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ARTS IN TEACHING AND LEARNING**

**Inclusive Education in Azerbaijan: A role of assistive technologies in facilitating its  
effectiveness**

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### **STATEMENT OF AUTHENTICITY**

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## **Abstract**

This study used a qualitative research methodology to explore the role of assistive technologies employed by inclusive classroom teachers in two public schools in Baku. In addition, it studied the perceptions research participants had and practices used by teachers and parents to educate children with special educational needs. Semi-structured interviews with two principals, six classroom teachers, and four parents confirm that inclusive classroom teachers utilize assistive technologies. Yet, the range of assistive technologies used by the two schools differed significantly. In addition, all participants agreed that assistive devices play an essential role in implementing inclusive education. Regarding practices, research participants agreed that it is required to implement inclusive education. This practice has social and emotional benefits for students with special educational needs and allows them to achieve effective learning.

Overall, the study provides readers with comprehensive information about assistive devices and their role in the facilitation of inclusive schooling in the Azerbaijani context.

*Keywords:* inclusive education, inclusive education in Azerbaijan, special educational needs, assistive technologies, teaching strategies in inclusive classrooms

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### Chapter 1: Introduction

UN Convention on the Rights of Persons with Disabilities (CRPD) asserts that inclusive education is a basic right of all children with disabilities (Implementing inclusive education, 2012, p. 2). Nevertheless, children with special educational needs (SEN) were historically excluded from mainstream schools. Some students with SEN were home-schooled, and others were educated in special schools. Powell (2015) claims that at the turn of the 20th century, new schools appeared that were considered substitutes for special schools.

It is important to consider how disability is perceived. The perception people hold affects their use of attitudes and language while talking about disabilities (Haegele & Hodge, 2016). Several models of thinking exist about disabilities, such as medical, charity, social and biopsychosocial. Based on a medical model, people with disabilities are thought of “as an illness that needs treatment by the medical profession” (Rapp & Arndt, 2012, p. 8). While the charity model views people with disabilities as pitiful, the social model asserts that disability “is not a product of personal failings, but is socially created” (Rapp & Arndt, 2012, p. 9). The biopsychosocial model of disability suggests that disability should be understood in terms of biological, psychological, and social factors (Shakespeare et al., 2016).

According to the Education for Persons with Special Educational Needs (EPSEN) Act (2004), Special Educational Needs (SEN) is defined as the limitation of a person's capacity, which may lead to a learning difficulty as a consequence of lasting physical, mental health, sensory and learning impairments. The term Special Educational Needs (SEN) is used as an umbrella term that encompasses a wide range of medical conditions.

Inclusion necessitates a radical transformation of educational systems, starting with teacher education and instructional methodologies to meet the individual needs of all children. In

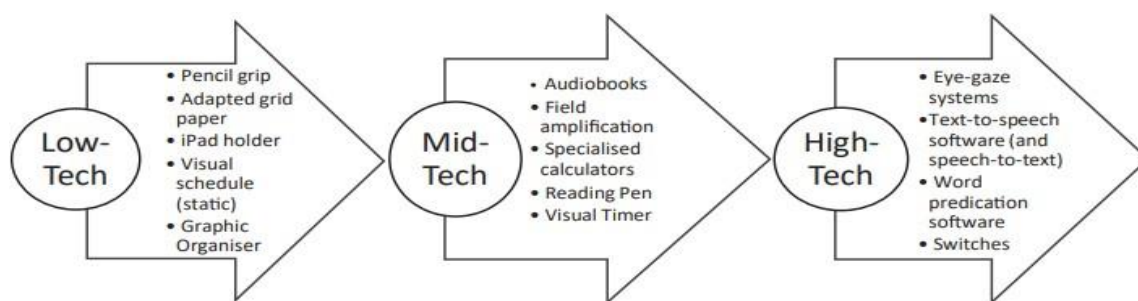
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this regard, the role of assistive technologies in facilitating the implementation of inclusive education should also be examined. The Individuals with Disabilities in Education (IDEA) Act defines Assistive Technologies (ATs) as the involvement of any items utilized to enhance the functional abilities of children with disabilities (IDEA Act, 2004).

Given various forms of technological devices, Chambers (2020) writes that “technology is integral to many inclusive education strategies used to enhance students' learning” (p. 2). More specifically, while assistive technology is broad enough to be defined, it can be categorized as low-tech, mid-tech, or high-tech devices. It should be noted that many assistive technologies are user-friendly and do not require any training to be utilized. (See Figure 1).

### Figure 1

#### *Continuum of Assistive Technology*



(Chambers, 2020)

### Problem Statement

The application of assistive technologies in inclusive education has not been scientifically explored in the Azerbaijani context so far. For this reason, I aimed to explore the perceptions of principals, teachers, and parents about educating children with special educational needs. In addition, I attempted to explore what practices were implemented and what assistive

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technologies were utilized by parents and teachers to educate children with special educational needs at the primary education level.

### **Research Questions**

What are school principals', teachers', and parents' perceptions about educating children with special educational needs at the education primary level?

What practices do teachers and parents implement to educate children with special educational needs at the primary education level?

What assistive technologies do teachers and parents use to educate children with special educational needs at the primary education level?

### **Significance of the Study**

Loreman (2007) highlights that the advantages of inclusive education have been outlined by research and literature. Considering this importance, the study aimed to contribute to the existing literature about perceptions held by stakeholders (principals, teachers, parents) on educating children with special educational needs. Another significance of the study was to generate knowledge about practices implemented by parents and teachers. Similarly, it was investigated in the course of study what assistive technologies were utilized in two public schools, which might become a rich source of information for the other public and private schools.

### **Purpose of the Study**

This study aimed to explore the opinions of principals, teachers, and parents about educating children with special educational needs (SEN). The research also investigated what practices were implemented in place and what assistive technologies were utilized in public schools at the primary education level to support the children with SEN in Azerbaijan.

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### **Chapter 2: Literature Review**

I divided the literature review in the following way: inclusive education, inclusive education in Azerbaijan, children with special educational needs (SEN), assistive technologies in inclusive education and the practices implemented while educating children with SEN, teaching strategies in inclusive education, differentiated instruction, sociocultural theory of Lev Vygotsky. While selecting articles for this literature review, I paid special attention to the sources' reliability and credibility: Google Scholar, Sage Journals, Taylor and Francis Online, Eric, Springer, and Science Direct. Considering the importance of gathering the most recent knowledge, I chose the articles which were published between 2010 and 2021. As Snyder (2019) asserts considering prior and relevant literature is crucial while writing a literature review.

#### **Inclusive Education**

Several models exist for inclusive education. These models are medical, charity, social and biopsychosocial (Rapp & Arndt, 2012; Shakespeare et al., 2016). Haegele and Hodge (2016) state that according to a medical model, children with special educational needs are considered a problem and need treatment to be accepted by society. Based on the charity model, people are expected to pity children with special educational needs (Retief & Letšosa, 2018). The social model of disability dictates that disability is “socially created” (Rapp & Arndt, 2012, p.10), meaning that society prevents people with disabilities from achieving their potential. According to the biopsychosocial model, disability can be understood if biological, social, and psychological factors are considered (Wade & Halligan, 2017).

Although different models exist for inclusive education, it should simply be understood as a fundamental right to education (Stubbs, 2008). This means that each child possesses a right to be educated in mainstream schools regardless of their different educational capacities.

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Inclusive education has become more acceptable in the last 30 years (Downing & Peckham-Hardin, 2007). Along with its popularity, more people realized that the main purpose of inclusive education is to reach out to all learners irrespective of their educational needs (Aas, 2019).

Inclusive classrooms mean a group of children who study together. This diversity generates several social and emotional benefits. Students with or without SEN learn how to interact with one another in a respectful manner (McCay & Keyes, 2001). Inclusive practices also engender tolerance and acceptance together with a mindset that people should not be treated differently based on their challenges or needs (Tkachyk, 2013). Cavioni et al., when students with SEN become accepted by their peers in inclusive environments, their self-confidence grows (2017).

Inclusive education also has a positive effect on the academic performance of students without special educational needs (Blazer, 2017). To be more specific, in inclusive classes teachers present the input in multiple ways. Rapp and Arndt (2012) point out that when the input is presented in multiple ways, students gain new insights on how to process the new concept in numerous ways. This leads to the reinforcement of new concepts among students without SEN.

### **Inclusive Education in Azerbaijan**

The history of inclusive education in Azerbaijan can be related to the Convention signed on Human Rights in 1992. The Republic of Azerbaijan was among the first in the region to acknowledge the Convention on the Rights of Persons with Disabilities. and pledged to protect the right of each child (Allahverdieva, 2020; Mikailova et al., 2009).

Lesko et al. (2010) have stated that between 2005 and 2009, Azerbaijan launched several initiatives to educate children with special educational needs and their peers together. One of the

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programs, the National Program on Development of Inclusive Education, implemented pilot projects that successfully included 187 children with various mild or moderate special educational needs in both primary and preschool education in four cities of Azerbaijan: Baku, Sumgayit, Mingachevir, and Yevlakh. In collaboration with World Vision Azerbaijan, International Medical Corps, and the Center for Innovations in Education (CIE) a nongovernmental organization conducted these projects employing the Step-by-Step instructional methodology.

