Middle School Teachers' Perceptions and Practices of Differentiated Instruction under Quarantine Conditions: A Case Study in a School for Gifted Children in Eastern Kazakhstan

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Submitted in partial fulfillment of the requirements for the degree of

Master of Science in Educational Leadership

Nazarbayev University Graduate School of Education

May, 2021

Word Count: 15547

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Yours sincerely

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Acknowledgement

I would like to express my gratitude to my research supervisor, Professor Anna CohenMiller, for her time, support, kindness and patience. Thanks to the guidance of my research supervisor, I was able to carry out this research and completed the thesis.

I am also grateful to all NUGSE staff for their help.

Middle School Teachers' Perceptions and Practices of Differentiated Instruction under Quarantine Conditions: A Case Study in a School for Gifted Children in Eastern Kazakhstan

Abstract

The purpose of the current research was to explore middle school teachers' perceptions and practices of differentiated instruction under quarantine conditions at a school for gifted students in Eastern Kazakhstan. A qualitative case study was conducted in order to gather in-depth data in a particular setting. Five teachers were recruited according to purposeful sampling and were interviewed online via the TEAMS platform. The lessons chosen by the participants were observed on TEAMS platform online. The findings revealed five primary themes for participants' perceptions and practices of differentiated instruction: (1) Meeting students where they are, (2) Benefits of differentiated instruction for students, (3) Quarantine broadens understandings of differentiated instruction, (4) Challenges faced in differentiated instruction under quarantine conditions, and (5) Instruments used to implement differentiated instruction under quarantine conditions. Teachers' perceptions of using differentiated instruction under quarantine conditions vary with some teachers appearing to perceive it as an approach used to support students who are struggling by providing them with additional teaching materials, while others understand it as a way to support students by organizing group work based on their readiness level. Despite the quarantine conditions, the participants managed to demonstrate uses of differentiated instructional approach while teaching online. An unexpected finding revealed how the new online teaching mode encouraged teachers to pay more attention to the need for differentiated instruction, and provided new opportunities to teachers to find new tools to implement differentiated instruction while teaching online. Given the current challenging times for teaching and learning online, further research is suggested to reveal effective strategies for implementing

differentiated instruction in face-to-face and online modes. The findings and recommendations of this study can be beneficial for those interested in addressing the best practices for teaching online, including during quarantine conditions.

Карантин жағдайында орта мектеп мұғалімдерінің саралап оқыту жөніндегі түсінігі мен тәжірибесі: Шығыс Қазақстан облысындағы дарынды балаларға арналған мектептегі кейс стади

Аңдатпа

Зерттеу жұмысының мақсаты Шығыс Қазақстан облысында орналасқан дарынды балаларға арналған мектептердің біріндегі орта мектеп мұғалімдерінің карантин жағдайында саралап оқыту жөніндегі түсінігі мен тәжірибесін зерттеу болды. Аталған білім беру мекемесінде мәлімет жинау мақсатында сапалық зерттеу әдісі қолданылды. Бес мұғалім зерттеу қатысушылары ретінде мақсатты іріктеу арқылы таңдалынып алынды және олардан TEAMS платформасы арқылы сұхбат алынды. Қатысушылар таңдаған сабаққа онлайн режимде TEAMS платформасында бақылау жасалынды. Зерттеу нәтижесінде зерттеу қатысушыларының саралап оқыту туралы түсінігі мен тәжірибесі бойынша келесі тақырыптар анықталды: (1) Оқушылардың қажеттіліктерін қанағаттандыру, (2) Саралап оқытудың оқушыларға пайдасы, (3) Карантин саралап оқыту туралы түсінікті кеңейтті, (4) Карантин жағдайында саралап оқытуды жүзеге асыруда туындайтын мәселелер және (5) Карантин жағдайында саралап оқытуды жүзеге асыруда қолданылатын құралдар. Карантин жағдайында саралап оқытуды қолдану жөніндегі мұғалімдердің түсінігі әр түрлі: кейбір мұғалімдер саралап оқытуды оқуда қиындықтары бар оқушыларға көмек ретінде қосымша материалдарды беру арқылы жүзеге асырылады десе, басқалары оқушылардың академиялық дайындық деңгейін есепке ала отырып, топтық жұмыстарды ұйымдастыру арқылы оқушыларға қолдау көрсету деп түсінеді. Карантин жағдайына

қарамастан, зерттеу қатысушылары онлайн режимде сабақ беру барысында саралап оқытуды көрсете алды. Кейбір мұғалімдер оқытуды саралау мақсатында онлайн-платформаларды қолданса, кейбіреулері сыныптағы әр оқушы үшін оқу қызықты әрі тиісті деңгейде болуы үшін деңгейлік тапсырмалар берді. Күтпеген зерттеу нәтижелері ретінде онлайн оқытудың мұғалімдердің саралап оқытуға көбірек көңіл бөлуге итермелеуін және онлайн режимде сабақ беру кезінде саралап оқыту жөніндегі түсінікті кеңейтуге жаңа мүмкіндіктер беріп, саралап оқытуды жүзеге асыруда қолдануға болатын жаңа құралдарды табуларына жол ашты. Онлайн режимде оқыту мен оқудың қазіргі таңдағы қиын кезеңін ескере отырып, болашақта сыныпта және онлайн оқытуда саралап оқытуды жүзеге асыруда қолдануға болатын тиімді стратегияларды анықтау үшін зерттеу жүргізу ұсынылады. Қорытындылай келе, осы зерттеу нәтижелері мен ұсыныстары қашықтықтан оқыту уақытында саралап оқытуды жүзеге асыру бойынша қызығушылық танытатындарға тұлғаларға пайдалы болмақ.

Понимание и практика дифференцированного обучения учителей средней школы в условиях карантина: Кейс стади в школе для одаренных детей в Восточно-Казахстанской области

Аннотация

Целью данного исследования было изучение понимания и практики дифференцированного обучения в условиях карантина учителями среднего звена школы для одаренных детей в Восточно-Казахстанской области. Качественное исследование было проведено с целью сбора подробных данных в конкретной обстановке. Пять учителей были отобраны на основе целенаправленной выборки и опрошены онлайн через платформу TEAMS. Выбранные участниками уроки наблюдались на платформе TEAMS в режиме онлайн. Результаты выявили пять

основных тем по пониманию и практики дифференцированного обучения участниками данного исследования: (1) Удовлетворение потребностей учащихся, (2) Преимущества дифференцированного обучения для учащихся, (3) Карантин расширяет понимание дифференцированного обучения, (4) Проблемы, с которыми сталкиваются при дифференциации обучении в условиях карантина и (5) Инструменты, используемые для реализации дифференцированного обучения в условиях карантина. Понимание учителями использования дифференцированного обучения в условиях карантина разнится: некоторые учителя, по-видимому, воспринимают его как подход, используемый для поддержки учащихся испытывающих трудности путем предоставления им дополнительных учебных материалов, в то время как другие понимают его как способ поддержки учащихся путем организации групповой работы исходя из степени их готовности. Несмотря на условия карантина, участникам исследования удалось продемонстрировать использование дифференцированного обучения при обучении онлайн. Некоторые учителя использовали онлайн-платформы и приложения для дифференциации обучения, в то время как другие давали многоуровневые задания, чтобы усложнить обучение для каждого ученика в классе. Неожиданный результат показал, что онлайн обучение способствовало уделению учителями большего внимания на необходимость дифференцированного обучения и предоставил учителям новые возможности для расширения их понимания дифференцированного обучения и поиска новых инструментов для реализации дифференцированного обучения при обучении в онлайн режиме. Учитывая нынешние сложные времена для преподавания и обучения в онлайн режиме, предлагается дальнейшее исследование, чтобы выявить стратегии эффективные для реализации дифференцированного обучения в классе и в онлайн режиме. В конечном итоге, выводы и рекомендации этого исследования могут быть полезны для тех, кто

заинтересован в использовании дифференциации при обучении в дистанционном

режиме.

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Chapter 1: Introduction

Introduction

Since an educated generation is a guarantee of a bright future for any country, it is important to maximize all students' potential and ensure that every student is provided with the opportunity to get quality education. Thus, in an ideal world, teachers would ensure that every student is fully engaged in a lesson and has an opportunity to acquire new knowledge and develop skills regardless of a student's learning ability. To meet each student's interest, learning style and learning abilities, teachers can employ a differentiated instructional approach. An expert in this field Tomlinson (2005) explains differentiated instruction as a teaching approach that is based on accommodating student diversity in terms of academic readiness, interests and learning profiles. Similarly, Heacox (2012) defines this approach as addressing individual student needs, interests and learning styles through modifying the pace, level and teaching strategy, and assumes it is the best approach that shows students' progress allowing each student to demonstrate their knowledge in ways that exploit their interests and strengths.

Background of the Study

To provide a background of the study, I will present western researchers' explanations of what differentiated instruction is, and why they consider it important for the development of young generation. Western, here, refers to countries such as the United States of America, the United Kingdom of Great Britain, and the Netherlands. The reason why western researchers were chosen is that the approach seems to be explored mostly in western countries, and the literature I found were written mostly in those countries. Regarding the Kazakhstani context, differentiated instruction is being practiced in all schools. The necessity of employing differentiated instruction is detailed in the curriculums of Nazarbayev Intellectual Schools. However, there is a lack of research conducted on how teachers perceive

and implement the approach in the Kazakhstani schools. Therefore, it is worth exploring perceptions and practices of this approach in Kazakhstani context.

In the book that explains what differentiated instruction is and is not, Tomlinson (2017) broadly states that several decades ago an individualized instruction was experimented to meet students' learning differences. However, applying an individualized instruction appeared to be unrealistic causing many difficulties for teachers as they had to plan and prepare materials for each student in a class. It was time-consuming and led to the exhaustion of teachers. Unlike the individualized instruction, differentiated instruction can be carried out through group, pair and individual work. Since any class consists of students with different learning styles, different learning abilities and interests, ideally, every teacher should use differentiated instruction at each lesson. Using a differentiated instructional approach implies celebrating the diversity in a classroom. For example, Carolan and Guinn (2007) compare diversity to a gold mine saying that all members of a diverse group benefit from diversity as it brings multiple ideas, perspectives, and solutions to problems. The benefits of diversity in the classroom are also supported by Maruyama and Moreno (2000) who state that diverse groups can see any assumptions from different perspectives and can propose valuable and unique points of view. Moreover, the results of Gruin's (1999) literature review showed that diversity in the classroom enhances students' active thinking, motivation, as well as academic and intellectual abilities (as cited in Maruyama and Moreno, 2000). Given the advantages of diversity, it is important to meet each student's interest, learning style and academic readiness in order to maximize their potentials.

Regarding the theories that are closely related to differentiated instruction, Abdullah and Magableh (2020) state that a differentiated instructional approach is closely related to Gardner's theory of Multiple Intelligences, Vygotsky's theory of the Zone of Proximal Development (ZPD) and Bloom's taxonomy. It means that while making decisions on what

to teach and how to teach, teachers need to take into account the fact that students learn through eight intelligences including verbal, musical, mathematical-logical, spatial, bodily-kinesthetic, interpersonal, intrapersonal and naturalist (Theory of Multiple Intelligence). Besides, to group students so that they can support and help each other through ZPD achieve learning objectives, and to prepare materials of an appropriate level, teachers should consider students' academic readiness levels. Moreover, for the lower-ability students, who struggle to achieve learning objectives, teachers should plan activities that require knowledge and comprehension, for the middle-ability students, tasks that need skills of application and analysis, and assignments that require synthesis and evaluation for the higher-ability students (Bloom's Taxonomy).

As for the benefits of differentiated instruction, Pham (2012) states that differentiated instructional approach is an effective teaching approach directed to meet students' educational levels. The author emphasizes that it provides students with the opportunity to get a holistic view of what they are taught, to be a creative and self-reliant learner and to feel the responsibility for their own learning.

It is worth noting that Faber, Glas and Visscher (2017) outline two important characteristics of differentiated instruction. Firstly, analysis of student assessment data should serve as the basis for instructional decisions. Secondly, variation in learning objectives, content, teaching time, tasks, and materials that are prepared to address different learning needs make differentiated instruction observable in the classroom. According to Tomlinson (2008), to plan and prepare a differentiated lesson, teachers need to be aware of what their learners can do and monitor their progress in accomplishing learning objectives within a developmental framework (as cited in Griffin, 2018). In other words, to effectively implement differentiated instruction, analysis of assessment data needs to be done and based on the analysis decisions on what to teach and how to teach should be made.

Despite the value and importance of differentiated instructional approach in leading learners to success, many teachers are still experiencing struggles with differentiating instruction effectively. This is due to the challenges, such as lack of time for planning and preparation, lack of resources, limited knowledge and skills of differentiated instruction, excessive workload and large class size, teachers encounter in planning and conducting a differentiated lesson (Nicolae, 2014; Bekeyeva, 2019). However, the findings of Bekeyeva's qualitative study revealed that the challenges teachers face do not hinder the implementation of differentiated instruction as many teachers understand the importance of this approach, and try to broaden their knowledge of differentiated instruction through reading different resources, attending online courses and webinars.

