

**Adaptive Physical Education in Astana Schools: Exploring Teacher Readiness,
Attitudes, and Challenges in Mainstream and Private Settings**

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Aizhan Zhumadilova

Abstract

Physical education (PE) remains an underexplored area within inclusive education, despite its important role in supporting the physical, social, and emotional development of students with disabilities. In Kazakhstan, inclusive education has become a key focus of educational reform, with increasing emphasis on equitable access to learning opportunities. However, the successful implementation of adapted physical education (APE) depends not only on policy frameworks but also on teachers' beliefs, their sense of readiness, and their capacity to enact inclusive practices. This study examines PE teachers' beliefs about APE, explores their perceived readiness to implement inclusive practices, and identifies the challenges they encounter in inclusive school settings. A qualitative, phenomenological approach was adopted to understand teachers' lived experiences. Data was collected through semi-structured interviews with 12 PE teachers from public and private schools and analyzed using thematic analysis. The findings indicate that while teachers generally express positive attitudes toward inclusive education, their readiness to implement APE varies considerably. This variation is influenced by factors such as the quality of professional preparation, access to resources, and levels of institutional support. Teachers reported challenges related to adapting activities, managing diverse abilities, and the lack of specialized training in APE. The study highlights a gap between inclusive education policy and classroom practice and contributes context-specific insights to the limited literature on APE in Kazakhstan. The findings have implications for strengthening teacher education, professional development, and institutional support for inclusive physical education.

Keywords: inclusive education, adapted physical education, teacher beliefs, readiness, Kazakhstan

Аңдатпа

Дене шынықтыру (ДШ) пәні ерекше білім беру қажеттіліктері бар оқушылардың физикалық, әлеуметтік және эмоциялық дамуын қолдауда маңызды рөл атқарғанымен, инклюзивті білім беру аясында әлі де жеткілікті зерттелмеген сала болып қала береді. Қазақстанда инклюзивті білім беру білім беру реформасының негізгі бағыттарының біріне айналып, оқу мүмкіндіктеріне тең қолжетімділікке ерекше назар аударылуда. Алайда бейімделген дене шынықтыруды (БДШ) тиімді жүзеге асыру тек саясат пен нормативтік құжаттарға ғана емес, сонымен қатар мұғалімдердің сенімдеріне, олардың дайындығын сезінуіне және инклюзивті тәжірибелерді іске асыру қабілетіне де байланысты. Бұл зерттеу дене шынықтыру мұғалімдерінің БДШ туралы көзқарастарын қарастырып, олардың инклюзивті тәжірибелерді енгізуге дайындық деңгейін зерттейді және инклюзивті мектеп жағдайында кездесетін қиындықтарды анықтайды. Мұғалімдердің тәжірибесін терең түсіну үшін сапалық, феноменологиялық тәсіл қолданылды. Деректер мемлекеттік және жекеменшік мектептерден 12 дене шынықтыру мұғалімімен жүргізілген жартылай құрылымдалған сұхбаттар арқылы жиналып, тақырыптық талдау әдісімен өңделді. Зерттеу нәтижелері мұғалімдердің жалпы алғанда инклюзивті білім беруге оң көзқарас білдіретінін көрсеткенімен, олардың БДШ-ны жүзеге асыруға дайындығы әртүрлі деңгейде екенін анықтады. Бұл айырмашылықтар кәсіби даярлық сапасы, ресурстарға қолжетімділік және институционалдық қолдау деңгейі сияқты факторларға байланысты. Мұғалімдер іс-әрекеттерді бейімдеу, оқушылардың әртүрлі қабілеттерін басқару және БДШ бойынша арнайы дайындықтың жетіспеушілігі сияқты қиындықтарды атап өтті. Зерттеу инклюзивті білім беру саясаты мен сыныптағы тәжірибе арасындағы алшақтықты көрсетіп, Қазақстандағы бейімделген дене шынықтыру саласындағы шектеулі ғылыми әдебиетке маңызды үлес қосады. Алынған нәтижелер мұғалімдерді даярлау, кәсіби

даму және инклюзивті дене шынықтыруды институционалдық қолдауды күшейту қажеттігін көрсетеді.

Түйін сөздер: инклюзивті білім беру, бейімделген дене шынықтыру, мұғалімдердің сенімдері, дайындық, Қазақстан

Аннотация

Физическая культура (ФК) остаётся недостаточно исследованной областью в рамках инклюзивного образования, несмотря на ее важную роль в поддержке физического, социального и эмоционального развития обучающихся с ограниченными возможностями здоровья. В Казахстане инклюзивное образование стало одним из ключевых направлений образовательных реформ, с возрастающим акцентом на расширение доступа к образовательным возможностям. Однако успешная реализация адаптивной физической культуры (АФК) зависит не только от нормативно-правовой базы, но и от убеждений педагогов, их готовности и способности внедрять инклюзивные практики. Данное исследование рассматривает убеждения учителей ФК относительно АФК, изучает их готовность к реализации инклюзивных практик, а также выявляет трудности, с которыми педагоги сталкиваются при реализации инклюзивных практик в школьной среде. В исследовании применён качественный феноменологический подход для понимания профессионального опыта педагогов. Данные были собраны посредством полуструктурированных интервью с 12 учителями ФК из государственных и частных школ и проанализированы с использованием тематического анализа. Результаты показывают, что, несмотря на в целом положительное отношение педагогов к инклюзивному образованию, уровень их готовности к реализации АФК существенно различается. Эти различия обусловлены такими факторами, как качество профессиональной подготовки, доступ к ресурсам и уровень институциональной поддержки. Учителя отмечают трудности, связанные с адаптацией занятий, работой с обучающимися с различными возможностями, а также недостатком специализированной подготовки в области АФК. Данное исследование выявляет разрыв между политикой инклюзивного образования и практикой в классе и дополняет исследования по АФК в Казахстане. Результаты исследования могут быть

использованы для совершенствования подготовки педагогов, их профессионального развития и усиления институциональной поддержки инклюзивной физической культуры.

Ключевые слова: инклюзивное образование, адаптивная физическая культура, убеждения учителей, готовность, Казахстан

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Chapter 1: Introduction

Many governments worldwide view the development of the sports sector as a key strategic focus because of its social and health-related benefits (Houlihan & Green, 2011; Ministry of Culture and Sport RK, 2023; Sport England, 2021). Sports not only promote public health and help prevent diseases but also contribute to productivity and quality of life. Studies show that youth sports participation is linked to lower stress levels, better self-confidence, and improved cognitive functioning (Pate et al., 1995). Engagement in physical activities builds discipline, reduces the possibility of negative behaviors, and contributes to a safer society.

Youth, often defined in broader terms as individuals aged 15 to 35 in various national and regional contexts, make up a substantial proportion of the global population (Youthpolicy.org, 2014). Youth represents both a valuable resource and a potential challenge for governments around the world. According to the International Labour Organization (2025), young individuals can play a vital role in their communities and act as agents of positive change when provided with opportunities to utilize their energy and skills. However, in situations when young people experience exclusion because of socio-economic difficulties, they may cause trouble and instability in society (Rekker et al., 2015)

Sport must be open to all members of the population. Physical education (PE) has become a powerful tool for social development. Adaptive physical education (APE) is a modified approach to PE, designed to meet the needs of students with special educational needs. It is particularly important to promote APE from an early age, as education systems aim to serve increasingly diverse student populations. The implementation of APE in schools has become both a necessity and a challenge. In Kazakhstan, particularly in the capital city of Astana, inclusive education has gained growing attention, yet the application

of APE remains underdeveloped and inconsistently implemented across different school types.

The focus of this study is to examine the readiness, attitudes, and challenges faced by school PE teachers in delivering APE within both mainstream and private schools in Astana. Despite national policies promoting inclusive education, many schools in Kazakhstan still lack well-trained, psychologically prepared PE and APE specialists and the appropriate resources to effectively support students with disabilities during PE lessons (Abdrassilov et al., 2023; Orynassarova, 2017). Moreover, the number of children with special educational needs in Kazakhstan increased from approximately 139,887 in 2019 to over 188,000 by 2022, reflecting the impact of inclusive policies that have enabled more students with SEN to enroll in regular schools, including participation in PE (UNICEF, 2022).

By researching teacher experiences with APE, this research contributes to broader efforts to create equitable, inclusive, and healthy learning environments for all children. It emphasizes the role of PE in building not just healthier individuals, but also a more stable, inclusive, adaptable, and tolerant society.

Background of the Study

Kazakhstan has made important progress in fostering inclusive education over the past two decades, particularly since the adoption of the State Program for Education and Science Development 2016-2019 and subsequent reforms. This progress has been influenced by both international agreements and changes within the country. By ratifying the Salamanca Statement (UNESCO, 1994) and the UN Convention on the Rights of Persons with Disabilities (2006), Kazakhstan has committed to providing quality education to all children, regardless of their diverse educational needs. Several national laws help to support the development of inclusive education in Kazakhstan. The Constitution of

Kazakhstan gives every child the right to free and compulsory education (Article 30). In addition, laws such as the Law on the Rights of the Child (2002) and the Law on Social Protection of Persons with Disabilities (2005) confirm the rights of children with disabilities, including their right to education. The Law on Education (2007) gives a clear definition of inclusive education, which is described as a process that gives all students equal access to education, considering their special educational needs and individual abilities (Article 1, Clause 21-7).

By adopting national policies and reforms aimed at integrating students with special educational needs (SEN) into regular classrooms, Kazakhstan demonstrates its commitment to the global movement toward inclusive education (Makoelle & Burmistrova, 2021). However, the implementation remains inconsistent across regions and schools. This increasing trend shows the need for schools, including PE departments, to be well-prepared to support inclusive learning environments.

APE is a specialized area of PE that adapts physical activities and instructional strategies to meet the needs of children with various disabilities. International studies report on the importance of teacher training, positive attitudes, and supportive environments in making APE successful. For example, studies from Japan (Sato et al., 2007), Taiwan (Liu et al., 2019), and Indonesia (Utami, 2025) show that although teachers often support inclusive practices in theory, they frequently report feeling unprepared or lacking the confidence to teach students with disabilities. This concern is similar in African contexts like Zambia (Josephat, 2019), where limited resources and inadequate teacher training are cited as major barriers to inclusive PE.

In Kazakhstan, recent studies report that while inclusive education is growing in visibility, APE is still under-researched and under-implemented. Orynbassarova (2017) notes that many teachers lack both the pedagogical skills and the necessary resources to

adapt PE classes for students with disabilities. Teachers in private schools may have access to better facilities and specialized staff, while those in public (mainstream) schools, which are often under-sourced, face higher student-to-teacher ratios and limited support. Yet there is little empirical data comparing how APE is practiced across school types, particularly in the urban context of Astana.

Globally, research reports on the importance of teacher self-efficacy and psychological readiness for inclusive education. For example, a study from Slovakia found that teachers with higher levels of self-efficacy were more likely to successfully include students with disabilities in PE (Antala et al., 2023). Similarly, in Saudi Arabia, Alhumaid et al. (2023) found that specific training programs improved pre-service teachers' confidence in inclusive PE. Catellani et al. (2023) also states the role of psychological readiness and motivation as essential factors in implementing inclusive practices in PE settings. These findings suggest that Kazakhstani PE teachers may benefit from targeted training programs and professional development in APE.

Sports and physical activity play an essential role in promoting the holistic development of children. As stated by Abdrassilov et al. (2023), sports not only improve physical health but also foster discipline, teamwork, and social inclusion. In a diverse school environment, access to well-structured PE becomes even more crucial for students with disabilities, as it can support their self-esteem, social integration, and academic engagement.

In summary, while the national push for inclusive education in Kazakhstan is promising, there is a need for a deeper understanding of how APE is perceived and practiced at the school level. This study aims to fill a critical gap in the literature by focusing on teachers' readiness, attitudes, and the barriers they face, particularly in the urban and diverse educational landscape of Astana.

Statement of the Problem

As mentioned in the previous section, Kazakhstan has made significant progress in developing laws and policies to support inclusive education, including APE. The Law on Physical Culture and Sports (2014, with amendments) states the state's responsibility to ensure equal access to physical activity for people with disabilities. Articles 4 and 23 require local governments to provide access to inclusive sports facilities, equipment, and programs. Articles 22 and 25 further state the state's duty to support adaptive sports clubs and organize competitions for children with special needs (Adilet, 2014). Similarly, the State Compulsory Educational Standard for Primary Education (2018) mandates the inclusion of children with SEN. Paragraph 27 of the standard requires schools to adapt the curriculum, including PE, to meet students' individual needs and promote inclusive teaching approaches (Adilet, 2018). The Law on Education (2007, with amendments) also supports this direction. Article 8 ensures equal access to education and requires the creation of special conditions in schools for students with disabilities, which also applies to PE lessons (Adilet, 2007).

Kazakhstan has also joined international initiatives to promote inclusion in PE. Through collaboration with UNESCO, the country is implementing the Quality Physical Education (QPE) policy, which focuses on inclusion, gender equality, and health promotion in schools (UNESCO, 2022). A practical example of this effort is the Children's Paralympic Games held in Astana in 2019, which involved more than 220 children with disabilities. Aktoty Raimkulova, Minister of Culture and Sports, described the event as "an important milestone in Kazakhstan's movement toward inclusive sports" (2019).

Despite these positive developments, the implementation of APE in schools still faces many challenges. Teachers often feel psychologically unprepared and lack the necessary training and resources. (CABAR.asia, 2023). Secondly, in many schools,

conditions are not yet adapted for APE. Thirdly, there are no clear guidelines on how to adjust the PE curriculum for students with disabilities (UNICEF, 2020). Lastly, teachers are still unsure how to define inclusive education and how to adapt PE for students with disabilities (Orynbassarova, 2017; Sakayeva & Oleksiuk, 2016). The topic of APE and inclusive sports remains under-researched and often overlooked. A report by CABAR.asia states that “only 43.5% of schools are fully prepared for inclusion,” and PE is one of the least adapted subjects.

These challenges show the urgent need to better understand how teachers in Kazakhstan perceive and implement APE, in both public and private school settings.

Purpose of the Study and Research Questions

The purpose of this qualitative study is to explore the readiness, attitudes, and challenges faced by PE teachers in delivering APE in mainstream and private schools in Astana, Kazakhstan. The following research questions frame this study.

1. How do PE teachers define and understand inclusive education within the context of Adaptive Physical Education (APE)?
2. What challenges do PE teachers face when adapting the curriculum for students with disabilities?
3. How do PE teachers’ attitudes and the availability of resources influence the implementation of Adaptive Physical Education (APE)?
4. How do the experiences of PE teachers in mainstream and private schools differ in relation to the support and implementation of APE?

Definition of Key Terms

Inclusive Education

According to the Salamanca Statement by UNESCO (1994), inclusive education refers to the idea that “schools should accommodate all children regardless of their

physical, intellectual, social, emotional, linguistic, or other conditions” (p. 6). This approach reports the importance of adapting the educational environment to suit the diverse needs of students, rather than expecting learners to conform to existing structures. Inclusion emphasizes equity, diversity, and the proactive removal of barriers within educational settings.

Special Educational Needs (SEN)

Students with Special Educational Needs (SEN) are those who require additional support due to learning difficulties or disabilities that make it harder for them to learn compared to most students of the same age. SEN may arise from cognitive, emotional, behavioral, sensory, physical, or communication challenges.

According to UNESCO (2009), “children with special educational needs may experience barriers to learning stemming from disabilities or learning difficulties, and they require additional educational support to benefit from schooling” (p. 8).

