

Running head: IMPLEMENTATION OF THE INTEGRATED CURRICULUM IN  
KAZAKHSTANI SECONDARY SCHOOLS: CHALLENGES AND OPPORTUNITIES  
IN PILOT SCHOOLS AT SCHOOL LEVEL

**Implementation of the Integrated Curriculum in Kazakhstani Secondary Schools:  
Challenges and Opportunities in pilot schools at School Level**

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IMPLEMENTATION OF THE INTEGRATED CURRICULUM IN KAZAKHSTANI  
SECONDARY SCHOOLS: CHALLENGES AND OPPORTUNITIES IN PILOT  
SCHOOLS AT SCHOOL LEVEL

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November 16, 2016

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## Abstract

After the collapse of the Soviet Union, Kazakhstani Educational system faced some challenges because the curriculum that was used during the early independence period could provide students with the skills and knowledge that are applicable in the new century. In 2012 report, the Organization for Economic Co-operation and Development (OECD) noticed that the learning process in Kazakhstani secondary schools is highly ineffective in terms of enabling students to gain and practice higher-order thinking skills. Thus, Kazakhstani government made an attempt to solve the following systematic problems in modern secondary education: (1) integrity and systematic vision of scientific and objective worldview is lost as well as the speedy progress of scientific information volume has led to a growth in the number of subjects; (2) knowledge has lost its importance and driving force for the development of thinking because of the necessity to acquire a huge amount of new information on a daily basis; (3) teaching focuses on transferring reproductive information techniques, such as “know-can-apply” technique; (4) students are assessed based on the information memorized without its deep understanding and an ability to apply it in practice; and (5) reproductive forms of learning do not allow students to develop their personal qualities and abilities (Abdildina, 2016, p. 17). As a result, several steps were made in order to improve educational system in Kazakhstan. First, Kazakhstani government has created the network of Nazarbayev Intellectual Schools with its own integrated curriculum. Then, pilot schools were assigned to test effectiveness of the integrated curriculum in practice. This study aimed to advance an insight into the experience of implementation of the integrated curriculum in Kazakhstani pilot schools, the challenges that teachers and school administration faced and the opportunities that the program provided the schools. It employed a qualitative research design, in particular a unique case study. Three methods

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were used to answer the overarching research question: one-to-one interviews, document analysis and lesson observations. Specifically, a sample of seven teachers, the school principal and two vice-principals was interviewed to identify the teachers and school administrations' understanding of the purposes for curriculum integration, to distinguish the challenges that they faced and to shed light on the opportunities that they received in the process of the integrated curriculum implementation. The results of this study provided information on the nature of the pilot school's staff experiences of the integrated curriculum implementation as well as recommendations and suggestions for further improvement of the existing experience of implementation when the integrated curriculum is widely put in all Kazakhstani secondary schools.

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## Аңдатпа

Совет Одағы құлағаннан кейін Қазақстандық білім беру жүйесі бірнеше қиындықтарға тап болды, өйткені сол кездегі бағдарлама жаңа жүзжылдықта оқушы бойында табылатын білім білік дағдыларын қалыптастыра алмайтын еді. Экономикалық ынтымақтастық және даму ұйымы (ЭЫДҰ) Қазақстандағы орта білім берудің жүйесі оқушының бойында ойлаудың жоғары деңгейін қалыптастыра алмайтынын көрсетіп, тиімсіз деп тапты (ЭЫДҰ, 2012 жылы). Сондықтан Қазақстан үкіметі келесі жүйелі мәселелерді жүзеге асыруды жоспарлады: (1) ғылыми және нақты дүниетанымның жүйелілігі мен тұтастығы жоғалуы пәндердің санының өсуіне әкелді; (2) білім күнделікті алынған ақпараттың көптігінен өзінің маңызы мен ойлаудың дамуындағы негізгі күш екендігінен айырылды. (3) оқыту репродуктивті ақпаратты ұсыну әдістемесімен жинақталады, өйткені басты техника "білу-жасау-қолдану", (4) оқушылар терең білім мазмұнын меңгермей-ақ жаттанды ақпараттар негізінде бағаланды және (5) Репродуктивті оқытудың формасы өзінің оқушыларға жеке қасиеттерін дамытуға мүмкіндік бермейді (Абдильдина, 2016, 17 б.).