To sum up, differentiated instruction is used to celebrate student diversity in a classroom, and to meet different student needs. Differentiated instruction is closely related to the theory of Multiple Intelligences, Vygotsky's theory, the Zone of Proximal Development (ZPD) and Bloom's taxonomy. The foundation of a differentiated instructional approach is made by these three theories (Maglabeh & Abdullah, 2020). Despite the challenges teachers face in implementing differentiated instruction, they attempt to broaden their understandings by using different resources.

Statement of the Problem

Tomlinson (2014) states that a teacher's question "How do I divide time, resources, and myself so that I am an effective catalyst for maximizing talent in all my students?" still remains as actual as it was 100 years ago. To address students' diverse learning abilities, interests and learning styles, it seems that teachers should use a differentiated instructional approach at each lesson. However, research findings on teachers' perception and practice of differentiated instruction showed that it is challenging for teachers to plan and implement differentiated instruction (Aftab, 2015). In addition, moving to a new teaching mode, which

is online teaching, may make it even more challenging for teachers to plan and implement differentiated instruction in an online learning environment. This may be due to adapting to a new learning environment, lack of IT skills of some teachers and stress caused by the pandemic. Therefore, to explore teachers' perceptions and practices of differentiated instruction would contribute to the improvement of teaching students that have different abilities, learning styles and interests and maximizing their potentials. In addition, most literature on differentiated instruction I managed to find were published in foreign countries. There seems to be a lack of research conducted in Kazakhstani context. Therefore, this topic is worth being explored in Kazakhstani context.

Purpose of the Study

The purpose of this study was to explore the middle school teachers' perceptions and practices of differentiated instruction at a school for gifted students.

Research Questions

The research questions this study aimed to answer were: 1) What are middle school teachers' perceptions of differentiated instruction under quarantine conditions? 2) What are middle school teachers' practices of differentiated instruction during the quarantine?

Definitions of Key Terms

There are two primary key terms used throughout this thesis. One of the key terms used in this thesis is '**differentiated instruction**'. Tomlinson (2013) defines 'differentiated instruction' as a teaching model that is aimed at maximizing each student's potential and guides teachers in meeting students' differences in areas, such as academic readiness, learning style, and interests.

'**Gifted students**' is another term that is frequently used in this study. The word 'gifted' is defined by Cambridge dictionary (n.d.) as an adjective that means "having special ability in a particular subject or activity". So, the term 'gifted students' in this thesis is

explained as learners who are successful in a particular subject and demonstrate exceptional academic performance.

Significance of the Study

Teachers of public schools and schools for gifted students in Kazakhstan and other countries, where differentiated instruction is being practiced, may benefit from the findings of this study as the work aims at helping teachers expand their understandings and reveal the practices of differentiated instruction under quarantine conditions. Since the school, where the research was conducted, identified the improvement of the use of differentiated instruction as one of the priorities of the school development, the school can benefit from the findings of this research. Likewise, other schools in Kazakhstan and in other countries, which identify the implementation of differentiated instruction as an important topic, could benefit from the findings of the study. The results may also be beneficial to other local and international researchers and practitioners interested in the contemporary topic.

Conclusion and Structure of the Thesis

This chapter introduced the topic chosen for the thesis, provided background study, illustrated research questions, and explained the statement of the problem, purpose and significance of the study, and definitions of key terms used in this paper. Given the significance of a differentiated instructional approach for all stakeholders and the complexity of its implementation in a classroom and in online teaching, the topic is worth being explored. The findings of the study may be beneficial for the school where the research was carried out and Kazakhstani teachers in general.

Overall, the thesis consists of six chapters, including introduction, literature review, methodology and analysis, findings, discussion and conclusion. A list of references and appendices were included at the end of the thesis. Chapter 1 introduced the topic chosen by detailing the research problem, purpose and significance of the study as well as research

questions. Chapter 2 provided the theoretical framework and the review of literature on teachers' perceptions and practices of differentiated instruction in a classroom and in online teaching. Chapter 3 detailed the research design, instruments used, site, population and sampling selection, data analysis process and ethical considerations. In chapter 4, the findings of data on teachers' perceptions and practices of differentiated instruction under quarantine conditions were presented. Chapter 5 compared and contrasted the findings of this study with the findings of other studies. In chapter 6, main points of the study were summarized, and recommendations for further studies for teachers, schools, and research were provided.

Chapter 2: Literature Review

Introduction

This chapter reviews the literature related to the theories on differentiated instruction, investigates teachers' perceptions of differentiated instruction and explores the ways of how teachers are implementing a differentiated instructional approach in the class and during distance learning. The purpose of the study was to explore middle school teachers' perceptions and practices of differentiated instruction under quarantine conditions. The two research questions addressed in the study are: 1) What are middle school teachers' perceptions of differentiated instruction under quarantine conditions? 2) What are middle school teachers' practices of differentiated instruction under quarantine conditions?

Theoretical Framework

This study was guided by the concept of Tomlinson's theory of differentiated instruction. Since differentiated instruction is closely related to Gardner's theory of Multiple Intelligences and Vygotsky's theory of the Zone of Proximal Development (ZPD), to set a theoretical framework of this study, these theories were reviewed as well. The goal of all these theories is the maximization of student learning potential in the classroom.

Even though western researchers give different definitions to the concept of differentiated instruction, all of them emphasize the importance of providing all students with the opportunity to maximize their potential and reach common goals. For instance, an expert in the field of differentiated instruction, Tomlinson, introduced the theory of differentiated instruction as an instructional approach that should be used to differentiate content, presentation and assessment in order to address the needs of every student in the classroom (Tomlinson, 2001). The researchers, such as Robinson, Maldonado and Whaley (2014), define differentiated instruction as a teaching approach that is employed to support all learners in achieving a common goal, no matter what way they use to succeed. Meanwhile,

Tomlinson and Eidson (2003) explain a differentiated instruction as a systematic approach to planning and teaching directed to learners with academically diverse needs.

According to Tomlinson and Strickland (2005), in order to increase the chance for students to learn as much as possible, teachers can differentiate five classroom elements, namely, content, process, products, affect and learning environment. The authors state that based on student needs, teachers can differentiate the content by specifying what their learners ought to know, understand and be able to do at the end of a lesson, unit or a year; differentiate process by choosing activities that encourage students to apply the existing knowledge and skills to understand an important idea; differentiate the product by giving individual student needs-based success criteria that are clear and challenging; differentiate affect through caring about student feelings and creating good weather in the classroom that makes every student feel they are important and belong to the group; and differentiate learning environment by creating a flexible learning environment involving students in the decision-making process.

Gardner's theory of Multiple Intelligences

Gardner's theory of Multiple Intelligences has been considered as an important aspect which must be considered to effectively differentiate instruction. Gardner identified eight kinds of intelligences that include verbal, musical, mathematical-logical, spatial, bodily-kinesthetic, interpersonal, intrapersonal and naturalist. Gardner assumes that the identified intelligences very seldom function independently, and they are used simultaneously complementing each other (Timmins, 1996). According to Gardner's theory, to respond to students' individual needs, first, teachers need to realize that students' learning styles differ, and then, they need to tailor their teaching strategies taking into consideration their students' needs (Nolen, 2003).

Timmins (1996) proposes that each child is born possessing all kinds of intelligences, but their intelligences develop differently. As a result, children come to school with their own

unique set of intellectual strengths and weaknesses. Therefore, Timmins (1996) suggests teachers to maximize student engagement by presenting material using maps, songs, organizing a role play and reading a novel related to the topic. This kind of presentation can lead to a deeper understanding of the subject material.

Vygotsky's theory of the Zone of Proximal Development

The theory of the Zone of Proximal Development was developed by the Russian psychologist, Lev Vygotsky, in the 1920s. According to Vygotsky, the ZPD describes a student's current level of development and the potential development level that can be reached under the guidance of a capable adult or with the help of peer's support (as cited in Shabani, Khatib, & Ebadi, 2010). Podolskij (2012) defined the ZPD as a gap between what a student already knows and what he or she can master being supported by others. The author assumes that the ZPD is the level that cannot be reached in the learner's individual work but can be achieved with the help of the collaborative activity. It means that a student is able to perform a certain number of tasks independently, but in collaboration with an adult or peers, he or she can perform a greater number of tasks.

The tasks assigned to a student should be neither too difficult nor too easy as learning takes place when a student's brain is challenged. Teachers need to identify what a student can do (zone of actual development), what he or she struggles to do and what he or she cannot do (Griffin, Rickards, & Francis, 2018). Using this information, teachers can plan a differentiated lesson and prepare multi-leveled materials and activities that are appropriate for student's readiness level.

To sum up, the theory of differentiated instruction is closely related to the theory of multiple intelligences and the theory of the Zone of Proximal Development as all these three theories aim at leading each student to success. While the theory of multiple intelligences aims at accommodating individual learning styles and needs and the theory of the Zone of Proximal Development implies consideration of students' readiness level, the theory of

differentiation encompasses students' learning styles, needs and readiness levels. I will use this theoretical framework in the rest of the thesis to discuss teachers' perceptions and practices of differentiated instruction. It will help me identify what I mean while talking about differentiation.

Teachers' Perceptions of Differentiated Instruction

Teachers are supposed to use a differentiated instructional approach to provide quality and rigorous education to each student considering the diversity of their academic background. However, it is becoming challenging due to the rapid changes that are taking place in the sphere of education. Due to the pandemic caused by COVID-19, students are being taught online. Given the complexity of employing a differentiated instructional approach in the classroom and the fact that it becomes even more complex while teaching distantly, it is important to explore teachers' understandings of what differentiated instruction is and how they implement differentiated instruction during distance learning. According to Tomlinson and Strickland (2005), effective implementation of differentiated instruction depends on teachers' understanding of who they teach and what they teach. If teachers increase their understanding of differentiated instruction, their audience and target teaching, they will be able to be flexible in how they teach. Langley (2015) emphasizes that teachers' understanding of what differentiated instruction is and awareness of the ways of how to effectively implement it in the classroom is important to all stakeholders. Moreover, Magableh and Abdullah (2020) say that teachers' commitment is needed to employ differentiated instruction, and the commitment comes with the positive attitude towards differentiated instruction. It can serve as one more reason why the exploration of teachers' view of this approach is necessary.

The case study held by Robinson, Maldonado and Whaley (2014) revealed that teachers understand differentiated instruction as something time-consuming but possible if they apply diligence in practicing different strategies. The research was conducted among

elementary, middle and high school teachers to investigate the perceptions of teachers regarding the successful implementation of differentiation. Nine European American teachers, selected according to a purposeful sampling, were interviewed. All the participants stated that each learner is different and different methods should be used to ensure all students' success. In addition, all the participants of the qualitative research held by Burkett (2013) emphasized that they value differentiated instruction and assume it as a necessary approach that should be used to address the needs of all students in the classroom. Moreover, the participants noted that it is a teacher's responsibility to use a differentiated instructional approach in every lesson. The majority of the participants felt that it is essential to use a differentiated instructional approach in the classroom which helps teachers in meeting the needs of each student. They also highly value the benefits of differentiated instruction that students get, including the opportunity to explore and improve their learning, as well as support learners who are struggling.

According to the findings of another qualitative case study held by Prince (2011), teachers believe differentiated instruction assists in meeting the learning needs of every student in the classroom, and they indicated grouping as a necessary part of differentiated instruction. The research was conducted in one suburban middle school in South Carolina. The study involved four teachers selected by purposeful sampling. Teachers expressed positive attitudes towards identifying students' readiness levels to apply an appropriate teaching approach, and they also stated that they believe a variety of lesson ideas should be implemented to teach different types of students.

One more aspect to discuss is factors that made teachers passionate about employing a differentiated instructional approach in their classrooms. Some teachers indicated personal reasons for why they differentiate instruction in their classrooms such as having their own children struggling with their education (Robinson, Maldonado & Whaley, 2014). Others

stated that having negative and positive schooling experiences made them understand why differentiated instruction is needed (Burkett, 2013). Some teachers believe in the importance of employing a differentiated instructional approach due to the hands-on experiences with their colleagues (Maddox, 2015). However, Nicolae (2014) states that many teachers expressed concerns about the effectiveness of carrying out differentiated instruction because of the barriers such as time constraints, lack of resources, classroom size, increasing demands and low payment. Moreover, Smit and Humpert (2012) note that teachers view student diversity as a problem and view planning the lesson that involves differentiation as a time-consuming process. Thus, teachers' attitude towards student diversity and the need of differentiation seem to influence the effectiveness of planning and implementing differentiated instruction.

Even though research findings show that teachers understand the theory of differentiated instruction and its importance, several research findings revealed that teachers do not have a comprehensive understanding of a differentiated instructional approach and as a result, they do not differentiate in the classroom. For instance, Moon, Tomlinson and Callahan concluded that half of the middle school teachers did not use a differentiated instructional approach as they lacked the knowledge of how to differentiate in the classroom (as cited in Santangelo & Tomlinson, 2012). In addition, research conducted by Ordover (2012) indicated that many teachers have limited knowledge of the principles and practices of differentiation in the classroom and some teachers think that strategies such as "Research Tree" or "Six thinking hats" are the types of differentiated instruction (Bekeyeva, 2019). So, there is still a limited practice and knowledge of types of differentiated instruction among some teachers.