One recent project executed between 2018 and 2020 by the Delegation of the European Union to the Republic of Azerbaijan with UNICEF was grounded on an aim to establish an environment to increase access to quality education for children with disabilities (Kazimzade & Mikayilova, 2021). Another joint project, "Expanding Inclusive Education for Children with Disabilities in Azerbaijan" by the European Union, UNICEF, and the Ministry of Education was launched in 2018 to increase the number of children with disabilities in mainstream schools by 5000 (Kazimzade & Mikayilova, 2021).

The above-mentioned governmental initiatives confirm that Azerbaijan seriously intends to protect the right of students with SEN (Special Educational Needs).

### **Special Educational Needs**

The term *special educational needs* was suggested by the Warnock Report (DES, 1978). The report initiated by Margaret Thatcher aimed to increase the number of children with special educational needs in mainstream schools (Glazzard, 2013). According to the Education for Persons with Special Educational Needs (EPSEN) Act (2004), special educational needs are defined in the following way:

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*Special educational needs* means, in relation to a person, a restriction in the capacity of the person to participate in and benefit from education on account of an enduring physical, sensory, mental health or learning disability, or any other condition which results in a person learning differently from a person without that condition. (p. 6)

Based on this definition, it becomes apparent that the term *special educational needs* refersto learning difficulties originating from a broad range of medical conditions. For instance, physical disabilities may refer to cerebral palsy, amputations, and spinal cord injuries (Carona et al., 2012), sensory disabilities may relate to low vision, blindness, hard of hearing or deafness (Sorgini et al., 2017), mental health disorders may denote autism or developmental delay (Bekhet et al., 2012) and learning disabilities may involve dyslexia, dysgraphia, dyscalculia, or ADHD (Reisman & Severino, 2020).

Children who do not possess any learning difficulties are referred to as children without special educational needs (Cara, 2013; Lindsay 2007).

### **Assistive Technologies (ATs) in Inclusive Education**

Assistive technologies play an essential role in facilitating and enhancing the educational outcomes of children with special educational needs. Therefore, the term should be defined to prevent any confusion. Even though assistive technologies do not possess a commonly agreed definition, the legislation from the United States, the Individuals with Disabilities in Education Act (IDEA) defines AT in the following way:

The term *assistive technology device* means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of

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a child with a disability. (p. 851)

In another source, ATs (Assistive Technologies) is described as a type of technology that aims "to improve the education of students with disabilities" (Messinger-Willman & Marino, 2010, p. 8). Similarly, assistive devices are designed to scaffold learners' brain activities (Marino et al., 2009). Thiyagu (2014) claims:

Assistive Technology is any object or system that increases or maintains the capabilities of people with disabilities, while Adaptive Technology is any object or system that is specifically designed for the purpose of increasing or maintaining the capabilities of people with disabilities. (p. 16)

Assistive technologies are divided into three groups and categorized as low-tech, mid-tech, and high-tech devices (Chambers, 2020). "Low-tech devices include pencil grips, graphic organizers, adapted paper and highlighting pens" (Chambers, 2020, p. 3). Examples of mid-tech devices can be calculators, visual timers, audiobooks, and recording devices which may require no or little training to use. High-tech gadgets have been invented to meet the needs of children with severe disabilities. These devices are both complicated to use and high-priced to access. According to Ahmad (2015), while integrating various forms of ATs, it is vital to consider that such devices should be "need-based, inexpensive to produce, purchase and maintain, easy to use, and effective" (p. 67). Another point to consider is ATs are not intended for treating disabilities but are meant for helping a child overcome a difficulty in learning (Thiyagu, 2014). In my study, I focused on the use of low-tech assistive technologies and their role in the facilitation of inclusive education.



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### **The Practices with Assistive Technologies (ATs) in Inclusive Education**

Zilz and Pang conducted a synthesis study in 2019 by reviewing seven related research articles and concluded that the application of assistive technologies could facilitate the learning process of children with SEN (Special Educational Needs). The summaries of those articles are listed below:

A survey study was conducted in Thailand with the inclusion of 116 students aimed to determine what are the facilitators and barriers of ATs (Assistive Technologies). The results revealed that most students with physical and hearing handicaps needed ATs for accessibility and communication purposes (Lersilp et al., 2018).

Yankova and Yanina (2010) studied several types of ATs which can be utilized for children with mental disabilities and concluded that while didactic materials are available at schools, no ATs are used to facilitate the learning process. Interestingly, most of the teachers' conceptions of ATs were related to school facilities, proving that teachers misunderstood the concept of Ats (Yankova & Yanina, 2010).

In 2015, Coleman et al. studied if art teachers utilize or adapt any form of assistive devices for students who have various forms of disabilities by carrying out an online survey in the United States. Seventeen teachers responded to the survey, and 70% of them confirmed that they were using adaptive materials to facilitate students' learning process. Regarding the implementation of ATs, most teachers expressed their concern about "not being knowledgeable or feeling prepared about AT" (Coleman et al., 2015, p. 655).

Another survey was conducted in Saudi Arabia and focused on the practices of caregivers with autism spectrum disorder (ASD) and other developmental impairments. It was revealed that caregivers are concerned with "finding fewer solutions to problems with typical routines,

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received less training and information about AT, and reported lower levels of competence in using AT” (Alabbas & Miller, 2019, p. 10).

Liu et al. (2016) surveyed 1235 K-12 teachers in the state of Florida to identify what impacted teachers' decisions about the use of technology in the classroom. It was concluded that teachers' integration of technology in their classes heavily depended on their prior experience with technology.

Another research was carried out in 2018 by Lubniewski et al. and included one hundred and fifty-one teachers to reveal their practices in teaching students with disabilities. It was disclosed that teachers were positive about using various apps and preferred to employ various apps in their content instruction.

Smith and Tyler (2011) claim that placing children with SEN in regular schools without considering teacher preparedness does not yield the desired results as teachers should be prepared so that they can include technology into their instruction and be able to instruct children with various needs. For this reason, it is emphasized that instructors should possess adequate expertise in the selection and implementation of assistive devices (Marino et al., 2009).

In summary, teachers and instructors believe that children can benefit from the integration of ATs in their teaching. However, they are expected to understand “assistive technologies” clearly. Once they have a better understanding, they can be prepared to integrate ATs into their instruction.

### **Teaching Strategies in Inclusive Education**

Managing students with a wide variety of needs in inclusive classrooms remains challenging for teachers (Cawthon, 2001). Several strategies have been identified to facilitate the inclusion of students with SEN (Special Educational Needs) in mainstream environments

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(Cartledge & Johnson, 1996; Norwich & Nash, 2010). While implementing inclusive teaching strategies, a particular emphasis might be placed on building successful relationships with each learner. Rose and Sehvlin (2010) have propounded that effective teaching stems from building relationships that spark curiosity and eagerness for learning. McLaughlin et al. (2015) have discovered that building successful relationships is a vital component of inclusive education principles as well.

Bucholz and Sheffler (2009) suggest that the classroom environment is conducive to promoting mutual respect and acceptance (Carpenter & McKee-Higgins, 1996). In this sense, teachers are highly expected to facilitate communication in inclusive classrooms (Molbaek, 2017; Poon-McBrayer & Wong, 2013). Teachers in inclusive environments should be extra cautious about their communication with their students.

Inclusion does not require students to be present in classrooms but to be engaged in the presented class activities (Kershner et al., 2009). Besides, it is often proposed that students learn better when held responsible for their learning. Goodman and Williams (2007) emphasize the use of visuals may increase learners' independence and minimize the need for constant teacher intervention. Deris and Di Carlo (2013) almost support the same claim and state that "using multiple modalities (auditory, visual, tactile) maximizes learning and attention" (p. 52). Adopting carefully chosen activities causes children with special needs to perform better in inclusive environments.

### **Differentiated Instruction**

Differentiated instruction is a way of varying instructional approaches that are used to meet the diverse needs of students (Fox & Hoffman, 2011). Teachers are required to differentiate

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their instruction because individuals are capable of learning materials more easily when they are presented with concepts in diverse ways.

Differentiation principles are based on varying products, content, and process (Dixon et al., 2014; Nusser & Gehrler, 2020; Levy, 2008; Minott, 2009; Stanford, 2009; Tomlinson, 2001). Levy (2008) defines varying content as reducing the amount of content and making it appropriate to a student's level, varying processes as adjusting the delivery of input, and varying product as expecting various outcomes depending on a student's ability (Levy, 2008). Salend (2016) adds the importance of affect and learning environment while implementing differentiation. Affect refers to the influence of students' feelings on their learning (Salend, 2016). Consequently, learning environment should be safe enough to assist student learning (Gaitas & Alves Martins, 2016).

Minott (2009) asserts that educators should differentiate their instruction because education cannot be based on a one-size-fits-all model. When teachers employ the same method and deliver the content in the same way, they may overlook low-achieving students (Brevik et al., 2018). As differentiation requires a shift from traditional teaching methods to an active learning method (Ismajli & Imami-Morina, 2018) when it is implemented students' learning may be enhanced.