Physical Education (PE)

This is a school subject that is a fundamental part of the educational process, aimed at developing students' physical competence, motor skills, and knowledge for lifelong health and physical activity. According to the National Association for Sport and Physical Education (2004), PE “provides students with the opportunity to learn through movement activities that promote physical competence, health-related fitness, self-responsibility, enjoyment, and the ability to be physically active for a lifetime” (p. 3).

Adaptive Physical Education (APE)

APE is a specially designed PE program tailored to meet the unique needs of students with disabilities. As defined by Winnick and Porretta (2017), APE “is physical education which has been adapted or modified so that it is as appropriate for the person with a disability as it is for a person without a disability” (p. 4). In this study, the terms

APE and inclusive PE are used interchangeably to refer to adapted PE practices that support the participation of all learners.

These definitions state the importance of inclusion, accessibility, and appropriate instructional strategies to support all learners, regardless of their physical or developmental challenges. For the present study, APE will be defined as the systematic adaptation of PE instruction, curriculum, and assessment to support the full inclusion and participation of students with disabilities while addressing institutional and teacher-related challenges. This definition integrates elements from existing research while aligning with the study's focus on teachers' experiences and implementation practices in different school settings.

Significance of the Study

The central stakeholders affected by this research include PE teachers in Astana's schools, educational policymakers, teacher training institutions, and school administrators. Teachers are at the front line of implementation, and their preparedness, beliefs, and challenges directly impact how APE is delivered. The study also has implications for students with disabilities, whose right to inclusive and quality education depends on how effectively APE is practiced in their schools. Finally, by comparing mainstream and private school settings, this research provides insights that could help reduce educational inequalities and guide future training and policy interventions in Kazakhstan.

Contribution to Research

This study fills an important gap by examining how PE teachers in Astana, Kazakhstan, are prepared to teach APE. This study addresses the limited research on APE in Kazakhstan, particularly between mainstream and private schools, while also contributing to global understanding of inclusive education across different contexts.

Impact on Teaching Practice

The findings provide insights for improving teaching by showing what challenges PE teachers face when working with students with disabilities. It identified the types of training and support teachers needed to feel confident and able to adapt to their lessons. This contributed to improving PE classes where all students could participate and benefit.

Importance for Policy

This study provides useful information for education leaders and policymakers in Kazakhstan. It reported the differences between school types and suggested ways to improve teacher training and resources. The results helped inform clearer policies to support APE for all students.

Conclusion

This chapter outlined the background and justification for conducting this study. It explained the significance of APE in Kazakhstan and highlighted the need to understand the readiness and challenges of physical education teachers in inclusive settings. The chapter outlined the research problem, purpose, and significance of the study, thereby establishing a foundation for the research.

Outline of the Thesis

This thesis is organized into six chapters that collectively explore teacher readiness, attitudes, and challenges in implementing APE in Astana schools. The first chapter introduces the study by outlining the background, rationale, research problem, purpose, and research questions, as well as the significance of the study, key terms, and delimitations. The following chapter provides a comprehensive review of the existing literature related to APE and inclusive education, discusses relevant theoretical and conceptual frameworks, and identifies the research gaps that the present study seeks to address. This is followed by the methodology chapter, which explains the research design, participants, data collection procedures, data analysis methods, and ethical considerations, while also addressing the study's trustworthiness and validity. The fourth chapter presents the findings derived from the collected data, organized around the main research questions, and highlights the key themes that emerged from teacher interviews. The subsequent chapter discusses these findings in relation to the theoretical framework and existing literature, emphasizing their implications for the development of APE in Kazakhstan. Finally, the last chapter concludes the thesis by summarizing the main findings, presenting recommendations for policymakers, school administrators, and teachers, and suggesting directions for future research.

Chapter 2: Literature Review

This chapter reviews the existing literature on APE in inclusive school settings, with a focus on teacher readiness, attitudes, and challenges in implementing APE in both mainstream and private schools. The chapter reports on the role of teachers, as they are key to the success of inclusive practices in PE classes. This chapter also introduces the theoretical framework that guides the study: Ajzen's Theory of Planned Behavior, along with a conceptual focus on attitudes and perceived readiness. These frameworks help to understand how teachers' beliefs and preparedness influence the implementation of inclusive practices in PE. The literature review is organized around three guiding questions: (1) how prepared physical education teachers are to implement adaptive physical education in inclusive settings, (2) what attitudes teachers hold toward inclusive physical education, and how do these attitudes influence their teaching practices, (3) what barriers teachers face when implementing APE in mainstream and private schools in Kazakhstan.

Theoretical Frameworks

Theoretical frameworks guide researchers in their approach to a problem and in interpreting their findings (Anfara & Mertz, 2006). This study draws on a primary framework: Ajzen's Theory of Planned Behavior (TPB), with a conceptual focus on attitudes and perceived readiness. The TPB is used to examine how PE teachers' attitudes, perceived control, and social norms influence their decisions and actions in implementing inclusive practices. The conceptual framework, focusing on attitudes and readiness, helps to understand how teachers' beliefs and preparation shape their instructional approaches (Ajzen, 1991; Bandura, 1997; Shulman, 1987). Together, these frameworks offer a lens to explore how inclusive practices are implemented in APE across different school settings.

Theory of Planned Behavior (TPB)

Ajzen's Theory of Planned Behavior (1991) explains how people make decisions and act based on what they believe, what others expect from them, and how much control they think they have. The theory suggests that behavior is guided by a person's intention, which is influenced by three main factors. Attitudes are how positively or negatively a person views a certain behavior. Subjective norms are the social pressures a person feels from others, such as colleagues or school leaders. Perceived behavioral control means how confident a person feels about doing the behavior, depending on their skills, support, and resources. In this study, the theory helps to understand how PE teachers' beliefs and confidence affect their decision to use inclusive teaching practices in APE (Ajzen, 1991).

Conceptual Focus

Attitudes and Perceived Readiness

In the context of APE, attitudes refer to teachers' beliefs, feelings, and intentions toward including students with disabilities in PE classes. Positive attitudes are closely linked to greater willingness to adapt lessons and support inclusion (Block & Obrusnikova, 2007). Perceived readiness relates to how confident and prepared teachers feel to implement APE. This includes their self-efficacy, training background, and comfort with inclusive practices (Hutzler, 2003). Together, these two concepts influence how effectively teachers can meet the needs of diverse learners in PE settings.

Adaptive Physical Education (APE)

APE is a specially designed PE program tailored to meet the unique needs of students with disabilities. As defined by Winnick and Porretta (2017), APE "is physical education which has been adapted or modified so that it is as appropriate for the person with a disability as it is for a person without a disability" (p. 4). These definitions state the

importance of inclusion, accessibility, and appropriate instructional strategies to support all learners, regardless of their physical or developmental challenges.

For the present study, APE was defined as the systematic adaptation of PE instruction, curriculum, and assessment to support the full inclusion and participation of students with disabilities while addressing institutional and teacher-related challenges. This definition aligned with the study's focus on teachers' experiences and implementation practices in different school settings.

Inclusive Education in Kazakhstan

Inclusive education in Kazakhstan refers to the process of creating schools where all children, including those with special educational needs, learn together in the same classrooms. According to Makoele (2020), Kazakhstan has made progress in promoting inclusive education through national policies and programs. However, in many schools, inclusion is still mostly understood as teaching children with disabilities, rather than embracing all types of learner diversity. Makoele and Burmistrova (2021) explain that the idea of inclusion in Kazakhstan is still developing, and many teachers need better training and support to include all students effectively. While there is strong political will, the success of inclusive education depends on improving teacher preparation and changing school cultures.

Teachers' Beliefs and Attitudes Toward Inclusion and APE Internationally

Teachers' beliefs and attitudes toward inclusive education directly influence the quality of APE implementation. International research shows that while many PE teachers support the idea of inclusion, they often feel unprepared to effectively teach students with disabilities in PE settings. For example, Sato et al. (2007) found that Japanese PE teachers held positive views about inclusion but lacked the necessary skills to adapt physical activities for students with disabilities. Similarly, Liu et al. (2019) reported that although

Taiwanese PE teachers supported inclusion, they were unsure how to modify lessons to meet diverse student needs.

Professional training plays a key role in improving both teachers' attitudes and their ability to implement inclusive practices in APE. Alhumaid et al. (2023) found that in Saudi Arabia, training programs improved teachers' confidence and attitudes toward teaching students with disabilities in PE. Antala et al. (2023) also emphasized that teachers with higher self-efficacy were more likely to apply inclusive strategies effectively. Furthermore, Haegele et al. (2021) highlighted that even among trained adapted physical educators, attitudes and confidence were influenced by school-level barriers such as lack of administrative support, unclear expectations, and limited collaboration with general PE staff. These findings reveal that both individual beliefs and systemic support are important for successful inclusion.

Teacher Preparedness: Training and Confidence

A significant number of teachers report feeling unprepared to deliver APE primarily because of the limited training in this area. For instance, Catellani et al. (2023) found that teachers in Russia and France who received more comprehensive preparation demonstrated greater confidence in teaching inclusive PE. Similarly, Freak and Miller (2017) highlighted that many pre-service teachers in the United Kingdom felt underprepared, citing insufficient exposure to inclusive education practices during their training. In North America, Block and Obrusnikova (2007) also noted a widespread lack of APE specific training, which negatively impacted teachers' self-efficacy and readiness to engage with students with disabilities. Likewise, Haegele et al. (2021) found that even trained, adapted physical educators encountered challenges when systemic support and collaboration with general PE staff were limited. However, research shows that targeted training programs can significantly enhance teachers perceived preparedness and

competence in this field (Alhumaid et al., 2023). Therefore, teacher education programs must incorporate more structured and practical APE training components to foster both the necessary pedagogical skills and the confidence required for successful inclusive teaching (Catellani et al., 2023; Freak & Miller, 2017; Block & Obrusnikova, 2007; Alhumaid et al., 2023).

Challenges and Barriers to APE

Teachers face many challenges in the implementation of APE, which often hinder the delivery of high-quality, inclusive lessons. Common barriers include insufficient training, inadequate access to appropriate equipment, large class sizes, and limited institutional support. For example, Josephat (2019) found that Zambian teachers struggled to meet the diverse needs of their students due to overcrowded classrooms and a lack of basic resources. Similar challenges have been reported in Kazakhstan, where studies by Orynbassarova (2017) and Abdrassilov et al. (2023) revealed that schools rarely employ APE specialists, leaving general PE teachers without the necessary guidance or support to adapt lessons effectively. In the United States, Bomna Ko and Boswell (2013) also identified time constraints and equipment shortages as key obstacles faced by teachers working in inclusive settings. Likewise, Haegele et al. (2021) reported that even experienced adapted physical educators in the U.S. encountered barriers such as limited collaboration with general PE staff and a lack of administrative support, which reduced their ability to implement inclusive practices effectively. These systemic issues significantly impact teachers' ability to provide equitable and effective PE for all students. Addressing these structural and resource-related barriers is essential for improving the overall quality and accessibility of APE programs (Abdrassilov et al., 2023; Bomna Ko & Boswell, 2013; Josephat, 2019; Orynbassarova, 2017).

International Differences in Teacher Preparedness and Attitudes

In many parts of the world, teachers face similar challenges when it comes to APE, but each region also has its specific problems that depend on the local context. These differences demonstrate that teacher preparedness and attitudes are influenced by many factors, such as training programs, available resources, and national policies. For example, in some Asian countries like Japan, Taiwan, and Indonesia, teachers usually want to include all students in PE classes. They show positive attitudes and are willing to work with children with disabilities. However, many of them say they do not have enough training or experience in teaching APE, so they feel unsure about how to adapt their lessons properly (Liu et al., 2019; Sato et al., 2007; Utami, 2025).

The situation is different in Zambia. Josephat (2019) found that the biggest problem is the lack of teaching materials, equipment, and space. Many schools have large class sizes, which makes it hard for teachers to give enough attention to students who need extra support. Even if teachers want to help, they cannot do much without the right resources. These problems make APE very difficult in such environments.

In North America, especially in the United States and Canada, APE programs are better developed. Some policies support inclusion, and in some places, there are special training programs for APE teachers. However, teacher preparation is not equal in all schools or regions. Some teachers receive strong training in APE, while others do not. This creates differences in how confident and prepared teachers feel (Martin, 2014; Winnick & Porretta, 2017). Additionally, Haegele et al. (2021) found that even trained, adapted physical educators in the United States still face systemic barriers, such as a lack of collaboration with general PE teachers and limited administrative support. These challenges show that even in advanced systems, teacher preparedness can be affected by school-level factors.

In Europe and parts of Eurasia, researchers focus more on teachers' confidence and how ready they feel to teach students with disabilities in PE. For example, studies from countries like France and Russia have shown that when teachers receive proper training and support, their confidence increases, and they become more open to inclusive teaching (Antala et al., 2023; Catellani et al., 2023). This highlights that building teacher confidence is a key goal in many international contexts.

In Central Asia, Kazakhstan is still developing its approach to APE. Studies by Abdrassilov et al. (2023), Orynbassarova (2017), and Makoelle and Burmistrova (2021) show that the country has made some progress, but there are still many issues to work on. Most schools do not have APE specialists, and there is little support from the government to help schools to include children with disabilities in PE, this is an area of inclusion that needs improvement. Teachers often must manage on their own without much training or assistance.

Implications for Policy and Teacher Education

Literature suggests several important steps that can help improve APE in schools. One of the main recommendations is to improve teacher education programs. Universities and teacher training centers should include more courses and practical lessons on APE. This will help prepare future teachers to work with students with disabilities in PE classes (Freak & Miller, 2017). In addition to pre-service education, in-service teachers also need regular professional development. Ongoing training can help teachers improve their skills, learn new strategies, and become more confident in teaching inclusive PE (Alhumaid et al., 2023; Catellani et al., 2023). However, improving training alone is not enough. Policymakers need to solve larger problems that make APE difficult for teachers. These include a lack of resources such as equipment, adapted materials, and proper space for inclusive activities. Teachers also need more support from school leadership, specialists,

and the wider education system (Josephat, 2019; Orynassarova, 2017). Without this support, even well-trained teachers may struggle to apply what they have learned.

For inclusive PE to work well, changes must happen in three areas simultaneously: education, training, and policy. These areas must support each other to create a strong system where all students, including those with disabilities, can fully take part in PE. Coordinated efforts between teacher education institutions, school leaders, and government policymakers are needed to make these changes effective and permanent (Sherrill, 2004).

Administrative Support

Administrative support plays a key role in the success of APE and inclusive teaching in general. When school leaders actively support inclusion, teachers feel more confident, better prepared, and more motivated to adapt their teaching to meet the needs of all students. However, without this support, teachers often feel isolated and struggle to find the resources they need. For example, Josephat (2019) reported that in Zambia, many PE teachers found it difficult to include students with disabilities because school administrators did not provide enough attention or help. This lack of leadership support made it harder to implement inclusive practices.

In the context of Kazakhstan, similar problems exist. Orynassarova (2017) pointed out that many schools do not have clear policies or leadership strategies focused on inclusive education. As a result, even when teachers are willing to teach students with special needs, they do not receive the proper guidance or resources to do so effectively. This slows down progress and limits the impact of inclusive education efforts.

On the other hand, strong and supportive administrators can create a more inclusive school environment. According to Catellani et al. (2023), school leaders who offer regular training, provide adapted equipment, and show encouragement help teachers feel more

prepared and valued. This kind of support not only improves teaching quality but also creates a positive school culture where all students can participate in PE.

