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Training ABA Therapy Specialists: Global Evidence and the Kazakhstan Context

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Abstract

This article reviews recent evidence on effective training models for Applied Behavior Analysis (ABA) specialists, comparing traditional, blended, and telehealth-based approaches. The analysis highlights that competency-based training with structured supervision ensures high-quality professional preparation. Traditional in-person training remains the gold standard for skill acquisition, while blended and telehealth models increase accessibility and sustainability—particularly relevant for Kazakhstan, where a shortage of qualified specialists persists. Implementing blended learning and tele-supervision could enhance the national capacity to deliver evidence-based behavioral interventions and promote inclusive education. The study underscores the importance of establishing national standards, certification systems, and academic collaboration to develop a sustainable ABA training framework in Kazakhstan.

Key words: applied behavior analysis (ABA), professional training, blended learning, telehealth supervision, competency-based education, inclusive education, Kazakhstan, autism spectrum disorder (ASD).

1. Introduction

In the last decade the prevalence of children with developmental disorders, particularly Autism Spectrum Disorder (ASD), has been steadily increasing worldwide. According to the World Health Organization (2023), approximately one in every 100 children has ASD. People with ASD characterized by difficulties in social interaction, communication and patterns of behavior that may differ from typical development. As a result, these individuals, particularly children, face various challenges in adaptation to and integration within social environments. This situation highlights the urgent need for well-trained professionals capable of providing evidence-based interventions to support these children and their families. One of the most effective and scientifically validated approaches is Applied Behavior Analysis (ABA) therapy — a method that focuses on understanding and improving socially significant behaviors through systematic observation, assessment, and reinforcement strategies (Heward, Heron, Cooper, & Scarlett, 2015). ABA therapy designed in way that allows a specialist to meticulously collect the data about each child, assess their knowledge and skills to create an individualized study plan tailored to child's specific needs and continuously evaluate their progress. However, without proper training, interventions may be ineffective or even counterproductive (Leaf et al., 2016).

Although Applied Behavior Analysis has demonstrated substantial effectiveness, many countries continue to face a significant shortage of qualified specialists (Leaf et al., 2016; Maglione, Gans, Das, Timbie, & Kasari, 2012). Kazakhstan, the largest country of Central Asia, is also affected by this issue. While Ministry of Health of Kazakhstan recommends ABA therapy as a non-medical intervention, it is primarily offered through private practices, making it unaffordable for many families. The limited availability of trained professionals not only restricts access to high-quality care but also hinders the inclusion of children with special educational needs in mainstream educational settings (Parsons, Yuill, Brosnan, & Good, 2015).

In Kazakhstan, despite the gradual development of inclusive policies, access to behavioural therapy remains limited. According to national data, more than 203,000 children are registered as requiring special educational conditions, with approximately 16,700 showing communication and social interaction difficulties typical of ASD (Mambetalina et al. 2022). Experts note that these numbers likely underestimate the true prevalence of autism due to diagnostic limitations and the scarcity of trained professionals, especially outside major cities. Despite the governmental support of inclusive education, an absence of standardised ABA certification and structured specialist training remains a major obstacle in implementing universal access to inclusive education in Kazakhstan. In this context, the presence of civic initiatives such as the Bolashak Foundation, which advocates for the creation of equal opportunities and increasing accessibility for children and adults with special educational needs, is vital. This community-based model demonstrates how public engagement can compensate for institutional gaps and promote the integration of ABA practices into Kazakhstan's educational environment (Mambetalina et al. 2022).

In response to the increasing need for trained ABA specialists in educational settings, ensuring the inclusion of all children within the social environment is essential. Training programs for ABA professionals should encompass both theoretical instruction and supervised practical experience. Such an approach ensures that practitioners not only comprehend the scientific foundations of behavioural interventions but also apply these methods ethically and effectively in a real-world context. (Hollins, Morris, & Li, 2023) The following literature review synthesises recent evidence on training models for ABA specialists, comparing the effectiveness of traditional, blended, and telehealth-based approaches, and situates these findings within the current educational and healthcare context of Kazakhstan.

2. Methodology

The systematic literature review followed a structured approach to ensure comprehensive coverage of relevant research papers. The aim of this research was to answer the main research question:

Which training interventions are most effective for developing the competencies of ABA specialists?

Information sources

To answer the research question a relevant publications were identified using the following keywords: "Applied Behaviour Analysis training," "ABA specialist education," "behaviour analyst supervision through major scientific databases, such as **PubMed**, **Scopus**, and **Google Scholar**. Reference lists of included studies and relevant review papers were also examined to identify additional sources.

Eligibility criteria

The review included research publications in the English language related to training models or

educational strategies for ABA practitioners. Research papers published in the period between 2020 and 2025 in peer-reviewed journals.