Differentiated instruction appears to lie at the heart of inclusive education. By varying content, product, content, process, affect, and learning environment teachers are more likely to achieve enhanced learning outcomes.

### **Sociocultural Theory of Lev Vygotsky**

In his sociocultural theory, Vygotsky emphasized the importance of culture for learning. He believed that learning occurred through social interactions with the help of more

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knowledgeable others (as cited in Rapp & Arndt, 2012; as cited in Scott & Palincsar; 2013).

Vygotsky considered language and symbols the most effective means to develop skills (Van der Veer & Valsiner, 1988). He claimed that meanings given to words could accelerate children's understanding and discussion among children could develop their cognitive skills (Lloyd & Fernyhough, 1999; Vygotskij, 1987).

While implementing inclusive education, Vygotsky's concept of scaffolding should be considered (as cited in Rapp & Arndt, 2012) by a teacher or a peer who acts as a knowledgeable other to support a child's learning and in their proximal development to reach actual learning. In addition, it is essential to know the role of assistive devices, which scaffolds a child's learning. According to Malik (2017), scaffolding means providing students with temporarily assisted learning until they acquire independence.

### Gap

"Despite the positive impact and advancement of AT over the years, prior research on the use of AT in inclusive education is few and limited to developed countries" (Grönlun et al., 2010, p. 6). The literature review revealed that the implementation of ATs (Assistive Technologies) in inclusive education is favored (Lersilp et al., 2018; Zilz & Pang, 2019). However, two main concerns were expressed alongside the approval of ATs:

1. Education providers do not seem to have a clear understanding of the term ATs (Messinger-Willman & Marino, 2010)
2. Education providers are concerned with not receiving sufficient training on the utilization of ATs to facilitate the learning and teaching process (Alabbas & Miller, 2019)

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While these two variables can be interest of the further investigation, I aimed to identify what practices and ATs were used by teachers and parents in inclusive education in the Azerbaijani context.

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### **Chapter 3: Research Design and Methodology**

This chapter describes the research design, research paradigm, research instruments, population, and sampling methods I used to collect data. To achieve the purpose, I chose the qualitative research method for several reasons. The qualitative research design allowed me to collect data through direct observations and interviews (Patton, 2005). In addition, qualitative research design enabled me to generate non-numerical data that assisted in making interpretations based on participants' experiences, beliefs, and attitudes (Fossey et al., 2002; Merriam & Tisdell, 2015). Finally, qualitative research aided to explore the topic which was representative of everyday life (Flick, 2009).

The nature of this research is exploratory as this approach allowed me to discover and obtain new information, knowledge, and understanding (Elman et al., 2020; RG Jaeger & TR Halliday, 1998; Stebbins, 2001). For this study, I explored the perceptions of principals, an primary education teachers who implement inclusive education about educating children with special educational needs in public schools at the primary education level. I also investigated what practices are implemented and what kinds of assistive technologies parents and teachers used.

#### **Philosophical Assumptions**

Designing the research process starts with making philosophical assumptions (Creswell, 2007). According to Matta (2021), qualitative research rests on philosophical assumptions that the researchers attempt to comprehend. Therefore, the selection of the right research paradigm was of crucial importance (Miskon et al., 2015). I used an interpretative research paradigm to explore the meanings participants created (Phothongsunan, 2010).

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### **Research Participants**

I carried out research in two schools located in Baku. One of these schools is a public school that implements inclusive education. Another public school is a pilot inclusive school. I interviewed two principals and three teachers from each school to find out how they perceived the education of children with special needs. In addition, I interviewed teachers and parents to explore what practices they implemented and what assistive technologies they used to educate children with special educational needs. I utilized a purposeful sampling strategy to select schools and teachers. According to this type of sampling, individuals who can provide the relevant data are selected (Creswell, 2007; Hyun et al., 2014; Merriam & Tisdell, 2015; Suri, 2011).

In addition, I managed to conduct interviews with four parents. To contact parents, I used convenience sampling "because of their ready availability" (Yin, 2011, p. 88). I could interview two parents in both schools who were available.

### **Description of Participants and Venue of Interviews**

Research participants were six inclusive classroom teachers and two principals who worked in two different schools located at a considerable distance from each other. In addition, two parents of children with special educational needs from each school were interviewed to explore what practices or assistive technologies they were using in their children's education. All participants were females.

All interviews were conducted from February to the beginning of March. Parents were contacted with the support of classroom teachers or school authorities. Although ten parents were contacted, only four of them agreed to be interviewed.



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The table of participants is presented below.

**Table 1**

*Participants (Principals and teachers)*

<b>Participants</b>	<b>Gender</b>	<b>School</b>	<b>Experience</b>
Principal 1	Female	School A	17 years
Principal 2	Female	School B	5 years
<b>Teachers</b>	<b>Gender</b>	<b>School</b>	<b>Experience</b>
Teacher 1	Female	School A	32 years
Teacher 2	Female	School A	32 years
Teacher 3	Female	School A	25 years
Teacher 4	Female	School B	27 years
Teacher 5	Female	School B	14 years
Teacher 6	Female	School B	5 years

**Table 2**

*Participants (Parents)*

<b>Parent</b>	<b>Gender</b>	<b>Child's diagnosis</b>	<b>School</b>
Parent	Female	Autism	School A
Parent	Female	Hearing disability	School A
Parent	Female	Mental retardation	School B
Parent	Female	Autism	School B

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### **Data Collection**

First, I obtained permission letters from Baku City Education Department to collect the data. Once I accepted the consent forms, I contacted the two schools through phone calls. During the call, I explained my research purpose and requested to be provided with a quiet place to conduct the interviews. School authorities appointed interview times, and I visited the schools at the agreed time.

Polkinghorne (2005) states that the aim of collecting data in qualitative research is to provide evidence for the investigation. To obtain the needed data, I conducted one-on-one interviews with two principals and teachers. According to Creswell (2014), “one-on-one is a data collection process in which the researcher asks the questions to and records answers from only one participant in the study at a time” (p. 218).

### **Data Transcription**

I audiotaped the interviews with the help of a recording device. Recording helped me focus on participants' answers without getting distracted (Stuckey, 2014). Simultaneously, I took some notes on participants' answers to prevent any form of data loss. After the completion of the interview, I started transcribing. I wrote transcription in the Azerbaijani language and then, started translation into English (Merriam & Tisdell, 2015).

### **Data Analysis**

Another critical step in qualitative research is analyzing the obtained data. According to Creswell (2007), data analysis in qualitative research begins with preparing and organizing the generated data. I aimed to collect and analyze the data simultaneously (Merriam & Tisdell, 2015). For that reason, I conducted the first interview. Since the interview was conducted in the Azerbaijani language, I translated the necessary data into English. Also, coding was done in the

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Azerbaijani language (Hyun et al., 2014). Once the coding stage was over, I wrote an analytical memo. Analytical memos facilitated the connection between the coding and analyzing processes (Linneberg & Korsgaard, 2018). I wrote a memo after each interview.

### **Limitations of the Study**

This research has several limitations. One of them is the sample size. Since the study was a qualitative inquiry and based on interviews, I would need more time to increase the sample size. As this academic work had to be completed within the allocated time, I could not study the remaining public schools which implemented inclusive education.

Moreover, I excluded private schools which implemented inclusive education. The exclusion of private schools could be considered another limitation of this study.

Furthermore, all participants were females which prevented me from compiling a demographically representative sample.

Finally, I used a convenience sampling strategy to interview parents. Parents who were willing to participate took part in this study which could make the findings biased.

### **Validity**

To increase the validity of the research, the obtained data were triangulated as multiple sources were searched and utilized (Guion et al., 2011; Merriam & Tisdell, 2015). Obtaining multiple sources of data is one way to triangulate the findings (Merriam & Tisdell, 2015). For this reason, I was able to triangulate my findings based on the answers of principals, teachers, and parents. Furthermore, I employed member checks. As the interviews were carried out in the Azerbaijani language, I aimed to take back the analysis of the findings and requested participants to check whether the interpretation sounded true (Merriam & Tisdell, 2015). Another strategy

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that I utilized was peer examination. I asked my peers and professionals to review the raw data and translation.

### **Trustworthiness**

Morrow (2005) emphasizes that trustworthiness is one of the essential standards of qualitative research as it makes the study more acceptable (Phillimore & Goodson, 2004). In addition, to establish trustworthiness in qualitative research, the course of action should be open to scrutiny (Yin, 2015).

Yin (2015) asserts that during the interviews, the researcher is expected to choose his/her words with care in order not to hurt the participants. The researcher should cater to participants' concerns (Eikenberry, 2007). For this reason, I paid close attention to establishing a positive rapport with the research participants.

### **Ethical Considerations**

Ensuring validity and reliability in qualitative research involves investigating ethically (Merriam & Tisdell, 2015). Given the importance of ethics, I informed the participants about respecting their rights and protecting their confidentiality. I contacted the participants through phone calls to get their consent to conduct the interviews (Stuckey, 2014). I kept the participants' names anonymous and coded their names during the interviews. Besides, I briefed the participants that if they felt uncomfortable during the interviews or wanted to stop the interview, all the data would be deleted immediately. All the interviews were conducted till the end as no interviewee objected to their participation.