Effective Strategies

Different research shows that teaching students with disabilities in PE is most effective when teachers adapt their lessons, provide support, and build an inclusive environment. In contexts such as Japan and Taiwan, teachers often change the rules of games, simplify activities, or use different equipment so that students of different abilities can participate equally (Liu et al., 2019; Sato et al., 2007). These adaptations are usually combined with short and clear instructions, which help all students understand the tasks, while peer support allows classmates to assist each other and encourages teamwork. Such strategies not only make participation possible but also help students with disabilities feel included and valued in the classroom. Teacher training further strengthens these practices. Professional development programs give teachers new strategies, increase their awareness of student needs, and build confidence in adjusting (Alhumaid et al., 2023). Similarly, Martin (2014) emphasizes the importance of flexible lesson planning, as teachers must be ready to consider individual abilities and make changes when needed. Taken together, these studies highlight that successful inclusion in PE depends on teachers' ability to adapt lessons and create supportive, cooperative learning environments that meet the needs of all students.

Collaborative Practice

Working together with others is very important for successful inclusive education, especially in APE. Collaboration between teachers, special education specialists, school leaders, parents, and even the wider community can help support students with disabilities more effectively. When everyone works as a team, it becomes easier to solve problems and share good teaching strategies (Block & Obrusnikova, 2007). For example, Bomna Ko and

Boswell (2013) found that in the United States, PE teachers who cooperate closely with special education professionals and parents can provide better learning experiences for their students. These teachers feel more confident because they are not working alone. They can ask for advice and get help when needed.

In Indonesia, Utami (2025) also found that teachers see teamwork as a very important part of inclusive teaching. Teachers share ideas with each other, talk about challenges, and find solutions together. This kind of cooperation helps teachers grow professionally and makes the learning environment better for students with special needs.

Whereas in Kazakhstan, Makoelle and Burmistrova (2021) found that inclusive education still needs stronger collaboration. They argue that teachers, school administrators, parents, and community members must all work together to improve inclusion. Without this support, it is difficult for individual teachers to meet the needs of every student, especially in PE, where adaptation and assistance are often required.

Community and Parental Involvement

The involvement of parents and the wider community is very important for the success of APE and inclusive education. When parents and community members take an active role, they help create a stronger support system for students with disabilities, both inside and outside of school (Tripp et al., 2007). For instance, Josephat (2019) found that in Zambia, when parents are involved in their children's education, teachers better understand the specific needs and abilities of their students. This understanding helps teachers adapt their lessons more effectively and encourages students to participate more actively in physical education. Parents' involvement also motivates students because they feel supported not only by their teachers but also by their families.

Similarly, Utami (2025) found that Indonesian teachers highly value when parents participate in their child's learning process. Communication between teachers and parents

helps solve problems faster and allows parents to reinforce learning at home, which improves student outcomes.

In Kazakhstan, Abdrassilov et al. (2023) state that raising community awareness about disabilities is essential. When the community understands more about inclusion, it reduces negative attitudes and stigma toward students with disabilities. Wider acceptance helps students feel more welcomed and respected in their schools and neighborhoods.

Research Gap

Few studies explore how mainstream and private school PE teachers in Kazakhstan understand and implement APE in inclusive settings. Most existing local studies (e.g., Abdrassilov et al., 2023; Orynassarova, 2017) provide general overviews but do not examine teachers' individual experiences, perceived readiness, and practical challenges in detail.

Additionally, collaborative practices in APE remain underexplored in Kazakhstan. While Makoelle and Burmistrova (2021) highlight the importance of collaboration in inclusive education, there is a lack of empirical research investigating how PE teachers engage with specialists or other stakeholders in practice. This study aims to address these gaps by exploring PE teachers' attitudes, preparedness, and the challenges they face when implementing APE in both public and private schools in Astana.

Conclusion

The literature review illustrated that teacher preparedness, and positive attitudes are key indicators in the pursuit of effective APE. However, many challenges remain, such as limited training for teachers, lack of resources, and insufficient support from school leaders. Despite these difficulties, the research also stated factors that help improve APE, including collaboration among teachers and specialists (Block & Obrusnikova, 2007),

involvement of parents and the community (Tripp et al., 2007), and continuous professional development (Alhumaid et al., 2023).

Chapter 3: Methodology

This chapter outlines the research methodology that was employed to explore the perspectives of PE teachers on implementing APE in schools in Astana, Kazakhstan. A qualitative research design was adopted, using semi-structured interviews with purposeful sampling to collect in-depth data. The chapter provides the philosophical rationale underpinning the research, describes the research setting, participant selection, data collection, analysis methods, and discusses ethical considerations of the study.

The following research questions guide the study:

1. How do PE teachers define and understand inclusive education within the context of Adaptive Physical Education (APE)?
2. What challenges do PE teachers face when adapting the curriculum for students with disabilities?
3. How do PE teachers' attitudes and the availability of resources influence the implementation of Adaptive Physical Education (APE)?
4. How do the experiences of PE teachers in mainstream and private schools differ in relation to the support and implementation of APE?

Research Design and Rationale

This study adopted a qualitative phenomenological design to explore how PE teachers experienced and implemented APE in schools in Astana, Kazakhstan. Because the research was focused on teachers' lived experiences, the qualitative approach was useful for capturing the complexity and depth of participants' perceptions and practices, elements that were difficult to assess through quantitative methods (Leavy, 2017).

Phenomenology is a valuable qualitative design for gaining a deep understanding of individuals lived experiences within their real-life contexts (Creswell & Poth, 2018). As Merriam and Tisdell (2015) note, this approach enables researchers to explore how

participants make sense of their experiences and the meanings they assign to them. In this study, phenomenology is suitable because it allowed me to investigate how PE teachers understand and navigate the challenges of APE in their specific school settings.

Data was collected through individual semi-structured interviews with purposively sampled PE teachers from both mainstream and private schools. This method enabled detailed exploration of participants' perspectives while allowing flexibility to probe emerging themes and nuances (Creswell & Poth, 2018). The study aimed to reveal both the unique and shared experiences of teachers regarding APE implementation, resources, attitudes, and challenges.

Philosophical Underpinnings of Research

Research philosophy provides the foundation for any study, shaping its methodology and influencing all aspects of inquiry (Saunders et al., 2019). This study adopted a constructivist ontology, which posited that reality was socially constructed and shaped by individual experiences and contexts (Grix, 2001). Thus, teachers' understandings of APE were seen as subjective and embedded in their personal and social environments.

Epistemologically, the study is grounded in interpretivism, which values understanding the complexity of human experiences and seeks to interpret meanings within specific contexts (Denzin & Lincoln, 2018). This approach aligns with the study's goal to co-construct knowledge through interaction with participants and to capture the rich, contextualized perspectives of PE teachers.

Theoretical Underpinnings of Research

According to TPB, individuals' behavior is shaped by their intention to act, which is influenced by three key factors: attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Attitudes refer to how positively or negatively a person views a

particular behavior. Subjective norms describe the social pressures individuals feel from others, such as colleagues, school leaders, or parents. Perceived behavioral control relates to how confident individuals feel about performing the behavior, based on their skills, experience, available resources, and level of support.

Positionality Statement

I have experience as a professional athlete and a PE teacher working with students with disabilities. I also went to a school where children with disabilities were often treated unfairly or excluded from PE. Because of this, I feel connected to the topic and understand the challenges teachers face.

I knew this might affect how I saw things, so I was careful to avoid bias. The study looked at teachers from different types of schools in Astana, and I kept in mind how these different settings affected their experiences. To make sure the study was unbiased, I checked my findings together with my participants.

Research Site

The study was conducted in two schools in Astana, Kazakhstan: one mainstream school and one private school. These schools were purposefully selected because of their engagement in implementing APE as part of their inclusive education practices. The private school was included due to its longer experience and more established APE practices, while the mainstream school was selected for its growing involvement in inclusion within a larger student body. This contrast enabled the study to compare how different types of schools supported APE implementation.

Table 1 summarizes the main characteristics of the two participating schools, including location, student population, and experience with APE. This information helped contextualize the environment in which the research was conducted.

Table 1*Comparative Overview of the Research Sites*

Feature	School A (mainstream)	School B (private)
Location	Urban district of Astana	Urban district of Astana
Student Population	Approximately 2,100	Approximately 750
Grades	1 to 11	1 to 11
APE implementation	Less than 5 years	More than 5 years
Class size	20+ students, more varied	Less than 20, more individualized
Support Staff	Limited	APE specialists, assistants

Both schools promote inclusive education in alignment with Kazakhstan’s ongoing educational reforms. These settings allowed for a comparative exploration of APE experiences across different school types.

Sample and Sampling Procedures

In this study, I used a purposive sampling method to select participants who had direct experience with APE in mainstream or private schools in Astana, Kazakhstan. This approach helped me include PE teachers who were familiar with inclusive practices and could provide rich, first-hand insights into how APE was implemented in their settings.

In qualitative research, purposive sampling is commonly used because the goal is not to generalize to the entire population but to explore the experiences of individuals with relevant knowledge (Merriam & Tisdell, 2015). This study used purposive sampling to select participants who had relevant experience and knowledge of APE. This method

allows the researcher to focus on individuals who can provide rich and meaningful information related to the research questions (Creswell, 2018). In this study, participants were selected based on the following criteria: (1) current or recent experience teaching PE in an inclusive school environment and (2) familiarity with adapting PE for students with special educational needs (SEN).

I recruited 12 teachers in total, with 6 participants from each school. This range is suitable for a qualitative interview-based study because it allows for the collection of detailed narratives while keeping the data manageable for in-depth analysis (Creswell & Poth, 2018). This number also supports the goal of reaching data saturation, where no new information emerges from additional interviews (Guest et al., 2006).

Table 1 presents a comparative overview of the research sites, including School A (mainstream) and School B (private), in terms of location, student population, grade levels, APE implementation, class size, and support staff.

Data Collection Instruments

To gain an in-depth understanding of teachers' perspectives on the implementation of APE, I used two qualitative data collection instruments: semi-structured individual interviews and a short questionnaire for demographic background. Using multiple tools is common in qualitative research because it increases the credibility and richness of the data (Yin, 2018). It also allows the researcher to explore both the personal experiences and broader professional contexts in which those experiences occur (Merriam & Tisdell, 2015).

The semi-structured interviews were the primary method of data collection (see Appendix B). This format allows for a balance between guiding the conversation and giving participants the freedom to express their thoughts openly. Semi-structured interviews are particularly useful for understanding complex experiences, such as how teachers adapt PE lessons for students with SEN (Patton, 2014). The interview guide

included open-ended questions (see Appendix D) focusing on participants' professional background, perceptions of inclusion in PE, specific strategies used, and the support and challenges they encountered in their school settings. This method helps to uncover personal beliefs, values, and school-based practices related to inclusive PE.

In addition to interviews, I used a brief questionnaire to collect demographic information (see Appendix B) from each participant. This included data such as years of teaching experience, qualifications, school type (mainstream or private), and whether they had received training for adaptive PE or in an inclusive education. Gathering this background information helped contextualize the findings and supported comparison across different cases.

Together, these tools allowed me to explore the lived experiences of teachers and the factors that shape their perspectives on APE implementation. The use of semi-structured interviews, supported by demographic questionnaires, aligns with the goals of phenomenological research, which seeks to understand how individuals experience and interpret a phenomenon in their specific context (Creswell & Poth, 2018).

Data Collection Procedures

The data collection process for this study was designed to follow ethical standards while respecting the busy schedules of teachers. First, I contacted the principal of the private school to explain the purpose of my research and to request permission to use the school for my research. After a verbal agreement, I submitted a formal letter and received written approval to conduct the study. For the mainstream school, I reached out to the vice principal, who then introduced me to the school's PE coordinator. With their support, I submitted a formal request for approval from the principal.

Once institutional approvals were secured, I began the participant recruitment process. In both schools, the administration shared the study information and recruitment

materials with PE teachers. Interested teachers either provided their contact details through the school or reached out to me directly. I then followed up individually to explain the study in more detail and confirm their willingness to participate.

All data collection activities were scheduled during non-teaching hours, including after-school periods and weekends, to avoid interrupting regular classes. Before each session, I provided participants with an informed consent form (see Appendix C), either electronically or in printed form. I also explained the purpose of the research, data confidentiality, and participants' rights. Signed consent forms were collected before each interview.

In each school, I conducted semi-structured individual interviews with teachers who had experience working with students with SEN in PE settings. The interviews took place in quiet locations chosen by the participants, such as staff rooms or classrooms, and lasted between 30 and 45 minutes. The interviews were guided by a set of open-ended questions from the interview protocol (see Appendix D and E), focused on their experience, challenges, and perceptions related to APE implementation. All interviews were audio-recorded with the participants' permission.

The interviews were conducted in Kazakh, Russian, or English, depending on the participant's language preference. In the private school, data collection was completed over two days, while in the mainstream school, it was conducted over three days. After each interview, I took brief field notes on participants' demeanor and other relevant observations, and I also held a short debriefing session to give participants the opportunity to share final thoughts or ask questions.

All recordings, transcripts, and notes were securely stored on a password-protected device. During transcription, pseudonyms were assigned to protect participants' identities.

Throughout the process, I maintained a professional and respectful atmosphere and was careful not to influence participants' responses, ensuring the integrity of the data collected.

Data Analysis Procedures

For this study, I followed a systematic approach to analyze the data collected from interviews. I used thematic analysis, as recommended by Creswell and Poth (2018), to identify and organize key themes from the participants' responses. This approach involved several steps. First, I transcribed all interview recordings and read through the transcripts multiple times to gain a general sense of the data. Second, I conducted initial coding by highlighting significant statements and labeling them with short phrases that captured their meaning (see Appendix F). Third, I grouped similar codes together to form broader categories. Fourth, I identified patterns across these categories and developed themes that reflected the teachers' experiences and perspectives. Finally, I interpreted these themes in relation to the research questions and the theoretical framework guiding the study. Throughout this process, I used memo writing to record reflections and maintained an audit trail to ensure transparency and trustworthiness in the analysis (Creswell & Poth, 2018).

Data Preparation

I started by transcribing all interviews manually. Then, I read the transcripts several times to understand the data and note initial ideas. I used thematic analysis (Creswell & Poth, 2018) to identify important themes in the interviews. First, I used descriptive coding to label key pieces of information. Then, I grouped these codes into broader themes to see patterns across participants' responses (Saldaña, 2013). The analysis was guided by Ajzen's Theory of Planned Behavior (1991), which helps explain how teachers' attitudes, social influences, and perceived control affected their actions. This framework helped me understand how ready and motivated teachers felt to deliver adaptive physical education.

To ensure the findings are accurate, I used member checking by sharing preliminary results with participants for confirmation. This approach provided a clear understanding of teachers' experiences and perspectives on adaptive physical education in Kazakhstan and highlight the opportunities and challenges of implementing APE.

Ethical Concerns and Risk of Research

Ethical considerations were fundamental part of this study. Before data collection began, I clearly explained the purpose, procedures, and potential benefits of the study to all participants. Informed consent was obtained from each participant, emphasizing that their participation was entirely voluntary and that they could withdraw from the study at any time without any negative consequences (Leavy, 2017). While full anonymity is challenging to guarantee in qualitative research due to the nature of data collection, confidentiality was strictly maintained. I protected participants' identities by assigning pseudonyms and removing any identifying information from transcripts and reports. In addition, potentially identifiable biographical data (such as age, gender, school affiliation, and years of teaching experience) was anonymized or reported in aggregated form to further ensure confidentiality (Cohen et al., 2017; Kumar, 2014).

Potential risks to participants were carefully considered. Since the research took place in participants' professional environments, I took steps to ensure that the process was as comfortable and non-intrusive as possible, minimizing any risk of stress or discomfort (Kumar, 2014). Participants had the right to skip any questions or withdraw from the study if they experienced any emotional distress or discomfort during data collection.