Нәтижесінде Қазақстандағы білім жүйесін оңалтудың бірнеше қадамдары жасалды. Біріншіден, Қазақстан үкіметі өзінің жеке кіріктірілген бағдарламасымен Назарбаев зияткерлік мектептерінің желісін құрды. Кейін пилоттық мектептер анықталып, кіріктірілген білім беру бағдарламасының тиімділігін анықтау жүзеге асты. Бұл зерттеу жұмысы пилоттық мектептерде кіріктірілген білім беру бағдарламасымен таныстыру үшін, мұғалімдер мен мектеп басшылығы тап болған мәселелерді анықтау үшін және бағдарламаның ұсынатын мүмкіндіктерін анықтау үшін жүргізілді. Бұнда сапалы зерттеу жобасы кейс-стади қолданылды. Зерттеудің негізгі сұрағына жауап беру үшін үш әдіс қолданылды: жеке сұхбат, құжаттардың

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талдауы, сабақтарды бақылау. Нақтыласақ жеті мұғалім, мектеп директоры мен екі директордың орынбасарлары кіріктірілген білім беру бағдарламасын енгізі кезінде тап болған қиындықтар мен ұсыныстарын анықтау үшін сұралды. Осы зерттеудің нәтижесінде пилоттық мектептердегі тәжірибенің мазмұны таныстырылып, кіріктірілген білім беру бағдарламасы Қазақстандық жалпы білім беру мектептеріне жаппай енгізу кезіне арналған жетілдірілген ұсыныстар дайындалды.

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## Аннотация

После распада Советского Союза, система образования Казахстана столкнулась с некоторыми проблемами, так как учебная программа, которая использовалась в этот период, не могла предоставить учащимся навыки и знания, которые применимы в новом столетии. Организация экономического сотрудничества и развития (ОЭСР) отметила, что процесс обучения в казахстанских средних школах крайне неэффективен в плане предоставления учащимся возможности приобретать и практиковать навыки мышления более высокого порядка (ОЭСР, 2012 год). Таким образом, правительство Казахстана предприняло попытку решить следующие систематические проблемы в современном среднем образовании: (1) потеряна целостность и систематическое видение научного и объективного мировоззрения, а также быстрый рост объема научной информации привел к росту числа предметов; (2) знания утратили свое значение и движущую силу для развития мышления из-за необходимости ежедневно получать огромное количество новой информации; (3) преподавание фокусируется на передаче методов репродуктивной информации, таких как техника «знать-уметь-применять»; (4) учащиеся оцениваются на основе информации, запоминаемой без ее глубокого понимания и способности применять ее на практике; и (5) репродуктивные формы обучения не позволяют учащимся развивать свои личные качества и способности (Абдильдина, 2016, с. 17).

В результате было сделано несколько шагов для улучшения системы образования в Казахстане. Во-первых, казахстанское правительство создало сеть Назарбаев Интеллектуальных школ с собственной интегрированной учебной программой. Затем пилотные школы были назначены для проверки эффективности интегрированного учебного плана на практике. Это исследование было направлено на ознакомление с

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опытом внедрения интегрированной образовательной программы в пилотных школах Казахстана, проблемами, с которыми сталкиваются учителя и администрация школы, и возможностями, предоставляемыми программой школам. В данном исследовании был использован качественный метод исследования, в частности уникальный кейс-стади. Три метода были использованы для ответа на главный исследовательский вопрос: индивидуальные интервью, анализ документов и наблюдения за уроками. В частности, была опрошена выборка из семи учителей, директора школы и двух заместителей директора, чтобы определить понимание учителями и школьной администрацией целей интеграции учебных программ, выделить проблемы, с которыми они сталкиваются, и пролить свет на возможности, которые они получили в процессе внедрения интегрированной учебной программы. Результаты этого исследования предоставили информацию о характере опыта пилотной школы в области внедрения интегрированной образовательной программы, а также о рекомендациях и предложениях по дальнейшему совершенствованию существующего опыта внедрения, когда интегрированная образовательная программа будет широко внедряться во все казахстанские средние школы.

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## Chapter One: Introduction

### 1.1. Introduction

After the collapse of the Soviet Union, the Kazakhstani educational system faced some challenges because the curriculum that was used during the early independence period could not provide students with the skills and knowledge that are applicable in the new century. Several researches have criticized the curriculum of the Soviet Union (Steiner-Khamsi et al. 2006; Kalikova and Silova 2008, p. 144). One researcher described it “the curriculum that is centralized, rigid, and inflexible and overloaded (Yakavets, 2014, p. 11). Moreover, a teacher-centred approach was dominant in schools as well as an assessment system valuing memorization rather than application. This approach tends to give students little opportunity for critical thinking or appreciation of the wider world.

In 2012 report, the Organization for Economic Co-operation and Development (OECD) noticed that the learning process in Kazakhstani secondary schools is highly ineffective in terms of enabling students to gain and practice higher-order thinking skills. For instance, students are weak at applying Math knowledge in practice and are weak in Math reasoning. They are also weak at reflecting on and evaluating texts when they are reading (OECD, 2012). As a result, Kazakhstani education policymakers took steps to improve its curriculum.