### **Chapter 4: Findings**

In this study, I aimed to explore the opinions of principals, teachers, and parents about educating children with special educational needs (SEN). I also investigated what practices were implemented in place and what assistive technologies were utilized in public schools at the primary education level to support the children with SEN in Azerbaijan.

The study was guided by three research questions:

What are school principals', teachers', and parents' perceptions about educating children with special educational needs at the primary education level?

What practices do teachers and parents implement to educate children with special educational needs at the primary education level?

What assistive technologies do teachers and parents use to educate children with special educational needs at the primary education level?

Because of the rich data obtained, I decided to divide the findings into primary and secondary sections. My primary findings, which were perceptions of participants, practices implemented, and assistive technologies utilized at the primary education level, were the focus of my study. The secondary findings were negative parental attitudes toward children without special educational needs, parents' lack of transparency related to their children's special educational needs, missing adequate support for teachers, scarce resources to use in inclusive classrooms, few quality training, absence of collaboration between teachers and parents, class size in both schools implementing inclusive education and the need for teacher assistants.

### Primary Findings

#### **Research question 1: What are school principals', teachers', and parents' perceptions about educating children with special educational needs at the primary education level?**

Two principals and six teachers interviewed for this study expressed their positive views about inclusive education in public schools in Azerbaijan. Teacher 1 from School A strongly endorsed this practice and stated:

Normal qəbul edirəm, çünki hər bir uşaq Azərbaycan Respublikasının vətəndaşıdır və biz müəllimlərin borcudur ki, onları heç bir qayğıya ehtiyacı olmayan uşaqlardan ayırmadan təhsil verək. Əgər biz bu uşaqların inkişaf etməklərini istəyiriksə, biz onları öz yaşadlarından ayırmadan təhsil verməliyik. Bu onların cəmiyyətə inteqrasiya etmələri üçün vacibdir.

[Each child, irregular of his/her needs, is a citizen of the Azerbaijan Republic, and it is our duty as teachers to educate the children with needs without separating them from their peers. If we want these children to thrive, we should make sure that they are educated side by side with their classmates. It is important for their integration into society.]

Research participants who implemented inclusive education believed that it was a basic right of each child to be educated in inclusive settings.

Teacher 2 from School A asserted that she observed an increase in the number of children with special educational needs in their school:

Etiraf etmək lazımdır ki, xüsusi qayğıya ehtiyacı olan uşaqlarla işləmək çətindir, düzdür. Amma bu danılmaz faktır ki, belə uşaqların sayı getdikcə artır və getdikcə daha çox məktəblərin inklüziv olması ehtiyacı yaranacaq.

[It should be admitted that it is not an easy task to teach children with special educational needs. Nevertheless, it is an undeniable fact that the number of children with needs is growing year by year, and this will lead to a need to make more schools inclusive.]

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The above quotes showed that both teachers may have acknowledged the right of children with SEN to be educated in public inclusive schools. Likewise, principals of Schools A and B supported inclusive schooling. Principal 2 noted:

Biz o faktdan yayına bilmərik ki, cəmiyyətdə xüsusi qayğıya ehtiyacı olan uşaqlar mövcud deyil. Biz bu uşaqlara adi məktəblərdə oxumaları üçün şans verməliyik. Çünki inklüziv təhsil onlara cəmiyyətə inteqrasiya etmək üçün şans verir və inklüziv təhsilin köməyi ilə xüsusi qayğıya ehtiyacı olan uşaqlar öz sosial bacarıqlarını, özlərinə inamı və güvəni artırırlar.

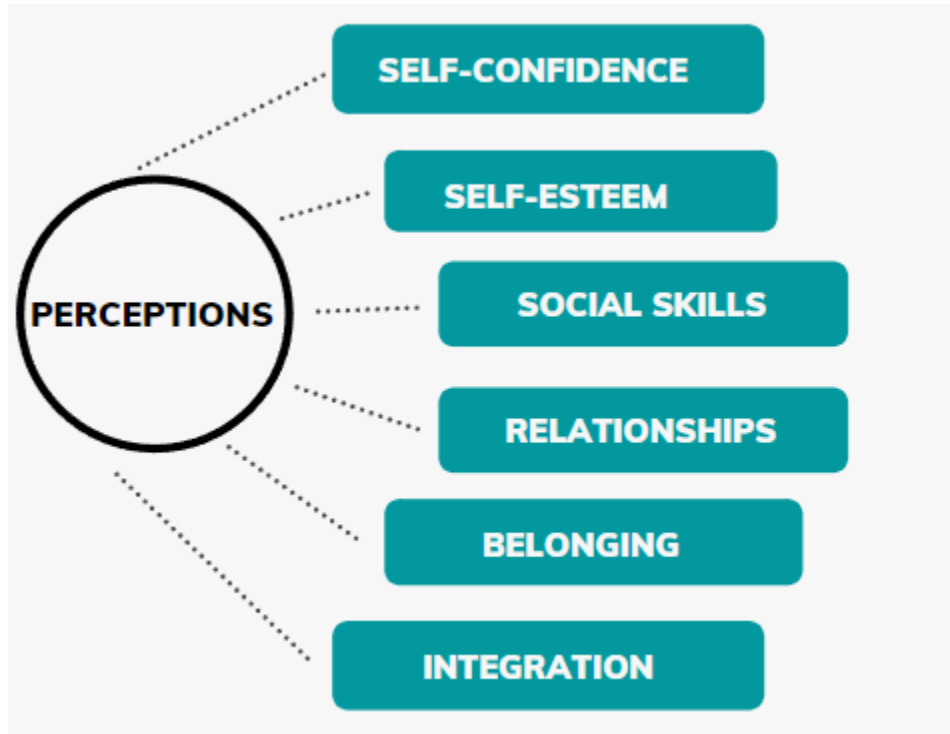
[We cannot escape from the fact students with needs do not exist in societies. We should give these children a chance to attend regular school. Because inclusive education gives them a chance to integrate into society, improve their social skills, and improve their self-esteem and self-confidence.]

Inclusive education providers did not support the idea of separating students from one another based on their needs. They desired children with SEN to have equal opportunities to participate in the teaching and learning process and freely express themselves.

Figure 2 below illustrates which benefits children with special educational needs may gain from the implementation of inclusive education.

### **Figure 2**

*Study participants perceptions*



**Research question 2: What practices do teachers and parents implement to educate children with special educational needs at the primary education level in public schools?**

The analysis of responses revealed that parents counted on teachers in their children's education and believed that their main responsibilities included feeding and clothing their children before their children started formal schooling. One of the parents interviewed mentioned the expense of the treatment that children with SEN should receive from their birth:

Xüsusi qayğıya ehtiyacı olan uşağın valideyni olmaq asan deyil. Bu uşaqlar daima həkim, terapevt, loqopedlərin nəzarəti altında olmalıdırlar və bu xidmətlər çoxlu vaxt və maddiyyat aparır. Bu səbəbdən mən uşağın məktəbə getməyini gözləmişəm.

[It is not easy to be a parent of a child with needs. These children are under close control of doctors, therapists, or logopaedics, and such services take a lot of time and money. For this reason, I expected my child to start school to be educated.]



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Parent participants in this research emphasized their parental duties regarding their children's health rather than their children's education. Similarly, another parent supported the above-shared idea and added:

Təhsil mənim sahəm deyil. Mən övladım üçün bu məktəbi ona görə seçmişəm ki, inklüziv təhsil sahəsində bu məktəbin göstəriciləri ilə tanış idim. Mən burda keçirilən dərslərin keyfiyyətindən razı idim və qızımı bu məktəbə yazdıranda onun etibarlı əllərdə olacağını bilirdim.

[Education is not my field. I chose this school for my child because I was aware of the good academic results of this school in inclusive education. I am satisfied with the quality of teaching here, and when I enrolled my child, I knew that she would be in safe hands]

Given the quotes, both parents had high expectations of instructors and considered them the only professionals who were capable of educating children with SEN. In other words, the parents who were involved in this study did not share any practices which they used to educate their children.

While analyzing teachers' responses from School A, two significant findings emerged: differentiated instruction and Lev Vygotsky's theory of Social Constructivism. Although teachers referred to those concepts, they may not have named them.

Among the interviewed teachers, Teacher 3 from School A and Teacher 4 from School B exemplified their points with differentiating instructions. Teacher 3 from School A asserted:

Əgər xüsusi qayğıya ehtiyacı olan uşaq hələ qələm tuta bilmirsə və digər uşaqlar artıq hərf öyrəndiklərini göstərməlidirlərsə, mən onlardan öyrəndikləri hərfi plastilindən və ya salfetkadan düzəltməyi xahiş edirəm. Sonra bütün sinifə səslənirəm ki, onlarda eynisini təkrar etsinlər. Özüm belə edirəm ki uşaq özünü fərqli hiss etməsin.

[If children without needs should demonstrate their learning by writing letters on the board or their copybooks and children with SEN cannot hold a pen yet or cannot write well yet, I usually ask them to make a letter out of plasticine or napkin while others write. Then I invite others to make a letter from the same materials so that these children would not feel different.]

