

**Teachers' experiences and perceptions of Universal Design for Learning in one
NIS school in Kazakhstan**

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Abstract**Teachers' experiences and perceptions of Universal Design for Learning in one NIS school in Kazakhstan**

As classrooms become more diverse teachers are becoming more aware of the necessity to meet learners needs and interests in the teaching and learning process. There are significant challenges that teachers face while working in a diverse classroom settings such as overloaded classrooms, lack of time, different levels of knowledge, behavioral problems and lack of explicit knowledge on inclusive pedagogies and inclusive education in general. Moreover, in Kazakhstan, the process of educational reform in the area of inclusive education is a recent initiative. Little attention has been paid so far to the issue of inclusive pedagogies that are employed by teachers to meet the needs of different learners. The present study addressed this problem focusing on Universal Design for Learning (UDL) and its basic principles by investigating teachers' perception and understanding of UDL, how they employ its main principles such as multiple means of representation, expression and engagement , and challenges that they face while working with students with diverse needs in one Nazarbayev Intellectual School in Kazakhstan. Data of the present study were obtained through semi-structured interviews. A total of six teachers were recruited using a probability sampling technique. The results demonstrate that teachers are not aware of the concept of UDL and its basic principles. However, they employ those principles in their practice since it is a common practice that they use differentiated approach which highly resonates with UDL and its principles. Additionally, the study revealed that the main challenge that they face while teaching diverse learners is different levels of knowledge that make it difficult to design tasks. The study further illustrates the limitations of sample size and potential biases during analysis. Recommendations for further research are given.

Аңдатпа

Қазақстандағы Назарбаев Зияткерлік мектептерінің бірінде оқытуға арналған әмбебап дизайнын мұғалімдердің қабылдауы мен оны оқу үрдісінде қолдану тәжірибелері

Мектеп оқушыларының контингенті әртүрлі болғандықтан, мұғалімдер оқыту мен оқу үдерісінде студенттердің қажеттіліктері мен мүдделерін қанағаттандыру қажеттілігін барынша түсінеді. Әр-түрлі оқушылармен жұмыс жасау барысында мұғалімдер уақыттың жетіспеушілігі, білім деңгейінің әр-алуандығы, мінез-құлық мәселелері және инклюзивті педагогика мен инклюзивті білім беру туралы білімдерінің аздығы сияқты қиыншылықтармен кездеседі. Сонымен қатар, Қазақстанда инклюзивті білім беру саласындағы білім беру реформасы жаңа бастамалардың бірі болып табылады. Осы уақытқа дейін инклюзивті педагогика мәселесіне назар аударылмады. Осы зерттеу оқытудың әмбебап дизайнына (UDL) және оның негізгі қағидаттарына негізделген. Оқытушылардың UDL-ды қабылдау және түсінуі, жаңа материалды таныстыру әдісі, оқушылардың өз білімдерін көрсету жолдары және оқушыларды ынталандыру әдістері қалай іске асырылатыны зерттелген. Зерттеудің деректері сұхбат алу арқылы алынған. Ықтимал іріктеу әдісімен алты мұғалім зерттеуге шақырылды. Алынған нәтижелер мұғалімдер UDL тұжырымдамасы мен оның негізгі қағидаттары туралы білмейтінін көрсетті. Дегенмен, мұғалімдер осы қағидаттарды өз тәжірибелерінде қолданатындықтары анықталды. Бұдан басқа, зерттеу көрсеткендей, оқушылармен жұмыс істеу барысында кездесетін басты мәселе - оқушылардың әртүрлі білім деңгейлері. Бұл өз кезегінде мұғалімдерге тапсырмаларды әзірлеуді қиындатады. Зерттеу деректерді талдау барысында туындайтын шағын үлгілердің мөлшеріне және

ықтимал дұрыстығына байланысты елеулі шектеулерді көрсетеді. Әрі қарайғы зерттеулерге қосымша ұсыныстар беріледі.

Аннотация

Опыт и восприятие учителями универсального дизайна для обучения в одной из Назарбаев Интеллектуальных Школ в Казахстане

Поскольку контингент учащихся в школах разнообразны, учителя все больше осознают необходимость удовлетворения потребностей и интересов учащихся в процессе преподавания и обучения. Существуют серьезные проблемы, с которыми сталкиваются учителя при работе с учащимися с различными потребностями, таких как перегруженные классные комнаты, нехватка времени, разные уровни знаний, поведенческие проблемы и отсутствие явных знаний по инклюзивной педагогике и инклюзивному образованию в целом. Более того, в Казахстане процесс реформы образования в сфере инклюзивного образования является одной из новейших инициатив. До сих пор мало внимания уделялось проблеме инклюзивной педагогики, которая используется учителями для удовлетворения потребностей учащихся. В настоящем исследовании рассматривается эта проблема с упором на универсальный дизайн для обучения (UDL) и его основные принципы. Исследовались восприятие и понимание UDL учителями, как они используют его основные принципы, такие как методы представления нового материала, выражение знаний учащимися и методы вовлечения и мотивации учащихся, а также проблемы, с которыми они сталкиваются во время работы со студентами с различными потребностями в одной Назарбаев Интеллектуальной школе в Казахстане. Данные настоящего исследования были получены посредством интервью. В общей сложности шесть учителей были набраны с использованием метода вероятностной выборки. Результаты показывают, что учителя не знают о концепции UDL и ее основных принципах. Тем не менее, они используют эти принципы в своей практике, поскольку общепринятой практикой является

использование дифференцированного подхода, который очень резонирует с UDL и его принципами. Кроме того, исследование показало, что основной проблемой, с которой они сталкиваются при работе с учащимися, являются разные уровни знаний, которые затрудняют разработку заданий. Исследование также иллюстрирует существенные ограничения, связанные с небольшим размером выборки и возможными предубеждениями, которые возникают в ходе анализа данных. Далее даны рекомендации для дальнейших исследований.

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NIS school in Kazakhstan**

Chapter 1.Introduction

1.1 Inclusive Education

Inclusive education is accommodating and meeting every learner's needs and interests irrespective of their race, nationality, religion, social status and gender. The United Nations Educational, Scientific and Cultural Organization (UNESCO – hereinafter) Education for All (EFA – hereinafter) established equity and quality education for every person (with or without disability) regardless his race, nation, religion, gender and social status as the main priority (UNESCO, 2009). There are a number of international declarations and agreements promoting inclusive education in Europe and worldwide. For instance, Universal Declaration of Human Rights (1948); United Nation Convention on the rights of the Child (1989); World Declaration for Education for All (1990); Standard Rules on the Equalization of Opportunities for Persons with Disability (1993); UNESCO Salamanca Statement and Framework for Action (1994); Dakar Framework for Action (2000) have also declared that quality education in a regular school system is the basic right of every child and adult. Furthermore, the adoption of these documents is the response to the problems of segregation and exclusion of people with special needs from the educational system and society all over the world. However, many children are still segregated or excluded from the mainstream education system and some are even homeschooled (OECD, 2009).

1.2 Definitions of Inclusive Education

Inclusive education can be defined as free access to a welcoming educational environment regardless of a learner' gender, religion, ethnicity and abilities (UNESCO, 2009). This definition describes inclusive education in its broader sense touching upon all specific characteristics and features that are pertinent from person to person. There are other definitions of inclusive education that are particular to different contexts and influenced primarily through the lens of historical practices and culture. For example, an earlier definition from the National Center on Educational restructuring and Inclusion (NCERI) in 1995 defined inclusion as the provision and support of all children with special educational needs as well as with severe impairments providing them with necessary tools and materials to develop social and academic skills so that they can be the part of the society (NCERI, 1995). Booth and Ainscow (2002), explained that inclusive education is also the cooperation of stakeholders charged with improving educational outcomes within their school communities. What is problematic for educators is that there is no universal definition for the term inclusion or inclusive education, since the term can be exceptionally broad and used differently depending the context (Shyman, 2015). Irrespective, it is founded on the principle that every child is unique and has a fundamental right to education (Organization for Economic Co-operation and Development (OECD) (2009).

1.3 The Kazakhstani context

In 1991 Kazakhstan gained its independence and separated from the Soviet Union and the educational system faced some changes and challenges. The Soviet educational system left its traces influencing the educational system of this newly independent country. For instance, the

Soviet legacy can be easily seen in the way inclusive education is understood in post-soviet countries such as Kazakhstan. According to Thomson (2002), inclusive education in the Kazakhstani context was described as supporting disabled students. This resulted from the medical approach to disability known as “defectology” which views disability of a child as an illness that needs to be treated is still present in the society as a legacy from the Soviet Union (Daniels, as cited in Rouse & Lapham, 2013). In 1992 Independent Kazakhstan established The Law on Education which was aimed at incorporating national values into the educational system (Bridges, 2014). Between 1994-1996 the conceptual revision of the content of education was made. Thus, The Constitution of the Republic of Kazakhstan(1995), Article 30 states that every child in the country has the right to education including free primary, general secondary and higher education (on competitive basis) irrespective of origin, ethnicity, social status, gender, language, education, religion, health status and other circumstances.

Even today, many children with special needs are diagnosed as having disabilities and are placed to special correctional schools or in some cases they are homeschooled (Bridges, 2014;Rouse & Lapham, 2013). These children are deprived from their rights to be educated in mainstream schools as everybody else, staying in a shadow and in a silence (Rouse & Lapham, 2013; Bridges, 2014).

1.4 Educational Reforms in Kazakhstan

Educational reforms in Kazakhstan did not begin at the same time as others in other parts of the world, since Kazakhstan was originally part of the Soviet Union. The target was to maintain the old educational system and develop new educational approaches to meet the changes that were taking place in the country (Bridges, 2014). The educational system of the

Soviet Union was defined by specific characteristics. As Kanaev and Daun (2002) stated, a feature of the educational system was the fact that Science and Mathematics were highly privileged subjects, while Humanities and Social Sciences were not paid much attention (as cited in Bridges, 2014). Furthermore, Yakavets (2014) asserted that the Soviet educational system was also prescriptive and based on rote learning, which means learners were given facts to learn by heart and to remember them, which had little to do with the development of critical thinking and the practical skills that learners would need in real life (as cited in Bridges, 2014). Later, starting from 2000 to the present time several laws were adopted due to the criticism of the existing educational system in the country. The main focus of these reforms and laws was entering the world arena (Bridges, 2014). The educational system is still working towards that aim which is focused on preparing a specialist that can be demanded in any country of the world (Bridges, 2014).