After reviewing empirical studies, it seemed to be a good idea to review the secondary research done by Brighton's and Hertberg's (2004) in order to see a broader picture of

teachers' perceptions of differentiated instruction. The findings of the literature review revealed a shallow understanding of differentiated instruction among many teachers. They noted that many teachers misunderstand the philosophy of differentiated instruction as well as teaching and assessment practices associated with differentiation. The researchers also indicated that some of the respondents believe they are addressing all diverse learners by using a few differentiating strategies.

As for the teachers' perceptions of differentiated instruction under distance learning conditions, there appears to be little research on this topic. Beasley and Beck (2017) conducted research with 118 teachers from two cyber schools in the USA in order to explore the ways online teachers use to address diverse needs of students. According to the findings, online teachers define differentiation from two angles: why differentiation is important for a learner and what needs to be differentiated (Beaseley & Beck, 2017, 550). The participants noted that differentiation is needed because students have varying abilities and different learning styles. The researchers concluded that there is not much difference between how online teachers define differentiation and how face-to-face teachers perceive differentiation.

To sum up, it appears there is a lack of research conducted on teachers' perceptions and practices of differentiated instruction under online teaching conditions. However, a large body of literature was done on teachers' perceptions and practices of differentiated instruction in face-to-face teaching. It can be concluded that teachers find the use of differentiated instruction helpful in improving students' potential, but some teachers still have a shallow understanding of this approach. Besides, some teachers find the process of planning differentiation time-consuming, and see student diversity as a problem.

It appeared that Western researchers wrote most of the literature reviewed in this chapter, and the findings can be generalized to Western countries' context. However, regarding the Kazakhstani context, this chapter reviewed the findings of two theses, but both

were carried out at the schools for gifted students. Thus, the findings cannot be generalized to public schools.

Practice of Differentiated Instruction

Despite teachers said they understand what differentiated instruction is and why it is important to employ this teaching approach in the classroom, there is no consistent practice of differentiated instruction in today's classrooms (Pham, 2012; Tomlinson, 2005). Tomlinson et al. (2003) state that even though teachers are aware of student diversity in their classroom and understand the importance of employing differentiated instruction, they are not practicing it. In addition, the results of the quantitative research held by Aftab (2015), involving 120 middle school teachers in Karachi, showed that all stakeholders wanted their teachers to apply different strategies in the classroom, but teachers appeared not to have enough planning and enough time to implement differentiated instruction.

Another quantitative study was conducted by Ismajli & Imami-Morina (2018) with 200 students, 30 teachers, and 30 parents in Prishtina, the capital of Kosovo. The research results indicated that understanding and implementation of differentiated instruction seems to not be at the desired level despite the fact that 70% of the participants said they differentiate the key classroom elements including interests, assessment, planning, content, process and product, in comparison 20% of the respondents indicated that they often implement differentiated instruction and 10% stated that they sometimes apply differentiated instruction in their classrooms.

The results of several research studies showed that teachers use different strategies to differentiate instruction in their classrooms. For example, Aliyeva's (2018) qualitative case study findings revealed that differentiation of content appeared to be one of the most applied ways of differentiating, whereas differentiation of product is a strategy that is not commonly used. The research participants, who teach Language Arts, Sciences, and Social Studies at a school for gifted students in Kazakhstan, assumed that an effective way of differentiating

process is using group and pair work. Meanwhile, based on the findings of the research conducted with 141 teacher-participants in southeast Georgia, Logan (2011) noted that teachers said they try to modify essential components of differentiated instruction, namely, content, products and process. Additionally, qualitative research conducted with ten certified teachers (Morrison-Thomas, 2016) showed that many teachers use grouping to differentiate classroom environment and it was mentioned that groupings were based on student learning levels assigning the same level students to one group or assigning mixed-ability students to one group. Some teachers group their students according to the assessment results (Robinson, Maldonado & Whaley, 2014). Grouping students was also recognized by the participants of the research held by Maddox (2015) as a common strategy that is employed to differentiate instruction in the classroom. Moreover, the research findings revealed that all teachers who participated in the research use technology to differentiate instruction while some teachers view scaffolding as an approach that is used to differentiate teaching. However, most teachers do not use a differentiated instructional approach to assess student learning (Morrison-Thomas, 2016).

Tiered assignments are often used to differentiate instruction (Bekeyeva, 2019). Stewart (2016) defines tiered assignments as a strategy used to differentiate instruction where students are given the same goals, the same content but different process and product that considers the student's learning readiness. Teachers use texts that are based on student's learning abilities, graphic organizers, and tiered assignments to differentiate instruction (Stewart, 2016; Bekeyeva, 2019).

Regarding the implementation of differentiated instruction, a number of studies conducted revealed that there is a discrepancy between what teachers say and do. For instance, Maddox (2015) conducted qualitative research with 12 participants, who were interviewed individually and in groups, to explore elementary teachers' perceptions of

differentiated instruction. It should be mentioned that the participants of the research conducted seemed to struggle when they were asked to show a lesson where differentiation was implemented. It means that they were not able to discuss a concrete instance of a differentiated lesson because of the lack of professional experience and skills. Meanwhile, Bekeyeva (2019), who carried out a qualitative study in an intellectual school in south Kazakhstan aimed at exploring teachers' perceptions and practices of differentiated instruction, states that there were cases when teachers said they do not know how to use differentiating strategies in their lessons, however lesson observations showed that they were using good examples of differentiation. In contrast to it, some teachers claim they are experts in differentiated instruction, but lesson observations revealed opposite results. Moreover, some teachers admit that differentiated instruction is not always used in their classrooms, and some teachers even do not think about differentiating strategies while planning their lessons (Bekeyeva, 2019).

Related research study regarding the implementation of differentiated instruction showed that teachers have positive attitudes towards implementing differentiated instruction and are willing to use differentiating strategies in their classrooms (Aftab, 2015). However, Maddox (2015) stated that even though teachers were aware of the theoretical description of what differentiated instruction is and agreed with Tomlinson in terms of why differentiated instruction is important, they still struggled with its implementation in the classroom. Majority of teachers assumed that they were employing differentiation strategies, but in fact, they were not using them.

Similarly, the literature review conducted by Nicolae (2014) showed that even though many teachers are open to use a differentiated instructional approach and realize the importance of considering the ways of teaching that fit students learning needs best, they are not skilled enough and have concerns about the effectiveness of differentiation because of the

barriers they encounter. The findings of Nicolae's (2014) research were related to teachers who teach offline. Since there is a lack of literature that explore online teachers' perceptions and practices of differentiated instruction, I could find only two articles and a book chapter on this topic. One of them is the research conducted by Beasley and Beck (2017) which showed most of online teachers stated that they differentiate content, product and process, however, only few of them use assessment data to plan and implement differentiation.

To sum up, according to literature reviewed, many teachers understand the importance of differentiated instruction, but there are reasons, such as a lack of professional skills and experience, challenges encountered, hinder the implementation of differentiated instruction at their lessons.

Conclusion

In conclusion, using a differentiated instructional approach in the classroom provides diverse learners with the opportunity to achieve set objectives, maximize their potential and lead to success. It is worth noting that according to some research findings, there is a discrepancy between what teachers say about differentiated instruction and how they implement it in the classroom because lesson observations showed that those teachers who claimed to be experts of differentiated instruction did not use any differentiated strategies in the classroom. Moreover, online teachers' perceptions of differentiation appear to be not much different from face-to-face classroom teachers' perceptions. In addition, there is a lack of literature related to the topic of perceptions and practices of differentiated instruction under quarantine conditions, therefore the findings of this study will help fill the gap.

The next chapter details methodology of the research, present research site, participants, instruments used in the study and ethical considerations.

Chapter 3: Methodology and Analysis

Introduction

The purpose of this qualitative case study is to explore middle school teachers' perceptions and practices of differentiated instruction at one of the schools for gifted students in the Eastern Kazakhstan Region. The research questions this study seeks to answer are the following: 1) What are middle school teachers' perceptions of differentiated instruction under quarantine conditions? 2) What are middle school teachers' practices of differentiated instruction during the quarantine? To find answers to the research questions, I interviewed the participants, who were selected based on purposeful sampling, and observed their lessons.

This chapter presents information about the research design which is a plan for conducting research, site, participants and sampling selection, data collection, research instruments, data analysis procedures and ethical considerations.

Research Design and Methodology

A qualitative research design was chosen to conduct this study because the purpose of the current study is to explore understandings and practices of individuals, an approach commonly used in qualitative research (Leavy, 2017). According to Leavy (2017), qualitative approaches to research are most commonly used in exploratory research and provide the researcher with the opportunity to get a deeper understanding of an explored topic by prioritizing people's subjective understandings and making meanings out of their experiences. Besides, Merriam and Tisdell (2016) state that researchers employ a qualitative research approach when they want to explore how individuals view their experiences, the way they build their worlds, and what meaning they construct out of their experiences. Another expert in the field of qualitative research Bhattacharya (2017) notes that the purpose

of a qualitative researcher is "to work within the context of human experiences and the ways in which meaning is made out of those experiences" (p.6).

As for the methodological approach, a qualitative case study was used to address the aforementioned research questions. According to Yin (2012), the case study method is mostly applied when the research questions are descriptive or exploratory and when a researcher is exploring a phenomenon within its natural settings. Since the current research aims to explore teachers' perceptions and practices of differentiated instructional approach within the real-world context, a qualitative case study approach appeared to be the most suitable approach for this study. The case study involved the middle school teachers of the chosen site. The role of differentiation is major in middle school because middle school students' diversity is apparent (Logan, 2011). Therefore, middle school teachers' perceptions and practices of differentiated instruction are significant.

Site, Participants and Sampling Selection

The site is selected in accordance with the convenience sampling method. According to Hesse-Biber and Leavy, when a researcher selects participants that are easy to access, then he/she uses convenience sampling (as cited in Leavy, 2017). Moreover, Mujis (2011) states that the most frequently used sampling method in educational research is convenience sampling. The author explains that this type of sampling method is commonly employed in educational research because using the teachers and learners who the researcher has worked with before and having easy access to the site are convenient and cost-effective for the researcher. Thus, I decided to use convenience sampling in this study.

I chose one of the schools for gifted students in Eastern Kazakhstan region as a setting for the study. The reason why I selected this school is the fact that I am working as a teacher at the school, acquainted to the school administrators and teachers, so it is convenient for me to conduct the study at the chosen educational organization. In addition, the school

administrators determined the implementation of differentiated instruction as one of the priorities for school development.

As for the selection of participants, the purposeful sampling method was used. According to Etikan, Musa and Alkassim (2016), the purposeful sampling method is used when the researcher selects participants based on research purpose and expects each participant to provide valuable contribution to the study. The participants were selected on the following criteria: 1) having at least three years of experience of employing differentiated instruction; 2) being ready to demonstrate their practices; 3) teaching in middle school. Middle school includes grades from seven to ten and students of approximately 12 to 15 years old.

All the teachers of the chosen school are expected by the school administration to implement differentiated instruction in their classrooms, however, I selected five teachers who are teaching in middle school. The reason why I selected middle school teachers is that the chosen school admits seventh grade students from different state schools. Thus, middle school students have diverse academic abilities and needs. It is crucial to effectively implement differentiated instruction in middle school as it helps to maximize each student's potential and level up their academic abilities and needs by the time they get to high school. In addition, Logan (2011) states that effective implementation of differentiated instruction in middle school is important because student differences are more overt during this period. Therefore, given the importance of effective implementation of differentiated instruction, I decided to involve middle school teachers in this study.

Research Instruments

Two methods of data collection were used: semi-structured online individual interviews and online classroom observations. Due to the pandemic, the school moved to online teaching format in March 2020. Since that time all the lessons were taught online and

the length of a lesson reduced from 40 minutes to 20 minutes. Nobody was allowed to come to the school building in the online format. Therefore, I interviewed the participants and observed the lessons via their school online system, the TEAMS platform online.

Donalek (2005) define a qualitative research interview as a "shared journey" stating that the outcome of the interview is not just the respondent's interpretation of his/her past experience, but a co-created meaning assigned to the experience as a result of interaction of researcher and participant (p. 124). The researcher also indicates that the most frequently used method in qualitative data collection is the interview. Since the current research explores individuals' perceptions and practices, interviewing seems to be one of the best data collection methods that allows the researcher to hear the voice of each participant, to listen to their experiences and stories.

Semi-structured online interviews were carried out to find answers to the research questions. The participants were asked a series of open-ended questions relating to different parts of the research topic. The questions were clearly articulated and brief. Each interview was audiotaped to ensure accuracy and lasted 30-40 minutes. Face-to-face interviews were not possible because of the quarantine, so the interviews were held online via the TEAMS platform and audiotaped on my personal cell phone to enhance confidentiality.