One of such steps was the Programme for the Development of Education for 2011-2020 adopted in 2000, which introduced the idea of integrated curriculum. Kazakhstani policymakers have decided to create integrated curriculum that will promote fluency in three languages, enhance students’ skills in Physics and Mathematics, Chemistry and Biology directions, and “combine the best traditions of Kazakhstan education and international best pedagogic practice” (Decree of the President of the RK No. 922, 2010). In addition, the New State Compulsory Educational Standard of secondary education (primary, basic secondary and

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general secondary) and module curriculum have been developed by integrating the two approaches: value-orientated and systematic-activity (Abdildina, 2016, p. 17). These approaches have a central focus on the skills that have a wide range of applications in modern life - a creative application of knowledge; critical thinking; implementation of research; the use of ICT; the use of communicative methods of communication, including language skills; ability to work in a group and individually. Based on universal and ethno-cultural values, these skills would allow the student to solve problems as a school, and the nature of life (About Features, 2016, p. 28). The main features of the new integrated curriculum are:

- the principle of helicity in the design of the content of the subject, i.e. the gradual build-up of knowledge and skills both vertically and horizontally (the complexity of the skills based on the topics and classes);

- a hierarchy of learning objectives on Bloom's taxonomy that are based on the laws of cognition (classification and systematization of the expected results by “knows”, “understands”, “applies”, “analyzes”, “synthesizes” and “estimates”);

- the use of “cross-cutting” topics that allows to integrate knowledge from different subject areas and achieve the functionality of acquired knowledge;

- the importance of student’s actual results of learning, knowledge integration, personal development, the ability to apply his or her knowledge to meet learning tasks and solve life issues (Academic Council of National Academy of Education named after I. Altynssarin, 2016).

The task of piloting and testing the integrated curriculum was given to the network of Nazarbayev Intellectual Schools (NIS), which are experimental schools created around the country. Since autumn, 2013 Autonomous Educational Organization (AOE) “Nazarbayev Intellectual Schools” has started the wider implementation of an integrated curriculum in the

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appointed pilot schools to test this program in real life environment. Pilot schools are the secondary experimental sites in different regions of Kazakhstan that are chosen by the Ministry of Education. The main aim of these schools is to put an integrated curriculum into practice and see its appropriateness in reality. The translation of the new integrated curriculum was expected and took place in September 2016 in all secondary schools.

This study aimed to advance an insight into the experience of implementation of the integrated curriculum in Kazakhstani pilot schools, the challenges that teachers and school administration faced and the opportunities that the program provided the schools. It employed a qualitative research design, in particular a unique case study. Three methods were used to answer the overarching research question: one-to-one interviews, document analysis and lesson observations. A sample of seven teachers, the school principal and two vice-principals was interviewed to identify the teachers and school administrations' understanding of the purposes for curriculum integration, to distinguish the challenges that they faced and to shed light on the opportunities that they received in the process of the integrated curriculum implementation. More specifically, this study focuses on the nature of the pilot school's staff experiences of the integrated curriculum implementation in order to avoid the drawbacks when the integrated curriculum is wildly put in all Kazakhstani secondary schools.

### **1.2. Problem Statement**

As it has been stated above, Kazakhstan has made reforms in its educational system by adding changes into its curriculum. The Kazakhstani government puts an integrated curriculum into practice in order to improve its educational system and solve some issues that appear when the country declared its independence. These problems were identified as an “outdated” and “overloaded” curriculum that negatively affects the health of students and the quality of

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education, lack of basic vocational skills and a lack of child-centred teaching/learning strategies and assessment systems (Bridges, 2014, p. 34).

A range of research articles on curriculum integration either depict on the unit a teacher or group of teachers has planned and implemented (e.g., Diem, 1996; Bintz, Moore, Hayhurst, Jones, & Tuttle, 2006) or report on students' success without explanation of how the integrated unit was planned, or how it was implemented (e.g., Nuthall, 1999). Most of these articles illustrate the evidence of two or three content areas that are integrated in school programs. Some include actual lesson plans, while others are more descriptive. Some studies also include the teachers' perceptions of the effect of the integrated curriculum. Others consist of comparisons; either a comparison of two classes taught differently the same year or two classes taught in consecutive years.

According to Bridges (2014), "NIS is seen as a model for the country and a test bed for innovation" (p. 250), which is starting to translate its experience in all spheres to mainstream schools in Kazakhstan, including its integrated curriculum. However, no research has been conducted on the experience of implementation of an integrated curriculum in pilot schools. Previous studies have investigated integration, but only as the studying of some units of several subjects. In the NIS model, the curriculum is integrated across the whole school program for the year, where all subjects are taught interconnected with each other. Moreover, there is a lack of information on the initial experience of implementation curriculum in Kazakhstani schools. It is as well important to gain a better understanding of this experience before it will be disseminated across Kazakhstan. Since the teacher is in the best position and most qualified resource person to be consulted on the all perceived problems and opportunities that may raise in the process of implementation, greater understanding of the purposes of putting an integrated

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curriculum into practice by teachers and school administration as well as the pitfalls and opportunities that take place in the teaching and learning process is necessary.