The current Kazakhstani school system is characterized by primary, general secondary, basic vocational and higher professional education. According to the Development of strategic directions for education reforms in Kazakhstan for 2015-2020, at present there are 7384 comprehensive schools in Kazakhstan, 55.8% of which are small multi grade schools (p.16). Kazakhstan as other former USSR republics started to open specialized educational institutions for children with various types of impairments in early 1990 (Suleimenova, 2012). Later, along with special schools some classes in mainstream schools for children with special educational needs began to open. These were the first steps of integration of children with special needs into the educational process (Suleimenova, 2012, p.21). The Law of the Republic of Kazakhstan "On Education" (as supplemented), the Law on the Rights of the Child in the Republic of Kazakhstan (as supplemented), the Law "On Social and Medical-Pedagogical Correctional Support of Children with Disabilities", the Law "On social

protection of disabled people in the Republic of Kazakhstan", and the State Program for the Development of Education of the Republic of Kazakhstan for 2011-2020 are the main indicators of the steps taken forward to the development of inclusive education. The Decree of the President No. 160 presented the following data on the development of inclusive education: special education for children with special needs is introduced in 37 special kindergartens, 101 special needs schools, 240 special groups and 1098 special classrooms in comprehensive schools (Zholtayeva, Stambekova, Alipbayeva, & Yerzhanova, 2013, p.197). Though the organization of inclusive schools is evident from the numbers, only a third of children with disabilities are engaged in the educational process which is explained by the poor understanding of the idea of inclusive education (Zholtayeva et.al, 2013). The State Program for the Development of Education of the Republic of Kazakhstan (2016-2019), which is the main document for educational development of the country clearly states that 30% of pre-school organizations and 70% of Kazakhstani schools should support and make provision for children with special needs. Although the laws and official documents mentioned above promote the development of inclusive education, it is often observed that the approaches and methods used currently in classrooms remain the same as under the edicts of the soviet system and lack of individual approach, flexible programs to meet the needs of individual learners and special methodology (National Academy of Education named after Altynsarin, 2015). As a result, there is a current need to change, adapt and differentiate the curriculum to meet the needs of every child in a classroom in order to develop more inclusive practices.

1.5 The Nazarbayev Intellectual School System of Teaching and Learning

The establishment Nazarbayev Intellectual Schools (NIS) by the initiative of the President of Kazakhstan Nursultan Nazarbayev in different regions of the country was one of the

important steps forward the change. The main goal of NIS was to bring and implement best international practices alongside with Kazakhstani educational practices (the Strategic Plan of the Kazakh Ministry of Education and Science for 2011-2015). It is important to mention that NIS experience and practices are transferred into the mainstream schools across the country. Hence, these schools are the sites for experiments and educational innovations and teachers are the main agents who promote changes in the educational process.

One of the teaching innovations implemented at NIS is the use of differentiated tasks and instructions taking into account diverse needs of students. According to Tomlinson (as cited by Ellis, Gable, Greg, & Rock, 2008, p. 32) differentiated instruction is the process of "ensuring that what a student learns, how he or she learns it, and how the student demonstrates what he or she has learned is a match for that student's readiness level, interests, and preferred mode of learning" (p. 32). In other words, this framework promotes the learning process of each and every student regardless his or her ability/disability, weaknesses and strengths. For instance, learning a new material using the educational videos might be very exciting and useful for one type of learners, while for the other type this might be challenging due to the ability, style of learning and many other factors. Thus, differentiation is one of the teaching approaches that Nazarbayev Intellectual Schools (NIS) use in the educational process. As part of inclusive teaching practices teachers use differentiated tasks and instructions in their daily practice to meet the needs of diverse learners in each classroom. Suprayogi, Valcke and Godwin (2017) identified that there are diverse learners with different styles of learning, abilities, needs and interests, thus this diversity calls the necessity of changing teaching approaches at schools.

1.6 A framework that considers teacher competency

The adoption of Inclusive teaching practices by teachers depend on a range of factors such as the teachers' background, attitudes, years of experience and many other related circumstances. One of the most important factors that influences on teachers' practices and learners' progress in the educational process is teacher competence. Recent research on teacher professional competence conducted by Guerriero and Revai (2017) highlight the importance of teacher professional competence and defined its nature. According to Guerriero and Revai (2017), teacher competence is

“a broad term referring to the ability to meet complex demands in a given context by mobilizing various psychosocial (cognitive, functional, personal and ethical) resources. In this sense competence is dynamic and process-oriented, and includes the capacity to use and to adapt knowledge.” (p.261).

Over time, teachers work with different learners with diverse personal features, different levels of knowledge and various needs and interests. This diversity requires teacher's professional competence to respond to complex expectations required by the school system. In this regard, 'competence' depends on teacher's knowledge and learning. The conceptual framework by Guerriero and Revai (2017), indicates that teacher professional development (courses, teacher training, formal and informal learning) is one of the basic elements of teacher professional competence. They claim that teacher learning will affect teacher's content and pedagogical knowledge as well as his/her values and beliefs about teaching (Guerriero & Revai, 2017). Thus, teacher learning in general will influence the way a teacher work with learners, knowledge that he/she transfers to learners, the values held while teaching, and the beliefs about his/her students.

Another influence on teaching practices is said to be a teacher's ability to make decisions and self-analysis (Guerriero and Revai, 2017). These decisions are varied from the lesson planning procedure to changing the curriculum. The self-analysis is characterized as teacher's own professional judgement and making improvements in his own practice by analyzing lessons and the outcomes (Guerriero and Revai, 2017). These procedures make teachers to revise the lessons they conduct and if necessary, to change the teaching approaches that are used by them. Consequently, a teacher may use various strategies, tools and methods to correspond to the improvements made as as their own professional judgement (Guerriero and Revai, 2017).

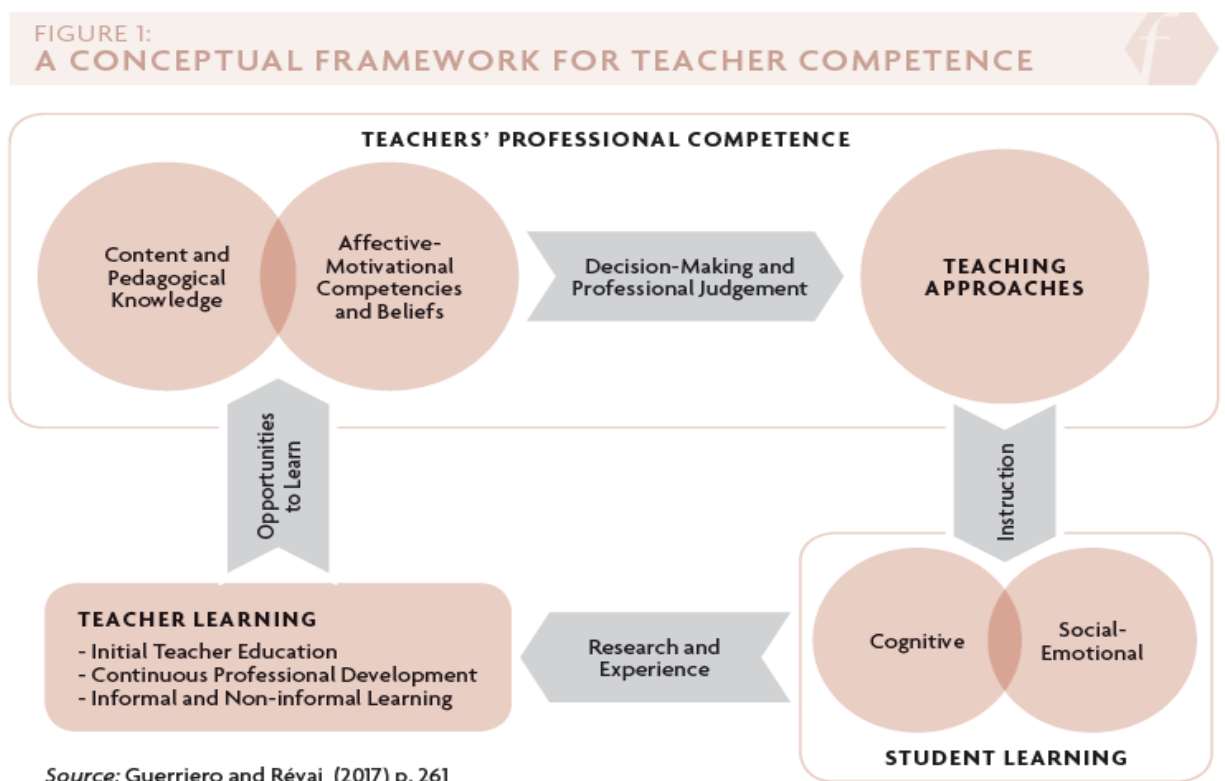


Figure 1. A conceptual framework for teacher competence

Source: <https://impact.chartered.college/article/jones-teachers-professional-competence-theory-action/>

1.7 Statement of the problem

Due to an acknowledgement of the growing diversity within classrooms in Kazakhstan, there is a need to support and develop NIS teachers' understanding of the terms "diversity", "differentiated instructions" and UDL as well as of other terms derived from the notion of inclusive education. It is important to remember that teachers' understanding of diversity determines the way they work and support different students with different abilities/disabilities in a classroom, as a result, have an impact on the skills their students gain (Dalton, Mckenzie & Kahonde, 2012). The present study examines teachers' understanding, perceptions and methods they use to welcome diversity and diverse needs of students.

To date, little attention has been paid to the issue of teachers' understanding and perception of UDL and its principles in the Kazakhstani context, and there is a need to explore to what extent NIS teachers understand the term and which methods they use to meet the needs of diverse learners in their classrooms.

1.8 Purpose of the study

The present study explores the experiences and perceptions of teachers of UDL for a number of reasons. First, the way teachers use the main principles of UDL will inform about their understanding of different learning needs in their classrooms. Secondly, the exploration of teachers' perceptions of UDL will potentially reveal teachers' understanding of the goals of inclusive education. Third, the research findings will be beneficial for the improvement of school's inclusive practices and inform better school-developed policies in achieving goals of inclusive education. In addition, this study would potentially contribute to the body of knowledge and teaching practices in the field of inclusive education in Kazakhstan as NIS best practices are being transferred to mainstream schools. The research will be primarily

beneficial for teachers in better understanding of the philosophy behind UDL and its underlying principles and values.

1.9 Main Research Question:

How is the concept Universal Design for Learning as an inclusive pedagogy understood by Kazakhstani secondary teachers in one NIS school?

Sub-questions which will help to explore teachers' perceptions in greater depth:

- a. What approaches and strategies of UDL do teachers employ in order to support classroom diversity?
- b. What do teachers feel are the main challenges and opportunities in implementing UDL in their classrooms?

Chapter 2. Literature Review

This chapter will discuss literature related to inclusive pedagogies that are directly related to the concepts of UDL. It will examine research that concerns the practical application of the UDL concepts in daily practice and the challenges that teachers encounter in their daily teaching practices to meet the diverse needs of their learners.

2.1 Inclusive pedagogies

Inclusive pedagogy is the type of pedagogy that intends to ensure each and every learner's participation and learning in the educational process using different teaching tools and strategies to accommodate diverse needs and features of learners (Makoelle, 2014). Florian (2010) holds the same idea asserting that inclusive pedagogy is a tool to support individual differences of diverse learners. Furthermore, she claims that using inclusive pedagogy in a teaching and learning process will help to reduce segregation, labelling, and stigma (Florian, 2012). Essentially, Florian and Black-Hawkins (2011) (as cited in Mintz & Wyse, 2015), explain that inclusive pedagogy rests upon two basic principles:

- a) each and every child should be heard and valued by his teacher and the school;
- b) curriculum design, adoption of the lesson plans should be done taking into account not only the child with special educational needs, but from the perspective of all children in classroom (Florian, 2010; Mintz & Wyse, 2015).

It is clear from these principles that inclusive pedagogy considers the needs of all children rather than concentrating the attention only on a child with special educational needs. Thus, all children in a classroom are of equal value. It is important to understand that this does not mean that all learners have the same level of knowledge or the same needs and interests (Mintz & Wyse, 2015).