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Consequently, Teacher 4 from School A shared some of her instructional practices on student interaction. She ascertained that it was a good chance for children with SEN to learn how to socialize and integrate into a small community. She claimed:

Mən həmişə izahatımı bitirdikdən sonra uşaqlara bir birlərini öyrətmək üçün şans verirəm. Məsələn mənim sinifimdə Ayan var o həmişə parta yoldaşı Ayaza kömək edir. Bu həmdə Ayazın sosiallaşmasına kömək edir. Ayan isə səbirli olmağı və şagirdlərin fərqli olduğunu öyrədir.

[Once I finish my explanations, I always give opportunities for children to facilitate and support each other's understanding through pair tasks. For instance, in my class Ayan (the name chosen for this study) always helps Ayaz (the name chosen for this study). This teaches Ayaz how to socialize and Ayan how to be patient and learn how to embrace diversity.]

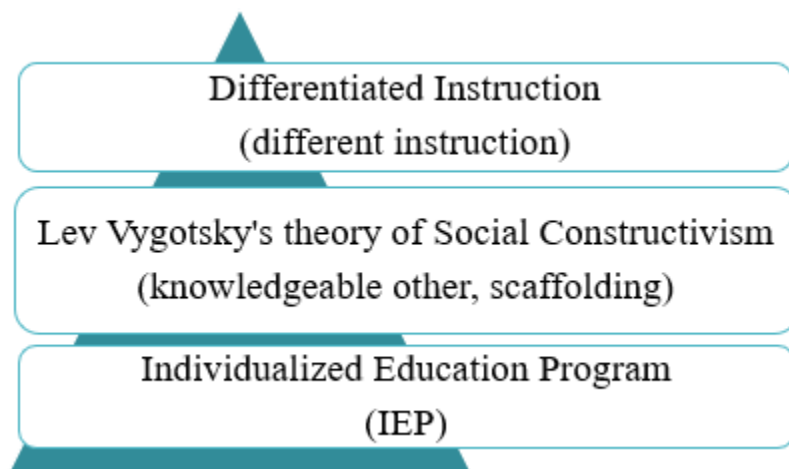
The examples of teaching practices by teachers from both schools illustrated the implementation of differentiated instruction and application of L. Vygotsky's theories in their teaching. In addition, teachers from School B referred to the Individualized Education Program (IEP) which they implement in their instruction. That being said, language lessons were spotlighted to be not taught in inclusive classrooms at the primary education level. The interviewed teachers professed to be required to utilize individualized education programs (IEP) and therefore, language teaching was not included in their everyday practice.

Figure 3 shows instructional strategies implemented by teachers in inclusive schools.

### **Figure 3**

*Instructional strategies employed by teachers*

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**Research question 3: What assistive technologies do teachers and parents use to educate children with special educational needs at the primary education level?**

Both schools differed in their use of assistive technologies. Teachers from School B claimed that they had a special room for students with SEN and that space was their biggest support for children with needs. All three teachers from School B believed that students with special educational needs (SEN) did not usually manage to stay in their classrooms till the end of the lesson. Teachers emphasized that they sent the students with SEN to a special room once they felt tired. In the special room, a special teacher (defectologist) took care of them until they felt better and continued to teach them till the end of the class. Parents, on the other hand, expressed their satisfaction with this practice and mentioned that a resource room was additional support for their children. Teacher 4 from School B confirmed the availability of a special room in their school:

Bu məktəbdə təhsil sinif müəllimi və xüsusi müəllim arasında baş verir. Məsələn əgər uşaq birinci və ikinci dərslərdən sonra özünü yorğun hiss edirsə, o xüsusi otağa keçir hardaki ona xüsusi müəllim nəzarət edir və daha rahat şəkildə uşağın dərslərini keçir.

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[Teaching in this school takes place between a classroom teacher and also a special teacher. For example, if a child with SEN sits in the first and the second lessons and feels tired, he or she goes to a special room where a special teacher supervises him/or her. A special teacher teaches them in a more relaxed atmosphere.]

When Teacher 4 from School B was asked to be specific about assistive technologies, she listed tactile letters or numbers, fruit shapes, slanted surfaces, and plastic sticks. While three teachers from School B utilized a limited number of assistive devices, the teachers from School A transcended their teaching strategies in their use of assistive devices. Teacher 1 from School A emphasized:

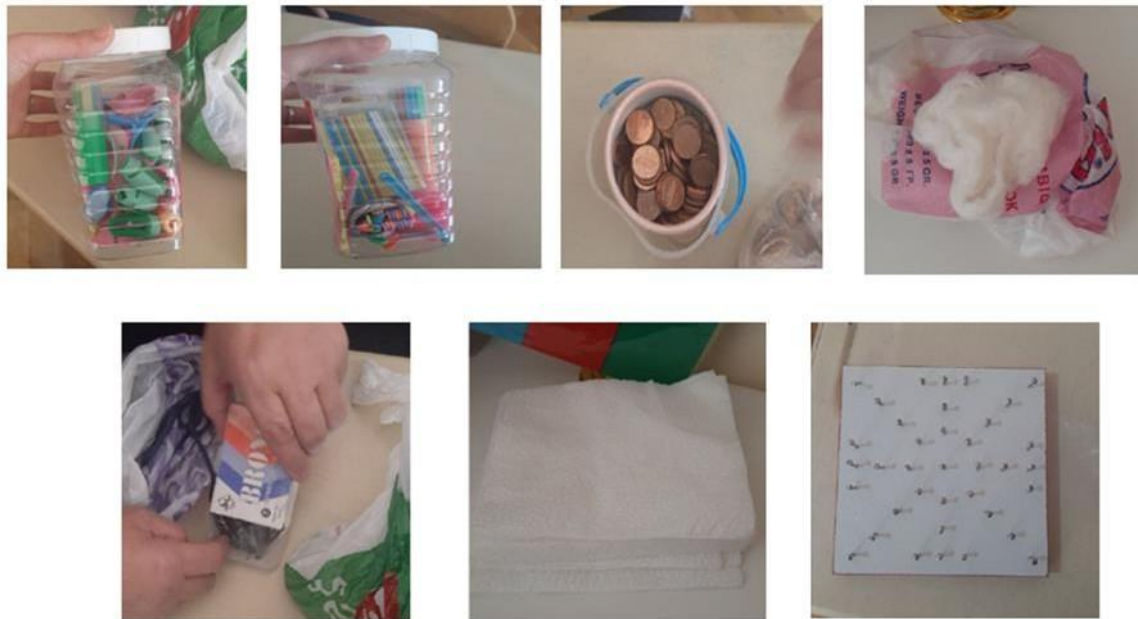
Mən inklüziv siniflərdə dərslər deməyə başlayandan ətrafda uşaqların öyrənməsinə kömək edən hər bir vəsaitdən istifadə etməyə çalışmışam. Buna misal olaraq plastilin, rəngli çöplər, rəngli kağızlar, salfetkalar, pinli lövhələr, paltar asanlar və sairə misal gətirə bilərəm.

[Since I started to teach in inclusive classrooms, I have made use of whatever was available to help children learn. Examples of this may include plasticine, colored plastic sticks, napkins, pinned boards, cotton, and even a cloth hanger.]

In each school, I witnessed a teacher who acted as an informal leader for other teachers who implemented inclusive practices. Those leaders acted as the main source of knowledge for the rest. In other words, strong collaboration was witnessed among the teachers of the same school. All six teachers from two schools stated that teaching in inclusive classrooms remained challenging and for this reason, they always shared new practices or tools they found with one another.

### **Figure 4**

*Low-tech assistive devices used by teachers in School A*



**Figure 5**

*Low-tech assistive devices used by teachers in School B*



**Secondary Findings**

**Obstacles Preventing Maintaining Full Inclusion**

The analysis of participants’ perceptions brought some important issues to the surface. These issues included negative parental attitudes toward children without educational needs,

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parents' lack of transparency related to their children's special educational needs, missing adequate support for teachers, scarce resources to use in inclusive classrooms, a small number of quality training, absence of collaboration between teachers and parents, class size in both schools implementing inclusive education and the need for teacher assistants.

### **Parental Attitudes**

Traditionally, children with special educational needs were marginalized and excluded from mainstream schools. Parents of children without special educational needs looked down on students with (SEN) and wanted to keep their children at a distance. Principal 2 shared the insights that vividly supported the idea of exclusion that was still apparent:

Bizim məktəb inklüziv məktəb olanda normal uşaqların valideynlərindən biz çox narazılıq gördük. O valideynlər kimlər ki, inklüziv təhsilə qarşı idilər bizim onlarla sonsuz sayda görüşlərimiz oldu. Onu da qeyd etmək lazımdır ki, indiki vaxtda belə hər il yeni siniflər açılarda biz bu problemlə üzləşirik.

[When we started to implement inclusive education in our school, we faced enormous opposition from the parents of children without. We had countless meetings with those parents who had strong opinions and were in absolute opposition to inclusive classrooms. It should also be noted we still face such problems when we enroll new students.]

Principal 2 appealed that how parents of children without special educational needs demonstrated unfair treatment towards the children with SEN by attempting to keep their children in separation. This attitude may have been related to the fact that there is a need for raising awareness in society and educating parents about the benefits of inclusive education. When people in society are sufficiently informed about inclusive education, the success of inclusive education can be assured.

