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THE US OF ABA THERAPY METHODS FOR THE FORMATION OF POSITIVE BEHAVIOR IN PRESCHOOLERS WITH ASD: A THEORETICAL REVIEW

Abstract. The article presents a theoretical review of the use of Applied Behavior Analysis (ABA) methods for fostering positive behavior in preschool children with Autism Spectrum Disorders (ASD). The purpose of the review is to summarize current theoretical approaches and practical strategies recognized as effective in corrective-pedagogical work with this category of children. The article describes the fundamental principles of ABA, including reinforcement, extinction, and functional behavior analysis, which form the basis of intervention programs. The review analyzes proactive strategies for preventing problematic behavior, methods for teaching alternative skills, and reinforcement systems that consider children's individual interests and motivation. The article also highlights the prospects for ABA development in Kazakhstan within the framework of inclusive education policy, as well as the need for training certified specialists and developing adapted programs. The findings confirm that ABA is one of the most scientifically grounded and effective approaches for supporting the socialization, learning, and adaptive functioning of preschool children with ASD, ensuring their successful inclusion in educational and social contexts.
Keywords: applied behavior analysis; autism spectrum disorders; preschoolers; positive behavior; correctional pedagogy; inclusive education; reinforcement methods

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АСБ БАР МЕКТЕП ЖАСЫНА ДЕЙІНГІ БАЛАЛАРДА ОҢ МІНЕЗ – ҚҰЛЫҚТЫ ҚАЛЫПТАСТЫРУ ҮШІН АВА ТЕРАПИЯ ӘДІСТЕРІН ҚОЛДАНУ:ТЕОРИЯЛЫҚ ШОЛУ

Аңдатпа. Мақалада аутизм спектрлік бұзылыстары (АСБ) бар мектепке дейінгі балаларда позитивті мінез-құлықты қалыптастыру үшін қолданбалы мінез-құлық талдауы (Applied Behavior Analysis, АВА) әдістерін қолданудың теориялық шолуы берілген. Шолудың мақсаты – осы категориядағы балалармен түзете-педагогикалық жұмыс кезінде тиімді деп танылған қазіргі заманғы теориялық тәсілдер мен практикалық стратегияларды жинақтау. Мақалада АВА-ның негізгі принциптері сипатталған, олардың ішінде нығайту, сөндіру және мінез-құлықтың функционалды талдауы, бұл интервенциялық бағдарламалардың негізін құрайды. Шолуда проблемалық мінез-құлықты болдырмауға бағытталған проактивті стратегиялар, баламалы (қалпына келтіретін) дағдыларды үйрету әдістері және балалардың жеке қызығушылықтары мен мотивациясын ескеретін нығайту жүйелері талданады. Мақалада Қазақстандағы АВА әдісін инклюзивті білім беру саясаты шеңберінде дамыту перспективалары, сондай-ақ сертификатталған мамандарды даярлау және бейімделген бағдарламаларды әзірлеу қажеттілігі қарастырылған. Қорытындылар АВА-ның АСБ бар мектепке дейінгі балалардың әлеуметтенуі, оқуы және бейімделген функцияларын қолдауда ең ғылыми негізделген және тиімді тәсілдердің бірі екенін растайды, бұл олардың білім беру және әлеуметтік контекстерге сәтті интеграциялануына мүмкіндік береді.
Түйінді сөздер: қолданбалы мінез-құлық талдауы; аутизм спектрінің бұзылуы; мектеп жасына дейінгі балалар; позитивті мінез-құлық.

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ПРИМЕНЕНИЕ МЕТОДОВ АВА – ТЕРАПИИ ДЛЯ ФОРМИРОВАНИЯ ПОЗИТИВНОГО ПОВЕДЕНИЯ У ДОШКОЛЬНИКОВ С РАССТРОЙСТВОМ АУТИСТИЧЕСКОГО СПЕКТРА: ТЕОРЕТИЧЕСКИЙ ОБЗОР