Makoelle (2014) connected the term of inclusive pedagogy with the notion of ‘connective pedagogy’ (p.1260). According to Corbett (2001), inclusion is an active process rather than passive; therefore, connective pedagogy means pedagogy that has a connection with each individual learner, and then it connects the learner with a school community he lives in (p.56). It is important to mention that connective pedagogy principles resonate with social constructivist approaches that also state that learners are not passive participants of the process, but are also responsible for their own learning which contributes to their social lives (Makoelle, 2014). Corbett (2001) also asserted that “connective pedagogy is a form of teaching which opens up creative possibilities to learn...” (p.56). Hence the central phenomenon in inclusive pedagogy is a learner that can learn and participate in the educational process possessing some individual characteristics and features that are pertinent only to him (Corbett, 2001; Kieron, 2013;Makoelle 2014).

Inclusive pedagogies promote participation and equality in a classroom and school environment. In 2011 Florian and Black-Hawkins identified the key characteristics of inclusive pedagogy approach: a shift from focusing on those who have been seen as having special educational needs, to all learners with diverse needs and interests, rejection of the idea that the presence of learners with special educational needs will have a negative effect on other learners’ progress, teachers facilitate the learning of all students and respect the dignity of all learners. Later, Spratt and Florian (2015) identified inclusive pedagogy as a special approach that welcomes diversity and avoids segregation and marginalization of each and every learner from the classroom community (p.90). They have identified the following principles of inclusive pedagogy and made the broader description of the principles: learning environment is available for everyone and every learner is an active participant of the learning process, ability grouping is not effective, using universal language that is understood by all

learners, using the social constructivist approaches in teaching and learning, mutual understanding between students and teachers, using formative assessment as a facilitating tool, all children can learn and make progress, paying attention on children's abilities rather than disabilities, grouping children so that they can learn from each other (Spatt & Florian, 2015).

Another idea of inclusive pedagogy is the use of different teaching strategies in order to enhance inclusion and participation of all learners. Makoelle (2014) claimed that inclusive pedagogy is the sum of teaching methods, approaches and principles that promote students' learning and participation. These are: reciprocal teaching; the use of technology; multi-level instruction; multi-sensory instruction; differentiated approaches (differentiated tasks and instructions) and Universal Design for learning (Makoelle, 2014). Based on the principles above and the diversity in a classroom, teachers choose the type of teaching strategy that would suit the needs and interests of learners in a specific classroom.

The use of assistive technology

Assistive technology is the tool that helps learners with special educational needs to have an access to the curriculum through different types of technologies such as computers, audiobooks, speech recorders, electronic dictionaries, different software, mobile phones and other types of technologies (Messinger-Willman & Marino, 2010). According to The Individuals with Disabilities Education Act (IDEA) (2004), assistive technology is any type of technology that can help, develop, maintain and assist a learner through the educational process and make it meaningful (as cited in Messinger-Willman & Marino, 2010). The use of computer assisted learning has become popular. Learners use computer to build different programs and maps. Furthermore, the use of internet makes it possible for learners to share various tasks, write comments, search for information online, publish their own work and

receive different tasks from their teachers (Makoelle, 2014). Finally, using assistive technology helps learners to complete tasks more effectively and efficiently, since learners stay motivated and interested. However, educators should implement it taking into account their learners' needs and interests and making the educational process meaningful both for learners and teacher (Messinger-Willman & Marino, 2010).

Multi-level instruction

The different level of knowledge is a common issue in teaching and learning processes when a teacher has to identify the level of a learner and adjust the learning process so he could learn and develop his skills. The level that each and every learner possesses usually depends on a range of interrelated internal factors such as the type of intelligence, character, personal features and external factors such as personal life experience, social life and status (Vayrynen, 2003). Taking into consideration the factors mentioned above a teacher designs the tasks to suit learners' levels, abilities, needs and interests. Integrating assessment and instruction is one of the ways that help learners with different levels to work at their own pace using knowledge and experience they have (Vayrynen, 2003).

Multi-sensory instruction

The senses such as smelling, touching, tasting, hearing and smelling are also important in the learning process as learners use them to perceive and understand something new. Multi-sensory instruction is one of the practical and useful approaches that facilitates students' learning by adjusting to their preferences and to the way they perceive information better (Rief & Heimburge, 2006). Taking into account the diversity in a classroom, it becomes obvious that learners use different senses to learn and perceive. Consequently, teachers have to ensure that learners are given chances to use different senses that are pertinent to their individual features and personality (Combley, 2001; Megaguchi, 2016). Thus, visual learners should be

support with visual aids, while auditoal learners can be accommodated with audio-visual materials. This is important and crucial factor in learning, otherwise children with diverse needs and interests are limited and learning will occur only for some of them (Combley, 2001).

A Differentiated approach

A frequently the used strategy to support diverse learners is the differentiated approach. This strategy emerged and is underpinned by socio-cultural theory proposed by Vygotsky. He claimed that socio cultural background of a person influences not only education, but also on relationship with peers (Subban, 2006). Lawrence-Brown (2004) asserted that differentiated instructions promote the principles of inclusive education. Tomlinson (2000) has also explained that differentiated approach does not have any strict or regulated rules to be used in the classroom. She asserted that it is up to an educator and his beliefs and values he holds about each learner's ability and strength (Tomlinson, 2000). Diversity in a classroom is the main principle of differentiated approach. Thus, this diversity requires educators to apply diverse strategies and tools to adjust learners' differences (Tomlinson, et al, 2003). As proposed by Corley (2005) and Tomlinson (2001;2003) differentiated approach should be realized taking into account learners' life-experience and prior knowledge. Additionally, Tomlinson (2000; 2003) stated that differentiation is realized in three main directions: content, process and product. These three directions are tightly connected as the content is what is taught, the process is methods and strategies used by a teacher and the product is the final outcome which can be different from learner to learner (Tomlinson 2001;2003).

Universal Design for Learning

Quaglia (2015) stated that UDL is understood as a flexible framework that can be used to teach diverse learners taking into account their individual features and characteristics. UDL is aimed at enhancing learning and participation of each and every learner through its basic principles: multiple means of expression, representation and engagement (McGuire, Scot & Shaw, 2006; CAST, 2012; King-Sears, 2008; Quaglia 2015). The basic principles of UDL embrace the diversity in a classroom and facilitate the learning and development of each learner (McGuire, Scot & Shaw, 2006). Having analyzed the term inclusive pedagogies and approaches discussed above, it has become clear that UDL is a broad approach that unites all the elements of multi-level instruction (as UDL is aimed at teaching and learning taking into account different knowledge levels of learners), multi-sensory instruction (as UDL takes into account diverse nature and individual features of each learner), the use of technology (UDL is a framework to adapt technology according to the needs and interests of learners) and differentiated approach (the basic principles of UDL highly resonate with the principles of differentiated approach).

Overall inclusive pedagogy is a term that incorporates various approaches, teaching strategies and tools to promote inclusive education and to ensure participation of every single learner in the educational process. Applying a specific type of strategies will be based on the types of learners, their educational needs and individual characteristics. In summary, it is clear that UDL is a framework that embraces all the principles of diversity and inclusive education.

2.2 Universal Design for Learning as a framework

The previous sub-section discussed the inclusive pedagogy and the strategies that are applied within the pedagogy. It touched upon some of the successful practices and tools used

by practitioners to welcome diversity in classroom, to ensure each and every learner's participation in the processes of teaching and learning. This sub-section will provide specific information on one of the strategies and concepts of inclusive pedagogy which is UDL. It will give an overview on the concept and the main principles that are used within this framework.

Salend and Whittaker (2017) asserted that “teachers who implement Universal Design for Learning (UDL) are educational architects, creating learning structures that support all students' success” (p. 59). The concept of Universal Design comes from the field of architecture, meaning convenience and comfort for every person living in a building (Dean, Lee-Post & Hapke 2017; Katz 2013;Salend & Whittaker 2017). When the UDL was first integrated into the field of education, the concept was understood as the use of technology in the educational process (Katz, 2013;Makoelle, 2014). Later, based on research in neuroscience and education, the Center for Applied Special Technology (CAST) developed the UDL framework (Cook, Rao & Collins, 2017).

The UDL is an approach that promotes access, participation and progress of every learner taking into account the diversity of a classroom community (CAST, 2012). As it was mentioned above, based on the researches in neuroscience, which involves human's brain activity UDL is organized around providing multiple means of engagement, representation, and action and expression (Cook, Rao & Collins, 2017).

Other scholars Meyer, Rose, and Gordon (2014) also stated that UDL and its principles are based on the main active brain networks (as cited in Robinson, 2017). These are the following: Recognition Networks, Strategic Networks, and Affective Networks (Robinson, 2017). Robinson (2017) explains that the first network which is Recognition includes the process of understanding and perceiving facts, information and other data; Strategic network

which includes how learners plan, perform and express their knowledge; Affective networks encompass learners' motivation and engagement into the process of teaching and learning (as cited in CAST, 2017).

The same division was proposed by the National Center on Universal Design for Learning (NCUDL). The center suggests guidelines based upon the main three principles of UDL (Table 1) and various data gathered by different researchers from many different organisations (NCUDL, 2011).

Table 1

| Principle 1. Provide Multiple Means of Representation | |
|---|--|
| Guideline 1: Provide options for Perception | |
| Checkpoint 1.1 | Offer ways of customizing the display of information |
| Checkpoint 1.2 | Offer alternatives for auditory information |
| Checkpoint 1.3 | Offer alternatives for visual information |
| Guideline 2: Provide options for language, mathematical expressions, and symbols | |
| Checkpoint 2.1 | Clarify vocabulary and symbols |
| Checkpoint 2.2 | Clarify syntax and structure |
| Checkpoint 2.3 | Support decoding of text, mathematical notation, and symbols |
| Checkpoint 2.4 | Promote understanding across languages |
| Checkpoint 2.5 | Illustrate through multiple media |
| Principle II. Provide Multiple Means of Action and Expression | |

Guideline 4: Provide options for physical action

Checkpoint 4.1 Vary the methods for response and navigation

Checkpoint 4.2: Optimize access to tools and assistive technologies

Guideline 5: Provide options for expression and communication

Checkpoint 5.1: Use multiple media for communication

Checkpoint 5.2: Use multiple tools for construction and composition

Checkpoint 5.3: Build fluencies with graduated levels of support for practice and performance

Guideline 6: Provide options for executive functions

Checkpoint 6.1: Guide appropriate goal-setting

Checkpoint 6.2: Support planning and strategy development

Checkpoint 6.3: Facilitate managing information and resources

Checkpoint 6.4: Enhance capacity for monitoring progress

Principle III. Provide Multiple Means of Engagement

Guideline 7: Provide options for recruiting interest

Checkpoint 7.1: Optimize individual choice and autonomy

Checkpoint 7.2: Optimize relevance, value, and authenticity

Checkpoint 7.3: Minimize threats and distractions

Guideline 8: Provide options for sustaining effort and persistence

Checkpoint 8.1: Heighten salience of goals and objectives

Checkpoint 8.2: Vary demands and resources to optimize challenge

Checkpoint 8.3: Foster collaboration and community

Guideline 9: Provide options for self-regulation

Checkpoint 9.1: Promote expectations and beliefs that optimize motivation

Checkpoint 9.2: Facilitate personal coping skills and strategies

Checkpoint 9.3: Develop self-assessment and reflection

*Retrieved from The National Center on Universal Design for Learning, 2011
<http://www.udlcenter.org/research/researchevidence> Copyright CAST, Inc 2012.*

These three principles help to incorporate strategies and tools that teachers can use to meet the needs of diverse learners as well as to use differentiated instructions in teaching and learning processes (Evans, Williams, King & Metcalf, 2010). Multiple means of representation is associated with ‘what’ of learning, which means teachers identify the main facts, ideas and draw on learners’ prior knowledge (Rose & Meyer, 2002). Multiple means of engagement represents the ‘why’ of learning, which means teachers engage students with linking the theoretical knowledge with real life situations to foster their interests and motivation. The third principle multiple means of expression involves the ‘how’ of learning which provides learners with various ways to show and demonstrate their knowledge (Evans, Williams, King & Metcalf, 2010).