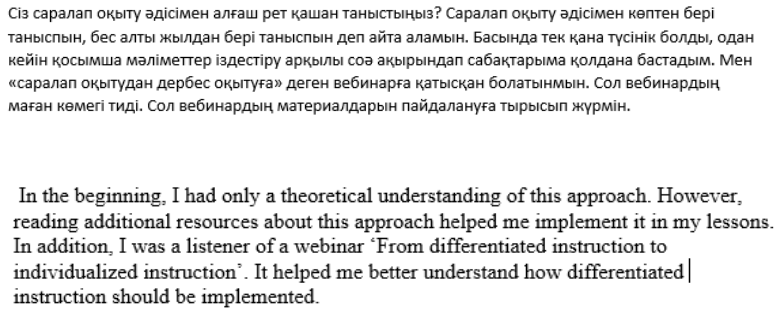
After interviewing, the participants selected a lesson to demonstrate their practice. The participants were allowed to choose a lesson for observation in order to let them share their experience as openly as possible, be prepared and not surprised. By observing the lessons, I was able to see teacher's examples of implementation of differentiated instruction under quarantine conditions. Observations allow a researcher to notice the things that may lead to deeper understanding of the situation (Merriam & Tisdell, 2016). The classroom observations were carried out after interviewing. I observed the lessons online via the

TEAMS platform and used an observational protocol. Each lesson observation lasted 20 minutes because this is the length of lesson that is taught in the online mode.

Data Analysis Procedures

This research followed general phases of data analysis and interpretation process suggested by Leavy (2017) such as data preparation and organization, initial immersion, coding, categorizing and theming and interpretation. The data was prepared for data analysis by making the transcription of interview recordings and reviewing the lesson observation protocols. Since the interviews were held in the languages that were convenient for the participants, the transcriptions were also made in the Kazakh and Russian languages. The quotes of the participants, which were included in Chapter 4, were translated into the English language. The instance of translation is illustrated in the picture below.

Figure 1. An example of translating quotes into the English language.

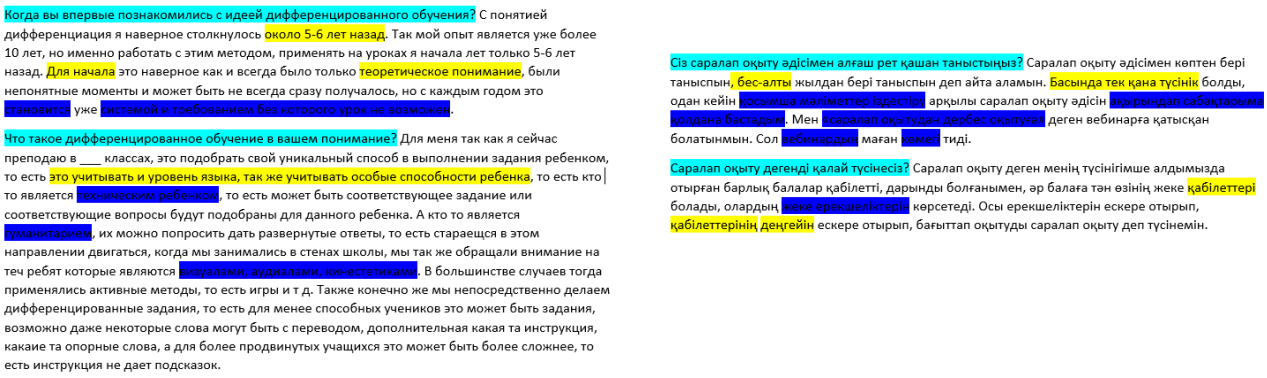


Then an initial immersion strategy was used by reading, looking at and thinking about the data which allowed me to 'feel' the pulse of the data as Saldaña explains, to develop ideas by taking brief notes about thoughts and ideas (as cited by Leavy, 2017). An initial immersion helped me reduce the data by choosing the data that would best help address the research goal and find the answers to research questions.

The next step was a coding process which helped classify and reduce the data collected. In Vivo coding strategy was used as it maintains the participants' language. After the coding process, the codes were grouped in similar codes. While studying codes and

categories, I was engaged in a process of grouping the data based on the two research questions. As a result, the findings were divided into two big groups, such as perceptions of differentiated instruction and practices of differentiated instruction, and each group was divided into subgroups. The subgroups were identified based on similar codes. The coding process can be observed in the following image. The interview questions were coloured in turquoise; similar answers in yellow; unique answers in blue.

Figure 2. An example of identifying similar and unique answers.



As can be seen from the coding process, participants' own words were highlighted so that they could be used during the analytic process. The similar answers were grouped and given a theme, while the unique answers were also analyzed and included in the findings chapter.

Ethical Considerations

The research was conducted in accordance with ethical principles and standards that are described by Leavy (2017). I submitted a proposal for a qualitative case study to the Ethics Committee of Nazarbayev University Graduate School of Education. After the case study was approved by the committee, I communicated to the school director to get permission to conduct research in the school premises. When the permission was gained, middle school teachers received an email from me in which I invited them to take part in the research. The criteria for selecting participants, research procedure and the nature of the study

was clearly outlined in the email. I selected those participants who expressed a desire to contribute to the research and responded to the invitation by sending an email to me.

When I received emails from the participants who agreed to participate, I circulated a letter of informed consent and sent the consent form via email. Informed consent includes the information about risks and benefits of participation, the participants' rights, confidentiality and the participants' rights to skip questions. All the five participants printed the informed consent form that was sent to their email addresses, read and signed it. After signing the informed consent form, they took a photo of it and emailed it back to me.

The information provided by the participants is kept confidential. The participants' names were replaced with pseudonyms and the subjects they teach were generalized (e.g. Humanities and Science) to provide more confidentiality; those teachers who agreed to participate received informed consent through their private email or cell phone, depending on their preference; the answers to the interview questions as well as the research data, audio and written transcripts and lesson observation protocols are kept in my private laptop protected by password. All electronic and paper data will be destroyed after one year.

There are minimal risks associated with this study. The participants might feel mild psychological discomfort in thinking about challenging times during quarantine and the efforts they have made to be successful regarding differentiated learning. To minimize the impact of the risk, the participants were given the opportunity to skip any question and stop participation at any time without repercussion. The participants were explained that their decision whether or not to participate in this study would not affect their employment or professional status in school. Since we used the online platform for interviewing it is also possible they could have been overheard by someone, which was explained to them in advance. To reduce this risk, it was told to the participants that if someone happens to enter

the room for the participant and the researcher, the interview can be stopped and then started again when the participant is comfortable.

The expected benefits associated with participation were explained to the participants of the study as such: opportunities to share and reflect practices of employing differentiated instruction. Moreover, the individual teachers, who participated in the research, got a chance to be heard, share their experience and reflect practices of employing differentiated instruction under quarantine conditions. All teachers of the chosen school and teachers of other schools in Kazakhstan and other countries, who are practicing differentiated instruction, can benefit from the findings of the study as it revealed the practices of differentiated instruction under quarantine conditions. Since the school identified the improvement of the use of differentiated instruction as one of the priorities of school development, the school will also benefit from the findings of this research. Those schools in Kazakhstan and other countries which are interested in this approach may benefit from the research as well.

Finally, the results may also be beneficial to other researchers and practitioners interested in the contemporary topic of perceptions and practices of differentiated instruction for local or international audiences including teachers and school administrators.

Conclusion

To explore teachers' perceptions and practices of differentiated instruction, a qualitative case study was conducted at one of the schools for gifted students in the Eastern Kazakhstan region. The site was selected in accordance of convenience sampling whereas the participants were chosen using the purposeful sampling. In order to collect data, two different methods were incorporated: interviewing and lessons observations. The data collected was analyzed according to the steps suggested by Leavy (2017). This chapter discussed ethical considerations and benefits of the research.

In the following chapter, I will present the findings of the current study grouping them according to the research questions.

Chapter 4: Findings of the Study

This chapter presents the findings of the research on teachers' perceptions and practices of differentiated instruction under quarantine conditions in one of the schools for gifted students in Eastern Kazakhstan.

The findings were interpreted and analysed based on two research questions: 1) What are middle school teachers' perceptions of differentiated instruction under quarantine conditions? and 2) What are middle school teachers' practices of differentiated instruction during the quarantine?

The findings are divided in this chapter by each of the questions, focusing on teachers' perceptions and teachers' practices of differentiated instruction. Each question was divided into themes as identified while analysing the data collected.

To promote confidentiality, the participants' names were replaced by pseudonyms. The following table illustrates the pseudonyms and subjects that the participants teach:

Table 1. Participants' Pseudonyms and Subjects They Teach.

#	Pseudonym	Subject
1	Adel	Humanities
2	Ayaulym	Science
3	Balzhan	Humanities
4	Timur	Science
5	Togzhan	Humanities

In the school where the research was conducted, Humanities include such subjects as Kazakh language, Russian language, English language, Literature. Sciences include various subjects such as Physics, Biology, Chemistry, Geography.

Teachers' Perceptions of Differentiated Instruction

In this section, I describe teachers' perceptions of differentiated instruction in general and how their perceptions changed due to COVID-19. As such, this section answers the first primary question for this thesis. The interviews were coded by hand following the *In vivo* coding strategy. This strategy was chosen because it is used by many qualitative researchers, and it does not limit the focus and allows to maintain the respondents' language (Leavy, 2017). From the data analysis, I found three themes. These are: 1) Meeting students where they are, 2) Benefits of differentiated instruction for students, and 3) Quarantine broadens understandings of differentiated instruction. Broadly, the data collected revealed that teachers value differentiated instruction and consider the approach beneficial for all students. However, teachers' understandings of differentiated instruction vary. Therefore, this category was divided into several themes to describe the findings from the interview.

Meeting Students Where They Are

Overall, the data analysis indicates that teachers believe that differentiated instruction is used to meet students' needs and to maximize their potential, and that they understand differentiated instruction as using tiered assignments, providing support as well as a choice of performing a task based on their interests. This section describes teachers' perceptions of what differentiated instruction is and what teachers understand by student needs.

The interviews have shown that some teachers see differentiated instruction as an approach used to meet students' academic needs, while others believe that it can be used to suit students' learning styles and interests. For instance, Adel believes that the main focus of using differentiated instruction should be directed to meeting students' needs in terms of learning styles:

> I think that differentiated instruction ought to be used at every lesson, and students' learning styles should be taken into account while preparing the materials for a lesson. For instance, we know that students absorb information differently. Some students are

> visuals, while others are auditory learners. These three types of perceptions should be taken into account.

As we can see from Adel's explanation, she saw how differentiated instruction could be integrated from before teaching (preparation) through implementing lessons, and how important students' learning styles are in learning. In the next example, seeing differentiated instruction a bit differently, Ayaulym argues that while employing differentiated instruction, the main focus should be students' academic readiness, "In my opinion, differentiated instruction is an approach that is used to meet each students' needs in terms of their capability, their level of learning abilities." Ayaulym's words show that she considers differentiated instruction as providing multileveled assignments that challenge each student in a class. Interestingly, two more teachers interviewed indicated students' academic readiness as the main focus in preparing a lesson where differentiated instruction is used.

However, it is worth noting that one participant thinks that both needs, namely learning styles and academic needs, need to be considered while planning and conducting a lesson. For example, Balzhan explains it as follows:

> For me, differentiated instruction is selecting materials and tasks that not only meet students' levels of English language but also meet students' types of perception. For example, some students, who are good at humanities, should be given open-ended questions which allow to fully use their ability and give a detailed answer. Others, who are good at technical subjects, should be given multiple-choice questions.

From this quote it is seen that she believes students' learning styles are of an equal importance as their academic readiness levels, and that differentiated instruction is a valuable approach in meeting both these needs.

To better understand teachers' perceptions of differentiated instruction, it is useful to know how long they have been using the approach in practice. The majority of teachers interviewed say that they were introduced to differentiated instructional approach multiple years ago. Interestingly, two of the respondents highlighted that despite being introduced to

the approach, they had only a theoretical understanding of it and started to implement it more recently. For example, Ayaulym explained how she moved from a theoretical understanding to practical implementation in this way:

> In the beginning, I had only a theoretical understanding of this approach. However, reading additional resources about this approach helped me implement it in my lessons. In addition, I was a listener of a webinar 'From differentiated instruction to individualized instruction'. It helped me better understand how differentiated instruction should be implemented.

This quote shows that teachers are studying various resources to better understand how a differentiated instructional approach is used. Similarly, two Humanities teachers mentioned professional development for learning more about differentiated instruction. They say that online resources helped them broaden their understanding of differentiated instruction, and to share their knowledge and experience with public school teachers, they even conducted a workshop on 'How to implement differentiated instruction while teaching online'.

