powerful framework for addressing the educational barriers faced by children with SLDs, especially when integrated into inclusive classroom practices. Its systematic, skills-based approach aligns well with the individualized support needs of Group II children. However, realizing this potential in Kazakhstan will require investments in teacher training, curriculum adaptation, and interdisciplinary collaboration.

Children classified in Group II within Kazakhstan's national SEN framework often display emotional and behavioral difficulties, including oppositional behavior, aggression, noncompliance, avoidance, anxiety, and difficulties with emotional regulation or peer relationships. These challenges may stem from a range of factors, such as neurodevelopmental vulnerabilities, family dysfunction, trauma, or educational mismatch – yet they often go unaddressed or are misinterpreted as disciplinary problems within school settings.

ABA offers a structured, evidence-based framework for understanding and supporting these learners. A cornerstone of ABA intervention in this domain is the Functional Behavior Assessment (FBA), which identifies the antecedents and consequences that maintain problematic behavior. This process leads to the development of Behavior Intervention Plans (BIPs), which focus on reducing maladaptive behaviors and teaching functionally equivalent replacement behaviors (Inoue et al., 2021).

For example, a child engaging in aggressive outbursts to escape academic tasks may be taught to request a break or use a calm signal.

Meta-analytic findings support the efficacy of such approaches. Gersib and Mason (2023) reviewed behavioral interventions in self-contained settings and found moderate to large effect sizes for ABA-based strategies targeting students with emotional and behavioral disorders. These strategies included differential reinforcement, token economies, self-monitoring, and systematic prompting, which improved not only behavior but also academic engagement and social interaction. Similarly, Nuske et al., (2023) emphasized that children with autism spectrum disorder and co-occurring emotion dysregulation benefit most from ABA interventions that incorporate graded emotional regulation supports, visual cues, and reinforcement tailored to the child's sensory and cognitive profile. Although their review focused on autism, the findings offer critical insights for addressing emotionally driven behaviors in a broader population, including learners in Group II.

In Kazakhstan, however, systematic behavior assessment and intervention remain underdeveloped in general education settings. Children with behavioral challenges are often labeled as “undisciplined” rather than recognized as needing structured support. Teachers frequently lack training in FBA or the tools to implement consistent, proactive behavioral interventions. As a result, behavioral incidents are often addressed through punitive measures or parental discipline, missing the opportunity to build emotional and behavioral competence through positive, function-based strategies.

In conclusion, ABA provides a well-established and adaptable methodology for addressing emotional and behavioral problems in inclusive classrooms. For children in Group II, who frequently fall between clinical thresholds and educational norms, ABA can play a key role in promoting self-regulation, peer relationships, and academic readiness. To harness this potential, Kazakhstan must invest in teacher training and integrate behavior analysis into school-based support systems.

Children in Group III of Kazakhstan's special educational needs (SEN) classification represent a diverse population whose difficulties in education stem not from inherent cognitive or developmental disorders, but from socio-cultural, linguistic, and economic factors. These children include those from low-income or socially vulnerable families, migrant or refugee backgrounds, and households where the language of instruction is not spoken. Despite having the potential to succeed academically, many of these learners face persistent barriers to participation and achievement in general education settings due to systemic inequities, language mismatches, and cultural dissonance. While Applied Behavior Analysis (ABA) has traditionally been associated with developmental and behavioral disorders, its structured, individualized, and skill-based principles can also be effectively adapted to support children facing environmental and socio-cultural disadvantages. ABA strategies, such as modeling, shaping, positive reinforcement, and task analysis can help teach school readiness behaviors, classroom routines, and social communication to children who may not have acquired these skills due to limited prior exposure or cultural mismatch. However, the implementation of ABA in such contexts requires significant cultural sensitivity and contextual adaptation.