2.3 Teachers’ practices of UDL

This section will present the data from different studies conducted on the implementation of UDL and teachers’ practices. It will also cover some specific examples how educators integrated the main principles of UDL, which are multiple means of representation, expression and engagement.

The role of a teacher is of a great importance in teaching and learning processes. Since teachers are the main stakeholders who directly influence on the individuality of each learner in a classroom. It is widely known that teachers have always worked with diverse learners; however, it has become more imperative now that they change their strategies and tools for teaching to meet the needs of everyone and involve them into the learning process (Delware State Dept.of Education, 2004). However, there are different cases when students are educated using one single way without taking into account their interests, abilities/disabilities and other specific features.

Curriculum and curriculum content and adjustment is vital in implementing inclusive education strategies in a classroom. The study conducted by Spooner, Baker, Harris, Ahlgrim-Delzell, and Browder (2007) clearly stated that teachers are the ones who are responsible for curriculum adaptation, its capacities for learners and teaching ‘remedial skills’ (p.108). Therefore, teachers are the main agents to bring the changes into the educational process. Hence, it is vital to know what their practices are on integrating the UDL and its core principles.

Scholars such as Hitchcock (2001) and Lowrey, Hollingshead, Howery, and Bishop (2017) acknowledged the importance of lesson panning and stated that integrating all the modifications should be brought before the lesson planning, not afterwards (as cited in Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007). The outcomes of their study demonstrated the fact that teachers have a better opportunity to teach and involve everybody using the principles of UDL, if teachers design the lesson plans before the fact with the support on implementing three main principles of UDL (Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007, p.114). Along with lesson planning teachers acknowledged the importance of the support teams, participation in team planning that promote teachers’

professional development (Lowrey, Hollingshead, Howery, & Bishop, 2017). Furthermore, when teachers use instructional strategies that are based upon the UDL principles, the personalization of the learning process occurs, which helps to build the instructions that are tailored according to learners' needs, preferences and interests (Smith, 2012, p. 35).

When teachers hear the term UDL, most of them think that the term is connected with the use of technologies and devices in the classroom (Riviou, Kouroupetroglou, Oikonomidis & Agogi, 2015, p.34). It cannot be denied and rejected that teachers can integrate technology into the teaching and learning process. However, the UDL practice shows that the use of multi-media is only one tool or strategy that teacher can use to ensure inclusive education practices (Riviou, Kouroupetroglou, Oikonomidis & Agogi, 2015). A study conducted by (Smith, 2012) stated that teachers integrate the use of digital technology according to the preferences and learning styles of their learners, since most of them are skilled and use the technological advances, digital resources, websites and blogs as “a medium of expression” that would present their own work (p.36). This study was focused on the instructional practice during four semesters; hence, the research on teachers' practices of implementing UDL and its core principles revealed that teachers used Power Point Presentations, links to audio and video files, reading materials and variety of other resources to meet the needs and interests of learners (Smith, 2012). Multiple means of engagement was represented by the use of timely feedback, comments on the written works, and everyday meetings or individual meetings after the lessons as well as motivating them with personal or real life stories (Smith, 2012). Teachers provided students with multiple options to demonstrate their knowledge; thus most of them chose the way they are most comfortable with, which ensured each students' participation and learning (Smith, 2012). In general, the UDL approach brought positive results in students' learning and promotion of inclusive classroom environment.

The case study along with participatory action research conducted by Dymond et. al (2006) revealed that the redesigned content of the program according to UDL principles resulted in advantages for students as well as for the educators who implemented the approach. The benefits were high motivation and engagement, high task achievement results, high responsibility, close relationships and increased academic collaboration between different abled students (Dymond et. al, 2006).

Lastly, it is important to mention the reflective practices of teachers. Teachers who are reflective practitioners, who always see the benefits and drawbacks of a lesson and continually reflect on the outcomes and consider the benefits for their learners are best practitioners (Cochran-Smith and Lytle, 2010). Hence, teachers' reflective practice is one of the main important tenets of the UDL approach and its core principles (Smith, 2012).

Overall teachers' practices and experiences of the UDL implementation resonate with one another in terms of the positive effect on the classroom environment as well as teachers' professional experience.

2.4 Challenges and problems of the UDL implementation

The previous sub-section discussed how teachers use UDL to ensure every learners active participation in the educational process from different researches and sources. This sub-section will discuss the problems and challenges that teachers encountered in their everyday teaching practices while using and implementing UDL and its main principles.

The UDL framework helps educators to shift from 'one size fit all' model, and recognize learners' diversity and their different needs and interest. However, there might be various factors that can hinder the effective practice of this framework. For instance, Rose et al. (2005) highlighted some of the barriers that might hinder the development and

implementation of UDL: lack of time (teachers are overloaded), lack of resources and teacher training. Lesson planning is an important process in teaching and learning, since all the values, principles, instructions, strategies and tools are embedded in the lesson plan. The study conducted by Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder (2007) stated that one of the challenges that teachers encountered while teaching inclusive classroom and applying the UDL principles was the lesson plan development. According to Schumm and Vaughn (1995) the main challenges that teachers faced with were time constraints, learners' behavioral issues and learners' different level of knowledge (as cited in Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007).

The other problem was identified by Smith (2000) and Cawley, Folley and Miller (2003) is that teachers do not feel they are ready and prepared to bring changes into their practice due to the lack of knowledge and the low level of pre-service preparation (as cited in Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007). If teachers are not certain about their knowledge of UDL and differentiated instruction, they tend to fall back on traditional approaches which do not fit to all learners' individual features and characteristics (Mills et al., 2014).

The implementation and practical appliance of the UDL requires changing the content of the program and resigning it. Therefore, teachers that participated in the case study conducted by (Dymond et. al, 2006) indicated the time constraints as the main problem they face, since redesigning the curriculum content and lesson plans took much time. They also stated that more time for collaboration with colleagues to make necessary amendments and universally designed lesson plans was necessary (Dymond et. al, 2006).

Standardized assessment was identified as another challenge that teachers encounter with the implementation of UDL. The study conducted by Lowrey, Hollingshead, Howery, &

Bishop, (2017) revealed that it was challenging for teachers to assess learners progress, since they provide them with multiple options to express their knowledge and the standardized assessment has the strict guidelines that were prescribed by the state (p.232). Teachers from Queensland, Australia faced the same challenge and reported that high educational accountability dictate them strategies and instructions to be used in the classroom, which hampers teachers' autonomy in the educational process (as cited in Mills et al., 2014).

The literature shows that there are both opportunities and challenges for teachers in the implementation of inclusive pedagogical approaches. Thus, this literature connects very closely to the aim and purpose of the present study.

The Main Research Question:

How is the concept Universal Design for Learning as an inclusive pedagogy understood by Kazakhstani secondary teachers in one NIS school?

Sub-questions which will help to explore teachers' perceptions in greater depth:

- c. What approaches and strategies of UDL do teachers employ in order to support classroom diversity?
- d. What do teachers feel are the main challenges and opportunities in implementing UDL in their classrooms?

Chapter 3. Methodology

3.1. Introduction

This chapter provides information on methodology for this study. It also explains a rationale that lies behind the choice of research design, a detailed description of the sampling procedure, the research site where the research will be conducted, data collection instruments in details and the process of data analysis. Additionally, ethical considerations of this research are discussed.

3.2. Research Design

Qualitative research is commonly characterized by an in depth understanding of the central phenomena, requiring data collection from a small number of people to obtain their opinions and perspectives on a particular topic (Creswell, 2014). Taking into account the nature of the present research topic this type of research design was deemed most appropriate due to the idea that “the main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences” (Kumar, 2011, p. 104). A broad phenomenological lens was applied within a case study design since this provides a bounded view of people’s perceptions and shared experiences of particular practices within a shared context (Lester, 1999). The research was carried out in a particular school setting and collected data from six participants, which is appropriate for a case study research design (Zaynal, 2007).

3.3. Research site

A Nazarbayev Intellectual School was chosen as the site to conduct this research for several reasons. First and foremost, the school is prioritizing differentiation and the practice of using differentiated tasks and instructions taking into account learners’ needs and interests

(e.g. there is a special subsection in the lesson plan where teachers write how differentiation is realized). Thus, teachers from this school might be knowledgeable and familiar with UDL and its principles and will help the researcher to understand the central phenomenon. Secondly, the school is an experimental site where a research and innovations take place. In addition, the choice of this site can be explained that the researcher is employed there and could receive permission to conduct the research from the school principal.

3.4. Research participants

According to Morse (2010), “it is important to be strategic when sampling, in order to find out information-rich cases that best address the research purpose and questions” (as cited in Leavy, 2017, p.148). Therefore, as this study intended to explore inclusive teaching practices, in particular, UDL, thus a purposeful sampling strategy was employed to select participants of this research who had been part of professional development and trainings on new approaches to teaching such as differentiation and were familiar with some of the principles of catering for classroom diversity. A Purposeful sampling strategy allowed the researcher “to select individuals intentionally to learn or understand the central phenomenon” (Creswell, 2014, p.228). Taking into account these reasons, six teachers were selected as participants of this research. Creswell (2014) stated that it is a common characteristic of a qualitative research to study a few individuals or participants and deeply analyze the outcomes taken from each individual (p.209).

It is important to mention that convenience sampling was more applicable to this research, as all six teachers were the researcher’s colleagues. This had some strengths and limitations. One of the strengths was that interviewees work with the researcher and this could assist with trust and confidence and helped the researcher to gain valuable data from the

research. As for the disadvantage, it also could be considered that participants might lie or be afraid to tell the truth, as this may affect their future carrier. To avoid this situation, the researcher fully explained the participants about the purpose, benefits and possible risks of this research. It is important the participants were made aware about the confidentiality of their responses which were part of ethical considerations around informed consent to participation (see section 3.6).