Benefits of Differentiated Instruction for Students

This section describes teachers' understandings of the benefits of differentiated instruction for students, such as teachers' perceptions of student needs, their understandings of benefits of the differentiated instruction for students also vary. The majority of respondents emphasise that their less able students can benefit from differentiated instruction more as the approach allows teachers to see their students' academic readiness levels, and preparing tiered assignments, providing support as well as scaffolding assist less able students achieve learning objectives. When teachers referred to 'less able' students they were indicating those students who may struggle academically. While the vast majority of participants noted the importance of differentiated instruction for less able students, only two of the participants highlight the effectiveness of a differentiated instructional approach in maximising the potential of more-able students. For instance, Timur explains it as follows:

> Since the subjects such as Geography and History of Kazakhstan are taught in the Kazakh language in all classes, differentiated instruction helps students, who are struggling with speaking the Kazakh language, to learn the language more quickly. Moreover, more-able students can benefit as well because they are given higher-order questions that allow them to improve their critical thinking skills.

From these words, it can be concluded that there are teachers who believe differentiated instruction helps not only less able students, such as those who are low attaining to achieve learning objectives, but also helps gifted students to improve their potential. On the contrary, one of the participants noted the benefits of differentiated instruction in motivating students by providing different tasks based on students' interests. Togzhan explains it as the following:

> At my lessons, I try to give students the opportunity to choose the type of assignment they are interested in, for example, I offer several writing tasks. If we look at the second term, my students were given four different types of writing assignment: writing a summary of the story read, writing a review of the story, writing an essay where the two stories are compared, writing a story from the point of view of one of the characters and writing a poem about the story read. The students chose the one that they found interesting. It motivated them to complete the task successfully.

This quote shows that some teachers consider meeting students' interests is a key to raising their motivation which results in successful achievement of learning objectives by all students.

To sum up, the findings of this section revealed that teachers value differentiated instruction and understand the importance of it for maximising their students' potential and motivation in particular for those who are less able and also more capable students. All the teachers interviewed mentioned one or two types of differentiation.

Quarantine Broadens Understandings of Differentiated Instruction

In this section I describe how online teaching influences teachers' understandings of differentiated instruction. The majority of the respondents say that distance learning changed their perception of differentiated instruction. Many of them explained that due to teaching students online, they started to pay more attention to differentiated instruction because they

did not have the opportunity to support less able students while teaching distantly. For instance, Ayaulym explains it as:

> I am not sure if this is due to distance learning or due to the increasing demand of a modern education, but I noticed that I am currently paying more attention to differentiated instruction in comparison to the period when we taught at school. When I make a lesson plan, I try to write the type of differentiated instruction next to each activity. For example, I write differentiation by support or differentiation by multileveled tasks and so on. I believe I am currently broadening and deepening my understanding of this approach.

Ayaulym's words indicate that due to online teaching she started to consider differentiated instruction as an important and necessary approach that helps her conduct online lessons effectively. Moreover, all the participants explained that in order to find the ways of effective implementation of differentiated instruction under quarantine conditions, they are studying different resources. For example, two respondents said they have found online tools that can be employed at the lessons in order to implement differentiated instruction, and even delivered a workshop for public school teachers. These two participants noted that online teaching allowed them to broaden their understanding of differentiated instruction and opened new ways of implementing the approach at a lesson. For instance, Balzhan explained it as following:

> When we realised that we were struggling to differentiate instruction under quarantine conditions, we started to search for online platforms that could be helpful for us. So, we found several of them including Whiteboard.fi, Quizziz, Learnis and so on. We tried those platforms at our lessons and were happy with the results. Then we decided to share our experience with our colleagues and conducted the training for public school teachers.

Balzhan's quote shows that teachers did not stop to differentiate instruction because of experiencing a new teaching format, but continued to work on searching new ways of implementing differentiated instruction under quarantine conditions. They even were ready to disseminate their experience to help other teachers.

From the five interviews, one of the participants said that her understanding of differentiated instruction has not changed. The teacher shared that she pays the same amount of attention to differentiated instruction as she used to do while teaching offline in person.

Overall, teachers understand the importance of differentiated instruction in improving each student's performance, and they try to meet different student needs including academic needs, learning styles and interests. All the teachers interviewed consider differentiated instruction beneficial for their students, even though their views vary in terms of benefits of this approach. As for the changes in perceptions of differentiated instruction, teachers said that the challenges of teaching under quarantine conditions led them to discovering the platforms that can be used to differentiate instruction while teaching online.

Teachers' Practices of Differentiated Instruction

This section illustrates challenges teachers encounter in implementing differentiated instruction as well as tools they use in their lessons to differentiate instruction. As such, this section answers the second research question for this thesis: What are middle teachers' practices of differentiated instruction under quarantine conditions?

The data analysis revealed that teachers interviewed implement differentiated instruction in their lessons using various tools, and most importantly, they noted that in general, online teaching opened new opportunities for the effective implementation of differentiated instruction. They all stated that they value differentiated instruction and explained that they understand the importance of it for students. Depending on the person and subject, the frequency of the use of differentiated instruction varies as a result of challenges teachers face in differentiating instruction while teaching online. Therefore, to explain the variances, this category was divided into two subcategories: challenges faced in differentiating instruction under quarantine conditions, and instruments used to implement differentiated instruction under quarantine conditions.

Challenges Faced in Differentiating Instruction Under Quarantine Conditions

It is worth noting that three participants out of five said they try to regularly implement differentiated instruction in their lessons, but the frequency depends on the topic taught at the lesson. A Humanities teacher believed that it is challenging to differentiate instruction when new material is presented or when students perform a writing assignment, whereas Science teachers said that when a new topic is explained, they struggle to differentiate instruction. For instance, Timur details it as following:

> I would say I use differentiated instruction not at every lesson, but only when it is needed. Even though I try to take into account my students' learning styles while preparing for lessons, it is sometimes problematic to implement it at a single lesson when new material is explained.

According to Timur, it is sometimes hard to differentiate instruction when new material is delivered. It shows that even though some teachers understand the importance of differentiated instruction and value it, they find it difficult to implement it at every lesson. When Timur's lesson was observed, Timur implemented differentiated instruction by giving several lower-order and higher-order thinking questions to all students and one more question for those students who wanted to get a bonus score. This type of activity encouraged more-able students to feel challenged and to develop critical thinking skills. However, depending on the student's language level in Kazakh, some students struggled to answer the questions. From the observations it appeared that those students who could not express their thoughts and were silent, and seemed to expect more support and scaffolding. Besides, the participant thinks that sending the learning materials and videos before the lesson is also one of the ways of implementing differentiated instruction. He used thoughtful and purposeful sharing of learning materials and video before the lessons as a means for implementing differentiated instruction. However, as demonstrated in one lesson observed, it appeared some students still struggled. No definitive results can be drawn from this one instance, but it suggests that additional support could be provided for some of the students who continued to

struggle. It indicates that using tiered assignments only is not enough for students whose academic readiness level is low.

Similarly, Adel thinks that at some lessons to differentiate instruction is a challenge or perhaps not required:

> Mmm, I do not remember an exact lesson when I did not use differentiated instruction, but I can say that it sometimes happens. I guess differentiated instruction is not implemented when students do a writing task or a reading task because all the students are given the same task, the same amount of time, and the same assessment criteria are used to assess their work.

Adel's words illustrate that when students perform tasks independently under the same structured framework, differentiated instruction may not be needed. Moreover, three participants emphasise that it is sometimes impossible to implement differentiated instruction in a single lesson due to time constraints. They explain it by having twice less time while teaching online because the time of an online lesson is 20 minutes, whereas it used to be 40 minutes when the lessons were taught offline. Due to these factors, the implementation of differentiated instruction at every lesson is considered to not be possible for many teachers in this study.

In contrast to the above-mentioned answers, the other two teachers say they try to implement differentiated instruction in every lesson. Balzhan states:

> The element of differentiated instruction is used even at the lessons where new vocabulary is presented. While preparing materials for vocabulary presentation, I try to consider students' learning styles. For instance, to introduce a word, I show a sentence where the word is used. If nobody can guess the meaning from the context, I show a picture related to the word, and only after it I show the definition of the word. Then students make their own sentences using a newly introduced word. By doing this, I think I meet students' learning styles.

It shows that some teachers differentiate instruction even when they present new material. It should be noted that despite most teachers state they sometimes do not use differentiated instruction, the lessons observed showed that elements of differentiated

instructional approach are present at their lessons. For instance, while I was observing a Science lesson, a teacher used multileveled questions and wrote the names of students next to each question. It appeared that the teacher took into account students' academic readiness levels while preparing the task because she wrote a student's name next to each question depending on difficulty level of the question, and as a result, all the students managed to answer the given questions. Another example of the use of differentiated instruction is a Humanities lesson where less-able students were supported by the provision of expressions that could be used to answer the questions.

To conclude, the teachers interviewed stated that they try to implement differentiated instruction with some aiming to implement at every lesson. However, they face difficulties in differentiating instruction when presenting new topic or when students complete the assignments independently under the same structured framework. In addition, most of the teachers find it difficult to effectively differentiate instruction in a single lesson which lasts only 20 minutes. Despite these challenges, teachers attempt to plan and implement this approach regularly.

Instruments Used to Implement Differentiated Instruction under Quarantine Conditions

This section describes tools teachers use to differentiate instruction under quarantine conditions. Most of the participants say they use online platforms and applications, such as channels in TEAMS platform for group work, Quizizz, Learnis, Wordwall, Live Worksheets, and Whiteboard.fi at their lessons to implement differentiated instruction efficiently.

The above-mentioned platforms and applications function differently. The common feature for all these applications is that they allow teachers to immediately see their students' work and students can compete with each other. For instance, Quizizz is an online application that allows teachers to observe their students work online. Students compete with each other in terms of the best time spent on answering the questions or the best result shown. Another

learning platform used by teachers is Learnis. It allows teachers to motivate students as tasks are given in a game format. With the Wordwall platform, teachers have an opportunity to quickly create tasks in different formats such as matching up, crossword, quiz, random cards and so on. This online platform allows teachers to meet students' interests by providing the same task in several versions, and students can choose what activity they want to complete. Liveworksheets platform can be used to create multileveled tasks. Teachers can see the results of their students and write feedback on a student's work.

Most of the respondents believe the mentioned online platforms are effective tools for differentiating instruction while teaching distantly. For instance, Balzhan details the benefits of these platforms as the following:

> We implement differentiated instruction by using different online applications. With the help of them, it is possible to see the work of each student, to give different level tasks. Whiteboard allows a teacher to observe each student's work, and if a student struggles to complete the given task, a teacher can support that student by providing keywords, expressions or clues. So, by observing each students' working process, a teacher can see who needs help and support that student.

This quote shows that Whiteboard can be used to effectively implement differentiated instruction by providing support to students who struggle to perform tasks given. The benefits of online platforms in implementing differentiated instruction under quarantine conditions are explained by Togzhan as the following:

> Online applications help teachers see what questions students struggled to answer and teacher can discuss those questions once the given task is completed. Live worksheets provide a teacher with the opportunity to create multileveled tasks. The time given to perform tasks can also be differentiated as less able students can be given more time to do a task.

These quotes indicate that despite the challenges of online teaching, teachers were able to find tools that can be used to differentiate instruction under quarantine conditions.

In conclusion, the data analysis shows that all teachers value differentiated instruction, some of them also struggle to implement it in some lessons. The effectiveness of

differentiating instruction seems to depend on a topic of a lesson and the length of a lesson. In addition, most teachers find it helpful to differentiate instruction by providing multileveled assignments, and to give tiered assignments while teaching online, they use different online platforms.

Conclusion

The findings revealed from interviews and lesson observations were presented in this chapter. Regarding the first research question about middle school teachers' perceptions of differentiated instruction under quarantine conditions, the data collected showed that teachers understand the importance of differentiated instruction in developing students' potential and appreciate the benefits of differentiated instruction. Besides, it was revealed that online teaching positively affected teachers' perceptions of differentiated instruction because the participants noted that they started to pay more attention to this approach when they moved to the online teaching format.

As for the second research question, it was revealed that teachers attempt to implement differentiated instruction on a regular basis, but they face difficulties, such as lack of time, explaining a new topic and conducting activities under the same structured framework, which do not allow them to effectively implement differentiated instruction in their lessons. Despite these challenges, teachers continue implementing differentiated instruction, broadening their understanding of the approach by reading different resources, and looking for tools that are effective in employing the approach under quarantine conditions.

The next chapter will analyse the findings described in this chapter and compare and contrast them to other research findings.

Chapter 5. Discussion

Introduction

This chapter discusses the research findings, which were presented in the previous chapter, in relation to the literature reviewed. The study purpose was to investigate middle school teachers' perceptions and practices of differentiated instruction under quarantine conditions. The data is presented in accordance with the research questions: teachers' perceptions of differentiated instruction under quarantine conditions and practices of differentiated instruction under quarantine conditions.