Аннотация. В статье представлен теоретический обзор применения методов прикладного анализа поведения (Applied Behavior Analysis, ABA) для формирования позитивного поведения у дошкольников с расстройствами аутистического спектра (РАС). Цель обзора заключается в обобщении современных теоретических подходов и практических стратегий, признанных эффективными в коррекционно-педагогической работе с данной категорией детей. В статье описываются фундаментальные принципы ABA, включая подкрепление, угасание и функциональный анализ поведения, которые составляют основу интервенционных программ. В обзоре анализируются проактивные стратегии предотвращения проблемного поведения, методы обучения альтернативным (замещающим) навыкам и системы подкрепления, учитывающие индивидуальные интересы и мотивацию детей.В статье освещаются перспективы развития ABA в Казахстане в рамках политики инклюзивного образования, а также необходимость подготовки сертифицированных специалистов и разработки адаптированных программ. Полученные выводы подтверждают, что ABA является одним из наиболее научно обоснованных и эффективных подходов в поддержке социализации, обучения и адаптивного функционирования дошкольников с РАС, что обеспечивает их более успешное включение в образовательный и социальный контексты.

Ключевые слова: прикладной анализ поведения, расстройства аутистического спектра, дошкольники, позитивное поведение, методы подкрепления

Introduction. Introduction. Autism Spectrum Disorder (ASD) is a complex developmental condition characterized by deficits in social interaction, impairments in communication, and the presence of restricted, repetitive interests and stereotypical behaviors [1]. According to the World Health Organization, the global prevalence of ASD is approximately 1 in 100 children, which underscores the importance of developing scientifically grounded correctional and educational interventions for this category of children [2]. Preschool age is considered a critical period for the acquisition of fundamental social and adaptive skills. During this developmental stage, the child's nervous system demonstrates a high level of plasticity, making it particularly receptive to structured educational and correctional influence [3]. Research consistently shows that interventions initiated at an early age are associated with better outcomes in communication, social functioning, and learning [4].

Applied Behavior Analysis (ABA) is recognized as one of the most effective approaches to addressing the challenges faced by children with ASD. Rooted in behavioral science, ABA offers a structured and systematic method for teaching skills and modifying behavior [5]. Numerous studies and meta-analyses confirm the effectiveness of ABA-based interventions in improving communication, reducing maladaptive behaviors, and promoting independence [6].

Moreover, ABA interventions are highly versatile and can be adapted to the individual needs of each child, taking into account their unique strengths, interests, and motivational factors. These interventions often include strategies such as discrete trial training, naturalistic teaching, reinforcement systems, and functional behavior assessment, which collectively aim to enhance social, cognitive, and adaptive skills [7]. The integration of ABA within inclusive educational settings has been shown to not only improve learning outcomes but also facilitate social inclusion and peer interaction, which are critical for long-term developmental success. Despite its proven efficacy, the effective implementation of ABA requires well-trained specialists, ongoing

monitoring, and collaboration with families to ensure consistency across home and educational environments.

Given the growing prevalence of ASD and the importance of early intervention, examining the application of ABA for preschool children remains a priority for both researchers and practitioners. This study aims to explore the theoretical foundations, practical strategies, and observed outcomes of ABA-based programs for promoting positive behavior and adaptive functioning in preschoolers with ASD, highlighting its role in supporting inclusive education and holistic child development.**Main Body**.

Theoretical Foundations of ABA Therapy. ABA therapy is based on the principles of behaviorism, particularly the work of B.F. Skinner, who demonstrated that behavior is shaped by its consequences. The central principle states that behaviors followed by reinforcement are more likely to be repeated, while those followed by neutral or negative outcomes diminish over time [8]. **Key techniques of ABA include:** Positive reinforcement – providing a preferred stimulus (e.g., praise, toy, activity) to increase the likelihood of desired behavior.Negative reinforcement – removing an aversive condition following appropriate behavior [9].

Extinction – withholding reinforcement to reduce maladaptive behavior [10]. Prompting and fading – providing cues to help the child perform the correct behavior and gradually removing them. Modern ABA emphasizes ethical application, focusing primarily on positive strategies and minimizing punitive methods. This humanistic orientation helps children develop motivation and positive associations with learning [11]. Another cornerstone is functional behavior assessment. By identifying the antecedents (triggers) and consequences of behavior, specialists can determine whether the child is trying to gain access to an object, avoid a task, seek attention, or satisfy sensory needs [12]. Understanding these functions allows practitioners to replace maladaptive behaviors with socially acceptable alternatives [13]. Specifics of ABA Application in Preschool Children with ASD. Preschoolers with ASD demonstrate a set of developmental challenges, including limited eye contact, echolalia, difficulties in play skills, sensory sensitivities, and problems with skill generalization [14]. ABA interventions at this stage must be carefully adapted to meet the needs of young learners [15]. Effective approaches include: naturalistic teaching methods – embedding learning opportunities into play, meals, and daily routines. Visual supports – using schedules, picture symbols, and social stories to enhance predictability and reduce anxiety [16]. Imitation training – teaching children to copy actions, sounds, and gestures as a foundation for communication [17]. Discrete Trial Training (DTT) – structured, repetitive teaching sessions that break down skills into small, manageable steps. Generalization strategies – practicing skills across different environments, people, and materials to ensure flexible use [18]. Preschool ABA programs emphasize play-based learning. For instance, teaching turn-taking during games or using toys as reinforcers helps children acquire social skills in an engaging way. This combination of structured and naturalistic strategies maximizes effectiveness.