3.5. Research instruments

Interviews were chosen as one of the basic methods of data collection. This method of qualitative data collection is mostly used to gather data about their opinions, attitudes and perceptions regarding a specific issue (Ary, Jacobs, Sorensen & Walker, 2014). Creswell and Plano Clark (2011) stated that open-ended questions help the participants of a research which is qualitative to “voice their experiences unconstrained by any perspectives of the researcher or past research findings” (p. 218). Hence, as the researcher was intended to explore teachers’ experiences and perceptions of UDL, a semi-structured open ended one-on-one interview was chosen as the main instrument to collect necessary data. One-on-one interview helped to collect data asking open ended questions to get deep insight into people's personal ideas and opinion (Creswell, 2014, p.240). Semi-structured interview best fitted to collect data from interviewees, as the researcher was be able to change the order of questions or format if necessary to gain the important information to the study (Ary, Jacobs, Sorensen & Walker, 2014, p.466). Some of the questions were paraphrased in case participant did not understand some terms such as “UDL” or “multiple means of representation, expression and

engagement”. Open ended questions allowed the researcher to gain in-depth understanding of the phenomenon rather than having yes or no answers.

Interview protocol was developed from the literature and attached in the Appendix.

3.6. Recruitment and participants

The researcher e-mailed the principal (gatekeeper) about the research and assigned time to meet in person. While meeting the purpose of the research and benefits were explained. All aspects of the research study were explained to the principal along with ethical requirements such as confidentiality as well as any potential risks associated with the research. After approval was gained from the school principal, the researcher approached teachers introducing them the research and asking for their participation. Participation of teachers was on a voluntary basis after information about the aims and scope of the study had been explained and information and consent had been provided. It was understood that teachers had many commitments and a busy schedule was taken into consideration.

3.7. Data collection

When the researcher had all documents signed and permissions were ready, she sent participants an email informing them about research, its purpose and benefits for them as educators. So, as Tuckman (1972) stated, a researcher needs to be honest “without risking biasing responses, and should strive to put the participant at ease” (as cited in Cohen, Manion & Morrison, 2007, p.421). Interviews with six participants were assigned at time and venue convenient for participants. Prior to the interview additional information about

the research was given and informed consent form was signed by each participant. This ensured the protection of their rights.

According to Creswell (2014), qualitative interviews are conducted by asking open-ended questions during one-on-one meetings with participants. The researcher and participants agreed on time and place of the interview convenient for participants. Each interview lasted approximately 45-60 minutes. A quiet and suitable place was chosen in order to avoid noise and distractions. Interviews were recorded only with permission of participants. Participants were informed about their rights to refuse to answer any questions they feel uncomfortable with prior to the commencement of the interview. The researcher used probing questions which helped to elicit detailed answers (Creswell, 2014). Finally, interviews were transcribed. After the interviews were transcribed, they were sent to participants back to check if they correspond to what they had reported. All participants approved the wording and correspondence of the transcripts to what they reported.

3.8 Data Analysis

The data analysis process began as once the interview materials (data) were collected in accordance with the principles suggested by Creswell (2014). The first step the researcher took was organizing data. Organization of data was very crucial since large amount of information was collected (Creswell, 2014). All electronic data were transcribed into text. Since most of the respondents were Kazakh and Russian speaking, transcribed texts were translated into English. For further analysis the texts were set into a Microsoft Word document and analysed using color coding. Through the process of coding some categories were identified and were grouped into major themes. This method is inductive thematic analysis

which implies “identifying themes” from the gathered data and helps to explore the issue in-depth answering research questions (Braun & Clark, 2006, p.79). The themes that were identified were assigned to the study’s research questions. Some *invivo* quotes were chosen as evidence for findings and were kept in a separate document.

3.9. Ethical Issues

The research was conducted according to ethical principles and basic standards of conducting research. As this research involved teachers and their responses about their teaching practice and work they do, their rights had to be protected (Cohen, Manion & Morrison, 2007). Ethics approval was sought through the GSE Ethical Review Committee for approval prior to any research activities being undertaken. Once approval had been provided the researcher got an approval from a “gatekeeper” to conduct the research (Creswell, 2014, p.233). In this research the gatekeeper was the principal of the school the research was conducted.

Ethical considerations such as informed consent form for respondents, confidentiality were preserved throughout the research. All the participants in this research were adults and were able to provide informed consent. Due to the nature of this study there were no foreseeable major risks in participation therefore, this research was considered to be of minimal risk to participants. The possible risks were that teachers might share personal information about their professional life which they feel might affect their future career. However, these were mitigated as best as possible through following ethical guidelines. It was made very clear that the protocols in place to protect anonymity and confidentiality should ensure that there were no negative impacts on their relationship with the school, other colleagues and Nazarbayev University.

Participation in the research was purely on a voluntary basis. All participants were provided with an informed consent form which made them able to be informed about the purpose and the research itself prior to any interviews being conducted. The Researcher provided information and consent form which explained to participants the procedures that are in place to protect their identity and outline any potential risks and benefits of the research. It was up to the participant to take part in the research and it made clear that they could withdraw at any time. In case a participant wished to withdraw from the research it made clear that he/she does so with no obligations or fear of a negative impact on their professional or personal relationships. If a participant did not want to answer any particular question during the interview the researcher moved on to the next question as per ethical guidelines. Participants were also informed that their responses would be included into research materials but their real names would be replaced by other symbols or signs and all the data would be stored in a password protected folder. The Researcher also informed participants that their names would not be used in any publication resulting from the research; as pseudonyms were to protect their rights and keep all the data in confidential. Participants were also informed that the data collected from the interviews might potentially benefit for the researcher and for the field of education (Creswell, 2014).

Chapter 4. Results

The study investigated the teachers' perception of UDL and its main principles, namely multiple means of representation, expression and engagement, since these principles might help to reveal their understanding of inclusive education and inclusive pedagogies that they use in their teaching practices. Within this chapter, the findings of the study are discussed. Findings are organized according to research questions. Sub-question A is divided into three sections: multiple means of presentation, expression and engagement. Further, challenges are discussed.

Research question 1: How is the concept Universal Design for Learning as an inclusive pedagogy understood by Kazakhstani secondary teachers?

Some teachers used the term UBD (Understanding by Design) since teachers used this framework while planning the units and lesson plans. Two out of six participants provided a definition of UDL. For instance, one of the teachers claimed that:

Participant 1: "UBD as far as I am concerned ... it is something like unified program that's created in order to involve students with different abilities, with different types of perception and ... it is created to foster students' learning and it also provide a number of things that will help to every teacher to involve every student in the process of learning. This is how I understand it."

Participant 2 also shared that she knows the term UDL from the discussion and informal talks with colleagues:

From my discussion with colleagues I understand this as individual approach in teaching learners. As you know we have different students, with different abilities, even styles of learning. And I consider that UDL as something that can help teacher to meet that requirements of students.

Another teacher supported their explanation by saying that students are different with different abilities and different styles of learning. Thus, UDL is an individual approach designed to meet the requirements of those students.

Even though not all of the participants could define the term UDL, six out of six participants could relate UDL to the concept of “diversity”. Five of the teachers perceived their students as individuals with specific type of a character, worldview and interests. Most of the teachers claimed that the difference and diversity in a classroom can be seen from the ways learners prefer to learn, the level of knowledge and different abilities.

Participant 2: “....They have different levels of perception, knowledge and they also have different abilities and in my class I cannot say that there are students who are clever than others, they are just different. I can say it from the way they complete their tasks, the way they present information....”

Only one teacher highlighted the personal features of students claiming that extroverts tend to be very communicative, while introverts prefer to stay in a shadow. For instance,

Participant 6: “....Some students are extroverts, they all the time want to know how teacher is going, what is teachers mood, what is teacher’s life, and some of them are really quite. And the problem is mostly with those who are quite. You do not really know what he or she thinks. And in this way writing helps here. You try to take their reflections hoping that they will write you something about themselves.”

It is also important to mention that History, Chemistry and Mathematics teachers view the diversity dividing the students into those who have mathematical thinking and those with humanitarian mindset. Also, one of the participants mentioned “puzzled thinking”, describing it as an ability to think and analyze deeply in one field which is very familiar to a student and having difficulties in analyzing in other fields that is unknown for him. That means he has a ready puzzle in his mind that is easy to construct and the broken one which is difficult to build up.

Sub-question a): What approaches and strategies of UDL do teachers employ in order to support classroom diversity?

Multiple means of representation

In general all participants explained they used various means of representation to present a new material during the teaching process. However, this was not with a class approach under UDL principles of multiple means of engagement, representation and expression but more individualized. Their perspectives were different in regards with differentiation, lesson planning, group and individual works during a lesson. It appeared that differentiated instruction is the main teaching approach that participants actively use in their practice. For instance, one of the teachers described the way she represents new materials in the following way:

Participant 1: “In our school in particular we try to use differentiated approach. It means that we try to differentiate the tasks that we create for students. So, some students complete tasks more quickly than others, so we try to challenge them maybe. It doesn’t mean that we give more tasks to complete, we just try to challenge them. We also try to provide tasks for those students who complete tasks slower than others, so we try to provide some kind of support to scaffold them. So this is how I try to involve every student in the learning process.”

Scaffolding is the other pedagogical tool that helps teachers to support each and every learner, especially the weaker ones, since they need more support during the lessons. All participants welcome the idea that all students need scaffolding and support throughout the process of learning.

Two out of six participants highlighted the importance of lesson planning before the presentation of a new material which is an essential part of UDL. They also claimed that it is important to revise the previous lessons so teacher can use the advantages and change the

drawbacks of the previous lesson. One participant even stated that he imagines the faces of some students and their level of satisfaction with a particular lesson.

Participant 2: “But, I think that it is import also beforehand, before the presentation of the material to do the detailed planning. In your planning you should think about every student in your class, in your grade. Then I can subdivide them into some levels according to their knowledge, and in the task already try to give some kind of differentiation. Maybe some vocabulary support for those who have weaker knowledge in English. Also when I plan the lesson I already see my student’s face. There are two ladies who always disappointed with the way how I teach, and when I imagine the task for them I think “Ok, how she will react on this one?”, “Will she be interested on this or not?””

This way of analysis and reflection helps a teacher to improve his own teaching practice and take into account his students’ needs and interests.

Lastly, all participants discussed the idea that while presenting a new material, teacher should use multiple ways of presenting new concepts such as Power Point presentations for visual learners, audio-video materials for audio visuals, reading texts for ones who like reading and analyzing and electronic books where there are different tasks with different levels. For instance:

Participant 2: “At first, before the presentation it is important for me to know what they already know about this theme. Then, I try to interest them with a new topic. Usually this is information on PPT, it could be a video.....”

All participants mentioned that combining these pedagogical tools according to the needs and interests of students will best help to meet their requirements.

Multiple means of expression

Participants shared that they have different learners with different levels of knowledge and diverse interests in learning. They stated that this fact obviously affects the way they express the gained knowledge. In general, most of the participants stated that they use different forms of presenting students’ knowledge such as power point presentations,

individual/group projects, writing comments and others. Most teachers (5 out of 6) stated that their students have a choice in presenting the final product for the unit, presenting the home assignment and showing what they learnt. They claimed that students have several options to choose according to their preferences, interests and abilities. For instance, one of the teachers claimed that:

Participant 1: “They have different preferences and tastes in the way how they present information. So, what we usually do is we try to provide them with the list of options that they can choose from. If it is a presentation, they can choose a format for themselves. If it’s talk show, they will also choose maybe type that they will be comfortable with. So, I try not to push them ... to put them in any kind of pressure. So, we try to be loyal.”