Teachers' Perceptions of Differentiated Instruction

According to the leading expert in differentiated instruction Tomlinson (2017), a differentiated instructional approach is a teaching approach that is employed to meet diverse student needs, including students' academic needs, learning profiles and interests. In other words, it is an approach that allows teachers maximize each student's potential by addressing diverse academic readiness levels, learning profiles and interests. One of the questions the participants answered was about their understandings of differentiated instruction. The data analysis revealed that the majority of the teachers perceive differentiated instruction as an approach used to meet students' academic needs, and others think that it is employed to meet diverse learning styles and interests. Thus, the participants' understandings of differentiated instruction do not vary from Tomlinson's (2017) definitions of this approach, however, teachers' perceptions of student needs are different. It is because some participants of this research consider academic needs more important in comparison to learning profiles and interests, while others focus on learning profiles and interests more, and they see meeting diverse interests and profiles as a key to success in learners' development.

In addition, the participants of this study believe that the purpose of differentiating instruction is to lead each student in a classroom to success and achievement, which appears

to match with Robinson, Maldonado and Whaley's (2014) definition of differentiated instruction. They stated that regardless of the path they take to achieve the common goals, differentiated instruction helps all students achieve the objectives. Thus, it can be noted that the participants' understanding of the purpose of differentiated instruction is similar to Robinson, Maldonado and Whaley's (2014) definition of differentiated instruction.

Meanwhile, Tomlinson and Strickland (2005) state that the five classroom elements, such as content, process, product, support and learning environment, can be differentiated to maximize students' potential. The majority of the participants of the thesis study also believe that process can be differentiated through providing multileveled tasks and presenting material using various resources, such as visuals, words and videos. Some participants stated that they can differentiate by support meaning that the students, who struggle with doing the task, can be provided with supporting expressions and key words that help them perform the given task. For instance, one of the teachers interviewed explained that product may be differentiated through giving several options of task types so that students can choose the type of task they are comfortable with and want to do. She also explained that the products students produce can be assessed based on assessment rubrics made for each type of task.

As for differentiating learning environment, the participants stated that they use pair and group work to differentiate learning environment while teaching online. It should be noted that differentiating content appeared not to be mentioned by any of the participants. The reason for this may be the fact that teachers are offered curriculum topics and a planned course content that they are supposed to cover within the given time, they only can change the sequence of topics and instructional strategies (Aftab, 2015). Thus, the participants may find it difficult to differentiate content.

The findings of the research conducted by Smit and Humpert (2012) revealed that student diversity is perceived as a problem, and planning of a differentiated instruction as a time-consuming process. Bekeyeva's (2019) research conducted at one of the Kazakhstani schools showed that teachers spend much time on planning a differentiated lesson which varies between two hours, two-three days and a week. In contrast to those findings, none of the participants of this research considered student diversity as a problem and think that planning a lesson that involves differentiation is a time-consuming process. The participants of this research seemed not to concerned about the time they spend on planning and noted that it takes three or four hours a day. However, some Humanities teachers, who practice collaborative planning, noted that if a lesson is planned in collaboration with other teachers, the time spent on it can be reduced. Therefore, some teachers, who participated in this study, stated they found the way to make the process of planning a differentiated lesson easier and more efficient by planning a lesson in a team of teachers who teach the same grade level.

Concerning the benefits of differentiated instruction, Tomlinson (2003) states that this approach gives an opportunity to every student in a classroom to succeed and achieve goals. The findings of the research conducted by Burkett (2013) indicated that the benefits of differentiated instruction, such as opportunities to improve learning and support for low-attaining students, were appreciated by the participants. However, the majority of the teachers of the current research emphasised that differentiated instruction helps mostly low attaining students succeed and achieve learning objectives. Only some teachers noted the benefits of the approach for gifted students stating that by providing challenging tasks to gifted students, it is possible to maximise their potential and develop their critical thinking abilities. Aftab (2015) highlighted that not only low-attaining learners benefit from differentiated instruction, but also mainstream students can benefit as differentiation allows them to enhance their performance. Based on this, it can be concluded that teachers are recommended to pay as

much attention to gifted students as they pay to less-able ones while planning and delivering a lesson. It may help each learner in the classroom to maximize their potential.

Regarding students' learning profiles, Nolen (2003) cited that teachers should tailor their teaching strategies taking into account students' learning styles referring to Gardner's theory of multiple intelligence. In addition, according to Timmins (1996), teachers should deliver new material using different ways, such as maps, songs, role-plays, in order to maximize student engagement. Accommodating students' learning preferences was mentioned by some participants of the current study. Some teachers take into account students' learning preferences when giving tasks. They said that those students who have creative mode of thinking are usually given open-ended questions, and those who have practical mode of thinking are given multiple choice questions. In addition, observation of Humanities teacher's lesson showed that material is delivered to students using different ways, such as text, map and video, which helps students with different learning styles master lesson material.

As Tomlinson and Strickland (2005) state, effective implementation of differentiated instruction depends on teachers' understanding of who they teach and what they teach. As it was mentioned in Chapter 2: Literature Review, Magableh and Abdullah (2020) say that teachers' commitment is needed to employ differentiated instruction. The understanding and commitment seem to come with flexibility and openness of teachers to changes. Fullan (2007) emphasises that openness to changes is considered to be a feature of effective teachers. The findings of the current research revealed that the participants were ready and open to changes that occurred due to the pandemic. The participant teachers explained that moving to distance learning allowed them to focus more on differentiation, find more ways of differentiating process and gave them the opportunity to widen their understanding of differentiated instruction. Therefore, it can be concluded that the participants of this study

appear to be flexible and effective and are ready to broaden their understanding of differentiated instruction, which may lead to more effective implementation of the approach.

Similar to the findings of studies (Robinson, Maldonado, & Whaley, 2014; Burkett, 2013; Prince, 2011; Beaseley, & Beck, 2017) conducted in western countries which revealed that teachers understand why differentiated instruction is needed and appreciate it in face-to-face and online teaching, all the participants of this research stated that they value the use of differentiated instruction in a classroom and in teaching online. The participants of this study stated that differentiation gained more focus in online teaching in comparison to the offline one. Some teachers explained it as while teaching online, it is difficult to see each students' work at the same time, and see the students who struggle with doing the given task, and effectively implementing differentiation in online lessons can help each student achieve learning objectives. Thus, the participants believe that an online teaching requires more differentiation than an offline instruction. However, the findings of Beaseley and Beck (2017) indicate that the difference between how online teachers and offline teachers perceive differentiation is little. In contrast, the findings of this study show that most teachers think that online teaching allowed them to broaden their perception of differentiated instruction and discover new ways of implementing the approach.

To sum up, the definition of differentiated instruction the participants of this study used was similar to Tomlinson's (2017) definition. The findings of this thesis and literature reviewed show that teachers appreciate differentiated instruction and think it is beneficial for all students both in face-to-face and online teaching, however, the findings of this study indicate that teachers, who were involved in this research, started to pay more attention to differentiation when they moved to online teaching.

Teachers' Practices of Differentiated Instruction

This section discusses the findings of this study regarding middle school teachers' practices of differentiated instruction in relation to the literature reviewed. The results of a qualitative research conducted by Logan (2011), which involved 141 teacher-participants from schools of southeast Georgia, showed some positive results of teachers' understating and attitude towards differentiated instruction. However, it revealed that disagreement on differentiation was expressed mostly by middle school teachers. Several factors that may influence middle school teachers' responses, including the shortage of teacher education programs that prepare pre-service teachers for academically diverse classrooms, lack of trainings on differentiation, were noted in the paper. In contrast to the findings of Logan's (2011) research, the teacher participants of this study appeared to have positive attitude towards differentiated instruction and to practice the approach regularly. Despite some teachers stated that they do not employ a differentiated instructional approach at every lesson, they emphasised that they try to differentiate instruction frequently. The reasons for this positive result may be trainings for differentiation offered by the school, seeing student diversity as a benefit, and teachers' readiness to change.

According to Heacox (2012), giving more time to less-able students for performing the task, and providing challenging assignments to all is a part of differentiation. The teachers of this study also noted that they try to differentiate by time offered for doing the given task meaning they offer more time to students who struggle to do it and offer more challenging tasks to the ones who are gifted. In addition, one of the participants mentioned the trainings on the implementation of differentiated instruction she took saying that those trainings helped her get to know the various types of differentiation, including differentiation by support and differentiation by time given to perform the task. As the findings of this study revealed, teachers differentiate instruction by providing enough time to each student to do the task and

by giving challenging tasks to all, and these findings match what was stated by Heacox (2012) in the book about differentiated instruction. As for online teaching, teachers said while teaching online, they offer flexible time and challenging tasks using online platforms mentioned in Chapter 4: Findings. Therefore, it can be concluded that this type of differentiation can be effectively implemented both in face-to-face teaching and online teaching.

The findings of the quantitative research conducted by Smit and Humpert (2012) showed that teachers most commonly differentiate instruction by providing tiered assignments and adapting time and number of tasks. Similar to these findings, the teachers of this study also appeared to frequently use multileveled tasks and offer more time for less-able students to implement differentiated instruction both in a classroom and online. However, the participants emphasise that even though they try to implement it at every lesson, it sometimes seems not possible due to reasons such as time constraints and presenting new material under online teaching conditions.

Differentiating instruction to address student interests is detailed in the chapter written by Keeler et.al (2007). They exemplify a science teacher who teaches the basics of physical and life sciences to three groups of middle school students with different background knowledge, academic proficiencies, unique learning styles and preferences. She teaches her students online and implements differentiated instruction through providing multiple task options. For instance, her students choose what activity they prefer from the range of activities they are offered to communicate what they have learned. This is similar to the findings of the current research where one of the participant teachers stated that she also pays much attention to student interests and offers several assignment options to her students through which they can demonstrate what they have learned. The teacher thinks that differentiating instruction to meet students' interests increase their learning motivation which

is a key to success. It is similar to what Tomlinson (2001) noted in her paper considering student interest as a strong motivator that can be used by teachers to support learning in a differentiated classroom. She used multiple assignment options to differentiate instruction in face-to-face teaching, and continues doing it in online teaching. Unfortunately, meeting diverse student interests was mentioned only by one of the participants and this finding is similar to the findings of research conducted by Beasely and Beck (2017) who reported that only 19% of participants cited differentiation by interest. The researchers concluded that the reason why teachers did not include this aspect of differentiation in their responses might be the fact that they do not consider it as an important part of differentiation. That is why, both in offline and online teaching, some teachers differentiate instruction to meet diverse students' interests by offering several options of assignments that are designed to communicate what they have learnt, but most of teachers do not pay as much attention to this aspect as they pay to academic readiness and learning profiles.

Another aspect teachers are supposed to differentiate is process. Logan (2011) notes that one of the ways of differentiating process is using flexible grouping. According to Logan's literature review, flexible grouping was used as one of the differentiated approaches in reading in the study conducted by Fisher, Frey and Williams (2003), and as a result of the study, improvements in reading skills as well as in attitudes to reading were observed (as cited in Logan, 2011, p.5). The current research also revealed that some teachers consider flexible grouping as one of the ways to differentiate instruction, and noted that they used flexible grouping in offline teaching and continue using it under quarantine conditions. The participants said they group students into several groups with the help of channels offered by TEAMS platform. Some teachers stated they group their students according to their academic readiness, others said they take into account their interests when grouping them. Thus, it can

be concluded that teachers use flexible grouping to differentiate instruction both in face-to-face teaching and online teaching.

Regarding the challenges in implementing differentiated instruction under online teaching conditions, the participants noted a lack of time for effectively differentiating instruction in online lessons that resulted due to the reduction of a lesson duration twice, and difficulties in differentiating the presentation of new material was mentioned by some of the teachers. In addition, one of the teachers indicated the challenges in organising differentiated lessons in classes where the difference of students' language proficiency is huge. Unfortunately, these findings cannot be compared to the findings of other studies that were reviewed in Chapter 2: Literature Review because most of the literature reviewed discussed differentiation in a classroom, and only two papers were about differentiating instruction in teaching distantly. Those two articles do not talk about challenges of differentiating instruction under online teaching conditions.

As for the time spent on planning a lesson that involves differentiation, some participants noted that they spend several hours to plan a lesson while others said that they spend less time for planning a lesson as they practice collaborative planning. The participants of this research emphasised that it is effective to plan lessons with their colleagues. This is similar to what the participants of a qualitative research by Prince (2011) stated. They indicated that they understand the importance of collaborative planning as a differentiated lesson, and therefore, they plan lessons with teachers who teach the same subjects. However, according to the findings of several studies, one of the challenges teachers face in planning and implementing differentiated instruction is a lack of time (Bekeyeva, 2019, Morrison-Thomas, 2016).

To conclude, according to the literature reviewed, teachers struggle to implement differentiated teaching at their lessons despite valuing the importance of the approach. However, the participants of this study attempt to differentiate instruction both in face-to-face and online teaching. In addition, the participants of this thesis discovered online platforms that can be used to differentiate teaching under online teaching conditions.