### 1.3. Statement of Purpose

The purpose of this qualitative research is to explore the initial experience of the implementation of this integrated curriculum in Kazakhstani secondary pilot schools. More specifically, it focuses on three major aspects, which can be used to understand the process of putting the new curriculum into practice. First, it aims to investigate how Kazakhstani school administrations and teachers understand the purposes behind implementation of an integrated curriculum. Second, it sheds light on the possible barriers that may occur in the process of putting the integrated curriculum into practice. Third, this study is also an attempt to identify the opportunities that the integrated curriculum can afford to students as well as teachers.

### 1.4. Research Questions

According to Creswell (2014), the “*central question* is the overarching question you explore in your study” (p.132). Additionally, sub-questions should be proposed by the qualitative researchers to “provide greater specificity to the questions in the study” (Creswell, 2014, p. 133).

For the purpose of this study, the following questions are addressed:

**Central Question:** What is the experience of the implementation of the integrated curriculum in pilot schools?

**Sub-questions:**

1. How are the purposes of implementing integrated curriculum in pilot schools understood by administrators and teachers?

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- a. How do school administrators understand the purposes?
- b. How do teachers understand the purposes?
2. What challenges arise in the implementation of integrated curriculum at the school level?
3. What opportunities present themselves in the implementation of integrated curriculum at the school level?

### **1.5. Definition of the Central Phenomenon**

According to Creswell (2014), a “*central phenomenon* is the key concept, idea, or process studied in qualitative research” (p. 16). The central phenomenon of this study is teachers and administrators’ perceptions of the experience of implementation of integrated curriculum in Kazakhstani pilot schools.

### **1.6. Significance of the Study and Intended Audiences**

Several types of stakeholders will benefit from the results of the study. The stakeholders include the government, school administrators and teachers.

The government will benefit from my research due to the identified barriers that may occur in the process of implementation the integrated curriculum in mainstream schools, which could be eliminated. Moreover, the study will show what equipment and courses are necessary for a wide implementation of the integrated curriculum.

School administration will benefit from my research because understanding of challenges and opportunities associated with implementation of integrated curriculum in pilot schools will rise the school leadership team’s awareness of the ways of supporting the teaching staff and students in terms of organizing professional development courses and additional training workshops, as well as providing other types of support.

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My research will be beneficial for teachers because it will identify the challenges and opportunities that take place in the teaching and learning process when the pilot schools have put the integrated curriculum into practice. This will help them to avoid some pitfalls that they may face in further implementation of an integrated curriculum and develop the opportunities that they receive in the process of curriculum integration.

My research will explore teachers' and school administration's experiences of integrated curriculum implementation and the problems and opportunities that face them in the process. The outcomes obtained about the implementation strategies, difficulties faced and seized opportunities are expected to provide useful information for various stakeholders in their future attempts to adjust the process of implementation.

Finally, my study will be beneficial for research on integrated curriculum implementation across the globe since no previous research in the area of integrated curriculum implementation has been done in Central Asia. Research of this kind in Kazakhstan would contribute to the existing body of knowledge on the opportunities that an integrated curriculum as a whole course offers for students. These opportunities are believed to be identified through the analysis of the schoolteachers and administration's responses.

### **1.7. Organization of the Study**

This study is comprised of six chapters, including the introductory chapter (Chapter 1: Introduction). In Chapter 1, the background of the integrated curriculum implementation and its significance have been discussed. In addition, the main purposes of the study as well as research questions have been stated.

Chapter 2 (Literature Review) is devoted to the review of the literature connected to the problem. In this chapter, a brief introduction provides general information about the structure

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of this part and organization of topics. More specifically, this chapter reviews the studies on the experience of implementation of integrated curriculum in different countries and focus on pitfalls and opportunities schools have faced when they have put an integrated curriculum into practice.

Chapter 3 (Methodology) explains the main elements of the qualitative research design, in particular a unique case study, description of the setting, sampling procedures with detailed description and justification of selected procedures. In addition, the procedures of data collection and data analysis are presented. At the end of this chapter, possible limitations and delimitations are stated following by a summary of the main points.

Chapter 4 (Findings) and Chapter 5 (Discussion) provide the findings and their analysis with discussion. In particular, the main results are discussed in conformity with the research questions and literature review.

The last chapter (Chapter 6: Conclusions and Recommendations) draws the main conclusions arising from the discussion, which provide the final thoughts on the experience of implementation of integrated curriculum in a pilot school and answer the central research question. It also contains recommendations coming from the analysis of findings and directed to different constituent groups such as school administration and teachers as well as for further directions of research in this area.