The main exclusion criteria were all studies unrelated to ABA specialists' training, or studies that focused on individual outcomes for the trainees without reference to the effectiveness of the training methods.

Data Extraction and Analysis

All selected research papers were examined to identify training methods (traditional in-person, blended, or telehealth), instructional approach (e.g., Behaviour Skills Training, competency-based frameworks), methods of progress assessment and overall outcome of the training. Studies were divided related to the training model, and findings were grouped thematically to compare effectiveness, accessibility, and contextual feasibility.

3. Results

1. Traditional In-Person Training Models

In-person training has long been the traditional method of ABA professional education. This type of program is typically conducted in classroom settings, where teachers deliver evidence-based lectures and use case reports to illustrate key concepts of the subject. Empirical studies consistently show that direct, face-to-face supervision leads to improved skill acquisition, deepens students' understanding of course materials, and strengthens their professional confidence (Kranak, Andzik, Jones, & Hall, 2023; Vazquez, Lechago, & McCarville, 2024).

A systematic review by Kranak et al. (2023) stated that in-person supervision based on Behaviour Skills Training (BST)—which includes instruction, modelling, rehearsal, and feedback—produces measurable

improvements in trainees' practical competence (Kranak et al., 2023).

2. Blended Learning Approaches

Blended learning, which combines online theoretical coursework with in-person practice in the field under the guidance of a local supervisor, has been recommended as an optimal solution for continuous access to ABA training without compromising quality. This method was especially useful during the COVID-19 period. (Ninci et al., 2021) The Behaviour Analyst Certification Board (BACB, 2024) supports blended models that meet competency and supervision standards.

A systematic review by Koldas (Koldas, 2025) found that outcomes of blended learning programs can provide the same level of cognitive learning outcomes compared to traditional programs. Online ABA therapy

training offers greater flexibility for students, allowing them to engage in active learning, interaction and discussion with peers, and supervised practical activities at a convenient time. Additionally, other research shows that blended programs reduce other barriers, such as logistics and training costs. These factors increase accessibility for students from remote regions.

In practice, blended learning models often rely on competency-based frameworks such as the BACB Task List (5th ed.), ensuring that theoretical instruction aligns with practical competencies (Martin & Shook, 2011). Several studies have shown that consistent feedback and supervision are maintained in higher education and clinical training, blended learning produces comparable to, or even better learning outcomes, than those of fully in-person models (Lockey, Bland, Stephenson, Bray, & Astin, 2022; Vallée, Blacher, Cariou, & Sorbets, 2020).

3. Telehealth and Remote Supervision Models

Telehealth-based training and supervision became an essential part of global ABA education during the COVID-19 pandemic. These models utilise video conferencing, digital feedback tools, and virtual classrooms to deliver instruction and observe practicum sessions remotely (Batton, Kaplan, Ellis, Schmidt, & Nudelman, 2022; Sipila-Thomas & Brodhead, 2024).

Telehealth supervision improves accessibility in remote and underserved areas. Several reports

highlighted that telehealth-based training can achieve similar learner satisfaction and knowledge gains compared to in-person training, with added flexibility. (Du, Guo, & Xu, 2024; Neely, Tsami, Gruber, & Lerman, 2022) However, technological barriers remain a major challenge, limiting opportunities for hands-on interaction and real-time feedback (Sipila-Thomas & Brodhead, 2024).

Hybrid tele-supervision approaches that integrate video review with live online feedback have proven effectiveness in training and maintaining the quality of supervision while addressing access limitations (Kranak et al., 2023). Telehealth models are particularly relevant for Kazakhstan and Central Asia, where the shortage of supervisors and geographical distances hinder the establishment of traditional in-person programs.

4. Comparative Effectiveness and Best Practices

Comparative studies highlighted that adherence to evidence-based practice and structured supervision are the strongest indicators of effective ABA specialist training (Kranak et al., 2023). Nonetheless, the selection of an appropriate training format largely depends on contextual factors such as local infrastructure, accessibility, and institutional capacity. The literature converges on several best practices:

Training element	Evidence of effectiveness	Supporting sources
Traditional In-Person Training Models	Ensures standardised skills acquisition Strongest effect on practical competence	(Kranak et al., 2023; Vazquez et al., 2024)
Blended Learning Approaches	Effective balance of theory and practice Improved accessibility	(Koldas, 2025; Lockey et al., 2022; Ninci et al., 2021; Vallée et al., 2020)
Telehealth and Remote Supervision Models	Essential for local sustainability Improved accessibility	(Batton et al., 2022; Du et al., 2024; Neely et al., 2022; Sipila-Thomas & Brodhead, 2024)

4. Discussion

The results of this review emphasize a growing understanding that ABA specialist training should be grounded in evidence-based approaches and adapted to

the local context. Traditional in-person education continues to serve as the most effective model for direct supervision and immediate feedback. Nevertheless, this

approach demands considerable resources, including supervisor time, travel, and access to appropriate client cases. In many low-resource settings, including Kazakhstan, the limited number of qualified supervisors and practicum opportunities poses additional challenges.