Additionally, the close involvement required in qualitative research means I continuously reflected on my role and influence throughout the research process. Recognizing that researchers are not detached observers but active participants in knowledge production (Berger, 2015), I remained aware that my background, beliefs, and

experiences could shape interactions with participants and the interpretation of data (Bourke, 2014). I took measures to maintain neutrality and avoid bias, including keeping reflective journal and seeking feedback from peers and supervisors.

Risks of Research

The primary risks anticipated in this study included potential discomfort or anxiety among participants when discussing challenges in their professional practice. There was also a risk of inadvertent disclosure of sensitive information related to school practices or colleagues. Such risks were common in qualitative educational research and require careful attention to confidentiality and participant well-being (Creswell & Creswell, 2018; Cohen et al., 2017). To mitigate these risks, all data was handled with strict confidentiality, and findings were reported in a way that prevented identification of individuals or schools. Ethical approval was sought from relevant institutional review boards, ensuring compliance with national and institutional ethical standards (BERA, 2018). By addressing these ethical concerns and risks proactively, the study aimed to create a respectful, safe environment that supported honest and meaningful participation.

Conclusion

This chapter outlined the research methodology designed to investigate teachers' perspectives on the implementation of APE in two schools in Astana, Kazakhstan. This study employed a qualitative phenomenological approach, using interviews to explore the lived experiences of teachers working in inclusive physical education setting. A total of 12 physical education teachers were purposively selected, with equal representation from mainstream and private school settings.

Data collection consisted of semi-structured individual interviews aimed at capturing teachers' personal experiences, beliefs, and challenges in delivering APE. Additionally, participants completed a short background questionnaire to provide

demographic information, including years of experience, educational background, and specialization in physical education or adaptive practices.

The analysis followed Saldaña's (2013) two-cycle coding method, incorporating both within-case and cross-case comparisons. The process was guided by Ajzen's Theory of Planned Behavior, which offered insight into how attitudes, perceived behavioral control, and social norms influenced teachers' intentions and practices in implementing inclusive physical education. The conceptual focus on attitudes and perceived readiness further framed the investigation into how prepared and motivated teachers felt to adopt APE practices.

Ethical considerations, including informed consent, confidentiality, and strategies such as triangulation and member checking, were integrated to ensure credibility and trustworthiness of the study. The next chapter presents the findings from the data analysis, focusing on emerging themes related to teachers' attitudes, readiness, and the challenges they encountered in both mainstream and private school contexts.

Chapter 4: Findings

This chapter presents the findings of the study on the implementation of APE in mainstream and private schools in Astana, Kazakhstan. The study aimed to examine the readiness, attitudes, and challenges faced by physical PE teachers in delivering APE, as well as how these factors influence the inclusion of students with special educational needs (SEN) in PE classes. Data was collected through semi-structured interviews with PE teachers from both school types. Table 1 provides a comparative overview of the research sites, highlighting key features such as school type, student population, grades, duration of APE implementation, class size, and availability of support staff.

The findings are organized around the main research questions, highlighting four key themes that emerged from the data, including teachers' attitudes towards inclusive education and APE, the challenges in implementing APE, the influence of resources and training on implementation of APE, and the differences in experiences between two school types.

1) Teachers' Understanding and Attitudes Towards Inclusive Education and APE:

This theme examines how PE teachers conceptualize inclusive education and APE, including their beliefs about the inclusion of students with special educational needs in PE lessons, their perceived roles and responsibilities, and their levels of confidence and psychological readiness to implement adaptive practices.

Differences in understanding and attitudes between teachers working in mainstream and private schools are also explored.

2) Implementation of APE and Associated Challenges:

This theme focuses on the practical aspects of implementing APE in school settings. It explores the challenges PE teachers face when adapting the curriculum

and physical activities for students with disabilities, including issues related to class size, curriculum flexibility, availability of adapted equipment, time constraints, and classroom management. Particular attention is given to how these challenges differ between mainstream and private schools.

3) **Influence of Training, Resources, and School Support on APE**

Implementation:

This theme examines the role of professional training, institutional support, and resource availability in shaping teachers' ability to deliver APE effectively. It includes teachers' experiences with pre-service and in-service training, access to support staff such as assistants or APE specialists, administrative support, and how these factors influence the quality of inclusive PE practices. Differences in support structures between the two school types are highlighted.

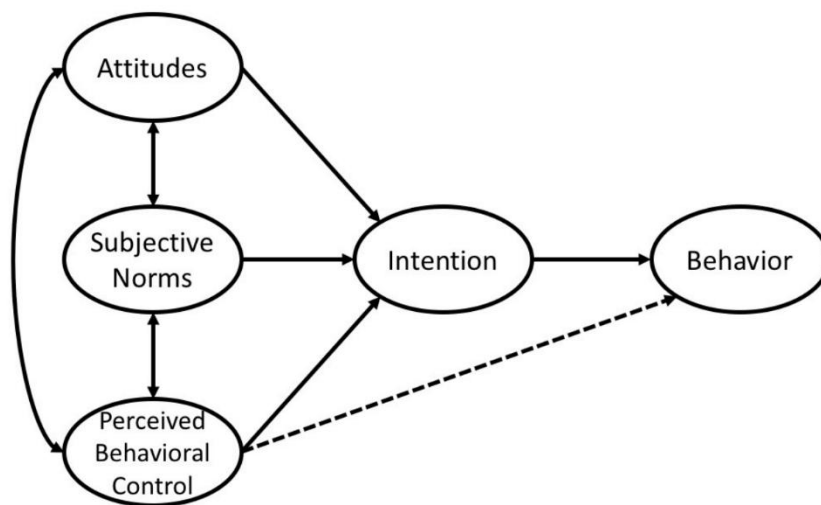
4) **Differences in Experiences Between Mainstream and Private Schools:** This theme brings together the findings from the first three themes and compares the experiences of PE teachers in mainstream and private schools. It highlights differences in teachers' understanding, attitudes, and readiness, as well as the challenges they face and the level of training, resources, and support available in the two school types.

Each theme and its related subthemes provide a comprehensive understanding of PE teachers' perspectives and experiences in implementing APE. The findings are presented systematically to ensure a clear alignment between the research questions and the data generated through the interviews, while also allowing for a comparative analysis between mainstream and private school contexts.

Teachers' Understanding and Attitudes Towards Inclusive Education and APE

Across both mainstream and private schools, participants emphasized that inclusive education and APE aim to provide all students, including those with special educational needs (SEN), the opportunity to participate in PE in a safe and supportive environment. Most participants described inclusion as an ethical and professional responsibility and emphasized the importance of participation, safety, and emotional well-being for all students. From the perspective of TPB, these findings indicate that teachers largely hold favorable attitudes toward inclusive PE, which is a necessary condition for inclusive practice. However, attitudes alone were insufficient to ensure consistent implementation of APE, as differences emerged in teachers' confidence, understanding, and contextual support.

To guide the interpretation of the findings, this study draws on TPB. In the context of this study, TPB provides a useful framework for understanding how physical education teachers' beliefs about inclusion (attitudes), perceived expectations from their school environment (subjective norms), and confidence in their ability to implement APE (perceived behavioral control) influence their intention to use inclusive practices and their actual teaching behavior in PE lessons. Figure 1 illustrates the dimensions of the TPB (Ajzen, 1991; see Figure 1).

Figure 1*Theory of Planned Behavior (Ajzen, 1991)**Note. Adapted from The Theory of Planned Behavior, by I. Ajzen, 1991.*

In mainstream schools, several teachers presented a more limited understanding of inclusive education and expressed concerns about practical implementation. Participant 1 described inclusive education simply as “providing education to 'special' children,” and defined APE as “a type of physical education adapted for children with special needs. Some activities may be too dangerous or difficult for them to do, so the program is adjusted to suit their abilities and needs” (Participant 1). While some teachers supported integrating students with disabilities alongside typically developing peers, others felt that children with more significant disabilities should receive separate instruction or specialized classes (Participant 2). Teachers in these schools also noted restrictions in modifying the curriculum, with one participant explaining, “We can’t change the calendar-thematic plan. We can’t change the topics, but we can rearrange their order at our discretion” (Participant 1). These statements reflect that mainstream teachers perceived behavioral control is limited due to structural constraints and lack of resources. The school

environment was often described as unsupportive, leaving teachers to manage inclusion largely on their own.

In contrast, teachers in private schools reported a broader understanding of inclusion and a more proactive approach to implementing APE. They emphasized that inclusive education involves adapting exercises so that all children can participate safely and develop both physical and social skills. Participant 7 explained, “For me, inclusion is when each child performs physical exercises according to their abilities and is also part of a team, doing them together” (Participant 7). Similarly, Participant B noted, “Inclusive education means giving every student, regardless of ability, a chance to participate in PE. It’s about adapting activities so that students with disabilities can join and feel included” (Participant 7). Private school teachers reported having more autonomy to adapt exercises, pacing, and lesson activities while keeping the overall curriculum objectives intact. They also described stronger institutional support, including access to assistants, adaptive equipment, and occasional training sessions on inclusion, although they acknowledged that more specialized training would still be beneficial, and will potentially increase their perceived behavioral control and facilitated more effective implementation.

Overall, teachers’ attitudes toward teaching students with disabilities in PE were generally positive across both school types, with a shared belief in the importance of participation and adaptation. However, the differences between mainstream and private schools were clear: private school teachers demonstrated more confidence, had greater autonomy to modify lessons, and benefited from better resources and support, whereas mainstream schoolteachers faced more practical and structural challenges.

Mainstream Schools

In mainstream schools, teachers often described inclusive education in relatively narrow or simplified terms. For example, Participant 1 defined inclusion primarily as

providing education for “special children” and described APE as an adapted version of PE designed to reduce risk: “Some activities may be too dangerous or difficult for them to do, so the program is adjusted to suit their abilities and needs” (Participant 1, male teacher, public school).

While this reflects a caring and protective attitude, it also suggests uncertainty about how inclusion can function within mixed-ability PE classes. Several teachers expressed concern about safety, lesson flow, and fairness to other students, which limited their willingness to fully integrate students with more complex needs.

This hesitation reflects reduced perceived behavioral control, as teachers doubted their ability to manage inclusive lessons effectively under current conditions. These doubts were often linked to structural factors rather than personal resistance, indicating a gap between intention and practical capacity. Teachers also described limited autonomy in adapting the curriculum: “We can’t change the calendar-thematic plan... we can only rearrange topics” (Participant 1, male teacher, public school).

Such restrictions further reduced teachers’ sense of control, reinforcing the perception that inclusive practices are constrained by systemic requirements rather than pedagogical choice.

Private Schools

In contrast, teachers in private schools articulated a broader and more holistic understanding of inclusion. Inclusion was described not only as participation but also as belonging, teamwork, and social development: “Each child performs exercises according to their abilities and is part of a team” (Participant 7, male teacher, private school).

Private school teachers emphasized adaptation as a normal part of teaching rather than an exception. This reflects stronger perceived behavioral control, supported by smaller class sizes, greater flexibility, and access to assistants.

Overall, while positive attitudes toward inclusion were evident across both school types, confidence and clarity of understanding differed significantly, shaping how teachers approached APE in practice.

Implementation of APE and Associated Challenges

The second theme focuses on how APE is implemented in practice and the challenges teachers encounter. These challenges primarily influenced perceived behavioral control, which TPB identifies as a key predictor of whether intentions lead to action.

Mainstream Schools

In mainstream schools, teachers highlighted several challenges that limit the effectiveness of APE. Participant 1 explained:

Yes, it (APE) helps children like this (SEN students). When other children play active or risky games, the child with special needs finds it interesting and wants to join in, but they are usually separated. I think APE helps to put children on one team. There is usually not enough time for PE teachers during the lesson to organize games like this. (Participant 1, male teacher, public school)

Participant 2 emphasized the need for personalized programs and specialized equipment but noted that these resources are often unavailable: “Class size and the size of the gym are major challenges. When there are many students and limited space, it is hard to follow the program properly and give individual attention to students with disabilities” (Participant 2, male teacher, public school). Participant 3 also noted the difficulty of managing large classes, explaining, “In most cases, I must work with such children during the lesson itself. For instance, if there are 25 students in the class and one of them has a disability, it can be challenging to provide adequate support” (Participant 3, male teacher, public school). These accounts reflect that mainstream teachers perceived that behavioral control is limited by structural barriers such as class size, resources, and time constraints,

even though their attitudes toward inclusion are generally positive. Teachers reported working with students with autism, cerebral palsy, and other developmental or health-related limitations, and noted that these challenges often require additional time or adaptations outside of regular lessons.

Private Schools

Private school teachers reported similar challenges but described a more structured and supportive environment for implementing APE. Participant 7 explained, “Adaptive Physical Education is beneficial for children with disabilities, it improves their physical abilities and also allows them to interact with other children, which helps them become more confident” (Participant 7, male teacher, private school). Participant B noted the importance of assistants in class: “APE allows children with disabilities to feel part of the class and participate in activities that would otherwise be difficult. Having an assistant in class makes this much easier” (Participant 8, male teacher, private school). Teachers also reported challenges, such as limited lesson time and the need to adapt exercises to individual student abilities. Participant 9 explained, “The main challenge is the limited time during lessons. Even with an assistant, it can be hard to give each child the individual attention they need” (Participant 9, female teacher, private school). Private school teachers’ stronger support systems, access to assistants, and adaptive equipment enhanced their perceived behavioral control, enabling them to implement inclusive practices more effectively. Private school teachers described working with students with ADHD, mild cerebral palsy, learning difficulties, and other conditions, and noted that step-by-step approaches and gradual progression were often necessary to ensure participation and skill development.

Overall, teachers in both school types agreed that APE supports the inclusion of students with disabilities by helping them participate, gain confidence, and socialize with

peers. However, the differences between mainstream and private schools were evident: private school teachers had access to better support, including assistants and some adaptive equipment, and could adapt lessons more effectively. In contrast, mainstream teachers faced larger classes, fewer resources, and limited time, which made it more challenging to provide individualized attention to students with disabilities.

Influence of Training, Resources, and School Support on APE Implementation

Teachers across both mainstream and private schools highlighted the importance of proper training, sufficient resources, and support staff for the successful implementation of APE. They explained that without these elements, it is difficult to provide individualized attention and adapt lessons effectively for students with disabilities, which lowers perceived behavioral control.

Mainstream Schools

In mainstream schools, teachers reported several gaps in training and support. Participant 1 emphasized the need to change societal attitudes as a first step: “Some parents don’t want their children to study or play with kids who have special needs. I think we need to change people’s mindset first, and then the system will also change” (Participant 1, male teacher, public school). Teachers also requested more qualified assistants to help during lessons. Participant 2 explained, “I would be very glad to have a qualified assistant supporting me, but only if they are properly trained and competent, not just a random assistant” (Participant 2, male teacher, public school). Participant 3 suggested that PE lessons should be more engaging and supported by an objective assessment system to motivate students and enhance participation: “Currently, most students automatically receive top marks in PE, but it shouldn’t be like that. The subject should be taken more seriously” (Participant 3, male teacher, public school).

Mainstream teachers also expressed the need for professional development in APE and inclusive education. They reported that most training opportunities are available only through external courses, often in Russian or English, which limits accessibility. One teacher emphasized the absence of a dedicated APE specialization in Kazakhstan, noting that “currently, there is no specific specialization in Adaptive Physical Education (APE) in Kazakhstan... one can only study general physical education” (Participant 3, male teacher, public school).