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## Chapter Two: Literature Review

### 2.1. Introduction

The purpose of the study is to explore the experience of implementation of integrated curriculum in Kazakhstani secondary pilot schools. The study attempted to answer the following research questions:

1. How are the purposes of implementing integrated curriculum in pilot schools are understood by school administration and teachers?
  - a. How do school administrations understand the purposes?
  - b. How do teachers understand the purposes?
2. What challenges arise in the implementation of integrated curriculum at the school level?
3. What opportunities present themselves in the implementation of integrated curriculum at the school level?

This chapter is an overview of the relevant literature. While appropriate studies about the implementation of integrated curriculum in Kazakhstan are not available, countries such as South Africa, Australia, South Korea, and Singapore have done significant work in the field. This review of the literature focuses on three main topics: the purposes behind implementation of integrated curriculum, challenges that implementation presents and opportunities it affords at the level of a single school.

This literature review is organized in the following way: The first part provides information about the process of implementation of integrated curriculum and the understanding of the purposes of the implementation of integrated curriculum by teachers and school administration as reflected in the literature. The second part describes the challenges teachers and school leadership teams in various countries meet in the process of implementing

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an integrated curriculum. The third part focuses on the opportunities schools across the world open to themselves as they undertake an integrated curriculum. Finally, a summary of the literature is provided.

### **2.2. Definition of an Integrated Curriculum**

Several researchers provide a range of definitions for integrated curriculum. According to Bound (2000), integrated curriculum is described as curriculum that connects different areas of study by cutting across subject-matter lines and emphasizing unifying concepts (p. 45). In addition to that, integration focuses on creating opportunities for making connections by students, allowing them to engage in relevant, meaningful activities. Similar, Shoemaker (1989) defines an integrated curriculum as education, which has crosscutting subjects that brings together different aspects of the curriculum into significant unit focusing on broad areas of study. Stated differently, teaching and learning is given in a holistic way and displays the real world (p. 5). As a result, there is consensus of many researchers that students who were taught an integrated curriculum have competitive skills that are required in the real world. Students who were taught based on integrated curriculum could develop their level of thinking, they were able to perceive the situations from different perspectives and apply gained experience in practice.

### **2.3. The Purposes of the Implementation of Integrated Curriculum**

There is a lack of empirical research in teacher understanding of the purposes of curriculum integration at the school level. For instance, a range of studies are done about the researchers' interests in terms of the use of integrated curriculum (Saravanan, 2007; Chan, 2009), the teacher or school principal's roles (Johnston, 2005; Nuthall, 1999), perceived challenges that schools face when they implement an integrated curriculum (Ross & Hogaboam-Gray, 1998; Venville, et al., 2003).

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Different studies provide a variety purposes for curriculum integration. These purposes can be listed as the following ones:

- To develop a holistic view of learning;
- To make learning applicable in practice;
- To increase teachers and students' motivation to teaching and learning.

**2.3.1. To develop a holistic view of learning.** Teachers put an integrated curriculum into practice in order to develop a holistic view of learning that will make learning more meaningful for students and enhance their success. According to Lipson et al. (1993) the main argument for curriculum integration is a fact that integration of subjects “represents a way to avoid the fragmented and irrelevant acquisition of isolated facts, transforming knowledge into personally useful tools for learning new information” (p. 252). A range of studies in curriculum integration shows that implementation of an integrated curriculum can be effective for students because it makes education manageable and relevant. Students gain information better if themes are taught in interconnection and interrelation within the subjects. A holistic view of learning values in-depth knowledge of subjects. Educators teach learners by dividing information into meaningful concepts focusing on a particular topic or theme that is studied from different perspectives. Thus, students have deeper understanding of concepts and can see the big picture rather than an isolated fact. Shoemaker (1989), Palmer (1991), Caine and Caine (1991) state that learning occurs faster and more thoroughly when it is presented in meaningful contexts, with an experiential component.

This holistic learning achieved via implementation of an integrated curriculum is desirable because of the modern world's demands. These days students' abilities in memorization and recitation of isolated facts and figures are not enough to be competitive. The twenty-first century requirement for a flexible use of knowledge goes beyond a superficial

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understanding of multiple isolated events to insights developed by learning that is connected or integrated. It is essential for learners to be able to make connections between concepts, to solve problems by looking at multiple perspectives, and to incorporate information from different areas.

**2.3.2. To make learning applicable in practice.** Another teacher perspective on curriculum integration is the necessity for students to connect gained material with its practical application in real life. Bonds et al. (1993) note that what is learnt and applied in the formal curriculum should be related and used in other areas of life. This integration will reinforce, provide repetition, and expand students' knowledge and skills in all curriculum areas. As a result, students will quickly comprehend the relationships between learning in all curriculum subjects and apply it throughout each of the school subjects.