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### **Lack of Transparency Between Schools and Parents**

Another concern expressed by principals was the lack of trust or transparency by parents of children with special educational needs. Both principals and some teachers uttered that in many cases, parents of children with special educational needs attempted to hide their children's diagnoses, which caused some difficulties in the teaching and learning process. Principal 2 stated:

Bəzən belə hallar olur ki valideynlər çalışırlar uşaqlarının diaqnozlarını gizlətsinlər. Əslində biz onları başa düşürük. Hər bir valideynin arzusudur ki, onun övladı sağlam olsun ancaq belə olan hallarda bizim işimiz çətin olur.

[Sometimes, there are cases when some parents try to hide their children's diagnosis. In fact, we understand them. It is a dream of every parent for their children to be healthy. However, in such cases, our job is becoming difficult for us.]

Although principals together with the teachers expressed their concerns relating to parents' attempt to hide the medical conditions of their children, both sides appeared to show empathy towards the parents who had children with SEN. Yet, they acknowledged that when they started to educate children with SEN, their medical conditions created problems during the teaching and learning process. School principals' and teachers' concerns may have been related to the stigma and shame that were still attached to inclusive education.

### **Lack of Quality Training**

All six teachers agreed that there were not enough seminars or training on inclusive education. They were cognizant that attending seminars and training on inclusive education would help them update their knowledge and improve their instructional strategies. Teacher 2 from School A voiced an opinion:

Belə təlimlərdə iştirak etmək müəllimlərə uşaqlara daha yaxşı xidmət etməyə kömək olur. Təlimlər müəllimlərin biliklərini artırır və onların daha yaxşı dərslər keçmələrinə səbəb olur.

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[Attending such training allows teachers to better serve children with needs. Training enhances teachers' knowledge and teaching strategies and causes them to obtain better learning outcomes.]

Two out of six interviewed teachers assumed that, in many cases, they eagerly attended seminars or training, yet they learned either little or nothing. They believed they needed to attend high-quality seminars or training so that they could receive new insights into their teaching strategies. However, all six teachers and two principals confirmed that they had not attended any training on assistive technologies or devices.

### **Lack of Resources**

The interviewed teachers emphasized that there were not enough resources that they could have used in their inclusive classes and they believed that the supply of learning resources could facilitate their instruction of students with special educational needs. Teacher 1 from School A stated:

İnklüziv siniflərdə dərs demək üçün bizə əlavə materialların verilsəydi bizə çox kömək olardı. Biz bu materiallardan ev tapşırığı vermək üçün və ya sinifdə əlavə material kimi istifadə edə bilərdik.

[It could have helped us if there were additional materials for inclusive classes. We could have used these books as supplementary materials to assign home tasks or during the classrooms.]

The provisions of materials for inclusive classrooms could have facilitated the instruction of inclusive classroom teachers. Similarly, Teacher 3 from School B professed:

Təəssüflər olsun ki, biz inklüziv məktəblərdə istifadə olunan bütün materiallarla tanış deyilik. Bizim məktəbin maliyyə vəziyyəti imkan vermir ki, biz əlavə materiallar alaıq. Aydın məsələdir ki, biz valideynləri belə məsələlərlə yükləyə bilmərik.

[Unfortunately, we are not aware of all materials used in other inclusive schools. Our school budget does not allow us to buy additional materials. Clearly, we can't burden our parents with such needs.]



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Teacher 3 from School B unveiled the problem regarding the lacking instructional materials and their school's scarce funding to supply them with the adequate stuff to teach children with SEN. The provision of additional materials for inclusive schools may have supported teachers to facilitate their instruction.

### **Class Size in Both Schools Implementing Inclusive Education**

Data analysis revealed that the number of children in inclusive classrooms remained crucial for inclusive schooling. Class size was spotlighted by both teachers and parents. Parent 3 noted:

Biz bu məktəbi ona görə seçdik ki, çünki bilirdik ki, qızımız burda bacarıqlarını inkişaf etdirə bilər. Ancaq onu demək lazımdır ki, xüsusi qayğıya ehtiyacı olan və olmayan uşağın vaxt ehtiyacı fərqlidir. Bu səbəbdən yaxşı olardı ki, inklüziv siniflərdə uşaqsayı az olsun ki, müəllim hər bir uşağa kifayət qədər vaxt ayıra bilsin.

[We chose this school for our daughter because we knew that this is the place where she can learn and improve her abilities. Yet, it should be noted that the time requirement of a child with needs and without a need may not be the same. For this reason, it could be better if there were limits on the number of children in inclusive classrooms so that a teacher could spend enough time with each child.]

The number of children in inclusive classrooms appeared to be an important issue for parents who took part in this study. As Parent 3, Teacher 1 from School A also emphasized the class size as a problem:

Uşaq sayının çox olması bizim işimizi xeyli çətinləşdirir. Təsəvvür edin bir sinifdə 30-a yaxın normal və dörd xüsusi qayğıya ehtiyacı olan uşaq varsa tədris necə çətin gedir.

[A large number of students in the classroom makes our job very difficult. Imagine how the teaching process gets difficult when there are about 30 without special educational needs children and four students who have special educational needs.]

Both parents and teachers who taught children with SEN believed that reducing the number of students in classes needed to be considered a large class size, particularly with two and more

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children with SEN who needed more attention and care, may have caused problems, such as time management and individual approach, in teaching and learning process.

### **The Need for Teacher Assistants**

While analyzing data, it became clear that principals and parents agreed that teachers took the whole responsibility for the implementation of inclusive education in public schools in Azerbaijan. Teachers shared their opinions and concerns about how inclusive education could have been facilitated. All teachers interviewed believed that they needed teacher assistants to teach better and provide adequate care to children with SEN in their classes. Teacher 1 from School A confessed:

Etiraf etmək lazımdır ki, xüsusi qayğıya ehtiyacı olan və olmayan uşaqlara birlikdə dərs demək asan deyil. Bizə köməkçi müəllim lazımdır ki, işimiz asan olsun. İndiki vəziyyətdə bütün məsuliyyət bizim çiyinlərimizdədir.

[Admittedly, it is not that easy to teach children with special educational needs and without needs together. We need teacher assistants who could help us make our job easier. Nevertheless, currently, all the responsibility lies with us.]

Teachers who implement inclusive instruction believed that the provision of teacher assistants could ameliorate their situation as they are sole implementers of inclusive education.

Teacher 3 from School A similarly emphasized the importance of teacher assistants:

Əgər bizə köməkçi müəllim verilərsə biz daha keyfiyyətli dərs deyə bilərik. Çünki biz həm normal uşaqların həm də xüsusi qayğıya ehtiyacı olan uşaqların öyrəndiklərinə birlikdə nəzarət etməliyik. Eyni anda bir neçə işi görmək çox çətinidir.

[If we are given teacher assistants, we can teach much better. We are required to control the progress of children with or without special educational needs at the same time which makes our job very difficult.]

Teachers from School A believed that the presence of teacher assistants in inclusive classrooms can support their instruction. The recruitment of assistants could have eased the teachers' load and helped give each child enough attention.

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Unlike three teachers from School A, Teachers from school B did not raise the concern related to having teacher assistants, which may have been due to the special room where children with SEN were sent by their class teacher and worked with a defectologist there.

### **Summary**

The findings of this research have shown that research participants held a favorable view of the implementation of inclusive education. It was also revealed that assistive technologies were used in both schools to facilitate inclusive schooling. Nevertheless, School A surpassed School B in the use of assistive devices. Both a principal and teachers from School B highlighted the availability of a resource room. Parents did not contribute to this study in terms of practices they could have implemented to educate their children with SEN (special educational needs). It has been disclosed that teachers base their teaching on the Sociocultural theory of Lev Vygotsky and differentiated instruction. In addition, it was revealed that the Individualized Education Program (IEP) was implemented by teachers in School B.

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### **Chapter 5: Discussion**

This study aimed to explore the opinions of principals, teachers, and parents about educating children with special educational needs (SEN). The research also investigated what practices were implemented in place and what assistive technologies were utilized in inclusive schools at the primary level to support the children with SEN in Azerbaijan.

Perceptions of inclusive education providers and practices applied by teachers and parents of children with SEN as well as assistive technologies used were central explorative themes of this study. The investigation was based on qualitative research as it allowed me to gain new information on inclusive education in two public schools selected for this study (Elman et al., 2020).

#### **Perceptions about Inclusive Education**

The literature review shows that setting up successful inclusive environments is heavily dependent on teacher perceptions (Ahmmed et al., 2012). The research concludes that teacher beliefs may even act as an accurate predictor of educational achievements (Alvidrez & Weinstein, 1999; Mayfield, 1979; Schappe, 2005). According to Specht et al. (2015), teacher perceptions can also shape their ability to instruct students in their classrooms. McLeskey and Waldron (2002) have discovered that teachers' abilities vary when adapting or differentiating their instructions to better serve children with SEN (Special Educational Needs). For this reason, it was essential to study participants' views on the implementation of inclusive education. Participants of this study have held positive views about the children with SEN having a chance to study together with their peers. All teachers have noted that they feel that they need to be better prepared as they witness a constant increase in the number of children who have educational needs (Thomazet, 2009; Yildiz, 2015).