Private Schools

In private schools, teachers generally reported better access to training and support, though they still saw room for improvement. Participant 7 highlighted the importance of sharing best practices and having additional staff: “Provide more training for teachers, supply specialized equipment, and encourage experience sharing between schools... It is also important to assign additional staff, such as teaching assistants, to classes, since working with children with special needs requires close attention” (Participant 7, male teacher, private school). Participant 8 stressed the value of adaptive equipment and flexible lesson planning: “More regular training on inclusive education and adaptive PE would be helpful. Also, adding more adaptive equipment and increasing lesson time or planning flexibility could make inclusion even more effective” (Participant 8, male teacher, private school). Participant 9 added the need for collaboration with specialists: “I would like more collaboration with specialists and guidance on working with children with complex disabilities” (Participant 9, male teacher, private school). These findings indicate that training, resources, and support are critical determinants of teachers perceived behavioral control and, therefore, the successful implementation of inclusive PE.

Overall, both school types agreed that teacher training, support staff, and adequate resources are crucial for the successful implementation of APE.

Differences in Experiences Between Mainstream and Private Schools

This theme combines the findings from the previous three themes to provide an overall understanding of how APE is implemented in mainstream and private schools in Astana. It highlights teachers' knowledge and attitudes toward inclusive education, the challenges they face, the support available, and the differences between school types. Teachers' attitudes toward inclusion in both school types were generally positive in both settings but perceived behavioral control and subjective norms varied.

Mainstream Schools

In mainstream schools, structural constraints, limited resources, and minimal school support reduced teachers' ability to implement APE, despite their willingness to include students. Parental attitudes and societal norms also influenced the classroom environment, highlighting the role of subjective norms. In mainstream schools, teachers often viewed APE as a way to help children participate safely and gain confidence. Participant 1 explained, "APE helps to put children in one team (the team of both normal students and SEN students). There is usually not enough time for PE teachers during the lesson to organize games like this" (Participant 1, male teacher, public school). Participant 3 added that working with students individually during lessons is difficult because of large class sizes: "If there are 25 students in the class and one of them has a disability, it can be challenging to provide adequate support" (Participant 3, male teacher, public school). Despite these challenges, mainstream teachers generally had positive attitudes and a willingness to include students, but their efforts were often limited by structural constraints, lack of training, and insufficient resources.

Private Schools

In private schools, teachers benefited from greater autonomy, access to assistants, adaptive equipment, and training. These factors strengthened their perceived behavioral

control, enabling them to implement APE more effectively and foster student inclusion.

Private school teachers also emphasized the importance of APE in helping students develop physical, social, and emotional skills. Participant 8 said, “APE allows children with disabilities to feel part of the class and participate in activities that would otherwise be difficult. It helps them gain confidence, improve motor skills, and socialize”

(Participant 8, male teacher, private school). Private school teachers reported having better support, including assistants, adaptive equipment, and occasional training, which allowed them to adapt lessons more effectively. Participant 9 explained, “With an assistant present, I can give more attention to students who need extra support, and they can participate alongside their peers” (Participant 9, female teacher, private school).

When synthesizing the challenges and needs highlighted across the three themes, several patterns emerge. Teachers in both school types identified large class sizes, limited time, and insufficient resources as major barriers to fully implementing APE. They also emphasized the importance of training in inclusive education, specialized knowledge in APE, and qualified support staff. For example, Participant 1 from a mainstream school said, “I would like to have an assistant to support me during lessons, someone who is qualified. As a PE teacher, I want to get strong training in Adaptive Physical Education and inclusive education to understand it better” (Participant 1, male teacher, public school). Similarly, Participant 8 from a private school noted, “Having an assistant makes a big difference, but I’d like more guidance on how to include students with complex needs. Training in adaptive PE specific to different disabilities would be very valuable” (Participant 8, male teacher, private school). Another key finding is that attitudes toward inclusion are generally positive, but the ability to implement inclusive practices depends heavily on school support and resources. Mainstream schools often lack equipment, assistants, and flexible lesson structures, while private schools provide a more supportive

environment with greater autonomy for teachers to modify exercises safely. Teachers also highlighted that social and parental attitudes play a role in inclusive practices, particularly in both schools, where some parents are hesitant to have their children study or play with peers with disabilities.

Overall, the TPB framework helps explain how attitudes, perceived control, and social pressures interact to shape teachers' practices inclusive PE. Where resources, training, and support align with positive attitudes, inclusive practices are more successful, as seen in private schools. In mainstream schools, limitations in these areas present significant barriers, even when teachers are willing and motivated to include students with disabilities.

Conclusion

The findings of this study highlight that APE is a crucial tool for promoting the inclusion, confidence, and social development of students with disabilities in both mainstream and private schools. Teachers' experiences indicate that effective APE depends not only on their knowledge and positive attitudes but also on broader school factors, including class size, availability of assistants, adaptive equipment, and access to specialized training. While private schools generally provide more supportive conditions, mainstream schools face systemic constraints that limit teachers' ability to implement inclusive practices fully.

The study shows that inclusive PE involves more than participation in activities; it supports students' holistic development, including social skills, emotional regulation, teamwork, and self-confidence. Teachers' attitudes perceived social expectations (from colleagues, administrators, and parents), and sense of control over adapting lessons aligned with the Theory of Planned Behavior play a central role in fostering an inclusive learning environment. Even in resource-limited settings, teachers who value inclusion actively seek

ways to adapt lessons and support students, demonstrating a commitment to equity and student well-being.

School culture, leadership, and parental engagement emerged as critical factors in successful APE implementation. Support from administrators, collaboration with colleagues, and positive parental attitudes strengthen teachers' confidence and ability to provide individualized attention. Conversely, challenges such as large class sizes, insufficient training, and limited adaptive equipment can hinder teachers' efforts, particularly in mainstream schools.

The findings suggest that promoting inclusive PE requires a multi-level approach. Strengthening teacher professional development, providing qualified support staff, and ensuring access to appropriate equipment are essential. Raising awareness among parents, students, and the wider school community about the benefits of inclusion can further enhance a supportive and empathetic environment. By addressing these factors, schools can create opportunities for all students, regardless of ability, to participate meaningfully in PE, develop essential life skills, and experience the social, emotional, and physical benefits of engagement.

Chapter 5: Discussion

This chapter discusses the findings of the present study, which explored the implementation of APE in mainstream and private schools in Astana through qualitative interviews with PE teachers. Semi-structured interviews allowed participants to elaborate on their experiences, beliefs, and challenges related to inclusive PE, while enabling the researcher to probe emerging issues in greater depth.

The purpose of this chapter is to summarize the key findings, interpret their meaning, and locate them within the TPB and relevant literature, while also considering their implications for policy and practice in Kazakhstan.

This chapter is structured around four key themes identified in the findings:

1. **Teacher Readiness for APE:** Examining teachers' professional training, pedagogical competence, confidence, and preparedness to adapt physical education (PE) lessons for students with diverse needs.
2. **Teacher Attitudes Towards Inclusive PE:** Analyzing teachers' beliefs, perceptions, and dispositions towards inclusive practices in PE, and the extent to which positive attitudes translate into classroom practices.
3. **Challenges in Implementing APE:** Identifying structural, institutional, and pedagogical barriers, including limited professional development opportunities, insufficient resources, large class sizes, time constraints, and differences between mainstream and private school contexts.
4. **Influence of Resources and Training on APE Implementation:** Examining how access to adapted equipment, materials, and ongoing professional development affects teachers' ability to deliver inclusive PE effectively.

Each theme will be critically discussed in relation to the primary theoretical framework of this study, the TPB (Ajzen, 1991). TPB provides a lens for understanding

how teachers' intentions and behaviors regarding APE are influenced by three key factors: attitudes, subjective norms, and perceived behavioral control. Inclusive context, attitudes refer to teachers' positive or negative evaluations of inclusive PE practices, subjective norms capture the social pressures they perceive from colleagues, school leaders, and parents, and perceived behavioral control reflects teachers' confidence in their ability to implement APE effectively, considering their skills, experience, available resources, and institutional support.

Furthermore, TPB serves as a "thinking tool" to critically examine how these individual and social factors interact with contextual and institutional conditions, shaping teachers' readiness, attitudes, and practices in implementing inclusive PE across both mainstream and private schools in Astana.

Teachers' Attitudes Toward Inclusive Education and APE

Teachers across both mainstream and private schools expressed broadly positive attitudes toward inclusive education, frequently framing inclusion as a moral and professional obligation. However, these attitudes appear to function primarily at the level of principle rather than practice, as they do not consistently translate into concrete pedagogical strategies. This pattern is consistent with evidence from diverse contexts, including Japan (Sato et al., 2007), Taiwan (Liu et al., 2019), and Indonesia (Utami, 2025), where teachers similarly endorse inclusion in principle but face challenges in operationalising it within classroom practice. The cross-contextual consistency of this gap suggests that the relationship between attitudes and practice is systematically mediated rather than linear.

This interpretation aligns with Block and Obrusnikova (2007), who argue that inclusive PE is shaped not only by teacher beliefs but also by structural and contextual conditions that enable or constrain practice. The findings of the present study extend this

argument by demonstrating that, in the Kazakhstani context, these structural influences also shape how inclusion is conceptually understood. In particular, teachers in mainstream schools tended to frame inclusion primarily in terms of safety and risk avoidance rather than participation and social integration. This indicates that attitudes toward inclusion are not fully formed abstractions, but are instead shaped by prior professional preparation and the institutional realities of school environments.

Perceived Behavioral Control and Practical Constraints

Perceived behavioral control emerged as the most decisive factor shaping the implementation of APE, suggesting that teachers' ability to act on inclusive intentions is primarily conditioned by contextual rather than attitudinal factors. In mainstream schools, teachers reported limited confidence in delivering inclusive lessons due to structural constraints such as large class sizes, inadequate equipment, and insufficient support. Rather than functioning as isolated barriers, these conditions collectively shape a teaching environment in which inclusion becomes logistically difficult to sustain. This finding is consistent with research from Zambia (Josephat, 2019), where similar constraints were shown to systematically restrict teachers' capacity to implement inclusive practices, indicating that such challenges are not context-specific but structurally recurring across educational systems.

In contrast, private school teachers demonstrated higher perceived behavioral control, largely enabled by smaller class sizes, greater resource availability, and more responsive institutional support. However, this difference is not simply indicative of greater teacher competence; rather, it reflects unequal institutional conditions that mediate the feasibility of inclusion. This interpretation aligns with Haegele and Sutherland (2015), who argue that inclusive practice is contingent upon institutional capacity rather than individual willingness alone. Similarly, Antala et al. (2023) emphasize that self-efficacy is

not solely an internal psychological trait but is shaped and reinforced by external support systems, highlighting the interaction between individual perception and structural environment.

These findings suggest that within the TPB framework, perceived behavioral control may not only be the strongest predictor of inclusive practice, but also the mechanism through which structural inequalities are translated into pedagogical outcomes. This raises a critical limitation of TPB in explaining inclusion in contexts where control beliefs are externally constrained rather than individually determined.

Subjective Norms and Social Influences

Subjective norms, understood as perceived social expectations, emerged as a significant but uneven influence on teachers' engagement with APE. In mainstream schools, teachers consistently referenced parental attitudes, broader societal beliefs, and institutional expectations as shaping their professional decisions. Notably, perceptions of parental hesitation toward students with disabilities participating in PE created a climate of uncertainty, which appeared to constrain teachers' willingness to fully implement inclusive practices. Importantly, this influence operated even in cases where teachers personally endorsed inclusion, suggesting a disconnect between individual attitudes and perceived social acceptability.

This pattern reflects the broader role of socio-cultural context in shaping educational practice. Similar dynamics have been reported in Indonesia (Utami, 2025) and Zambia (Josephat, 2019), where ambivalent or resistant community attitudes limit teachers' sense of legitimacy in implementing inclusive approaches. Within the TPB (Ajzen, 1991), such conditions can be understood as weak or conflicting subjective norms that undermine the translation of intentions into action. However, the present findings

suggest a more complex mechanism: subjective norms do not only influence intention formation but also shape teachers' perception of professional risk and accountability.

In contrast, private school teachers described institutional environments where inclusion was actively endorsed by leadership and reinforced through collegial expectations. Rather than functioning as external pressure, subjective norms in these contexts operated as enabling structures that legitimised inclusive practice and reduced perceived professional risk. This is consistent with Antala et al. (2023) and Catellani et al. (2023), who highlight the importance of collaborative and supportive school cultures in strengthening inclusive pedagogy. In such environments, normative alignment appears to convert inclusion from an individual responsibility into a shared institutional expectation.

Subjective norms do not merely reflect social influence on teachers' intentions, but actively shape the conditions under which inclusion is perceived as feasible or risky. The study extends existing literature by demonstrating that in the Kazakhstani context, inconsistencies between parental expectations and institutional support produce fragmented normative environments that differentially enable or constrain inclusive practice. This indicates that sustaining inclusive physical education requires not only individual commitment but also coherent alignment between school culture and broader community attitudes.

Training and Readiness

The findings reports teacher preparation as a foundational determinant of readiness for APE, suggesting that implementation is shaped less by willingness and more by the extent to which teachers are professionally equipped to act. Participants' reported sense of unpreparedness was not simply an individual perception but reflected a structural absence of specialised training in APE within pre-service and in-service teacher education. This

indicates that readiness for inclusion is constructed through institutional preparation systems rather than developed solely through professional experience.

This interpretation is consistent with international research. Freak and Miller (2017) similarly demonstrate that generalist teachers often experience insufficient preparation for delivering PE in inclusive contexts, while Catellani et al. (2023) further argue that both psychological readiness and professional competence are essential prerequisites for effective inclusive practice. Taken together, this literature suggests that readiness is not a static attribute but a condition produced through training environments and supported professional development.

In the Kazakhstani context, these limitations are intensified by systemic gaps in teacher education provision. Makoele and Burmistrova (2021) identify structural weaknesses in inclusive training frameworks, while Orynbassarova (2017) highlights persistent policy–practice misalignment that constrains effective implementation. Building on this, the present study demonstrates that such systemic deficiencies are not abstract policy issues but are directly reflected in teachers’ reduced confidence and limited pedagogical adaptability in PE classrooms. This suggests that institutional training structures function as a mediating mechanism between inclusive policy intentions and classroom-level enactment.

Resources and APE

Access to resources and specialised knowledge emerged as a critical structural condition shaping the feasibility of APE, suggesting that inclusion is constrained or enabled primarily through material and institutional capacity rather than teacher intention alone. While foundational work in adapted physical education (Winnick & Porretta, 2017; Martin, 2014) conceptualises effective inclusion as dependent on equipment availability, task modification, and individualised instruction, the present findings illustrate how the

absence of these conditions fundamentally reshapes pedagogical decision-making in practice.

In contexts where adaptive resources and specialist support are limited, teachers are not simply unable to implement ideal inclusive strategies but instead adapt by defaulting to minimal or superficial modifications. This indicates that resource scarcity does not merely reduce the quality of inclusion but actively redefines its form, often narrowing it to participation at a symbolic rather than pedagogically meaningful level. In contrast, environments with greater access to resources and support structures enable teachers to expand their instructional repertoire, facilitating more responsive and differentiated approaches to student needs.

These findings suggest that resource availability operates as a mediating mechanism between inclusive policy expectations and classroom realities. Rather than functioning as a supportive add-on, resources and specialised knowledge determine the extent to which inclusion can be meaningfully enacted, reinforcing the argument that inclusive PE is structurally produced rather than individually determined.