As Dennison et al., (2019) emphasize, delivering ABA interventions to culturally and linguistically diverse families demands flexibility in communication style, acknowledgment of family structure and roles, and inclusion of interpreters or culturally competent mediators when needed. In the context of Kazakhstan, where children from migrant families or ethnic minorities may be unfamiliar with the behavioral norms expected in Kazakh or Russian speaking schools, such adaptations are especially critical. Furthermore, Castro-Hostetler et al., (2023) highlight those cultural values such as respect for authority, familial hierarchy, and community belonging must be respected when designing and delivering ABA services. ABA must not impose rigid Western behavioral norms but instead co-create learning pathways with families in ways that honor their values.

Rotheram et al. (2022) similarly emphasize that parent training programs rooted in ABA are more successful when they are seen as culturally acceptable and when parents feel respected and empowered, rather than judged. In Kazakhstan, Group III children often suffer from misinterpretation perceived as “difficult” or “low achieving” when, in reality, they lack equitable access to language-appropriate instruction and individualized support. Integrating ABA into support for this group should involve redefining it not as a correctional tool, but as a flexible instructional method to foster inclusion, engagement, and behavioral competence. To do so, teachers and school-based professionals must be trained not only in ABA techniques but in culturally responsive application of those techniques, using tools and reinforcers that are meaningful in the local context. While ABA has significant potential for use with Group III students, its successful implementation will require systemic change, including professional development, localized material development, and a commitment to social equity in educational access and behavioral support.

Discussion. The present review sought to examine the potential of ABA therapy in supporting the development and correction of children with SEN in Kazakhstan. By synthesizing international literature and national policy documents, the analysis revealed that ABA represents not only a well-established clinical and educational framework but also a methodology with significant yet underutilized potential in the Kazakhstan context. This discussion interprets the findings in light of global evidence, highlights gaps in national implementation, and explores the implications for inclusive education.

The review confirmed that ABA has a strong evidence base in supporting children with ASD and intellectual disabilities. Decades of research, including large-scale systematic reviews and meta-analyses, demonstrate the effectiveness of ABA in improving communication, cognitive functioning, adaptive skills, and behavior regulation (Lovaas, 1987; Cooper et al., 2007; Ho et al., 2020). These findings establish

ABA as one of the most empirically validated approaches in the field of special education worldwide.

Beyond autism, emerging studies point to the adaptability of ABA for a broader range of developmental and learning challenges, including speech and hearing impairments, motor difficulties, specific learning difficulties (SLDs), and emotional-behavioral disorders (Byiers & Reichle, 2015; Giordano et al., 2023; Gersib & Mason, 2023). This expansion is particularly relevant for Kazakhstan, where the majority of children with SEN in mainstream schools belong to Groups II and III of the national classification, students with learning difficulties, emotional-behavioral issues, or socio-cultural and linguistic barriers, rather than only children with severe disabilities. Thus, the results underscore that while ABA is globally acknowledged as effective in autism intervention, its broader corrective and pedagogical applications should be considered in Kazakhstan’s inclusive education system.

One of the clearest findings of the review is the discrepancy between international integration of ABA and its limited presence in Kazakhstan. In countries such as the United States, Canada, and parts of Western Europe, ABA has been embedded into early intervention systems, school-based supports, and professional training programs (Matson & Neal, 2009; Dyer, 2020). By contrast, Kazakhstan lacks systematic implementation: ABA is primarily applied within private centers and by individual practitioners, with limited recognition in mainstream schools.

This gap can be explained by several factors:

1. Limited professional training : ABA is not yet widely included in teacher education or psychology curricula in Kazakhstan, which restricts the pool of qualified practitioners.
2. Conceptual misunderstandings: ABA is sometimes viewed narrowly as an autism-specific therapy, rather than a general behavioral framework applicable across disabilities and contexts.
3. Resource constraints: Schools face shortages of trained staff, financial resources, and adapted materials needed to deliver ABA-based interventions.