Aschbacher (1991) conducted a research that shed light on the effectiveness of the integrated curriculum implementation in terms of its application in practice. A high school in Los Angeles designed the Humanitas programme that provided an integrated curriculum. The researcher has compared this school's program with 16 other schools, which taught students in traditional way, i.e. learners learned new information in the form of isolated facts. Data gathered through surveys of all stakeholders (teachers, students, and administrators), teacher and student interviews, classroom observations, analysis of assignments and examinations, analysis of portfolios, teacher reports, records of college-orientated behavior and standardized tests was thoroughly studied and analyzed in order to explore the effect of curriculum integration. The findings of this research show students of the Humanitas programme were more motivated in learning because they were involved in discussions allowing making connections between content areas and the real world. The students could link and apply their knowledge gained from history, literature, and social study courses in their own lives. Their

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higher-order thinking skills become more developed, as they had to solve the tasks that were close to real-life situations. Thus, students were ready to grapple with real issues and problems that they might face in future life.

**2.3.3. To increase teachers and students' motivation to teaching and learning.** A few studies showed that an integrated curriculum implementation has a positive effect on students' attitude to learning. According to MacIver (1990), teachers perceive curriculum integration as a tool that develops students' motivation to learning. Students who were taught in accordance with an integrated curriculum tend to have a highly increased team spirit; in addition, they enhanced their attitude and work habits. These improvements were achieved because teachers who implement an integrated curriculum work in teams and can identify and address each learner's problem.

Furthermore, students' positive attitude to learning was also mentioned by Vars (1965). The researcher states that students' motivation to learning has increased in their study of student's attitude towards integrated curriculum in England because learners dealt with real-life situations and problems that are common elements in integrated curriculum. As a result, students who actively participated in planning of their learning and making choices and who express their thoughts and study concepts from different perspectives were more motivated and had less behavioral problems.

Similarly, Jacobs (1989) agree that implementation of an integrated curriculum improves students' school attendance and participation in the lessons and increases the level of homework completion. Students are involved in the learning process since they are to make connections between the subjects they study and the world outside the classroom.

The motivation to teaching has increased because teachers had a chance to work collaboratively when they plan and teach the lessons together during the process of integrated

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curriculum implementation. Edgerton (1990), in his study of an integrated mathematics curriculum, reports that the most teachers who experience an integrated curriculum come to promote further integration in other subjects. They feel confident teaching integrated subjects since they have the social support of collaborative work. Moreover, these teachers have a chance to share their ideas and discover new teaching strategies that enhances their teaching practice.

In short, different studies report that a range of countries implemented the integrated curriculum for three primary reasons such as to develop a holistic view of learning, to make learning applicable in practice, and to increase teachers' and students' motivation to teaching and learning.

### **2.4. Challenges met in the implementation of curriculum reforms**

The implementation of integrated curriculum in different countries has met a wide range of common impediments, which hinder its successful application in practice. Frey (2001) identified a number of frequent barriers that educators experienced in the process of the curriculum realization:

1. *Lack of instructional resources.* It is a fact that teaching and learning can be challenging if there is not enough sufficient teaching and learning resources. Some schools have a limited number of instructional materials and equipment such as books, science apparatus, modern technological devices and up-to-date library. Thus, to implement new curriculum, teaching and learning resources are vital. According to Kelly (1999), Zambian schools had limited number of instructional materials and equipment, such as “books, writing material, science apparatus, and inadequate or out of-date libraries” (as cited in Mkandawire, 2010). He stressed that classrooms were overcrowded, which caused students to share books and other materials with one another. Teacher effectiveness was limited and they were not able to pay attention to

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students because of the large number of pupils in classes. Consequently, teachers who had a resource deficit reverted to old methods of teaching since it was difficult for teachers to implement integrated curriculum. This example is relevant to Kazakhstan because Kazakhstani schools face the same challenge as the deficit of teaching and learning resources and overcrowded classrooms, in particular schools do not have enough books and their libraries are out of-date. Thus, lack of instructional resources in Kazakhstani schools can cause a huge challenge in the process of implementation of the integrated curriculum.

2. *Lack of required, ongoing professional development for teachers working with curriculum.* Teachers, as the main change agents of any school reforms, are people who adopt and put into practice the ideas and inspirations of the curriculum designers. Thus, Okello and Kagoire (1996) stated, “success of the curriculum depends on the teachers” (as cited in Mkandawire, 2010). As a result, teachers should be trained sufficiently if a country government wants to implement new curriculum successfully. However, in many countries, such as South Africa (Chisholm, 2000; Jansen & Sayed, 2001), South Korea (Park, 2008), and Australia (Andersen, 2007; Meier et al., 1998) schools experience teacher shortage (particularly in rural areas) and deficit of professional development courses that negatively affect curriculum reform implementation. Kazakhstan also perceives the same challenges since the teacher shortage is at high level not only in rural schools but in urban ones too. The number of professional development courses for Kazakhstani teachers seems to be satisfied. However, the quality of these courses is not sufficient since these courses are more theoretical rather practical.