Summary of Key Findings

The study indicates that while teachers in both mainstream and private schools broadly endorse inclusive education and APE, such attitudes primarily reflect normative agreement rather than guaranteed pedagogical action. In line with existing literature, the findings suggest that attitudinal support for inclusion is a necessary but insufficient condition for effective implementation, particularly in contexts where structural constraints are significant.

Perceived behavioral control emerged as the most influential determinant of practice, indicating that inclusion is primarily enabled or constrained through teachers' perceived capacity to act rather than their willingness to do so. In mainstream schools,

reduced confidence and preparedness were closely linked to systemic constraints, including large class sizes, limited instructional time, rigid curricular structures, and insufficient access to adaptive equipment and specialist support. These factors collectively shaped not only what teachers could do, but also what they perceived as realistically achievable within PE lessons. In contrast, private school contexts provided more enabling conditions, where smaller classes, greater flexibility, and additional support structures expanded teachers' perceived and actual capacity to implement APE in more sustained and meaningful ways.

Subjective norms further shaped these dynamics by influencing how inclusion was socially and institutionally defined. In environments where school leadership, colleagues, and parents expressed consistent support for inclusion, teachers experienced stronger validation of inclusive practices, which reinforced implementation. Conversely, in mainstream schools where expectations were more fragmented or ambivalent, inclusion was often perceived as uncertain or externally contested, which constrained teachers' willingness to fully commit to adaptive practices.

Inclusive physical education is not primarily determined by teacher attitudes, but is produced through the interaction of perceived capability and institutional context. This reinforces the argument that inclusion functions less as an individual pedagogical choice and more as a structurally conditioned practice shaped by school systems, resources, and normative environments.

Interpretation of Findings

Interpreted through the TPB (Ajzen, 1991), the findings suggest that teachers' engagement in APE is not primarily determined by attitudes, but by the interaction of perceived control and institutional conditions within which those attitudes are enacted. While teachers across both mainstream and private schools expressed generally positive

orientations toward inclusion, these functioned largely as normative endorsement rather than as predictors of instructional behavior. This supports prior work (Block & Obrusnikova, 2007; Sato et al., 2007; Liu et al., 2019), which conceptualises attitudes as necessary but insufficient for inclusive practice, particularly in physical education contexts where implementation demands are structurally intensive.

However, rather than simply replicating the well-established attitude–behavior gap, the present study shows that this gap is mediated by school-type-specific structural conditions. In mainstream schools, perceived behavioral control was significantly weakened by systemic constraints such as insufficient APE training, lack of adaptive resources, and limited institutional support. This aligns with findings from Orynassarova (2017) and Abdrassilov et al. (2023), but extends them by demonstrating that these constraints do not only limit practice but actively shape teachers’ perception of what inclusion is realistically achievable within PE contexts. In this sense, behavioral intentions are not formed independently of context but are continuously recalibrated in response to institutional limitations.

By contrast, private school teachers exhibited stronger perceived behavioral control, not because of fundamentally different attitudes, but due to more enabling structural conditions. These included access to resources, smaller class sizes, and greater institutional responsiveness, which collectively expanded the range of pedagogical possibilities. This supports the argument advanced by Haegele and Sutherland (2015) and Antala et al. (2023) that inclusive practice is contingent upon environmental affordances and self-efficacy reinforcement rather than attitudinal disposition alone.

Importantly, the findings also expose a limitation in TPB when applied to educational inequality contexts. While the model accounts for variations in intention formation, it under-theorises how structural conditions shape perceived behavioral control

itself. The results therefore suggest that inclusion in PE is not only behaviourally planned but structurally conditioned, with institutional context acting as a primary determinant of whether intentions can materialise into practice.

Implications of the Findings

The implications of this study extend beyond individual teacher behavior, pointing to inclusion as a structurally produced rather than individually enacted process. The findings suggest that improving inclusive physical education cannot be achieved through attitudinal change alone, as teachers already demonstrate generally positive orientations toward inclusion. Instead, the central constraint lies in the conditions that determine whether inclusion is practically possible.

In mainstream schools, the combination of limited training, insufficient resources, and weak institutional support functions not merely as a set of barriers but as a system that actively reduces teachers' perceived capacity to act. This reinforces a structural interpretation of inclusion, where implementation is contingent on material and organizational conditions rather than professional willingness alone (Block & Obrusnikova, 2007; Alhumaid et al., 2023).

Subjective norms further reinforce these structural conditions. Where school leadership and parental expectations are inconsistent or ambivalent, inclusion becomes discretionary rather than normative. This produces uncertainty in practice, leading teachers to adopt risk-avoidance strategies such as minimal adaptation. In contrast, private schools demonstrate how strong institutional endorsement of inclusion transforms subjective norms into enabling mechanisms, increasing both teacher confidence and pedagogical consistency (Tripp et al., 2007; Utami, 2025).

When situated within international literature, the findings reinforce a recurring pattern: systems that successfully implement APE are those where training, leadership, and

resource provision are aligned rather than fragmented (Martin, 2014; Haegele et al., 2021; Catellani et al., 2023). However, the present study adds a contextual layer by showing how misalignment between policy intent and institutional capacity in Kazakhstan produces a persistent implementation gap.

This suggests that reform should shift from promoting inclusion as a value to engineering inclusion as a system. This includes not only expanding teacher preparation in APE, but also restructuring school-level conditions that determine feasibility, particularly workload, resource distribution, and leadership accountability (Makoelle & Burmistrova, 2021). Without addressing these structural determinants, inclusion risks remaining dependent on individual teacher resilience rather than institutional design.

Conclusion

This chapter has synthesised the key findings of the study in relation to the research questions, the TPB, and relevant national and international literature on inclusive education and APE. The analysis demonstrates that while PE teachers in both mainstream and private schools generally endorse inclusive education, inclusion in practice is primarily shaped by the interaction between individual dispositions and the structural conditions in which teaching occurs.

Rather than functioning as a direct driver of practice, positive attitudes toward inclusion appear to operate as a baseline orientation that is consistently constrained or enabled by contextual factors. In particular, perceived behavioral control emerged as the most decisive factor influencing implementation, with its effectiveness determined by access to training, availability of resources, class size, and institutional support. This suggests that inclusion is not primarily an attitudinal issue but a structural one, especially in mainstream schools where systemic constraints are more pronounced.

Subjective norms further shaped how inclusion was enacted by influencing what teachers perceived as professionally acceptable or feasible. Variations in school leadership support, parental expectations, and institutional culture contributed to differences in confidence and instructional decision-making, reinforcing unequal implementation patterns across school types. These findings are consistent with international literature (Block & Obrušnikova, 2007; Catellani et al., 2023; Haegeler et al., 2021), which emphasises that inclusive practice depends on the alignment of individual, institutional, and systemic factors rather than teacher attitudes alone.

The study also highlights a conceptual limitation of TPB in educational contexts characterised by inequality. While the framework explains variation in intentions, it does not fully account for how structural conditions actively shape perceived behavioral control itself, thereby constraining agency. This suggests the need for integrating sociostructural perspectives alongside psychological models when examining inclusive education in contexts such as Kazakhstan. The study contributes to understanding inclusive PE as a structurally mediated practice rather than an individual pedagogical choice. It demonstrates that sustainable implementation of APE requires not only supportive teacher beliefs but also coherent alignment between policy intentions and school-level capacities. This provides a foundation for the subsequent chapter, which outlines practical and policy-oriented recommendations for strengthening inclusive physical education in Kazakhstan.

Chapter 6. Conclusions and Recommendations

This study explored the implementation of APE in Astana schools, with a focus on teachers' readiness, attitudes, and the challenges they encounter in mainstream and private educational settings. Guided by the TPB (Ajzen, 1991), the study examined how teachers' attitudes toward inclusion, perceived behavioral control, and subjective norms shape their intentions and actual practices in APE in inclusive school settings.

The findings indicate that PE teachers across both school types generally support the principles of inclusive education and recognize the value of APE for students with special educational needs (SEN). Teachers viewed inclusion as both a professional and ethical responsibility, emphasizing participation, safety, and student well-being. However, the analysis demonstrates that positive attitudes alone are insufficient to ensure effective implementation of inclusive PE practices.

From a TPB-informed perspective, the study shows that perceived behavioral control is a decisive factor influencing whether teachers' inclusive intentions translate into sustained classroom practice. In mainstream schools, structural constraints such as large class sizes, limited lesson time, restricted curriculum flexibility, insufficient adaptive equipment, and lack of trained support staff significantly reduced teachers' confidence in their ability to implement APE effectively. As a result, inclusive practices were often limited or inconsistently applied, despite teachers' willingness to include students with SEN.

In contrast, private school teachers benefited from stronger institutional support, including smaller class sizes, greater pedagogical autonomy, access to assistants, and adaptive equipment. These conditions enhanced teachers' perceived control and enabled them to adapt activities more confidently and consistently. This contrast illustrates how

institutional context mediates the relationship between teachers' beliefs and their instructional practices, highlighting an equity gap between school types.

The findings also underscore the role of subjective norms in shaping inclusive practices. Teachers' perceptions of parental attitudes, school leadership expectations, and broader societal views toward disability influenced their motivation and confidence to implement APE. Where inclusion was actively supported and normalized by school leadership and the wider school community, teachers were more likely to engage in adaptive and inclusive teaching practices.

Recommendations: Practical Actions and Future Research

Recommendations for Policy and Practice

Based on the findings, several practical recommendations can be made to strengthen the implementation of APE in Kazakhstan. First, there is a clear need to integrate APE more explicitly into pre-service and in-service teacher education programs. Regular, targeted professional development should focus on inclusive pedagogy, differentiation strategies, and practical approaches to adapting PE activities for students with diverse needs.

Second, schools particularly mainstream schools require greater institutional support. This includes increased funding for adaptive equipment, reduced class sizes where possible, and the provision of trained teaching assistants or APE specialists. Without these structural supports, teachers' perceived behavioral control will remain low, limiting the effectiveness of inclusive education policies.

Third, stronger coordination is needed between the Ministry of Education, school administrations, and teacher training institutions to ensure coherence between national policy goals and classroom-level practice. Clearer national guidelines for inclusive PE, alongside accountability mechanisms and professional support structures, would help

ensure that inclusive education reforms are implemented more equitably across school types.

Finally, schools should actively engage parents and the wider community to foster positive attitudes toward inclusion. Awareness-raising initiatives and transparent communication about the benefits of inclusive PE can help strengthen supportive subjective norms and reduce resistance to inclusive practices.

Recommendations for Future Research

Future research should expand the scope of investigation to include a wider range of schools across different regions of Kazakhstan in order to identify broader trends and variations in APE implementation. Longitudinal studies would be particularly valuable in examining how teachers' attitudes, perceived behavioral control, and practices evolve over time in response to policy reforms, training initiatives, and resource provision.

Additionally, future studies should explore the perspectives of other stakeholders, including school administrators, parents, and students. Including student voices would provide valuable insight into the social, emotional, and physical impact of APE on learners with and without disabilities. Further research could also examine how societal attitudes and cultural beliefs influence inclusive education practices, thereby contributing to a more comprehensive understanding of inclusion within the Kazakhstani context.

Limitations of the Study

Several limitations should be acknowledged when interpreting the findings of this study. First, the research was conducted with a relatively small sample of PE teachers from a limited number of mainstream and private schools in Astana. This restricts the generalizability of the findings to other regions of Kazakhstan or to different educational contexts. Second, the study relied primarily on self-reported data obtained through semi-structured interviews. While this approach allowed for in-depth exploration of teachers'

perspectives, it may also be influenced by subjective bias or social desirability, particularly given the policy-sensitive nature of inclusive education in Kazakhstan

Third, data collection took place over a short period and therefore reflects teachers' perceptions at a specific point in time. As inclusive education reforms continue to evolve in Kazakhstan, teachers' attitudes, confidence, and practices may change. Consequently, the findings do not capture long-term developments or the impact of future policy or training initiatives. These limitations do not undermine the value of the study but should be considered when drawing broader conclusions.

Final Reflections

This research has highlighted the pivotal role of teacher attitudes, perceived control, and institutional support in implementing APE. Engaging with the data has underscored the complexity of inclusive practices and the multifaceted barriers that teachers face.

Through this study, I have developed a deeper understanding of inclusive pedagogy, APE, and qualitative research methodology. It has enhanced my skills in planning, data collection, critical analysis, and application of theory to practical educational challenges.

This study contributes to research on inclusive education in Kazakhstan and offers practical recommendations for policymakers, school leaders, and teachers to improve equity in PE.

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Appendix A: AI Declaration Form

Appendix A: AI Declaration Form



Thesis Title: Adaptive Physical Education in Astana Schools: Exploring Teacher Readiness, Attitudes, and Challenges in Mainstream and Private Settings

Declaration of the Use of Generative AI

I hereby declare that I have read and understood NUGSE's policy concerning appropriate use of AI and composed this work independently (please check one):

☒ with the use of artificial intelligence tools, or

☐ without the use of artificial intelligence tools.

(If you have used AI tools as defined in the GSE policy document, please complete the rest of this form.)

During the preparation of this thesis, I used OpenAI's ChatGPT to brainstorm ideas, topics, and planning, to find and select sources, to rephrase some sentences and rearrange paragraphs I had written myself, I used Grammarly to check the grammar of my paper.

I also declare that I

☒ am aware of the capabilities and limitations of AI tool(s),

☒ have verified that the content generated by AI systems and adopted by me is factually correct,

☒ am aware that as the author of this thesis I bear full responsibility for the statements and assertions made in it,

☒ have submitted complete and accurate information about my use of AI tools in this work, and

☒ acknowledge that there may be disciplinary consequences if I have not followed NUGSE's guidelines regarding appropriate AI use.

Name: Aizhan Zhumadilova

Date: April 27, 2026

Signature:

Appendix B: Data Collection Instrument

Introduction for Participants

Thank you for agreeing to take part in this interview. The purpose of this study is to explore teachers' perspectives, experiences, and challenges related to Adaptive Physical Education (APE) in schools. Your insights will provide valuable contributions to understanding inclusive education in Kazakhstan.

You are free to skip any question that you do not wish to answer. There are no right or wrong answers; I am interested in your personal views and experiences. If at any point you would like to stop the interview, you may do so.

Biographical Information

1. What is your current school, and your role as a PE teacher?
2. How many years of experience do you have as a PE teacher?
3. Do you have any working experience in an inclusive setting as a PE teacher? If yes, how many years?

Definitions and Understandings

4. How do you personally define "inclusive education" in the context of physical education?
5. What does "Adaptive Physical Education" mean to you?

Experiences and Challenges

6. In your experience, how does APE support the inclusion of students with disabilities?
7. Can you describe any specific challenges you've encountered when trying to adapt your PE curriculum for students with disabilities?
8. What types of disabilities or special needs have you encountered in your PE classes?
9. What challenges do you face when attempting to adapt your physical education lessons for students with disabilities?

Attitudes and Support

10. How much autonomy do you have in modifying the curriculum to fit individual student needs?
11. How would you describe your attitude toward teaching students with disabilities in PE?
12. Do you feel your school environment supports the implementation of inclusive or adaptive PE? Why or why not?

Recommendations and Closing

13. What changes or improvements would you suggest to better support the implementation of APE in your school?
14. Is there anything else you would like to share about your experiences with Adaptive Physical Education?

Деректерді Жинау Құралы

Қатысушылар үшін кіріспе

Осы сұхбатқа қатысуға келіскеніңіз үшін рахмет. Бұл зерттеудің мақсаты-мектептердегі бейімделетін дене шынықтырумен (БДШ) байланысты мұғалімдердің көзқарастарын, тәжірибесін және қиындықтарын зерттеу. Сіздің жауаптарыңыз Қазақстандағы инклюзивті білім беруді түсінуге құнды үлес қосады.