Even though most of the participants are flexible with the way learners express their knowledge, one teacher stated that some tasks are “standard”, which means for everyone. However, this participant also mentioned learners were provided with flexibility in completing writing tasks. For instance:

Participant 2: “Yes, when it is about the projects I agree on students producing their knowledge. When it is about reading and listening, there is a standard, everyone should have the same. When it is about writing, yes, we also can offer them different topics for writing. Also I usually offer them that their writing could electronically or can be in a written way, it could include anything they want there, like pictures or something else.”

One teacher added that it is a common practice that teachers of the school use the results of psychological tests while designing the tasks and planning the lessons. She claimed that these results can guide a teacher to know more about students’ characters and preferences which can assist a teacher to choose the type of the task according to their abilities and interests. For example:

Participant 4: “.....I take into consideration the diagnostic test designed by our psychologists. There are some questions such as “How teacher can influence you so you can show your best abilities?” “What can teacher do so that you can show your

knowledge of a specific subject? These questions were designed in cooperation of teachers and psychologists of the school. So, I usually use the results of this test. There are also recommendations for teachers on choosing tasks in accordance of a student type and interests.”

One of the teachers shared that in some cases it is difficult to choose the type of task so that students can show their knowledge. They stated that sometimes students do not want to work in groups, instead they prefer individual work. Also, she claims that some students ask for a permission to do a different task if they do not like the one that is offered by the teacher. All these factors make her be flexible and take into consideration students’ needs and interests.

Participant 3: “..I offer them the type of a task, but sometimes they come up and ask for a different task. I usually give them such an opportunity, because I know that every learner has some unique abilities.”

“...for example, it can be a group work to design the graph. We have a site where learners can work in cooperation and build graphs. For some students it is difficult and they sometimes ask to work individually or in some cases they ask to draw a poster instead of graph. I allow them to do so. For me, the most important thing is not how a student presented, but the fact that he understood the material.”

Another participant claimed that there are some shy but smart students in classes where he teaches. He shared that they are smart enough, but do not like speaking or presenting in public. Due to this fact such shy students attend individual lessons where they can express their knowledge face to face.

Participant 5: “.....also we always tell our students that they can come to individual lessons, sit in front of me and present their ideas. It is called psychological barrier, and it is really difficult for learners to overcome such a barrier. That is why we usually say ‘come and speak to me face to face....’”

Two teachers stated that they try to make students feel free during the lesson. One teacher usually uses music during the lesson. It can occur while students work on completing some tasks. This teacher allows using headphones while reading or writing as it helps to work

better. The other teacher shared that students can walk around the classroom as they complete the task, change the place if necessary.

Participant 5: “For me it is Ok. But I think that our students, the same as teachers are used to use desks, tables, ordinary things, pencils, pens. Sometimes they even ask the permission to use a pencil, which is definitely not necessary. The same is with moving in the classroom. They ask for permission. I am not against of moving, standing, going even out in case of any ...”

Multiple means of engagement

Participants shared that the way they usually engage students into the learning process is connected to different activities that can raise interest to the subject, level up students’ motivation and promote successful learning which meet the needs and interests of learners. All teachers practice using interesting activities, games, music and videos. Six out of six teachers facilitate the learning process and engage students with involving them into these activities. For instance, one teacher shared the following idea:

Participant 1: “It depends on situation. We use games very often. Games help to summarise theoretical as well as practical knowledge of learners. My students love games very much. I really feel their engagement into the learning process. It helps a lot. Also there are a lot of different activities that can raise students’ motivation to the topic or lesson in general. Short videos before the new topic and discussion afterwards is one more great tool to awaken students’ interest. If they are interested , they are motivated....”

Two participants mentioned the importance of physical activities to engage learners. They think such activities help to awaken those who want to sleep by the end of the day or after physical education. Another teacher shared that allows students to take a five minute nap, since it helps them to be more engaged and concentrated on the topic.

Participant 4: “.....sometimes they ask “May we sit and do nothing?” this means they are totally exhausted both physically and mentally. I think this is a normal and standard situation for a school which is for gifted and talented students. Sometimes I offer “Take five minute nap”. Students are always glad to take a nap and relax for a short time. I make sure it takes only five minutes. And you know it helps. Students feel

much better and participate very actively. I think this is a normal situation and I am not against. ”

Two teachers claimed that it is important to change the plan, lesson plan or rearrange the order of the exercises in case students feel bored.

Participant 4: “And of course, we always try to look at the plans we create, to things we do in the classroom, we try to analyze, maybe to make a deeper analysis of what we do and try find maybe some things that can make students get bored on the lesson. Try to redo some things maybe during the lesson. So, that’s it.”

Three participants mentioned individual approach as the main tool in engaging and motivating learners. Thus, one of the participants shared the experience she motivated one of the students who did not like her subject. The student unconsciously became interested and engaged into her subject. She asked him for a help; however, it was help for a student. She explained it in the following way:

Participant 5: “I always engage in the following way: once I had a student who always complained that he did not like Geography. I approached to him and asked him to find some materials about one theme for me. I explained that I do not have time but I seriously need that material. He brought that material after several days. Next time I asked him again to do me a favor. He accomplished the task again. Unconsciously, he began to be interested in my subject. This a special trick that I always use with such students.”

Another participant claimed that it is important to create a “situation of success” for every learner. This means to design tasks taking into account their level and interests. She claims that having completed the task which is appropriate to his level, a student feels success and wants to learn more. If the tasks are difficult and do not fit his abilities, a student feels lost and disappointed with his own abilities and skills:

“...it is very important to create ‘a situation of success’ for every learner in your class. You ask why? It is important for a learner to feel success. Before the lesson it is necessary to think about every learner in your class. Think about his strengths and weaknesses. Think about his level and preferences. While planning the lesson and designing tasks for the lesson, take into account the thoughts you had before. Design the tasks that your learner will be able to

complete successfully. As soon as he completes successfully, he will feel himself successful and will probably ask you to give one more task. If a learner can cope with a particular task easily, because it corresponds to his level, he will be motivated to learn further and will do more. This is the 'situation of success'. Yes, and such situations should be created for every learner, irrespective of his level and preferences."

One of the participants mentioned that pair work where one student is strong and the other is weaker is very effective in engaging learners. In such roles weaker students feel comfortable and not lost. Strong students also take roles of teachers which is very engaging and interesting for them. The other teacher stated that strong students are usually engaged and motivated by challenges while weaker ones distract their attention.

"...In my classes often it depends on the level of the tasks. Stronger students are inspired and motivated by some difficulties and challenges, weak students they do not believe in themselves. They all the time try to ask other students, they distract them. I try strong students not to be distracted and create something for the weaker students."

In addition, two of the participants claimed that real life examples, famous people's life, personal examples help to raise students' motivation. Praising is the other tool to engage and motivate a student.

Sub-question b): What do teachers feel are the main challenges and opportunities in implementing UDL in their classrooms?

Participants of the research highlighted some of the problems and challenges they face while teaching students with diverse needs, interests and abilities. The most common problem that all six teachers face is the difference in levels of knowledge which usually cause another problem which is designing various tasks according to their levels. They claimed that each of the students require special approach in teaching due to their diversity. One participant claimed that those who are not active during the lesson might left behind which can cause

another problem. At the same time there are some strong students who might be bored since tasks are easy to complete. For instance:

“For me a great challenge is students who are very deserved and they tend to speak very little during the lesson ... because of their character, because of their personalities. They are too closed sometimes and it is very hard to make them speak during the lesson, to get them involved. And I know that they are able students, but it’s hard to reveal some maybe hidden abilities sometimes, because they are students who are really active and they always try to show off and there are those who are always behind. That’s the challenge.”

... as I said there are students who leave behind and tend to be less active. And there are those who are far beyond the program or the program can be too easy for them. So, it is also a challenge for me. I try not to overload them with extra tasks, because there is no point to do that. I always struggle to find something that would challenge those students.

Another teacher added that gifted students are different and it is necessary for a teacher to use special approaches in teaching:

“It appears that gifted students have special character. They think differently and behave not like other children do. They have extraordinary ideas and usually they say that people do not understand them. Sometimes they even solve some tasks using a special formula that you even might not know. That is why they require special psychological and pedagogical approach in teaching.”

However, three out of six participants stated that it is not always possible due to the big number of students in some classes. In Kazakh groups there are sometimes 20 students with different levels and abilities. For instance:

“....It is physically not always possible. There was a situation when a parent of one of my students asked the type of an activity that he likes and I could not even remember. Because there are a lot of students and each of them require my attention and I can not pay attention to each of them during 40 minute lesson. It is impossible.”

Two of the participants highlighted the lack of time as a problem that arises together with the problem mentioned above. They shared that designing tasks for each student and taking into account their needs and interests require much time and teachers cannot prepare the tasks for every lesson. For instance:

“...and sometimes even I lost. I do not know whom I should pay more attention, to them or to this student. So, this is the main difficulty for me in planning. Because, all my time management ... I not always can afford myself to plan for all three levels. Usually it is in the middle. So, I think this is a main difficulty that I have students of different levels in the classroom and time which is required for me to plan.”

In addition, one teacher highlighted the problem with behavior of some students. This problem occurs when students usually come after PE since they become very active and noisy. The other problem is the classroom arrangement that does not always allow teachers to move tables and chairs when it is necessary.

Although teachers claimed that differentiation is one of the effective ways of teaching different abled students, one participant shared the difficulty faced while teaching. This teacher does not deny the effectiveness; however, there are several reasons that this teacher uses differentiation seldom such as lack of time and classrooms with big number of students. Especially, groups with Kazakh track students where there are usually 20 students in a classroom. The participant claimed that theoretically differentiated instruction is one of useful teaching approach, but in practice it is very hard due to the reasons stated above.

Chapter 5. Discussion

The chapter will provide interpretations of the findings in relation to research questions. It also includes the limitations of the study as well as the implications. The chapter concludes with an overview of the study.

5.1 Teachers' understanding of the concept Universal Design for learning as an inclusive pedagogy

The first set of questions were exploring teachers' understanding of the concept UDL. The findings reveal that the concept of UDL is a new and unknown notion for them. Even though some of the participants explained the term, provided explanations did not cover the full meaning of the term. However, these participants highlighted the main characteristics of the UDL framework, stating that the concept is a flexible framework that embraces diversity in a classroom, takes into account every learner's individual characteristics and facilitate their learning and success in a school environment (CAST, 2012; King-Sears, 2008; McGuire, Scot & Shaw, 2006; Quaglia 2015). These participants' knowledge of UDL might be explained with the fact that they attended courses on inclusive education as a part of their graduate program. As reflected in the literature and the conceptual framework, these teachers' knowledge comes from their professional competence and teacher learning which directly will influence the way they work with learners, their beliefs and values about teaching (Guerriero & Revai, 2017). Teachers' formal learning (courses, graduate, undergraduate programs) directly influence on their professional competence, as a result, will have an impact on the learners' learning and success (Guerriero and Revai, 2017). Moreover, teachers' formal learning change teachers' perceptions and experiences resulting in deeper understanding and

willingness to use it (Evmenova, 2018). Hence, participants of the study were motivated and eager to use the UDL and its main principles, acknowledging its' effectiveness and benefits for their diverse classrooms.