3. *Difficulties in planning and continued oversight.* Those who implemented the new curriculum did not seem fully aware of how to integrate it into the classroom. Differences in perception of what implementation looks like arose often between teachers and administrators. Moreover, according to MacMath (2011), teachers that implement an integrated curriculum

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need to manage co-planning by rearranging their timetables and synchronizing course plans. As a result, this adds “challenge for planning and scheduling” (p. 40). In other words, teachers do not always have sufficient time to plan lessons effectively because of their workload at schools.

To sum up, taking the above-mentioned common barriers that occurred in the process of the Integrated Curriculum implementation, it is worth emphasizing the necessity of proper financing, of teacher support in putting curriculum into practice, and of proper planning. When teachers have ongoing professional development opportunities, they understand how to use curriculum successfully. In addition to that, in order for the curriculum to be implemented without impediment, curriculum developers, adopters and implementers must have appropriate funding to facilitate effective teaching and learning processes. They have also to think about planning since the workload at schools is rising and teachers usually do not have sufficient amount of time for effective planning.

### **2.5. Opportunities Presented by Implementation of Integrated Curriculum**

Several opportunities arise from curriculum integration. Teachers who implemented integrated curriculum in their schools have noticed that it gives students an opportunity to acquire in-depth understanding of a learning phenomenon and apply it in practice. Montgomery (1999) pointed out that “it is simply not enough for our students to read a variety of works; students need to discover the connections between them” (as cited in Contardy et al., 2000). Students tend to apply a range of methods and strategies to understand, analyze, synthesize, and evaluate gained knowledge. They can make conclusions based on their experience and interactions to make meaning of the provided information.

Another benefit of integrated curriculum implementation is student independent learning because of the use of student-centred approaches in the classrooms. Saravanan (2005), based

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on the research made in Singaporean schools, has stressed, “pupils experienced perhaps for the first time a sense of independent learning. Though the themes were given, they were given a choice in selecting topics and materials from their curriculum” (p. 105). As a result, students are not limited in reaching conclusions on their own, “they are provided with many different perspectives, affording students the opportunity to question the conclusions of their teachers” (Contardy et al., 2000). In addition, students develop their leadership qualities when “they learn how to lead and teachers learned to delegate certain responsibilities to pupils and to make sure that every pupil was involved” (Saravanan, 2005, p. 108).

One more benefit that an integrated curriculum implementation is connected with teacher and student’s attitude to learning. It was proved that integrated curriculum implementation improves teachers and students attitude towards teaching and learning. A study undertaken by Edgerton (1990) revealed that 83 percent of the teachers participating in integrated curriculum implementation continued working with this curriculum after one year of teaching rather than returned to the traditional curriculum. Moreover, MacIver (1990) reported that teachers were grateful to “the social support of working together” and felt that they were teaching more efficiently while they were integrating across subjects and courses. They found new interests and teaching strategies that improved their teaching practice (p. 25).

Greene (1991) also conducted a research with teachers from Mid-California School. These teachers have implemented the Mid-California Science Improvement Program during one school year. Science was linked with language arts, social studies, mathematics, and fine arts. These subject areas were taught to students of the first grade in an elementary school. An independent evaluator interviewed teachers who participated in the Mid-California Science Improvement Program. The findings of this study revealed a rapid rise in science instruction time and comfort with science teaching. Progress was indicated in teacher attitudes, student

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attitudes, and student performance. These findings were reliable for both gifted and “educationally disadvantaged” students (Greene 1991).

In addition, Greene (1991) reported that students of Laurel Wood School have improved their knowledge on science, art and languages because the learning content “Construction of buildings” was connected in “engaging ways with other subjects in the curriculum” (p. 42). During the experiment students followed several steps, such as designing, planning and developing the scale drawings, studying soil and rocks, and reading the story and making the models of houses. The results of this experiment showed that students are more motivated to learning when they learn themes in interconnected meaningful concepts in all subject areas. Moreover, *educationally disadvantaged* learners improve their performance since they consolidate their knowledge and connect the learning experience in all subject areas.

In brief, implementation of integrated curriculum gives students opportunities in terms of deep understanding of their surroundings and making connections between the learnt material and their experience, application of gained information in practice, enhancement of independent learning and development of leadership qualities, and increase of teacher and student motivation to teaching and learning.

### **2.6. Summary**

The review of the previous empirical studies on the issue of the experience of the implementation of integrated curriculum in different countries has shown that there are several areas of aspects, which need to be addressed in the future research. In particular, there are a number of research gaps and limitations, which this study will attempt to fill and investigate.