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Thomas (1997) asserted that teaching in inclusive classrooms reminded instructors of their moral responsibilities and public duties. Teachers' moral responsibilities and duties may be considered as one of the contributing factors to the success of two inclusive schools included in this study. Referring to the literature reviewed, all participants, particularly teachers and principals, assume that inclusive education provides students with SEN with opportunities to improve their social skills (Gülay, 2011). In addition, inclusive schooling is important for children to integrate into society (Corbett, 1999), improving their self-esteem and self-confidence (Tuncay & Kizilaslan, 2021). Similarly, teachers who were involved in this study have posited the importance of inclusive education. They have noted that inclusive education positively impacts children's views about themselves and their integration into communities.

### **Practices Employed by Teachers and Parents**

The literature reviewed delineates that the implementation of inclusive schooling is aligned with pedagogical practices of differentiated instruction (Martin, 2013). Dixon et al. (2014) assert that differentiated instruction means varying product, content, and process which is within the responsibility of classroom teachers.

Exploration of practices in this study revealed that teachers acknowledge the importance of differentiating instruction, and they think that their expectations of learning outcomes should vary depending on the needs of students. Unfortunately, the parents involved in this research have contributed little to this study. They mentioned their financial difficulties or the health conditions of their children. The parents interviewed have reported that they mostly spend their time and effort on improving the health conditions of their children and wait for their children to start school to be educated.

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### **The Use of Assistive Technologies in Public Schools**

The concept of assistive technologies in the context of inclusive education is not a new theme though it has not been scientifically explored in the Azerbaijani context. All participants of the study acknowledged the importance of inclusive education and various assistive devices to instruct children with special educational needs (SEN). The participants have found assistive technologies essential to the implementation of inclusive instruction as their use has been facilitating the teaching and learning processes, leading to enhanced learning outcomes (Feyerer, 2002; Merbler et al., 2010; Messinger-Willman & Marino, 2010).

Six teachers, the participants of the study, as sole implementers of inclusive education, have been interested in facilitating their instruction through adopting low-tech assistive technologies Chambers (2020). Farooq et al. (2015) state that among different types of technologies, low-tech devices are more useful and easier to operate, and cheaper to produce. Participants of this research believe that low-tech assistive devices are necessary tools for facilitating instructions. Nevertheless, some of the research participants, teachers implementing inclusive education, have mentioned that the instructors who utilize assistive technologies should not indiscriminately choose them, and carefully consider their selection (Hersh & Johnson, 2006). To be more specific, Benssassi et al. (2018) claim that some colors may make autistic children aggressive or anxious. Teachers, who implement inclusive education, decide about the use of assistive technologies, they should consider such essential nuances.

### **Lack of Collaboration**

Successful inclusive schooling requires school culture to undergo significant changes (Poon-McBrayer & Wong, 2013). One of these major changes may be the involvement of parents in the teaching and learning processes (Afolabi, 2014). Research manifests that parental

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involvement may play an essential role in the enhancement of the academic performance of children with special educational needs (Burke, 2012; Delores, 2000; Fishel & Ramirez, 2005; McCay & Keyes, 2001; Olusegun et al., 2013). The data obtained from parents' interview transcripts have not supported this claim. Given the data, the parents are concerned with the health conditions of their children rather than their education. However, Harris (2009) believes that engaging parents in the educational development of children with needs remain essential. Simple acts of homework supervision and communication with school personnel positively affect children's development (Allen & Freitag, 1988). Based on this hypothesis, parents could be informed about the importance of their role in their children's academic success. Nevertheless, Reio and Forines (2011) postulate that parents undergo a prominent level of stress and anxiety once they find out about the diagnosis of their children. Many parents experience frustration as they feel unable to accommodate the needs of their children (Reio & Fornes, 2011). This factor may be considered as the reason why parents of this study demonstrated limited involvement in their children's education. Thus, once parents are involved in education programs that nurture specific skills and abilities of their children, their stress levels and depression start to decrease (Koegel et al., 1996). Johnsen and Bele (2013) have found that when parents receive the necessary support from classroom teachers, they attempt to establish better relationships with the school community. By establishing a positive relationship, parents can model the behavior for their children. This modeling may be considered as one of the contributing factors to regular attendance, better social interactions, and higher satisfaction with school experience in children with special educational needs (Reio & Fornes, 2011). Both parents and school communities would better combine their efforts to help children with SEN alleviate their difficulties in their studies and establish a better future for themselves. Despite the above-mentioned literature-based

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benefits, it has been revealed that the study participants from two schools may have not collaborated.

### **The Need for Teacher Assistants**

Šukys et al. (2015) emphasize that inclusive education is challenging for classroom teachers. Teachers involved in this study held a belief that children with special educational needs (SEN) can be educated in regular schools when teacher assistants are assigned to class teachers (French, 2017; Giangreco, 2013). Teacher assistants (TAs) are defined as “paraprofessionals, teacher aides, and paraeducators” (Sharma, & Salend, 2016), and they are primarily recruited to address the needs of children with learning difficulties (Wilson & Bedford, 2008). Rose (2010) emphasizes that some of the responsibilities of teacher assistants include instruction or homework help, supervision of group tasks, helping students with personal care, and facilitation of peer interactions. Study participants asserted that they need TAs to address children’s care needs and help them with homework grading or class assignment preparations.

Nonetheless, Schuelka et al. (2019) accentuate while assigning responsibilities to teacher assistants to consider their level of academic credentials that differ from class teachers. Devecchi et al. (2012) indicate that teacher assistants are usually hired not because of their qualifications or major but on the personal qualities or experiences they had in the past. For this reason, expecting teacher assistants to take the place of classroom teachers and act as primary instructors is not a welcoming practice in inclusive educational settings (Schuelka et al., 2019). Sharma and Salend (2016) note that the pedagogical roles of teachers are diminished once teacher assistants are present in the classrooms of children with educational needs. Two reasons supporting this claim are as follows: Teacher assistants tend to instruct students with needs separately, which leads to an exclusion rather than inclusion (Cameron, 2013; Webster & Blatchford, 2013); The presence



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of teacher assistants adversely impacts classroom interaction of a student with needs with their peers (Malmgren & Causton-Theoharis, 2006).

Hall (1995) asserted that contributions made by teacher assistants should be reduced dramatically if students' needs allowed them sufficient independence to engage in activities. Classroom teachers involved in this project assume that the presence of TAs may prevent distraction from the teaching and learning process. For instance, they could cater to students' self-care needs.

### **Resource Room**

Unlike School A, School B has allocated a special room or a resource room for children with special educational needs (SEN). Participants from School B believe that allowing children with SEN to go to a resource room benefits them, especially when students feel tired or bored. Separating students with SEN from their peers and educating them in special classes is one of the educational approaches used in inclusive schooling (Teke & Sozbilir, 2019). Such practice started to be implemented after special education was made mandatory, and many schools began setting up a resource room where children with (SEN) were instructed either individually or in small groups (Moody et al., 2000). The rationale behind this practice is to provide students with SEN with additional services (Fiorello, 2001; McGill-Franzen & Allington, 1990).

Nevertheless, the idea of separating children and sending them to the resource room has been found “woefully inadequate” (Fisher et al., 2002, p. 63). Demo et al. (2021) assert that this practice adversely affects students with special educational needs as they nurture negative self-perceptions about their needs. In addition, the separation of students with SEN from their

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classmates leads to a stigma (Marston, 1996). Likewise, Klingner et al. (1998) found this practice not relevant as well and recommended child with SEN stay in their inclusive classrooms. He emphasized that only this way students with SEN could have an opportunity to socialize with their peers and become exposed to classroom instructional activities. Children who are educated in fully inclusive classrooms have higher self-esteem and are more likely to be accepted by their classmates (Vaughn & Klingner, 1998). Considering the limitations of placing children with SEN in resource or special rooms, it becomes clear why this practice should be avoided.

### **Class Size in Both Schools Implementing Inclusive Education**

As inclusive practices are becoming more common, classroom teachers are expected to meet the needs of a growing number of diverse children. Many teachers feel that they lack the necessary skills and abilities to meet the needs of all their students (Ballhysa & Flagler, 2011; Kamens et al., 2003). According to Tkachyk (2013), practicing inclusive education can be challenging for teachers considering the number of students in inclusive classrooms. To what extent class size plays a significant role in the learning outcomes of children with SEN (Special Educational Needs) has not been decided yet (Bondebjerg et al., 2021). Nevertheless, all teachers and parents who have been engaged in this process suppose that decreasing the number of students in an inclusive classroom will benefit both teachers and students. Cawthon (2011) states that successful inclusion depends on the reduction of class size. Fossey et al. (2002) claim that smaller classes allow teachers to plan their instruction more thoughtfully. Zarghami and Schnellert (2004) believe that class size might positively affect students' academic performance and even decrease their behavior problems. Considering these arguments, the idea of reducing the number of students in inclusive classrooms may be considered rational.