Another factor which plays an important role in teaching and learning process and essential part of the UDL and its main principles is teachers' understanding of the term 'diversity'. Even though not all participants are familiar with the notion of UDL, all of them could properly explain the term 'diversity' providing examples of how diversity is characterized. This knowledge might come from teachers' non- formal type of learning (learning from colleagues and other sources) which has an immediate relation to teachers' professional competence (Guerriero and Revai, 2017). It is a common practice that NIS teachers attend lessons of their colleagues and other subject teachers in order to learn from them and to make teaching and learning process better by analyzing the drawbacks of the lesson and make improvements for the future. This practice requires decision making skills and fair professional judgement, since it is important to analyze the advantages and disadvantages of a particular lesson, evaluate it generally and if necessary modify or change the methods and approaches used during the lesson (Guerriero & Revai, 2017). The system of assessment is one of the tremendous changes that was brought by the establishment of NIS schools. Formative and summative assessment system helped learners to take responsibility for their own learning and teachers started to understand the system of assessment that helps learners to learn. The assessment system is one of the key factors in evaluating students' learning. By implementing different teaching approaches and effective assessment system, the cognitive and socio-emotional types of learning occur in the process of students' learning (Guerriero & Revai, 2017). Teacher learning, especially non-formal types of learning might occur while

working and collaborating with colleagues, making research as a part of their self-development and professional competence (Guerriero & Révai, 2017). Along with a formal type of learning, non-formal learning is a crucial factor influencing not only teacher's professional competence, but also his/her beliefs, knowledge, teaching approaches that he employs, instructions, learners' knowledge and success (Guerriero & Révai, 2017).

Even though teachers understand the term 'diversity', they have a narrow understanding of it mentioning only some of characteristics. All participants connected the term diversity with the brain activities such as ways learners learn, the level of knowledge and different abilities on particular subject without mentioning learners' socio-economic status, ethnicity, nationality, religion, culture, language, gender, age, sexual orientation, special needs, and geographical or contextual factors as well as their values and beliefs. This is consistent with the literature concerning UDL (Dean, Lee-Post & Hapke 2017; Katz 2013; Salend & Whittaker 2017) even as the majority of participants were not familiar with the formal term of UDL. Participants connect the term 'diversity' only with learners' knowledge, the way they understand and analyze data. Interestingly, the teachers who taught exact sciences such as Mathematics and Science understood diversity as grouping learners into two categories such as those with mathematical thinking and those with humanitarian mindset, as reflected in the literature directly relates to thinking and brain activity (Robinson, 2017). The literature demonstrates that proper understanding of diversity is crucial in promoting inclusive education (Florian, 2010). Understanding of diversity will contribute to developing and supporting diverse learners taking into account their individual characteristics which will lead to successful teaching and learning process (Ramirez, Gonzales-Galindo & Roy, 2016).

5.2 Strategies and approaches teachers employ to support classroom diversity

A number of questions in this research study explored the approaches research participants use in order to meet classroom diversity. It was revealed that participants in general use various strategies and approaches in order to meet diverse needs of learners. Since questions were divided according to three basic principles of UDL such as multiple means of representation, expression and engagement, participants responded to questions mentioning the approaches they employ to realize each of them.

Multiple means of representation

The findings reveal that teachers employ different strategies and tools while representing a new material. However, they used more individualized style of representing a new material rather than a class approach under UDL principles. The most frequent approach that participants use is differentiated approach. Teachers use various ways to differentiate the instruction starting from preparing tasks for fast finishers to scaffolding those who need support. Within the literature this is explained by the fact that it is only a teacher and his values and beliefs about each learner's ability and his decision how to employ differentiated instruction taking into account each learner's strength or ability (Gueiro & Revai, 2017; Tomlinson, 2000).

It was also revealed that lesson planning process is of a great importance in order to present a new material effectively. As findings show, teachers highlighted the importance of lesson planning before the presentation of a material which is an essential part of UDL (Spooner et.al, 2007). The self-analysis and lesson analysis used by the respondents of the research show teachers' ability of making proper professional judgement in order to develop

their own professional competence (Guerriero and Revai, 2017). It also resonates with the idea proposed by Cochran-Smith and Lytle (2010), who asserted that teachers' reflective practices will help to maintain successful teaching and learning at the same time. As shown in the literature, lesson planning procedure is vital and modifications should be done before the planning process and taking into account previous lessons' drawbacks contribute to the successful implementation of three main principles of UDL (Spooner, Baker, Harris, Ahlgrim-Dezell, & Browder, 2007, p.114).

The findings demonstrate that often teachers do not follow any strict rules to present new ideas and concept. Instead, they use multiple ways of presenting a new material such as Power Point Presentations, audio-video materials and electronic books depending on their learners' interests and educational needs. This fact clearly indicates that teachers are able to choose the tools and strategies of teaching using their own judgements about learners they work with (Guerriero & Revai, 2017). This finding resonates with the idea that teachers may decide to use any strategy, approach and tools as a consequence of deploying their professional judgement (Guerriero & Revai, 2017). The individualized choice of the appropriate approaches and tools by the participants of the research depend on the styles and preferences in learning as proposed by CAST (2017). Learners should be provided with option for perception which includes audio and visual aids as well as the options for language and symbols (CAST, 2017).

Multiple means of expression

Generally, it was revealed that participants provide learners with multiple ways of expressing their knowledge since they believe that learners are different with different interest

in learning and different levels of knowledge. Data from the study shows that learners are provided with a range of options such as presentations, project works and the use of various assistive technologies (mobile phones, I pads, laptops). Within the literature it is explained by the fact that varying the methods for learners' responses facilitate their learning and success (CAST, 2017). The use of assistive technology by the participants of the research can be justified with the fact that technology in teaching and learning process is an access to the curriculum which makes the learning process successful and meaningful (Messinger-Willman & Marino, 2010). However, the data showed that the standardized approach in assessment restricts the expression of learners' knowledge thus negatively impacting on the interests and abilities of learners. This approach does not correspond to the principles of UDL and inclusive pedagogy which clearly states that every child is unique and the teaching and learning process should be organized taking into account their abilities, interests and needs (Makoelle, 2014). Moreover, as it was revealed participants of the research employ only options for physical action and options for expression and communication, whereas options for executive functions suggested by CAST are not realized in their practice (CAST,2017). These are goal setting and support planning and strategy development (CAST, 2017).

Multiple means of engagement

As suggests by the collected data, it becomes evident that participants of the study motivate and engage their learners using different activities including games, real-life stories and stories about famous people. They believe these methods motivate learners; consequently, they become interested and engaged into the learning process. This finding was discussed by Evans et.al (2010), who shared that multiple means of engagement is 'why' of learning which means that teachers engage learners finding the link between theoretical material with

practical and bounding them into real-life examples and stories. Real-life and personal stories help students to overcome the challenges they have and make progress in learning (Smith, 2012).

Rearranging the order of the exercises or changing the content of the whole lesson plan has also been found as the way to raise motivation of learners, especially when a teacher feels learners are bored or tired . This finding has to do with teacher professional competence and his ability to analyze and make decisions (Guerriero & Revai, 2017). An individualized approach is one more way to engage learners into the process of learning. Participants believe that it is important to create a situation of ‘success’ for every child. This means providing learners with tasks corresponding to their own level. By the completion of the task learner will feel satisfaction and will be motivated to complete tasks that are harder. Within the literature this is explained as providing options for self-regulation which means facilitating personal coping skills and strategies (CAST, 2017). Pair work has also been found as a tool for motivating students during the teaching and learning process. Research participants believe that learners can teach each other and learn from each other by creating their own learning environment. Fostering collaboration of learners and creating learners’ own communities are the main indicators of multiple means of engagement (CAST, 2017).

5.3 Challenges and problems of the UDL implementation

With regard to the challenges teachers face while implementing UDL and its principles, in general, participants of the present study believe that the main challenge they face is learners’ different levels of knowledge. They face difficulties with a task design taking into account learners’ level of knowledge as well as their interests. Schumm and Vaughn (1995) shared that learners’ different levels of knowledge is one of the reasons why UDL and its principles are not fully realized (as cited in Spooner, Baker, Harris, Ahlgrim-Delzell, &

Browder, 2007). Another interesting finding is the work with gifted students sometimes makes it difficult to work with them due to their extraordinary character and individuality. Participants believe that they require special pedagogical psychological approach in teaching. Since the research site is the place where there are many gifted students, participants might face this problem frequently.

Another interesting finding is the number of students in some classes where there are sometimes 20 students has also been found as a challenge that teachers face while implementing UDL and its principles. This issue is connected to the problem of learners' different levels of knowledge mentioned above as teachers find it difficult to design the task for big number of students with different levels of knowledge.

Lack of time was another challenge that participants face while teaching diverse students with different needs, levels of knowledge and various interests (Rose et al, 2005; Schumm & Vaughn, 1995). The task design and lesson planning processes require much time which make it difficult for participants to meet the needs of every student every lesson. Within the literature this fact is explained as one of the barriers that might hinder the implementation of UDL and its principles is lack of time as teachers are usually too overloaded and responsible for many things (Schumm & Vaughn, 1995). One more interesting finding is that participants of the present study believe that sometimes behavioral problems that occur in a class can also be the problem that teachers face while teaching and working with different students. Schumm and Vaughn (1995) shared that behavioral problems is one of the classroom management issues that can interfere the whole teaching and learning process (as cited in Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007).

5.4 Chapter summary

This chapter has discussed the results of the present study. The analysis of the findings shows that teachers are not aware of the term UDL. However, participants of the study employ differentiated approach which highly resonates with the ideas and principles of UDL. Multiple means of representation, expression and engagement as UDL principles are employed by the participants, even though they are not familiar with the concept of UDL. The findings also present some challenges that teachers face while working with diverse learners such as different levels of knowledge, lack of time, behavioural issues and big number of students.

Chapter 6. Conclusion

With a growing diversity in classrooms, there is a need to accommodate diverse needs and interests of learners. There is no research conducted in Kazakhstan to explore the inclusive pedagogies and approaches that are used in secondary schools to meet the different educational needs and interests of learners. Hence, the given study addressed the issue by exploring teachers' experiences and perceptions of UDL as one of the types of inclusive pedagogies that helps to meet the diverse needs of learners. Six NIS school teachers participated in the study. Using individual semi-structured interviews teachers shared their perceptions and experiences of UDL and its implementation. The findings of the study have shown that the participants are not familiar with the notion of UDL, however, they have a sound understanding of the term. The present research revealed that teachers employ the basic principles of UDL in their practice often without explicit knowledge about UDL. This shows that teachers' informal learning (learning from their colleagues and peers) influences on their choice of certain pedagogical approaches as well as their professional development (Révai & Guerriero, 2017). It has been revealed that teachers' non-formal learning is very important in employing and adapting inclusive pedagogies as a part of their professional competency. Their decision making skills influence on their practice and employing new pedagogies to meet the diverse needs of learners. Finally, teachers' professional judgement and self-analysis have an impact on the whole process of teaching and learning as well as learners' success and achievements.

Consistent with previous research, teachers revealed that there are both challenges of implementing UDL and opportunities in the implementation of the principles of a UDL approach. There are lack of time (teachers are overloaded), different levels of knowledge, work with gifted students, big number of students in one class and behavioral problems.