Сіз жауап бергіңіз келмейтін кез келген сұрақты өткізіп жібере аласыз. Бұл жерде дұрыс немесе бұрыс жауаптар жоқ; мені тек сіздің жеке көзқарастарыңыз бен тәжірибелеріңіз қызықтырады. Сіз кез келген уақытта сұхбатқа қатысуды тоқтата аласыз.

Өмірбаяндық ақпарат

1. Сіз қай мектепте жұмыс істейсіз және дене шынықтыру мұғалімі ретіндегі рөліңіз қандай?

2. Дене шынықтыру мұғалімі ретінде қанша жыл тәжірибеңіз бар?

3. Инклюзивті ортада дене шынықтыру мұғалімі ретінде тәжірибеңіз бар ма? Бар болса, неше жыл?

Анықтамалар және түсіну

4. Дене шынықтыру контекстінде "инклюзивті білім беруді" қалай түсінесіз?

5. "Бейімделетін дене шынықтыру" сіз үшін нені білдіреді?

Тәжірибе және қиындықтар

6. Сіздің тәжірибеңізге сүйене отырып, БДШ сабақтары мүмкіндігі шектеулі балаларды мектеп өміріне және спортқа қосуға қалай көмектеседі?

7. Мүмкіндігі шектеулі оқушыларға арналған дене шынықтыру оқу бағдарламасын бейімдеу кезінде кездесетін нақты қиындықтарды сипаттай аласыз ба?

8. Дене шынықтыру сабақтарында қандай шектеулерге немесе ерекше қажеттіліктерге тап болдыңыз?

9. Мүмкіндігі шектеулі оқушыларға дене шынықтыру сабақтарын бейімдеуге тырысқанда қандай қиындықтарға тап боласыз?

Қарым-қатынас және қолдау

10. Оқушылардың жеке қажеттіліктерін есепке алу үшін бағдарламаны өзгертуде сіздегі еркіндік дәрежесі қандай?

11. Дене шынықтыру сабақтарында мүмкіндігі шектеулі оқушыларды оқытуға деген көзқарасыңызды қалай сипаттайсыз?

12. Мектеп ортасы инклюзивті немесе бейімделетін дене шынықтыруды енгізуді қолдайды деп ойлайсыз ба? Неге иә немесе неге жоқ?

Ұсыныстар және Қорытынды

13. Сіздің мектебіңізде Бейімделетін дене шынықтыруды жақсы жүзеге асыру үшін қандай өзгерістер немесе жақсартулар ұсынар едіңіз?

14. Бейімделетін дене шынықтыру тәжірибесі туралы бөліскіңіз келетін тағы бір нәрсе бар ма?

Инструмент Сбора Данных

Введение для участников

Спасибо, что согласились принять участие в этом интервью. Цель данного исследования – изучить взгляды, опыт и трудности учителей, связанные с адаптивной физической культурой (АФК) в школах. Ваши ответы внесут ценный вклад в понимание инклюзивного образования в Казахстане.

Вы можете пропустить любой вопрос, на который не хотите отвечать. Здесь нет правильных или неправильных ответов; меня интересуют именно ваши личные взгляды и опыт. Вы можете прекратить участие в интервью любой момент.

Биографическая информация

1. В какой школе вы работаете и какова ваша роль как учителя физической культуры?
2. Сколько лет у вас опыта работы учителем физической культуры?
3. Есть ли у вас опыт работы учителем физкультуры в инклюзивной среде? Если да, то сколько лет?

Определения и понимание

4. Как лично вы определяете «инклюзивное образование» в контексте физической культуры?
5. Что для вас означает «адаптивная физическая культура»?

Опыт и трудности

6. Исходя из вашего опыта, каким образом занятия АФК помогают включать детей с ограниченными возможностями в школьную жизнь и спорт?
7. Можете ли вы описать конкретные трудности, с которыми сталкивались при адаптации учебной программы по физической культуре для учеников с ограниченными возможностями?
8. С какими видами ограничений или особыми потребностями вы сталкивались на уроках физкультуры?
9. С какими трудностями вы сталкиваетесь при попытках адаптировать уроки физической культуры для учеников с ограниченными возможностями?

Отношения и поддержка

10. Какую степень свободы вы имеете в изменении программы для учета индивидуальных потребностей учеников?
11. Как бы вы описали своё отношение к обучению учеников с ограниченными возможностями на уроках физкультуры?
12. Считаете ли вы, что школьная среда поддерживает внедрение инклюзивной или адаптивной физической культуры? Почему да или почему нет?

Рекомендации и завершение

13. Какие изменения или улучшения вы бы предложили для лучшей реализации АФК в вашей школе?
14. Есть ли что-то ещё, чем вы хотели бы поделиться о своём опыте работы с адаптивной физической культурой?

Appendix C: Informed Consent

Study Title: Adaptive Physical Education in Astana Schools: Exploring Teacher Readiness, Attitudes, and Challenges in Mainstream and Private Settings

Dear Teachers,

You are invited to be a part of this research study, which aims to explore your experiences with students who have special educational needs (SEN), specifically how your experiences inform your readiness to teach, your attitudes towards, and the challenges you encounter in implementing Adaptive Physical Education (APE) programs for students with SEN. Your participation in this study will involve either a face-to-face or online interview, where you are invited to share your insights and experiences of working with students with SEN.

With your consent, the interview will be recorded for transcription purposes. The recorded material will be securely archived on my password-protected computer. I will preserve all data for three years post-thesis submission, after which I will delete it permanently. I will make every effort to maintain confidentiality in all written work and future publications and will eliminate all identifying information from the data before analysis and inclusion in my thesis.

Time involvement: Your involvement is expected to take approximately 30 to 45 minutes.

Risks and Benefits: The risks associated with participating in this study are minimal.

The risks associated with participating in this study are relatively low. You have the option to not answer specific questions or to withdraw from the study entirely at any point without incurring any penalties under any circumstances, if any of the topics that were discussed during the interview caused you to feel uncomfortable. I will ensure your comfort and address any concerns during the interview. All the information that pertains to you will be removed without delay if you decide to withdraw from the study after the interview has been completed.

You may not directly benefit from participating in this study, but your contribution could change perceptions in our society regarding students with SEN. Your contribution to this research by sharing your experiences may help educators, policymakers, and society in the process of fostering inclusive education practices. This research may help other PE teachers facilitate better classroom management strategies for students with SEN; they may be able to help PE teachers accommodate effective APE to students with SEN. In addition, your participation can help raise awareness and eradicate the stigma that surrounds students with SEN, which will ultimately contribute to the creation of a society that is more accepting and supportive of students with special needs.

Voluntary Nature of the Study:

Your participation in this research is completely voluntary. In the case that you choose to withdraw from study or decline to answer questions; you will not be penalized.

Contacts and Questions:

If you have any questions, concerns, or complaints regarding this research study, its procedures, risks, or benefits, please feel free to contact my master's Thesis Supervisor, Professor Janet Helmer, janet.helmer@nu.edu.kz

For independent inquiries or concerns about the research process or your rights as a participant, you may contact the NUGSE Research Committee at gse_researchcommittee@nu.edu.kz

Thank you for your consideration to participate in this research.

I have carefully reviewed and understood the information provided above. I willingly consent to participate in this study and permit the use of my data for research purposes.

I give your permission to record this interview.

Participant's Name: _____

Participant's Signature: _____

Date: _____

Researcher's Name: Aizhan Zhumadilova

Researcher's Signature: _____

Date: _____

Форма Информированного Согласия для Учителей

Название исследования: Адаптивная физическая культура в школах Астаны: Изучение готовности учителей; их отношения и сложности в реализации адаптивной физической культуры в государственных и частных школах **Уважаемые учителя,**

Приглашаем вас принять участие в данном исследовании, которое направлено на изучение вашего опыта работы с учащимися с особыми образовательными потребностями (ООП). В частности, мы хотим узнать, как ваш опыт влияет на вашу готовность преподавать, ваше отношение к программам адаптивной физической культуры (АФК) для учащихся с ООП, а также с какими проблемами вы сталкиваетесь при их реализации. Ваше участие в этом исследовании будет включать индивидуальное интервью (вживую или онлайн), в ходе которого вам будет предложено поделиться своими мыслями и опытом работы с учащимися с ООП.

Интервью будет записано для расшифровки с вашего согласия. Записанный материал будет надежно храниться на моем компьютере, защищенном паролем. Я буду хранить все данные в течение трех лет после защиты диссертации, после чего они будут безвозвратно удалены. Я приложу все усилия для обеспечения вашей анонимности и конфиденциальности во всех письменных работах и будущих публикациях, а также удалю всю идентифицирующую информацию из данных перед анализом и включением их в мою диссертацию.

Занимаемое время: Ваше участие, как ожидается, займет примерно от 30 до 45 минут.

Риски и преимущества: Риски, связанные с участием в этом исследовании, минимальны.

Риски, связанные с участием в этом исследовании, относительно низки. Вы имеете право отказаться отвечать на конкретные вопросы или полностью выйти из исследования в любой момент, в случае если какая-либо из обсуждаемых тем вызовет у вас дискомфорт, не неся при этом никакой ответственности. Я обеспечу ваш комфорт во время интервью. Вся информация, касающаяся вас, будет незамедлительно удалена в случае, если вы решите выйти из исследования после завершения интервью.

Вы можете не получить прямой выгоды от участия в этом исследовании, но ваш вклад может изменить отношение в нашем обществе к учащимся с ООП. Ваш вклад в это исследование, посредством обмена опытом может помочь педагогам, политикам и обществу в целом, в процессе содействия инклюзивным образовательным практикам. Это исследование может помочь другим учителям физической культуры применять более эффективные стратегии управления классом для учащихся с ООП; они могут помочь учителям физической культуры эффективно адаптировать АФК для учащихся с ООП. Кроме того, ваше участие может помочь повысить осведомленность и искоренить стигму, окружающую учащихся с ООП, что в итоге будет способствовать созданию более принимающего и поддерживающего общества для учащихся с особыми потребностями. **Добровольный характер исследования:**

Ваше участие в данном исследовании является полностью добровольным. В случае, если вы решите отказаться от участия в исследовании или отказаться отвечать на определенные вопросы, вы не будете нести никакой ответственности.

Контакты и вопросы:

Если у вас возникнут какие-либо вопросы, опасения или жалобы относительно данного исследовательского исследования, его процедур, рисков или преимуществ, пожалуйста, свяжитесь с научным руководителем магистерской диссертации, профессором Джанет Хелмер, janet.helmer@nu.edu.kz

Для независимых запросов или опасений по поводу исследовательского процесса или ваших прав как участника, вы можете связаться с Комитетом по исследованиям Высшей школы образования Назарбаев Университета (NUGSE Research Committee) по адресу gse_researchcommittee@nu.edu.kz

Благодарим вас за рассмотрение возможности участия в данном исследовании.

Я внимательно ознакомился(ась) и понял(а) предоставленную выше информацию. Я добровольно даю согласие на участие в данном исследовании и разрешаю использование моих данных в исследовательских целях.

Имя участника: _____

Подпись участника: _____

Дата:

Имя исследователя: Айжан Жумадилова

Подпись исследователя:

Дата:

Мұғалімдерге Арналған Ақпараттандырылған Келісім Нысаны

Зерттеу тақырыбы: Астана мектептеріндегі бейімделетін шынықтыру: мемлекеттік және жекеменшік мектептердегі мұғалімдердің дайындық деңгейін, көзқарасын және қиындықтарын зерттеу

Құрметті мұғалімдер,

Сіздерді ерекше білім беру қажеттіліктері бар оқушылармен (ОР) жұмыс тәжірибеңізді зерттеуге бағытталған осы зерттеуге қатысуға шақырамыз. Атап айтқанда, біз сіздің тәжірибеңіз сіздің оқытуға дайындығыңызға қалай әсер ететінін, ОР бар оқушыларға арналған бейімделгіш дене шынықтыру бағдарламаларына (ROS) деген көзқарасыңызды және оларды жүзеге асыру кезінде қандай қиындықтарға тап болғаныңызды білгіміз келеді. Бұл зерттеуге қатысуыңыз жеке сұхбатты (тікелей немесе онлайн) қамтиды, онда сізден ОР бар студенттермен өз ойларыңыз бен тәжірибелеріңізбен бөлісу сұралады.

Сұхбат сіздің келісіміңізбен транскрипциялау үшін жазылады. Жазылған материал менің парольмен қорғалған компьютерімде қауіпсіз сақталады. Мен барлық деректерді диссертацияны қорғағаннан кейін үш жыл бойы сақтаймын, содан кейін олар біржола жойылады. Мен барлық жазбаша жұмыстарда және болашақ жарияланымдарда сіздің анонимділігіңіз бен құпиялылығыңызды қамтамасыз ету үшін бар күшімді саламын және оларды талдап, диссертацияма қоспас бұрын деректерден барлық сәйкестендіретін ақпаратты алып тастаймын.

Уақыт: сіздің қатысуыңыз шамамен 30–45 минутты алады деп күтілуде.

Тәуекелдер мен артықшылықтар: осы зерттеуге қатысуға байланысты тәуекелдер аз. Бұл зерттеуге қатысумен байланысты тәуекелдер салыстырмалы түрде төмен. Егер талқыланатын тақырыптардың кез-келгені сізге ыңғайсыздық тудырса, ешқандай жауапкершіліксіз белгілі бір сұрақтарға жауап беруден бас тартуға немесе кез-келген уақытта зерттеуден толықтай шығуға құқығыңыз бар. Сұхбат кезінде Мен сіздің жайлылығыңызды қамтамасыз етемін. Егер сіз сұхбат аяқталғаннан кейін зерттеуден шығуды шешсеңіз, сізге қатысты барлық ақпарат дереу жойылады.

Сіз бұл зерттеуге қатысудан тікелей пайда көре алмауыңыз мүмкін, бірақ сіздің үлесіңіз біздің қоғамдағы ОР бар студенттерге деген көзқарасты өзгертуі мүмкін. Сіздің осы зерттеуге қосқан үлесіңіз тәжірибе алмасу арқылы тәрбиешілерге, саясаткерлерге және жалпы қоғамға инклюзивті білім беру практикасын ілгерілету процесінде көмектесе алады. Бұл зерттеу басқа дене шынықтыру мұғалімдеріне ОР бар оқушылар үшін сыныпты басқарудың тиімді стратегияларын қолдануға көмектесуі мүмкін; олар дене шынықтыру мұғалімдеріне ОР бар оқушылар үшін ROS-ты тиімді бейімдеуге көмектеседі. Сонымен қатар, сіздің қатысуыңыз ОР бар студенттердің хабардарлығын арттыруға және олардың айналасындағы стигманы жоюға көмектеседі, нәтижесінде ерекше қажеттіліктері бар Студенттер үшін қабылдаушы және қолдаушы қоғам құруға ықпал етеді.

Зерттеудің ерікті сипаты:

Сіздің осы зерттеуге қатысуыңыз толығымен ерікті. Егер сіз зерттеуге қатысудан бас тартуды немесе белгілі бір сұрақтарға жауап беруден бас тартуды шешсеңіз, Сіз ешқандай жауапкершілікке тартылмайсыз.