4. Cultural adaptation: Most ABA resources and training are imported from Western contexts, with insufficient localization to Kazakh and Russian languages or adaptation to cultural norms.

This comparison suggests that Kazakhstan is at a formative stage of ABA implementation, with a need for deliberate investment in infrastructure, professional development, and culturally responsive adaptations.

The findings have significant implications for Kazakhstan's inclusive education reform. The 2024 Presidential Decree on the Development of Inclusive Education emphasizes the need for scientifically grounded and adaptive methodologies in schools (Adilet, 2024). However, current practice still relies heavily on general monitoring and remedial guidance rather than structured, evidence-based interventions. ABA could fill this gap by providing teachers and psychologists with concrete tools for skill-building, behavior management, and individualized planning.

For Group I children (those with psychophysical impairments, including intellectual disabilities, autism, and motor or speech difficulties), ABA offers structured approaches that can enhance adaptive skills, functional communication, and classroom participation. For Group II learners (with specific learning difficulties and emotional-behavioral challenges), ABA provides techniques such as task analysis, reinforcement, and functional behavior assessment, which align with the needs of students who otherwise fall between clinical thresholds and academic expectations. For Group III students (facing socio-cultural and linguistic barriers), ABA's emphasis on modeling, shaping, and reinforcement could facilitate school readiness and social integration provided that cultural norms and family values are respected. Taken together, these applications position ABA not merely as a clinical therapy but as a pedagogical framework that can strengthen Kazakhstan's inclusive education system by offering measurable, adaptable, and individualized interventions.

Overall, this discussion emphasizes that ABA therapy offers considerable potential to

strengthen Kazakhstan's inclusive education system by providing structured, evidence-based, and adaptable methods for children across diverse SEN groups. However, realizing this potential requires addressing significant barriers, including the lack of trained professionals, limited awareness of ABA's broader applications, and the need for cultural and linguistic adaptation. With targeted investment in professional development, policy alignment, and localized research, ABA could become a cornerstone of Kazakhstan's efforts to ensure equitable and effective education for all learners.

Conclusion. This theoretical-methodological review examined the potential of ABA in addressing the developmental and corrective needs of children with SEN in Kazakhstan. The study contributes to science by broadening the scope of ABA application beyond autism, demonstrating its relevance for children with intellectual and developmental disorders, specific learning difficulties, behavioral-emotional problems, and those facing socio-cultural and linguistic barriers. The review highlights how ABA can serve not only as a therapeutic method but also as a pedagogical framework capable of strengthening inclusive education practices.

The scientific value of this work lies in contextualizing ABA within Kazakhstan's national classification of SEN and educational priorities, thereby creating a foundation for localized models of intervention. It offers a structured basis for integrating behavior-analytic methods into teacher training, curriculum adaptation, and school-based support systems. The findings also point to the importance of developing culturally responsive ABA approaches that reflect local linguistic and social realities. Overall, this study provides a new perspective on how ABA can be systematically adapted for Kazakhstan, contributing to the scientific understanding of inclusive education methodologies and offering directions for future empirical research and practical implementation. In conclusion, ABA represents a valid, adaptable, and evidence-based framework for supporting children with

special educational needs in Kazakhstan. Its effectiveness depends not only on fidelity to behavioral principles, but also on thoughtful integration into the cultural, linguistic, and institutional realities of Kazakhstani schools. With proper adaptation and systemic support, ABA can become a transformative component of the country's inclusive education movement

- enhancing equity, participation, and developmental outcomes for all learners.

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Information about the authors:

Bekmurat Aidos, PhD, senior lecturer, Korkyt Ata Kyzylorda University, ORCID ID: 0000-0002-1315-5007, e-mail: bekaidos61@gmail.com

Duissekeyeva Nurgul, PhD, senior lecturer, Korkyt Ata Kyzylorda University, ORCID ID: 0000-0002-0586-7266, e-mail: duisekeevan@gmail.com