6.1 Recommendations

Based on the conclusions above, some recommendations were designed to promote teachers' understanding of the term UDL. Since, most of the participants had an incomplete understanding of the term UDL, it would be useful to organize courses for teachers where those teachers who are familiar with this term can share their knowledge with them. This is important as the NIS system of schooling is charged with sharing new approaches with other mainstream schools.

6.2 Limitations of the study

The present study demonstrates limitations that are related to potential biases that can emerge during data analysis. Additionally, the small number of participants used in the study makes it difficult to generalize the findings.

6.3 Recommendations for further research

Taking into consideration the fact that the sample size was small it is difficult to generalize the information, there is a need to conduct a research on teachers' perception of UDL and its implementation in other secondary schools in different regions of Kazakhstan in order to gain a broader perspective. New research could be carried out both in schools for gifted children and mainstream schools, particularly those mainstream schools associated with the NIS system. This would indicate what professional knowledge is being shared and how these teaching competencies are being developed outside of the NIS system.

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Appendices

Appendix A

INFORMED CONSENT FORM

Teachers' experiences and perceptions of Universal Design for Learning in one NIS school in Kazakhstan

Dear Participant,

You are invited to participate in a research study on investigating « Teachers' experiences and perceptions of Universal Design for Learning in one NIS school in Kazakhstan». The study will be conducted using semi-structured interviews. The interviews consist of 10 broad, open-ended questions which are developed to investigate teachers' experiences and perceptions Universal Design for Learning. During the interview sessions, the researcher will be taking notes, and your interview will be audio-taped and transcribed verbatim in order to be used further in the data analysis process. Your name will be kept confidential and stored in the computer of the researcher and supervisor, that is, no one except from them will have an access to the data. Once the research study has finished, all electronic documents will be destroyed and all printed materials be will be shredded.

There are no anticipated risks associated with this study however, there can be questions that will make you feel discomfort when answering about you or your teaching experiences.

There may be no direct benefits to you in the study, however the study may contribute to your knowledge on inclusive pedagogies and UDL and its main principles. This knowledge will assist you as well as your colleagues to choose teaching approaches and inclusive pedagogies taking into account the diversity of your classroom.

Your decision whether or not to participate in this study will not in any way affect your employment or your relationship with Nazarbayev University.

If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate. You have the right to refuse to answer particular questions. The results of this research study may be presented at scientific or professional meetings or published in scientific journals.

CONTACT INFORMATION:

Questions: If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Master's Thesis Supervisor for this student work, Michelle Somerton, Assistant Professor, Nazarbayev University Graduate School of Education; michelle.somerton@nu.edu.kz; [+7 7172 709383](tel:+77172709383)

Independent Contact: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the NUGSE Research Committee to speak to someone independent of the research team at +7 7172 709359. You can also write an email to the NUGSE Research Committee at gse_researchcommittee@nu.edu.kz

Please sign this consent form if you agree to participate in this study.

- I have carefully read the information provided;

- I have been given full information regarding the purpose and procedures of the study;
- I understand how the data collected will be used, and that any confidential information will be seen only by the researchers and will not be revealed to anyone else;
- I understand that I am free to withdraw from the study at any time without giving a reason;
- With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Signature: _____

Date:

Appendix B. Sample Interview Protocol**Teachers' experiences and perceptions of Universal Design for Learning in one
NIS school in Kazakhstan**

Date: January, 8, 2018

Place: a school for gifted students in Kazakhstan

Interviewer: Assem Rakhimbekova

Interviewee: English teacher

Questions:

1. How do you understand universal design for learning?
2. In what ways do you know that your learners are different than others?
3. In what ways do you usually present a new materials?
4. In what way your learners show the knowledge they gained?
5. Do you give them any opportunities to express themselves in different ways?
6. How do you usually engage your students?
7. In what ways do you motivate them to learn and study?
8. What are the challenges you face while working with children with diverse needs?

Thank you very much for participation! I want to assure you again that data will be kept
confidential and protected.

Appendix C. Sample Interview Transcript

A: Interviewer

B: Interviewee

A: Hello, dear participant of the research. The project is called “Teachers’ experiences and perceptions of universal design of learning in NIS school in Kazakhstan”. So, thank you for your support and being respondent. Can you give me just some information about you and your profession?

B: Yes, of course. I have been working at NIS almost 5 years. Now I am teaching 9th grades, before I had an experience of teaching in 11th grades and 7th grades. I teach English and GP (Global perspectives and project work).

A: How long have you been working as a teacher in general?

B: In general, I think it is almost 7 years.

A: Ok. So, let me ask some questions related to my research. So, question 1. How do you understand universal design for learning?

B: From my discussion with colleagues I understand this as individual approach in teaching learners. As you know we have different students, with different abilities, even styles of learning. And I consider that UDL as something that can help teacher to meet that requirements of students.

A: Ok. Thanks a lot. In what ways do you know that your learners are different than others?

B: From ... how they speak, how they act in the classroom, how they accept the information, how they react on your information. Some students are extroverts, they all the time want to know how teacher is going, what is teachers mood, what is teacher’s life, and some of them are really quite. And the problem is mostly with those who are quite. You do not

really know what he or she thinks. And in this way writing helps here. You try to take their reflections hoping that they will write you something about themselves.

A: Ok, next question is ... In what ways do you usually present a new materials?

B: At first, before the presentation it is important for me to know what they already know about this theme. The, I try to interest them with a new topic. Usually this is information on PPT, it could be a video, but recently I have noticed that in most cases I give reading to my students. Reading.

A: OK. What strategies do you use to meet each learners needs? So, in the way you teach, in the way you present information? The way you work with them?

B: Usually my presentation is for everyone the same, because the information is devoted to the whole class. Then, when students are given a task and in the process of their completion this task I come to each student and see how they are doing. So, I try to observe them and try to offer my help incase if this is necessary. But, I think that it is import also beforehand, before the presentation of the material to do the detailed planning. In your planning you should think about every student in your class, in your grade. Then I can subdivide them into some levels according to their knowledge, and in the task already try to give some kind of differentiation. Maybe some vocabulary support for those who have weaker knowledge in English. Also when I plan the lesson I already see my student's face. There are two ladies who always disappointed with the way how I teach, and when I imagine the task for them I think "Ok, how she will react on this one?", "Will she be interested on this or not?"

A: Ok. So, the next question will be about the expression of learners of their knowledge. In what way your learners show the knowledge they gained? To you give them an opportunity to show in the way they like?

B: Yes, when it is about the projects I agree on students producing their knowledge. When it is about reading and listening, there is a standard, everyone should have the same. When it is about writing, yes, we also can offer them different topics for writing. Also I usually offer them that their writing could electronically or can be in a written way, it could include anything they want there, like pictures or something else.

Also, it is important for me when I see that my students are glad. That's why before the task I also try to ask them what product do they see from this job, what could be offered for them to be done.

A: OK. Do you give them any opportunities to express themselves in different ways? And if so, in what ways?

B: Yes, I think my students feel free during my lessons. They can share with me any information they need. There is one learner for whom it is important during the lesson to say something personally from her. And I do not prohibit this inspiration of her, so I just listen to what she wants to say me, all other students are already used to this, so they are also not against. There are also other students, they like singing songs. And when there is an opportunity ... Personally I also like music. When there is an opportunity for me to include music, I include music during the lesson. For some of them when they do a task I can switch on the music to play or also some of 9G for example, there is a gentlemen who prefers all the time listening to music and as all learners have different favorite songs, lists ... I allow them just to use their headphones when they do the task.

A: Ok. Good. What about let's say classroom management. Are students allowed to move around the classroom during the lesson or to, let's say, complete reading task, writing task in the way they are comfortable with? Beside the window or under the table, let's say. Is it OK for you?

B: For me it is Ok. But I think that our students, the same as teachers are used to use desks, tables, ordinary things, pencils, pens. Sometimes they even ask the permission to use a pencil, which is definitely not necessary. The same is with moving in the classroom. They ask for permission. I am not against of moving, standing, going even out in case of any ...

A: Ok. Now let's talk about engagement. How do you usually engage your students? In most cases students are bored, tired. So, how do you engage them into the learning process?

B: Usually, when I see that they are tired, I offer them some kind of exercises. Like, morning exercises or games. Sometimes, it even requires me to change the whole lesson, because I see that probably this is the 9th or the 8th lesson and they want to sleep, they just came after Physics or Maths, they need another activity. Then I just rearrange the order of the lesson, or even leave one part which is important for the next one for them to accept this information. Otherwise to repeat them for the second time when you already see they are not able to accept this.

A: In what ways do you motivate them to learn and study?

B: I do not like teacher who all the time speak about exams. Or who say that in the future you will need this. So during the planning I try to think what will be interesting for them. And at the end of the unit I ask If it was interesting. Of course, during the lesson you can see that according to their faces. In my classes often it depends on the level of the tasks. Stronger students are inspired and motivated by some difficulties and challenges, weak students they do not believe in themselves. They all the time try to ask other students, they distract them. I try strong students not to be distracted and create something for the weaker students. In that case, of course, it is not always possible, because of time, because of my energy, because of my human abilities, but I think in ideal way it should be done.

A: Ok. So, now, concluding everything that you have already said let's think about challenges that you have in working with diverse students in your school? So what might be the challenges that you have faced already or will face in the future while working with such students? So, you said they are diverse. So, what are the challenges for example in, maybe in designing the tasks, in conducting the lesson, in the way they express themselves?

B: To answer this question I will tell you about one grade, which could be considered as the most difficult for me in terms of teaching. Because when I come there are two ladies who are upper-intermediate, there are three students who are pre-intermediate, and other three students were in the middle, so, they are intermediate or they are managed to do the tasks for intermediate level. And it is always difficult for me to leave upper-intermediate students pleased with the lesson. Remember I told about two ladies, who all the time are disappointed. When I offer them difficult tasks, they were inspired, motivated with them, but then other students they left behind. The intermediate students they left behind. For this class, it is always difficult for me to plan the lesson in the way for three levels to be glad, or to be sure that they have gained something from the lesson. And even inside the classroom, the atmosphere in the classroom is difficult they have this feeling that "I am superior than you, because my English is great than yours" and other students of course they will be ashamed of their own English. And this feeling of superiority of one student gives to the weaker students that they are lost. So, they do not know what to do. And sometimes even I lost. I do not know whom I should pay more attention, to them or to this student. So, this is the main difficulty for me in planning. Because, all my time management ... I not always can afford myself to plan for all three levels. Usually it is in the middle. So, I think this is a main difficulty that I have students of different levels in the classroom and time which is required for me to plan.

A: Ok. Would you like to mention any other challenges that you face?

B: I could mention one challenge which I have started speaking in the beginning. About quite students. For me it is important to know about student in a **half n** (13.17), I want to feel his atmosphere, his feelings, his mood. And such kind of students they can left behind by me. I mean they can be unnoticed by me on the lesson. And I think this is another field which I should work on.

A: Ok. What about taking into account some individual features maybe? Is it difficult for you to?

B: Individual features ...No, usually in the classroom it is OK. So, I do not have characters which could create problems in my classroom. However, there is still one student who doesn't like listening to music and doesn't like watching movies. But the movies were about movies and films, and definitely all the speaking and writing was about that staff. In order for him to feel comfortable, I asked him to speak about favorite game, because he is a great gamer. In some occasions he just imagined that he has a favorite song.

A: Ok. Thank you very much. That was a last question.

B: Thank you.