Conclusion

This chapter discussed the findings collected from middle school teachers on their perceptions and practices of differentiated instruction. The findings were discussed in relation to findings of studies reviewed in Chapter 2: Literature Review. Overall, the findings of the current research are similar to the findings of literature reviewed, which indicate that teachers value differentiated instruction and understand its importance. Regarding the practice of differentiated instruction, the participants of this study appear to attempt to regularly implement the approach, while the findings of other studies showed that many teachers seem not to practice differentiation regularly despite their valuing it. The literature reviewed showed that online and offline teachers' understandings of differentiated instruction do not vary. In contrast, this study revealed that the change to online teaching mode made teachers more interested in differentiation and provided opportunities to broaden their understandings and to discover new ways that can be used to implement differentiated instruction. In the next chapter, I will make conclusions based on the discussions of the findings, detail limitations of the study and present implications of the study.

Chapter 6. Conclusion

Introduction

The previous chapter detailed the discussions of the findings of the current research in relation to the literature reviewed in Chapter 2, and this chapter presents the conclusions based on the analysis and discussions of the findings. The results are related to teachers' perceptions and practices of differentiated instruction under quarantine conditions, and they are presented according to the following research questions: 1) What are middle school teachers' perceptions of differentiated instruction under quarantine conditions? 2) What are middle school teachers' practices of differentiated instruction during the quarantine? Additionally, limitations of this study and implications for further study are presented in this chapter.

Perceptions of Differentiated Instruction under Quarantine Conditions

In general, despite the fact that participants' perceptions of differentiated instruction vary - some perceive it as an approach used to accommodate students' interests, learning preferences, while others believe it is employed to meet students' academic readiness - all the participants value a differentiated instructional approach and consider it as an essential way to lead learners to success. Regarding the perception of the benefits of the approach to students, most of the participants see it as a beneficial approach used to support less-able students, and only some teachers see it as an approach that helps gifted students maximize their potential. So, it can be concluded that all teacher participants' have a positive attitude towards differentiated instruction and find it beneficial for students in general.

Regarding online teachers' perceptions of differentiated instruction, unlike the findings of the literature reviewed, the teacher participants of this study stated that their understandings of differentiated instruction are not the same as they used to be in face-to-face teaching. Teachers' understanding of differentiated instruction appears to have expanded due

to moving to online teaching mode, which encouraged them to explore the approach by reading online resources. Teachers started to pay more attention to differentiation when they moved to online teaching. For instance, with moving to online teaching, one of the teachers got used to writing the type of differentiation next to each activity in a lesson plan, which was not practiced by her in face-to-face teaching.

Practices of Differentiated Instruction under Quarantine Conditions

Overall, despite the challenges, such as moving to online teaching, reduction of a lesson length, and the complexity of effective implementation of differentiated instruction, the teacher participants of the current study tried to implement the approach at every lesson. Although some teachers noted they struggle to employ differentiation at a lesson where a new topic is presented or where students do tasks under the same framework structure, they detailed that they continue to search for ways to use the approach at every lesson.

The most significant finding of the research is that online teaching provided new opportunities to teachers to broaden their understandings of differentiated instruction, and find new tools to implement differentiated instruction while teaching online. The teacher participants employ online platforms, such as channels in TEAMS platform for group work, Quizizz, Learnis, Wordwall, Live Worksheets, and Whiteboard.fi at their lessons to differentiate instruction. Therefore, it can be concluded that quarantine conditions allowed teachers to find online tools, which seem to be effective in implementing differentiation, that can be used while teaching under quarantine conditions. Quarantine conditions encouraged teachers to pay more attention to differentiation.

As for the challenges of implementing differentiated instruction, according to the findings of the literature reviewed showed that many teachers find it difficult to plan a differentiated lesson as it takes much time. However, some participants of the current study did not indicate it as a challenge because they are practicing team planning. They noted that

planning a differentiated lesson with colleagues seems to be much easier than planning it independently. However, the reduction of a lesson time from 40 to 20 minutes appeared to be a challenge for most of the participants, and it seems to hinder the effective implementation of differentiated instruction while teaching online. Thus, the challenge that is mentioned by many teachers, who teach face-to-face, appeared to be not a challenge for online teachers, but online teaching mode caused another challenge for teachers, such as having less lesson time.

Limitations of the Study

The current study revealed the findings related to middle school teachers' perceptions and practices of differentiated instruction under quarantine conditions. However, there were some limitations of the study. Firstly, the chosen school is a school for gifted students, which means that the majority of students in the school are gifted and teachers are potentially more prepared to support different types of learners. Therefore, future studies should also examine mainstream schools where teachers and students have different backgrounds.

The second limitation is related to lesson observations. The participants chose a lesson for observation, and observing only one lesson only allowed for a peak into the practices. It was inconvenient to observe lessons online because at some points, it was hard to hear the answers of students due to the problems with the internet connection or problems with microphone.

Implications and Recommendations

This section provides implications and recommendations for school leaders and for future research. According to the findings of this research, teachers are doing well in differentiating in particular during quarantine and attempt to broaden their understanding of differentiation. The online platforms teachers are using to differentiate instruction in teaching online can be helpful for teachers of other schools in implementing differentiation while

online teaching. Recommendations for school leaders and for further research are the following:

Recommendations for School Leadership

Regarding the chosen site, the research can be valuable for the school since differentiation is one of the priorities of the school development. The participants noted the support they get from the school administration and appreciate the training they had undergone. Specific recommendations for school leadership to further promote differentiation in online teaching as informed by this study are:

- To provide teachers with demo lessons where differentiation is implemented effectively;
- To organize workshops where teachers can share the online platforms they use to differentiate instruction under quarantine conditions.

Recommendations for Future Research about Differentiation in Online Teaching

Since the current research, which was conducted under quarantine measures because of pandemic, involved teachers of a school for gifted students, other researchers are suggested to explore mainstream school teachers' perceptions and practices of differentiated instruction under online teaching conditions. It will allow us to compare the results of the study conducted at a school for gifted students and the research that took place at a mainstream school. Another suggestion for research includes going to another school for gifted students to compare the findings to see what can be transferred. It will allow us to see a broader picture of what teachers' perceptions and practices of differentiated instruction are under quarantine conditions.

Conclusion

This chapter presented the conclusions that were based on analysis and discussions of the findings of this study as well as limitations of the study and implications for the school

and other researchers on the topic of middle school teachers' perceptions and practices of differentiated instruction under quarantine conditions.

Overall, it can be concluded that the teachers of a school for gifted students value differentiated instruction and attempt to employ it at their lessons. Moving to online teaching encouraged them to pay more attention to the approach and gave them the opportunity to broaden their understandings by reading articles about the approach. Moreover, online teaching allowed teachers to find new ways, such as online platforms and applications to implement differentiation while teaching under quarantine conditions.

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Appendices

Appendix A. Informed Consent Form

Middle School Teachers' Perceptions and Practices of Differentiated Instruction under Quarantine Conditions: A case study of a gifted school in Eastern Kazakhstan.

DESCRIPTION: You are invited to participate in a research study on exploring perceptions and practices of differentiated instruction under quarantine conditions. You will be asked to participate in an interview and lesson observation of your choice that will be followed by a short clarification of points. The interview will be audio recorded at your personal permission in order to be further transcribed and analysed. Once the data is analysed, the recordings will be deleted, all electronic and paper data will be discarded after one year. Observation notes taken during lessons will be shredded after being analysed.

You will be interviewed about your teaching experiences for about 30-40 minutes via the TEAMS platform, in the language most suitable for you and at a time convenient for you. Once we finish interviewing, you will select the lesson to show your work. Observation will take one lesson period time that is 20 minutes. The data collected from interview and observation will be used for research purposes and shared with the school community.

TIME INVOLVEMENT: Your participation in the interview will take approximately 30-40 minutes. Lesson observation will take one lesson, 20 minutes, and will be followed by a quick five minutes discussion to clarify some points at a time convenient for you.

RISKS: There are minimal risks associated with this study. It is possible you may feel mild psychological discomfort in thinking about challenging times during quarantine and the efforts you have made to be successful. To minimize the impact of the risk, you may skip any question and stop participation at any time. Since we use the online platform for interviewing it is also possible you may be overheard by someone. To reduce this risk, if someone happens to enter the room for the participant and the researcher, the interview can be stopped and then started again when the participant is comfortable. Your decision whether or not to participate in this study will not affect your employment or professional status in school.

BENEFITS: The expected benefits associated with your participation in the study are opportunities to share and reflect practices of employing differentiated instruction. You will get a chance to share your experience and to be heard. All teachers of the chosen school and beyond can benefit from the findings of the study as it will reveal the practices of differentiated instruction under quarantine conditions.

CONFIDENTIALITY: The information you provide will be kept confidential. To maintain the confidentiality, I will never mention your real name and assign nicknames to you and the school, to your answers to the interview questions as well as keep the research data, interview recordings, transcripts and lesson observation protocols in my private laptop protected by password. All electronic and paper data will be destroyed after a year.

CONTACT INFORMATION: If you have questions, concerns or complaints about this research, contact the Master's Thesis Supervisor for this student work, Professor Anna CohenMiller anna.cohenmiller@nu.edu.kz.

If you are not satisfied with the way this study is being conducted, or if you have any concerns, complaints or general questions related to the study, contact the NUGSE Research Committee to speak to someone independent of the research team or write an email at gse_researchcommittee@nu.edu.kz.

If you agree to participate in the research, please, sign this consent form.

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 I can stop participation 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. Interview Questions

1. What is your experience with differentiated instruction?

    a. Prompt: when were you first introduced to the idea?

2. What is differentiated instruction in your understanding? Please, elaborate your answer.

3. What benefits do you think differentiated instruction can offer your students?

4. Why do you differentiate instruction? Do you differentiate your instruction all the time or only under certain circumstances? Please, provide examples.

    a. Prompt: when was a time when it wasn't important to differentiate instruction?

5. Can you walk me through a time you differentiated instruction under quarantine conditions? Think back maybe to last week. What steps did you plan? What steps did you take? How did you implement it? How much time did it take for you to plan a differentiated lesson? Did you spend more time on planning a differentiated lesson in face-to-face teaching?

6. Do you use any online platforms to differentiate instruction in online teaching?

7. How does differentiated instruction compare during quarantine to the normal classroom? Explain your answer.

8. In what ways have your perception of differentiated instruction changed, if at all, during the quarantine?

Appendix C. Lesson Observation Protocol

Setting: _____
Subject: _____
Student number:_____
Observer: _____
Teacher pseudonym: _____

Date and Time: _____

Length of observation: 20minutes

The purpose of the lesson observation will be to see how teacher implements differentiated instruction under quarantine conditions. To meet ethical standards, observation of the product and assessment will not be included to the protocol.

Descriptive Notes	Reflective notes

Appendix D. Sample Interview Transcript

A- Сұхбат алушы

B- Сұхбат беруші

A: Қайырлы күн. Зерттеуге өз үлесіңізді қосып, сұхбат беруге келісім бергеніңізге алғысымды білдіремін. Сізге қоятын алғашқы сұрағым, саралап оқыту әдісін қолданудағы тәжірибеңіз қандай?

B: Саралап оқыту әдісімен көптен бері таныспын, бес-алты жылдан бері таныспын деп айта аламын. Басында тек қана түсінік болды, одан кейін қосымша мәліметтер іздестіру арқылы саралап оқыту әдісін ақырындап сабақтарыма қолдана бастадым. Мен «саралап оқытудан дербес оқытуға» деген вебинарға қатысқан болатынмын. Сол вебинардың маған көмегі тиді.

A: Саралап оқыту дегенді қалай түсінесіз?

B: Саралап оқыту деген менің түсінігімше, алдымызда отырған барлық балалар қабілетті, дарынды болғанымен, әр балаға тән өзінің жеке қабілеттері болады, олардың жеке ерекшеліктері болады. Осы ерекшеліктерін ескере отырып, қабілеттерінің деңгейін ескере отырып, бағыттап оқытуды саралап оқыту деп түсінемін.

A: Саралап оқыту сіздің оқушыларыңызға қандай пайда әкеледі деп ойлайсыз?

B: Мысалы, бір жерден оқып қалдым, қолдау бойынша да саралау болады дегенді. Кейбір оқушылар аса қолдауды қажет етпесе, кейбір оқушыларға қолдау өте қажет. Қолдау көрсету арқылы да саралауға болады. Оқушыларға әрине пайдасы тиеді деп ойлаймын, себебі бір тапсырманы беріп тастап осыны осындай уақытта орындаңдар дегенде қабілетті оқушылар оны бірден сол берілген уақытта орындап тастайды да, біз солардың жұмысын көріп, ары қарай кете беретін болсақ, кішкене деңгейі төмен оқушылар оны орындамай сол жерде қалып қойды делік. Ол оқушы түсінді ме, біз оған мән бермей қаламыз. Сосын тағы бір айта кетсем, мына дарында балаларды оқыту бойынша алдыңғы жылдары мектепішілік курстан өткен болатынмын. Сол курста оқушылардың оқу стилін тест беру арқылы анықтауға болатынын білдім. Осы сексен сұрақтан тұратын тест сұрағы мына қашықтықтан оқыту кезінде тиімді.Оқу стилін анықтап алғаннан кейін сол бойынша да саралау жақсы. Мен бұны дәстүрлі сабақтарымда да қолданатынмын. Қашықтықтан оқыту кезінде каналдармен жұмыс жасағанда оқушылардың оқу стилін ескеремін. Каналдарда жұмыс істеген кезде мына топтық жұмыстарда тапсырмаларды берген кезде әр балаға рөлдерді беріп қою да тиімді екен. Уақыт жоғалтпас үшін оқушыларға рөлдерін түсіндіріп жатпай, тапсырмаға алдын ала жазып қойған тиімді. Оны да осы қашықтықтан оқыту кезінде қолданып жүрмін.