Байланыс және сұрақтар:

Егер сізде осы зерттеуге, оның процедураларына, тәуекелдеріне немесе артықшылықтарына қатысты сұрақтарыңыз, алаңдаушылықтарыңыз немесе шағымдарыңыз болса, магистрлік диссертацияның ғылыми жетекшісі, профессор Джанет Хельмерге хабарласыңыз, janet.helmer@nu.edu.kz

Зерттеу процесіне немесе қатысушы ретіндегі құқықтарыңызға қатысты тәуелсіз сұраулар немесе алаңдаушылықтар үшін Назарбаев Университетінің Жоғары білім беру мектебінің зерттеу комитетіне (NUGSE Research Committee) хабарласуға болады gse_researchcommittee@nu.edu.kz

Осы зерттеуге қатысу мүмкіндігін қарастырғаныңыз үшін рахмет

Мен мұқият танысып, жоғарыда келтірілген ақпаратты түсіндім. Мен өз еркіммен осы зерттеуге қатысуға келісім беремін және менің деректерімді зерттеу мақсатында пайдалануға рұқсат беремін.

Қатысушының аты-жөні: _____

Қатысушының қолы: _____

Дата:

Зерттеушінің аты-жөні: Айжан Жұмадилова

Зерттеушінің қолы:

Күні:

Appendix D: Open-Ended Questions

Biographical Information

1. What is your current school, and your role as a PE teacher?
2. How many years of experience do you have as a PE teacher?
3. Do you have any working experience in an inclusive setting as a PE teacher? If yes, how many years?

Definitions and Understandings

4. How do you personally define “inclusive education” in the context of physical education?
5. What does “Adaptive Physical Education” mean to you?

Experiences and Challenges

6. In your experience, how does APE support the inclusion of students with disabilities?
7. Can you describe any specific challenges you’ve encountered when trying to adapt your PE curriculum for students with disabilities?
8. What types of disabilities or special needs have you encountered in your PE classes?
9. What challenges do you face when attempting to adapt your physical education lessons for students with disabilities?

Attitudes and Support

10. How much autonomy do you have in modifying the curriculum to fit individual student needs?
11. How would you describe your attitude toward teaching students with disabilities in PE?
12. Do you feel your school environment supports the implementation of inclusive or adaptive PE? Why or why not?

Recommendations and Closing

13. What changes or improvements would you suggest to better support the implementation of APE in your school?
14. Is there anything else you would like to share about your experiences with Adaptive Physical Education?

Открытые Вопросы

Биографическая информация

1. В какой школе вы работаете и какова ваша роль как учителя физической культуры?
2. Сколько лет у вас опыта работы учителем физической культуры?
3. Есть ли у вас опыт работы учителем физкультуры в инклюзивной среде? Если да, то сколько лет?

Определения и понимание

4. Как лично вы определяете «инклюзивное образование» в контексте физической культуры?
5. Что для вас означает «адаптивная физическая культура»?

Опыт и трудности

6. Исходя из вашего опыта, каким образом занятия АФК помогают включать детей с ограниченными возможностями в школьную жизнь и спорт?
7. Можете ли вы описать конкретные трудности, с которыми сталкивались при адаптации учебной программы по физической культуре для учеников с ограниченными возможностями?
8. С какими видами ограничений или особыми потребностями вы сталкивались на уроках физкультуры?
9. С какими трудностями вы сталкиваетесь при попытках адаптировать уроки физической культуры для учеников с ограниченными возможностями?

Отношения и поддержка

10. Какую степень свободы вы имеете в изменении программы для учета индивидуальных потребностей учеников?
11. Как бы вы описали своё отношение к обучению учеников с ограниченными возможностями на уроках физкультуры?
12. Считаете ли вы, что школьная среда поддерживает внедрение инклюзивной или адаптивной физической культуры? Почему да или почему нет?

Рекомендации и завершение

13. Какие изменения или улучшения вы бы предложили для лучшей реализации АФК в вашей школе?
14. Есть ли что-то ещё, чем вы хотели бы поделиться о своём опыте работы с адаптивной физической культурой?

Ашық Сұрақтар

Өмірбаяндық ақпарат

1. Сіз қай мектепте жұмыс істейсіз және дене шынықтыру мұғалімі ретіндегі рөліңіз қандай?
2. Дене шынықтыру мұғалімі ретінде қанша жыл тәжірибеңіз бар?
3. Инклюзивті ортада дене шынықтыру мұғалімі ретінде тәжірибеңіз бар ма? Бар болса, неше жыл?

Анықтамалар және түсіну

4. Дене шынықтыру контекстінде "инклюзивті білім беруді" қалай түсінесіз?
5. "Бейімделетін дене шынықтыру" сіз үшін нені білдіреді?

Тәжірибе және қиындықтар

6. Сіздің тәжірибеңізге сүйене отырып, БДШ сабақтары мүмкіндігі шектеулі балаларды мектеп өміріне және спортқа қосуға қалай көмектеседі?
7. Мүмкіндігі шектеулі оқушыларға арналған дене шынықтыру оқу бағдарламасын бейімдеу кезінде кездесетін нақты қиындықтарды сипаттай аласыз ба?
8. Дене шынықтыру сабақтарында қандай шектеулерге немесе ерекше қажеттіліктерге тап болдыңыз?
9. Мүмкіндігі шектеулі оқушыларға дене шынықтыру сабақтарын бейімдеуге тырысқанда қандай қиындықтарға тап боласыз?

Қарым-қатынас және қолдау

10. Оқушылардың жеке қажеттіліктерін есепке алу үшін бағдарламаны өзгертуде сіздегі еркіндік дәрежесі қандай?
11. Дене шынықтыру сабақтарында мүмкіндігі шектеулі оқушыларды оқытуға деген көзқарасыңызды қалай сипаттайсыз?
12. Мектеп ортасы инклюзивті немесе бейімделетін дене шынықтыруды енгізуді қолдайды деп ойлайсыз ба? Неге иә немесе неге жоқ?

Ұсыныстар және Қорытынды

13. Сіздің мектебіңізде Бейімделетін дене шынықтыруды жақсы жүзеге асыру үшін қандай өзгерістер немесе жақсартулар ұсынар едіңіз?
14. Бейімделетін дене шынықтыру тәжірибесі туралы бөліскіңіз келетін тағы бір нәрсе бар ма?

Appendix E: Interview Protocol

Introduction (script)

“Thank you for agreeing to participate in this study. The purpose of this interview is to learn about your experiences and perspectives regarding adaptive physical education in mainstream and private schools in Astana. Your responses will remain confidential, and pseudonyms will be used. The interview will take around 30–45 minutes. With your permission, I would like to audio-record the session. You may skip any question or stop the interview at any time.”

Warm-up questions

1. Can you tell me a little about your background as a teacher (years of experience, subject specialization)?
2. What is your current role and responsibility in teaching physical education?

Core Questions

Teacher Readiness

3. How prepared do you feel to teach students with diverse needs in physical education classes?
4. What kind of training or support have you received related to adaptive physical education?

Attitudes

5. How do you personally view the importance of including students with disabilities in mainstream PE classes?
6. What are some positive experiences you have had in teaching inclusive or adaptive PE?

Challenges

7. What challenges do you face when implementing adaptive physical education in your school?
8. How do resources (equipment, facilities, class size, school support) influence your ability to provide inclusive PE?

Support and Improvements

9. What kind of support or professional development would help you feel more confident in teaching adaptive PE?
10. What recommendations would you give to improve adaptive and inclusive PE in mainstream and private schools in Kazakhstan?

Closing script

“Thank you for sharing your experiences. Your input is very valuable for understanding how adaptive physical education can be improved in Astana’s mainstream and private schools. Is there anything else you would like to add that we have not discussed?”

Протокол Интервью

Введение (текст для зачитывания)

«Спасибо, что согласились принять участие в этом исследовании. Цель этого интервью – узнать о вашем опыте и взглядах, связанных с адаптивной физической культурой в массовых и частных школах Астаны. Ваши ответы останутся конфиденциальными, будут использоваться псевдонимы. Интервью продлится примерно 30–45 минут. С вашего разрешения я хотел(а) бы сделать аудиозапись. Вы можете пропустить любой вопрос или в любой момент прекратить интервью».

Разогревающие вопросы

1. Расскажите немного о вашем педагогическом опыте (количество лет, предметная специализация).
2. Как вы описали бы свою работу и основные обязанности на уроках физической культуры?

Основные вопросы

Готовность учителей

3. Насколько вы чувствуете себя подготовленным к обучению учеников с разными потребностями на уроках физической культуры?
4. Какое обучение или поддержку вы получали, связанную с адаптивной физической культурой?

Отношение

5. Как лично вы оцениваете значимость включения учеников с ограниченными возможностями в массовые уроки физкультуры?
6. Какие положительные моменты вы испытывали при обучении инклюзивной или адаптивной физической культуре?

Трудности

7. С какими трудностями вы сталкиваетесь при внедрении адаптивной физической культуры в вашей школе?
8. Как ресурсы (оборудование, помещения, наполняемость классов, поддержка школы) влияют на вашу возможность проводить инклюзивные уроки физкультуры?

Поддержка и улучшения

9. Какая поддержка или профессиональное развитие помогли бы вам чувствовать себя увереннее при преподавании адаптивной физической культуры?
10. Какие рекомендации вы могли бы дать для улучшения адаптивной и инклюзивной физической культуры в массовых и частных школах Казахстана?

Заключительная часть (текст для зачитывания)

«Спасибо, что поделились своим опытом. Ваш вклад очень важен для понимания того, как можно улучшить адаптивную физическую культуру в массовых и частных школах Астаны. Хотели бы вы добавить что-то ещё, о чём мы не говорили?»

Сұхбат Хаттамасы

Кіріспе (оқуға арналған мәтін)

"Осы зерттеуге қатысуға келіскеніңіз үшін рахмет. Бұл сұхбаттың мақсаты- Астананың мемлекеттік және жекеменшік мектептеріндегі бейімделетін дене шынықтырумен байланысты тәжірибелеріңіз бен көзқарастарыңыз туралы білу. Сіздің жауаптарыңыз құпия болып қалады, лақап ат қолданылады. Сұхбат шамамен 30–45 минутқа созылады. Сіздің рұқсатыңызбен мен аудиожазба жасағым келді. Сіз кез-келген сұрақты өткізіп жібере аласыз немесе кез-келген уақытта сұхбатты тоқтата аласыз".

Қыздыру сұрақтары

1. Педагогикалық тәжірибеңіз туралы аздап айтып берсеңіз (жылдар саны, пәндік мамандандыру).
2. Дене шынықтыру сабағында өз жұмысыңызды және негізгі міндеттеріңізді қалай сипаттар едіңіз?

Негізгі мәселелер

Мұғалімдердің дайындығы

3. Дене шынықтыру сабақтарында әртүрлі қажеттіліктері бар оқушыларды оқытуға қаншалықты дайын екеніңізді сезінесіз?
4. Бейімделетін дене шынықтырумен байланысты қандай оқыту немесе қолдау алдыңыз?

Қатынас

5. Мүмкіндігі шектеулі оқушыларды жаппай дене шынықтыру сабақтарына қосудың маңыздылығын қалай бағалайсыз?
6. Инклюзивті немесе бейімделетін дене шынықтыруды үйрену кезінде қандай жағымды жақтарды бастан өткердіңіз?

Қиындықтар

7. Сіздің мектебіңізге бейімделетін дене шынықтыруды енгізу кезінде қандай қиындықтарға тап боласыз?
8. Ресурстар (жабдықтар, Үй-жайлар, сыныптарды толтыру, мектепті қолдау) инклюзивті дене шынықтыру сабақтарын өткізу қабілетіңізге қалай әсер етеді?

Қолдау және жақсарту

9. Бейімделетін дене шынықтыруды үйрету кезінде өзіңізді сенімді сезінуге қандай қолдау немесе кәсіби даму көмектеседі?
10. Қазақстанның мемлекеттік және жекеменшік мектептерінде бейімделетін және инклюзивті дене шынықтыруды жақсарту үшін қандай ұсыныстар бере аласыз?

Қорытынды бөлім (оқуға арналған мәтін)

"Өз тәжірибеңізбен бөліскеніңіз үшін рахмет. Сіздің үлесіңіз Астананың мемлекеттік және жекеменшік мектептерінде бейімделетін дене шынықтыруды қалай жақсартуға болатынын түсіну үшін өте маңызды. Біз айтпаған басқа нәрсені қосқыңыз келе ме?"

Appendix F: Data Analysis – Transcript and Coding Samples

Participant A (male PE teacher from public school).

1. What is your current school, and your role as a PE teacher?
"I am a PE teacher".
2. How many years of experience do you have as a PE teacher?
"I have 13 years of working experience".
3. Do you have any working experience in an inclusive setting as a PE teacher? If yes, how many years?
"Yes, I have several years of working experience in an inclusive setting. I cannot tell the exact number of years, unfortunately".
4. How do you personally define "inclusive education" in the context of physical education?
"Providing education to 'special' children".
5. What does "Adaptive Physical Education" mean to you?
"A type of physical education adapted for children with special needs. Some activities may be too dangerous or difficult for them to do, so the program is adjusted to suit their abilities and needs".
6. In your experience, how does APE support the inclusion of students with disabilities?
"Yes, it helps children like this. When other children play active or risky games, the child with special needs finds it interesting and wants to join in, but they are usually separated. I think APE helps to put children on one team. There is usually not enough time for PE teachers during the lesson to organise games like this. For instance, if there are 1 or 2 special students in class, we naturally focus on the majority, and those special ones are left out".
7. Can you describe any specific challenges you've encountered when trying to adapt your PE curriculum for students with disabilities?
"Lack of time is the main challenge I experience. Also, in terms of facilities, I would be happy to see equipment and exercise machines designed to develop balance in children. Also, a special treadmill for children with disabilities, so that they can run, and upper body workout equipment".
8. What types of disabilities or special needs have you encountered in your PE classes?
"I had students with autism and cerebral palsy. They were not in wheelchairs, but some couldn't run or had limited use of their hands".
9. What challenges do you face when attempting to adapt your physical education lessons for students with disabilities?
"Large class sizes make it harder to adapt lessons and give students with disabilities the support they need.".
10. How much autonomy do you have in modifying the curriculum to fit individual student needs?
"We can change the calendar-thematic plan. We cannot change the topics, but we can rearrange their order at our discretion".
11. How would you describe your attitude toward teaching students with disabilities in PE?
"I believe children with special needs should be educated alongside their typically developing peers".
12. Do you feel your school environment supports the implementation of inclusive or adaptive PE? Why or why not?

“No, not really. School administration as well as teachers are very busy, and they do not get paid enough, so there are no incentives for them to suggest any changes in school”.

13. What changes or improvements would you suggest to better support the implementation of APE in your school?

“I know Adaptive Physical Education is becoming more popular now. But there are still many challenges. For example, some parents don’t want their children to study or play with kids who have special needs. I think we need to change people’s mindset first, and then the system will also change. I also know that the number of students with disabilities is increasing”.

14. Is there anything else you would like to share about your experiences with Adaptive Physical Education?

“I would like to have an assistant to support me during lessons, someone who is qualified. As a PE teacher, I want to get strong training in Adaptive Physical Education and inclusive education to understand it better. Right now, we don’t have any training like that”.

Descriptive/In Vivo Coding (First Cycle)

Participant	Quote	Code	Theme
A	“PE adapted for children with special needs.”	Understanding of APE	Knowledge
A	“Special ones are left out.”	Neglect	Challenges
A	“Lack of time, limited equipment.”	Time and resources	Challenges
A	“We can rearrange calendar-thematic plan.”	Curriculum flexibility	Practice
A	“Children with special needs should be educated alongside peers.”	Positive attitude	Attitudes
A	“No support from school administration.”	Institutional support	Support
A	“Parents resist inclusive activities.”	Parental barriers	Support
A	“Need assistant and APE training.”	Support and training	Support