### Conclusion

This exploratory qualitative research has attempted to explore teacher and principal attitudes on inclusive education, what practices parents and teachers implement, and what kinds of assistive devices are used by education providers. It was found that both teachers and principals embrace and support inclusive education; teachers use practices that they consider to be more appropriate for children with needs through the application of Vygotsky's theories and differentiation of their instruction. Moreover, teachers use low-tech assistive devices with which they are familiar. Given the limitations of the study sample, results may not be generalizable for all-inclusive schools as it was evident both schools did not show any sign of collaboration with one another. Considering the importance of the topic, more in-depth exploration is needed to find out why these schools do not try to exchange their knowledge or experiences. Further research could determine how collaboration among inclusive schools could be enacted or facilitated.

Several issues highlighted by research participants suggest that our society has not entirely accepted inclusion yet. Specific examples could include how some parents of children without special educational needs try to avoid placing their children in inclusive classrooms or how parents of children with needs try to hide their children's diagnoses.

All research participants acknowledged the fact that the whole responsibility for the implementation of inclusive education lies on teachers as they are the ones who can take initiatives to modify the curriculum or adopt any assistive technologies to facilitate their instruction. Besides, the truth is that these teachers do not receive enough support from the government, be it the arrangement of training, provision of supplementary materials, or assignment of teacher assistants to inclusive classrooms. Although controversial views exist about teacher assistants or the provision of special rooms in inclusive schools, further research could be conducted to measure their effectiveness.

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In conclusion, the success of inclusive education seems to depend on government initiatives. For instance, teachers could be provided with high-quality training to develop their professional competencies to better cater to children with needs. These changes in inclusion can be normalized.

### **Implication**

In this research, it was revealed that the use of assistive technologies or inclusive educational practices by the two schools differed significantly. Accordingly, it could be deduced that these schools do not collaborate. The implication of this research could be to emphasize the importance of establishing collaboration among those who implement or aim to implement inclusive education. This collaboration could lead to increased knowledge on the use of assistive technologies and instructional practices.

### **Recommendations**

Based on the results, the following recommendations are presented:

Teachers who teach in inclusive classrooms should be engaged in high-quality training (Leung & Mak, 2010).

Schools should be provided with low-tech assistive devices (Chambers, 2020).

Teachers should closely collaborate with the parents of children with SEN (Bodvin et al., 2018).

Frequent meetings should be held between teachers and parents to discuss the overall progress of children with SEN (Special Educational Needs) (Bodvin et al., 2018).

All children, regardless of their needs, should be educated together (Stubbs, 2008).

In inclusive schools, resource rooms could be used for additional service provisions (Fiorello, 2001).

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Schools that implement inclusive education should collaborate and build a network (Billingsley et al., 2018).

**Appendix A**  
**Informed Consent Form**

**Date:**

**Name of Participant:**

**Study Name:** Inclusive Education in Azerbaijan: A role of assistive technologies in facilitating its effectiveness

**Researcher:** Aysel Beydullayeva; [abeydullayeva13865@ada.edu.az](mailto:abeydullayeva13865@ada.edu.az)

**Purpose of the Research:** To study the perceptions of teachers, and principals about educating children with special educational needs in public schools at the primary education level, explore the practices implemented by parents or teachers to educate children with special educational needs (SEN), and find out what kinds of assistive technologies are used to facilitate inclusive education.

**Participants' responsibilities:** The participants will be asked to participate in an in-depth interview which will last 30-40 minutes and answer the questions given by the researcher.

**Research Benefits:** The researcher believes that inclusive education as a sensitive aspect of education should be within the interest of every educator. By finding out the practices implemented by teachers and parents and by exploring assistive technologies researcher hopes to come up with findings that may act as a valuable source of information for public or private schools which aim to execute inclusive education in the future.

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**Withdrawal from the Study:** You have a right to stop your participation in the study at any time, for any reason. If you decide to stop participation, or not answer a specific question, it will not impact your relationship with the researcher or with ADA University and all information will be destroyed.

**Confidentiality:** The researcher will record the interviews with your consent only. Your identity will be protected, and all responses will be kept anonymous. Research data will only be accessible by the researcher.

**Questions About the Research?** If you have questions about the research, please feel free to contact Aysel Beydullayeva email [abeydullayeva13865@ada.edu.az](mailto:abeydullayeva13865@ada.edu.az)

### **Legal Rights and Signatures:**

I, (*fill in your name here*), consent to participate in Inclusive Education in Azerbaijan: A role of assistive technologies in facilitating its effectiveness conducted by (Aysel). I have understood the purpose of this project and want to participate. By signing below, I indicate my consent

Signature

Date

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## **Appendix B**

### **Principal's protocol**

Before starting the interview, let me thank you from the bottom of my heart for being willing to participate in the interview part of my research. As I have mentioned before, my study explores if inclusive education can be facilitated with the help of assistive devices. Our interview is supposed to last 40 minutes and during which I will be asking you questions on the topic

Based on your consent, I am allowed to audio record the interview. I will also take notes of our conversation. Hence, you have the right to deny your participation and quit the interview at any time.

1. Hello. Please introduce yourself.
2. How long have you been a principal in this school?
3. What subjects are taught in this school?
4. What curriculum do you follow?
5. How do you perceive educating children with special educational needs at the primary level in public schools?
6. What support and/or special assistance does your school provide students with special needs to enhance their learning?
7. What kinds of emerging assistive devices utilized in inclusive education are you familiar with?
8. How do they help children with special needs?
9. What kinds of assistive devices are available in your school, and which of them do you use in your classes and for what?



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10. What are the advantages/ disadvantages of such devices? Be specific, name at least three advantages and three disadvantages.
11. How long does it take for a child to get used to the assistive devices? Be specific, name one or two devices.
12. Who decides the use of assistive technologies in this school?
13. What training or workshops related to the use of assistive devices in inclusive education have you ever attended?
14. Do you think such training is available? If yes, would you be interested in attending such training in the future?

Thank you very much for making time and answering my questions. Your support is very much appreciated.

## Appendix C

### Teacher's protocol

Before starting the interview, let me thank you from the bottom of my heart for being willing to participate in the interview part of my research. As I have mentioned before, my study explores if inclusive education can be facilitated with the help of assistive devices. Our interview is supposed to last 40 minutes and during which I will be asking you the questions on the topic.

Based on your consent, I am allowed to audio record the interview. I will also take notes of our conversation. Hence, you have the right to deny your participation and quit the interview at any time.

1. Hello. Please introduce yourself.
2. How long have you been teaching in this school?
3. What subjects are taught in this school?
4. What curriculum do you follow?
5. How do you perceive educating children with special educational needs at the primary level in public schools?
6. What practices do you implement to educate children with special educational needs at the primary level in public schools?
7. What support and/or special assistance does your school provide students with special needs to enhance their learning?
8. What kinds of emerging assistive devices utilized in inclusive education are you familiar with?
9. How do they help children with special needs?

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10. What kinds of assistive devices are available in your school, and which of them do you use in your classes and for what?
11. What are the advantages/ disadvantages of such devices? Be specific, name at least three advantages and three disadvantages.
12. How long does it take for a child to get used to the assistive devices? Be specific, name one or two devices.
13. Who decides the use of assistive technologies in this school?
14. What training or workshops related to the use of assistive devices in inclusive education have you ever attended?
15. Do you think such training is available? If yes, would you be interested in attending such training in the future?

Thank you very much for giving your consent for this interview. Thank you for making time.

Your support is very much appreciated.

## Appendix D

### Parents' protocol

Before starting the interview, let me thank you from the bottom of my heart for being willing to participate in the interview part of my research. As I have mentioned before, my study explores if inclusive education can be facilitated with the help of assistive devices. Our interview is supposed to last 40 minutes and during which I will be asking you the questions on the topic.

Based on your consent, I am allowed to audio record the interview. I will also take notes of our conversation. Hence, you have the right to deny your participation and quit the interview at any time

1. Hello.
2. How long has your child been studying in this school?
3. Who helps your child with homework?
4. What practices do you implement to educate your child?
5. Which core subjects are taught in this school?
6. How is students' learning supported in this school?
7. Do they get special assistance from school?
8. What kinds of assistive devices do you know which is used in the class of your child?
9. Do you think such devices are useful?
10. How do you think they support the children?
11. Have you ever attended any training or workshop about the use of assistive devices in inclusive education? Would you be interested if there were such training?

Thank you very much for your consent and time. Your support is very much appreciated.

**Appendix E****Consent to participate in research****Inclusive Education in Azerbaijan: A role of assistive technologies in facilitating its effectiveness****Researcher: Aysel Beydullayeva (email: abeydullayeva13865@ada.edu.az)**

I am asked to participate in research conducted by Aysel Beydullayeva who is a master's student at ADA University. I have been given information about the study which is called Inclusive Education in Azerbaijan: A role of assistive technologies in facilitating its effectiveness. The research is being conducted as a part of a graduate student project.

I understand that my participation in this study is voluntary and I am free to refuse my participation or withdraw from the research at any given time. I am aware of the fact that my contribution will be confidential and there will be no personal identification in the data to be collected for this academic work.

If I have any other inquiries about the research, I can contact Aysel Beydullayeva (email: abeydullayeva13865@ada.edu.az). By signing this form, I consent to participate in an interview to be conducted by a research student and I consent to the interview to be audio recorded.

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Signature of Subject

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Date

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