Strategies for Forming Positive Behavior. The central aim of ABA interventions is not only to reduce maladaptive behaviors but also to cultivate positive, socially adaptive behaviors.

1. Proactive strategies – Preventing challenging behaviors before they occur. This includes environmental structuring, visual schedules, and advance warnings about transitions.

2. Replacement behaviors – Teaching functional communication systems, such as PECS (Picture Exchange Communication System), to allow children to express needs instead of using aggression or withdrawal.

3. Reinforcement systems – Using individualized reinforcement (toys, activities, social praise) tailored to the child's unique preferences to maintain high motivation [19].

4. Social skills training – Modeling and reinforcing skills like greeting peers, requesting help, or sharing materials. Such approaches not only improve classroom behavior but also enhance long-term independence and integration into educational settings.

Methods of Assessing the Effectiveness of ABA Interventions

One of the strongest features of Applied Behavior Analysis (ABA) is its data-driven and evidence-based approach. Specialists systematically collect and analyze information about a child's behavior and progress in order to evaluate the effectiveness of intervention strategies and make informed decisions. Continuous measurement allows for objective assessment and timely modification of intervention programs.

Common methods of data collection in ABA include frequency recording, which involves counting the number of times a specific behavior occurs during a session; interval recording, which determines whether a behavior occurs within predetermined time intervals; duration recording, which measures how long a behavior lasts; and latency recording, which assesses the amount of time that elapses between a given prompt and the child's response. These methods provide detailed and reliable information about behavioral changes over time.

Collected data are typically analyzed and presented in graphical form, allowing specialists to visually track progress, identify trends, and evaluate the effectiveness of interventions. Regular data analysis enables practitioners to adjust goals, teaching strategies, and reinforcement systems in real time, ensuring that ABA interventions remain individualized, flexible, and responsive to the child's needs.

Integration of ABA Methods into Preschool Education

The integration of ABA methods into preschool educational settings requires a systematic and coordinated approach at multiple levels. Teachers, caregivers, and support staff must receive professional training that includes both theoretical foundations and practical applications of ABA principles. In addition, effective implementation relies on interdisciplinary collaboration among psychologists, speech therapists, special educators, and other specialists involved in supporting children with ASD.

Key components of successful integration include structured classroom environments with clearly defined areas for play, learning, and rest, as well as the use of visual schedules and cues to support transitions between activities. Collaboration with families is another essential element, as parents are trained to apply ABA strategies at home, thereby ensuring consistency across educational and home settings. Inclusive practices are also emphasized, as ABA methods facilitate the participation of children with ASD in mainstream group activities while providing individualized support tailored to their specific needs [15].

Such an integrated approach promotes not only academic learning but also social inclusion, helping to reduce stigma and foster positive peer interactions within the preschool environment.

Prospects for Development in Kazakhstan

In Kazakhstan, interest in Applied Behavior Analysis (ABA) and other evidence-based intervention practices has been steadily increasing in recent years, reflecting broader global trends in the field of inclusive and special education. The national strategy for inclusive education provides an important institutional and legislative framework for expanding correctional and educational support for children with Autism Spectrum Disorder (ASD). At the policy level, there is growing recognition of the need to shift from predominantly medical or deficit-based models toward pedagogical approaches grounded in scientific evidence and focused on functional skill development and social inclusion.

Nevertheless, significant challenges remain. These include a shortage of qualified and certified ABA specialists, uneven access to high-quality intervention programs between urban and rural regions, and limited interdisciplinary coordination among educators, psychologists, and healthcare professionals. In addition, insufficient awareness of evidence-based practices among educators and families in some regions reduces the consistency and effectiveness of early intervention.