In Kazakhstan, where inclusive education is still developing, the introduction of blended and telehealth-supported training formats could help overcome regional inequalities and the shortage of resources. These methods would also create opportunities for collaboration between local universities and international experts, supporting the formation of a sustainable national network of trainers and supervisors.

Another promising direction involves integrating ABA principles into psychology, pedagogy, and medical education. Introducing ABA-related competencies into undergraduate curricula would help

increase the number of specialists equipped with practical, evidence-based behavioral management skills.

However, beyond curriculum development, long-term success requires institutional commitment, continuous professional growth, and formal recognition of the ABA profession. Establishing national standards of competency and a certification system, endorsed by the Ministries of Education and Health, would ensure the quality and sustainability of ABA practice across the country.

Future studies should explore the results of pilot ABA training initiatives in Kazakhstan, particularly evaluating how blended and telehealth models influence practitioner skills and outcomes for children. Evidence from such evaluations would help inform educational policy and guide resource allocation aimed at supporting inclusive education.

5. Conclusion

High-quality training of ABA specialists plays a crucial role in ensuring effective behavioral support for individuals with developmental disorders. Research shows that competency-based programs with structured supervision—whether delivered in person, through blended learning, or via telehealth—can prepare practitioners who are both skilled and ethical in their professional practice.

For Kazakhstan and other countries in Central Asia, blended and telehealth formats are particularly valuable, as access to trained professionals is still limited.

Prioritizing supervisor preparation, adapting and translating educational materials, and developing national systems for accreditation will help maintain the scientific quality of ABA training while making it relevant to local needs.

Establishing a sustainable educational framework for ABA professionals will not only improve the quality of therapeutic services but also promote broader inclusion of children with special educational needs in society.

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ABA-терапия мамандарын даярлау: Жаһандық тәжірибе және Қазақстан контексті

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Түйіндеме

Бұл мақалада қолданбалы мінез-құлық талдауы (Applied Behavior Analysis, ABA) мамандарын даярлаудың тиімді модельдері қарастырылады. Дәстүрлі, аралас (blended) және теледенсаулық (telehealth) форматтарының тиімділігі салыстырмалы түрде талданған.

Зерттеу нәтижелері көрсеткендегі, құрылымдалған супервизиямен бірге жүргізілетін құзыреттілікке негізделген оқыту жоғары сапалы қәсіби дайындықты қамтамасыз етеді. Дәстүрлі оффлайн оқыту ең тиімді болып саналса, аралас және қашықтан оқыту ұлтілері қолжетімділікті арттырады және тұрақтылықты қамтамасыз етеді.

Бұл тәсілдер Қазақстан үшін өзекті, себебі елде білікті ABA мамандарының жетіспеушілігі байқалады. Аралас және телесупервизия форматтарын енгізу инклюзивті білім беруді дамытуға және ғылыми негізделген мінез-құлықтық араласуларды жүзеге асыруға мүмкіндік береді. Мақалада ұлттық стандарттар мен сертификаттау жүйесін қалыптастырудың маңыздылығы атап өтіледі.

Түйін сөздер: қолданбалы мінез-құлық талдауы (ABA), қәсіби даярлық, аралас оқыту, телесупервизия, құзыреттілікке негізделген білім, инклюзивті білім, Қазақстан, аутизм спектрінің бұзылысы (АСБ).

Подготовка специалистов по прикладному анализу поведения (ABA-терапии): Мировой опыт и казахстанский контекст

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Резюме

В статье представлен обзор современных моделей подготовки специалистов по прикладному анализу поведения (Applied Behavior Analysis, ABA) с сравнением традиционного, смешанного (blended) и телемедицина (telehealth) форматов обучения.

Анализ показывает, что программы, основанные на компетентностном подходе и структурированной руководстве, обеспечивают высокий уровень профессиональной подготовки. Традиционные очные программы способствуют лучшему усвоению практических навыков, тогда как смешанные и дистанционные форматы повышают доступность и устойчивость обучения.

Эти подходы особенно актуальны для Казахстана, где сохраняется дефицит квалифицированных специалистов. Внедрение смешанных и дистанционных -моделей может способствовать развитию инклюзивного образования и расширению применения научно обоснованных поведенческих интервенций. Подчеркивается необходимость создания национальных стандартов, системы сертификации и академического сотрудничества для устойчивого развития подготовки АВА специалистов в Казахстане.

Ключевые слова: прикладной анализ поведения (ABA), профессиональная подготовка, смешанное обучение, телесупервизия, компетентностное образование, инклюзивное образование, Казахстан, расстройства аутистического спектра (PAC).