A: Сіз неліктен саралап оқыту әдісін қолданасыз? Саралап оқыту әдісін сіз әр сабақ сайын қолданасыз ба, әлде тек белгілі бір жағдайларда ғана қолданасыз ба?

B: Енді әр сабақ сайын қолданамын деп айта алмаймын, бірақ та көбінесе қолдануға тырысамын, сыныптағы оқушылардың қабілеттерін ескере отырып қолдануға тырысамын.

A: Саралап оқыту әдісін қолданудың қажеті болмаған кез болды ма?

B: Негізінде қажеті жоқ кез болмайды, бірақ та енді кейде мүмкіндік бола бермейді. Тапсырма көлемі ауқымды болады, немесе өзіміз көбірек мағлұмат беруіміз керек болады, сондай кезде ескерілмей қалады және мына уақыттың тығыздығына байланысты саралай алмай қалатын кездер болады. Бірақ мен жалпы өзім ойлаймын, әрбір сабақта қолданса артық болмайды деп.

A: Мысалға алдындағы аптаны алатын болсақ, сіз саралап оқыту әдісін қолдандыңыз ба?

B: Қолдандым деп айтсам болады, өйткені мен ол жерде тапсырмалар арқылы саралау әдісін қолдандым. Мысалы, мен тапсырмалар құрастырып, тимстағы публикацияға салып қойдым. Оқушылар сол жердегі тапсырмаларды аша отырып, өз аттары жазылып тұрған тапсырманы берілген уақыт аралығында орындады. Оқушылар бірден кірісіп кетті, олардың жұмыстарын бақылап қарап отырдым. Ол тапсырмалар, осы саралап оқыту әдісі бойынша құрастырылған болатын. Деңгейлік тапсырма деп те айтуға болады, мысалы күрделі сұрақтарды қабілеті жоғары оқушыларға ыңғайладым, ал кішкене деңгейі төмен сұрақтарды қабілеті сәл төмен оқушыларға бағыттадым. Ол жерде оқушылар бір бірінің жауабын көріп отырды, бірақ тапсырма әр түрлі болғандықтан, әркім өз тапсырмасының жауабын жазуға ұмтылды.

A: Осы сабақты жоспарлау сіздің қанша уақытыңызды алды?

B: Сабақты жоспарлау екі-үш сағат уақытымды алды. Себебі ресурстарды табу, оны ыңғайластыру, оқушылардың қабілеттерін ескеру және оны орналастыру деген сияқты. Бірақ енді мен соны қолданып жүргеннен кейін бірте бірте қалыптасып, уақыттың көлемі де азаяды деп ойлаймын, қалыптасып алсам егер.

A: Дәстүрлі оқыту кезінде саралап оқыту әдісін пайдалатын сабақты жоспарлауға көбірек уақытыңыз кететін бе?

B: Негізінде тиянақты, барлығын қарастырып отыратын болсақ дәстүрлі оқыту кезінде де, онлайн оқыту кезінде де көбірек уақыт кетеді.

A: Саралап оқыту әдісінің тағы қандай жолдарын қолданасыз?

B: Иә, мен осы оқу жылының басында қашықтықтан оқыту кезінде «Саралап оқытудан дербес оқытуға» деген вебинарға қатысқан болатынмын. Сол вебинардың маған көмегі тиді. Сол вебинардың материалдарын пайдалануға тырысып жүрмін. Сол менің ең көп пайдаланып жүргенім осы тапсырмалар бойынша саралау болса, сабақ барысында ресурстар бойынша саралау әдісін, мысалы жаңа сабақ туралы ақпарат беріп болғаннан кейін немесе оларға өздігінен ақпарат іздеуге мүмкіндік бергеннен кейін сондай жағдайлар болатын болса оқушыларды каналдарға бөліп, ресурстар бойынша саралап жүрмін, яғни бұл жерде ресурстар да әртүрлі болады, мысалы күрделі, жеңіл, деңгейі орташа ресурстар қойып, сол ресурстар бойынша саралауды қолданып жүрмін. Сосын жауап беруге уақыт бойынша саралау деген түрі бар екен, яғни қабілетті оқушыларға тез уақыт аралығында болатын болса, кішкене көмекті қажет ететін оқушыларға жауап беруге көбірек уақыт беру, мысалы тапсырманы орындауға уақыт беру, немесе сұрақ қойған жағдайда да ойлануға уақыт беру. Енді мына скаффолдинг бойынша саралау

деген түрі болды ол жерде, бірақ әлі осы әдісті мен өзім түсіне қойған жоқпын. Қосымша ресурстардан қарап жүрмін. Алдағы уақытта скаффолдинг бойынша саралауды енгізсем деп ойлаймын.

А: Саралап оқытуды қолдану үшін қашықтықтан оқыту кезінде онлайн платформаларды қолданасыз ба?

В: Жалпы осы ТИМС платформасында каналдар, чат, тақтаны қолданамын. Одан кейін Quizizz деген сайт арқылы оқушыларға он сұрақтан тұратын тест сұрақтарын дайындап, ойын түрінде өткіземін. Сол кезде де оқушылардың деңгейлері жақсы көрініп тұрады екен, қай оқушы жылдам жауап беріп отыр, дұрыс жауап беріп отырғандығын. Қайталау сабақтарында, бекіту сабақтарында қолданып жүрмін осыны және оқушылар қызығушылықпен қатысады.

А: Саралап оқытуды карантин жағдайында жүзеге асыру мен әдеттегі жағдайда жүзеге асырудың қаншалықты айырмашылығы бар?

В: Менің ойымша, енді біраз айырмашылығы болуы мүмкін. Мысалы дәстүрлі оқытуда да осылай қолданамыз, бірақ та дәстүрлі оқыту кезінде біз көбінесе зертханалық, эксперименттік жұмыстар жасатамыз, тақтаға шығарамыз оқушыларды деген сияқты. Ал мына қашықтықтан оқыту кезінде тиімділігі жоғары ма деп ойлаймын. Осы қашықтықтан оқыту кезінде қолдануға баса назар аударып, жаңағы сияқты жоғарыда айтып кеткен саралаудың түрлері қашықтықтан оқыту кезінде тиімді ме деп ойлаймын. Онлайн құралдарды пайдалану арқылы тиімдірек өткізуге болады. Мысалы, үй тапсырмасын берген кезде оларға деңгейлеріне байланысты үй тапсырмасын беремін. Олар оффлайн сабақ кезінде ескерілмей қалады ма деп ойлаймын.

А: Карантин уақытында саралап оқыту жөніндегі түсінігіңіз өзгерді ме?

В: Өзектілігін жоғалтпады. Қазір осы саралап оқытуға баса назар аударып, қазіргі күннің талабы болып жатқаннан кейін бе, мына қашықтықтан оқыту кезінде саралап оқытуды қолдану өзімнің тәжірибемде көбірек орын алып жатыр. Мысалы тапсырмалар арқылы саралау деп сабақ жоспарына жазып қоямын. Бұрын мен саралап оқытуды сабақ жоспарымда көрсетпейтінмін. Қазір мен әр тапсырмаға жазып қоятын болдым. Сабақ жоспарыма осы қашықтықтан оқыту кезінде енгізіп жүрмін.

А: Сұхбатқа уақытыңызды бөліп қатысқаныңыз үшін алғыс білдіремін. Рахмет Сізге.

В: Оқасы жоқ.

Interview Transcript (Translated into English)

A- Interviewer

B- Interviewee

A: Good afternoon. Thank you for agreeing to contribute to the research. The first question I want to ask is "What is your experience with differentiated instruction?"

B: I can say that I got introduced to differentiated instructional approach five-six years ago. In the beginning, I had only a theoretical understanding of this approach. However, reading additional resources about this approach helped me implement it in my lessons. in addition, I was a listener of a webinar "From differentiated instruction to individualized instruction". It helped me better understand how differentiated instruction should be implemented.

A: What is differentiated instruction in your understanding?

B: All students in a class are talented, but each student has their own abilities. In my opinion, differentiated instruction is an approach that is used to meet each students' needs in terms of their capability, their level of learning abilities.

A: What benefits do you think differentiated instruction can offer your students?

B: For instance, I read somewhere that one of the types of differentiation can be differentiation by support. Some students do not need much support; others do need it. By providing support to students we can differentiate instruction. Obviously, differentiation is beneficial for students. For example, if we give the same task to all students, gifted ones will complete the task earlier than low attaining students, and if we move on to the next activity after receiving the work of gifted students, then low attaining students will continue struggling and will not be able to complete the task given. One more thing to add is that last year I completed the interschool course "Teaching Gifted Students". At that course, I learnt that to identify students' learning styles, we can use a test that consists of 80 questions, and we can use it while teaching online as well. It is good to differentiate instruction based on learning styles. I used it in face-to-face teaching as well. During teaching online, we can use channels to group students, and it is good to group students according to their learning styles. When organizing group work, it is effective to assign a role to each student, and in order not to waste time, the roles should be written on the tasks. I use it in online teaching.

A: Why do you differentiate instruction? Do you differentiate your instruction all the time or only under certain circumstances?

B: I will not say that I use it at every lesson, however, I try to use it frequently considering students' readiness levels.

A: Was there a time when it was not important to differentiate instruction?

B: Actually, differentiation is always important, but sometimes we do not have opportunity to use it. When explaining new material, when there is a lot to explain and due to time constraints, sometimes differentiation is not used. I think that it would be great to differentiate instruction at every lesson.

A: Can you walk me through a time you differentiated instruction under quarantine conditions? Think back maybe to last week. What steps did you plan? Which lesson was it? What steps did you take? How did you implement it?

B: I would say that I used this approach last week. I differentiated instruction by giving different tasks. For example, I prepared different tasks and wrote the students' names next to the task they should do. The tasks were given through TEAMS platform. Students performed the task with their names in the given time. The tasks were prepared according to this approach. I can call it as multileveled tasks. For instance, complex challenging tasks were given to gifted students, and less challenging ones were given to low attaining students. Students could see the answers their peers, but since the tasks were different, they tried to do the task they were given.

A: How much time did it take for you to plan a differentiated lesson?

B: Planning took two-three hours of my time because it takes time to find resources, and preparing tasks taking into account students' readiness levels. However, I think that I will get used to it and the time spent will gradually be reduced.

A: Did you spend more time on planning a differentiated lesson in face-to-face teaching?

B: Actually, planning a lesson thoroughly takes more time both in face-to-face and online teaching.

A: What other ways of differentiating instruction do you use?

B: At the beginning of this school year, I participated in the webinar "From Differentiated Instruction to Individual Instruction". The webinar helped me a lot. I try to use the materials I took from the webinar. The most frequently used type is differentiating by tasks. I also try to differentiate by resources, for example, after explaining new material or after giving them the opportunity to search for material on their own, I group students using channels, i.e. the resources given are of different levels: low, middle and high level. I also use differentiation by time given to do the task. Low attaining students are given more time to think. One more type of differentiation I learnt from the course is differentiating by scaffolding, but I have not used it at my lessons. In the future I would like to learn more about this type and try it at my lessons.

A: Do you use any online platforms to differentiate instruction in online teaching?

B: I use channels, chat and whiteboard in TEAMS platform. I also use Quizizz to prepare a test for students, and conduct it in the game format. The site helps immediately monitor students answers and allows us to see who could answer the questions quickly, who gave correct answers to questions. I often use it at the lessons were the learnt material is revised, and students show great interest in doing this kind of tasks.

A: How does differentiated instruction compare during quarantine to the normal classroom?

B: In my opinion, there might be some differences. For example, when teaching face-to-face, we can use laboratory work, and we can ask students to come to the board, but in online teaching using differentiated instruction seems to be more effective. During distance learning, I started to pay more attention to differentiation, and it would be effective to use the above-

mentioned types of differentiation while teaching online. It is possible to effectively implement differentiation by using online instruments. For example, when I give home task to my students, I try to consider their readiness levels, and I think sometimes it is not considered in face-to-face teaching.

A: In what ways have your perception of differentiated instruction changed, if at all, during the quarantine?

B: It remained important and relevant. I am not sure if this is due to distance learning or due to the increasing demand of a modern education, but I noticed that I am currently paying more attention to differentiated instruction in comparison to the period when we taught at school. When I make a lesson plan, I try to write the type of differentiated instruction next to each activity. For example, I write differentiation by support or differentiation by multileveled tasks and so on. I believe I am currently broadening and deepening my understanding of this approach.

A: Thank you for participating in this research.

B: You are welcome.