Epidemiological data show that the number of identified cases of ASD in Kazakhstan has been rising sharply over the past decade. According to the Republican Scientific and Practical Center for Mental Health, the number of children diagnosed with autism has increased from just 228 cases in 2015 to 1,184 in 2021, representing a five-fold increase over seven years, largely due to improved

diagnostic capacity and training of specialists. More recent reports indicate that as of September 2025, approximately 14,500 minors with ASD were registered in the country, reflecting ongoing improvements in detection and reporting. Research further suggests that the *prevalence* of childhood autism in Kazakhstan rose from about 14 per 100,000 children in 2016 to 59 per 100,000 in 2022, with significant regional variation and higher rates observed in urban centers such as Astana.Despite these increases, official recorded prevalence remains lower than global estimates, likely reflecting underdiagnosis and limited screening coverage.

Future directions for the development of ABA in Kazakhstan include the establishment of nationally recognized certification and training programs for ABA practitioners that align with international standards while taking into account local educational realities. The creation of regional competence centers is also a priority; such centers could provide professional training, methodological support, supervision, and consultative services for specialists and families. Equally important is the development of culturally and linguistically adapted intervention protocols that reflect the sociocultural context, family values, and language environment of Kazakhstani children, thereby increasing parental involvement and the generalization of acquired skills.

In addition, there is a clear need for systematic longitudinal research examining the long-term outcomes of ABA-based interventions within local preschool and school settings. Such research would make it possible to assess not only short-term behavioral changes but also broader indicators of social adaptation, academic readiness, and quality of life. The accumulation of local empirical data will strengthen the national evidence base and support informed decision-making in educational policy and practice.The implementation of these measures will contribute to the sustainable development of ABA in Kazakhstan, expand access to effective and ethically grounded interventions, and ultimately improve the quality of life, educational opportunities, and social inclusion of children with ASD and their families.

Conclusion. The conducted theoretical review confirms that Applied Behavior Analysis (ABA) is one of the most scientifically validated and effective approaches for fostering positive behavior and adaptive functioning in preschool children with Autism Spectrum Disorder (ASD). Grounded in behavioral science, ABA provides a structured, systematic, and evidence-based framework for understanding, teaching, and modifying behavior, which is particularly important for children with ASD who experience persistent difficulties in communication, social interaction, and self-regulation.The preschool period represents a critically sensitive stage for intervention, as high neural plasticity creates optimal conditions for learning and behavioral change. Research consistently demonstrates that ABA-based interventions initiated at an early age are associated with improved language development, reduction of maladaptive behaviors, and increased independence. Therefore, the integration of ABA methods into preschool educational practice is both justified and necessary to maximize developmental outcomes and facilitate successful inclusion in educational and social environments.

An important advantage of ABA lies in its flexibility and adaptability. The combination of structured instructional methods, such as Discrete Trial Training, with naturalistic approaches, including incidental teaching and play-based learning, allows skills to be acquired and generalized across daily routines. This adaptability enables ABA programs to be individualized according to the child's developmental level, motivation, and sociocultural context. Equally significant is the focus on the formation of positive and socially appropriate behavior rather than the mere suppression of problematic actions. Through proactive strategies, functional behavior assessment, and reinforcement of alternative skills, ABA supports the development of self-regulation, communication, and adaptive behavior in an ethically sound manner.

The data-driven nature of ABA distinguishes it from many traditional correctional approaches. Systematic data collection, graphical analysis, and ongoing monitoring of progress allow specialists to evaluate intervention effectiveness objectively and make timely adjustments. This evidence-based decision-making model enhances both the reliability and transparency of

educational and correctional practices.In Kazakhstan, ABA therapy holds significant potential within the framework of inclusive education policy. Despite growing interest, challenges remain, including limited access to qualified specialists and adapted programs. Addressing these issues requires the development of certification systems, professional training, interdisciplinary collaboration, and culturally relevant intervention models. Longitudinal research conducted in local preschool settings will further strengthen the national evidence base.In conclusion, ABA should be regarded as a comprehensive pedagogical system that supports the holistic development, social inclusion, and quality of life of preschool children with ASD. Its further implementation and development will contribute substantially to the advancement of inclusive education and evidence-based practice in Kazakhstan.

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