First, the issue regarding the understanding the purposes for curriculum integration by teachers and school administration to implement an integrated curriculum has given little attention. Most emphasis in educational research has been given to use of integrated curriculum

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(Johnston, 2005; Nuthall, 1999; Ross & Hogaboam-Gray, 1998; Venville, et al., 2003). A lack of empirical comprehensive research in integrated curriculum implementation makes it difficult to understand the school administration and teachers' awareness of the purposes for curriculum integration at school level. Therefore, this study will address this gap by focusing on exploring of teacher and school leadership team's perceptions.

Second, besides the research on the challenges that teachers and school administration meet in the process of putting integrated curriculum into practice (Okello & Kagoire, 1996; Kelly, 1999; Sibulwa, 1996; Applebee, Adler & Flihan, 2007), a relatively small number of comprehensive studies are made in investigating the challenges that the main school reforms players face with in everyday classroom practice. Therefore, this research will attempt to shed light on the everyday impediments that curriculum implementers experience.

Finally, despite the fact that a range of empirical studies that reported on some subjects' units of integrated curriculum academic value (as noted by Berlin & Lee, 2005; Lederman & Niess, 1997; Meier et al., 1998; Venville, Rennie, & Wallace, 2003), a few research is focused on the meaningful opportunities that a whole integrated curriculum provides students with. Finally, no previous research in the area of integrated curriculum implementation has been done in Central Asia. Research of this kind in Kazakhstan would contribute to the existing body of knowledge on the opportunities that an integrated curriculum as a whole course offers for students are believed to be identified through the analysis of the schoolteachers and administration's responses.

### **2.7. Conclusion**

In this chapter, the major points from the previous studies on this topic were highlighted and discussed. In particular, the experience of the implementation of integrated curriculum was described. The overview of the literature on the challenges and opportunities of putting into

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practice integrated curriculum was presented. The summary of this chapter provided the data on several gaps and limitations of the previous studies, which were attempted to be filled in this study. In the next chapter, the methodology of this study will be described and justified.

## Chapter Three: Methodology

### 3.1. Introduction

The previous chapter provided a critical account of the existing body of literature relevant to the study of different countries' experience of the implementation of new curriculum in their educational field. The purpose of this chapter is to explain to the reader the methodology of the study to provide details on the selection of the participants and the analysis techniques. It describes the research design that helps to answer the central question: *What is the experience of implementation of the Integrated Curriculum in pilot schools?* More specifically, the purpose of this chapter is to define a research design of the study, to describe sampling techniques, and to identify methods of data collection. The focus is then shifted to the data analysis procedure, which is described addressing ethical considerations during the study. Finally, a section on limitations and delimitations provides an overview of some missing points of the study, possible weaknesses, as well as some solutions. The final section of this chapter is the conclusion to the methodology used.

### 3.2. Research design

In this section, the choice of the research design will be specified and a rationale for its choice will be provided. In the field of educational research, both quantitative and qualitative research can take place. In this study, the qualitative approach was used to gather data. According to Creswell (2014),

Qualitative research is best suited to address *a research problem* in which you do not know the variables and need to explore. The literature might yield little information about the phenomenon of the study, and you need to learn more from participants through exploration (p. 16).

Qualitative research is the most appropriate research strategy for this study because, according to Smith & Smith (2000), selecting qualitative research design will assist the researcher to grasp the overall picture and develop a detailed understanding of teachers'

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perceptions of the process of implementation of the integrated curriculum. This research design fits the purpose of the study, as the researcher will be able to obtain an in-depth understanding of the perceptions of teachers and critically explore the process of putting the integrated curriculum into practice from their perspective.

Within the qualitative approach, a case study design in particular is used in this research because this technique can aid in the collection of data in a real-life situation that is more reliable. Thus, the researcher has an opportunity to examine a central phenomenon in depth in its natural settings based on extensive data collection (Baxter & Jack, 2008; Creswell, 2014; Yin, 2004).

The researcher used single unique case study. Yin (2003) defines it as a case, which is distinctive or exclusive in some way. This case is unique because the research took place in the only secondary multi-graded pilot school which has been implementing integrated curriculum in Kazakhstan. While the school is the only one introducing curriculum integration so far, the unique case study would allow to collect information, which might be applicable to other multi-graded schools given the fact, that “there are 4288 multi-graded schools that comprises 56, 6 % of all schools” (Duisebek, et al., 2013, p. 3).

### **3.3. The Central Phenomenon of the Study**

The central phenomenon is described by Creswell (2014) as “the key concept, idea, or process” of research (p. 30). In this study, the central phenomenon can be characterized as experience of implementation of the integrated curriculum in a pilot mainstream school. For that reason, this study aims to build up a clear comprehension of this phenomenon, which might facilitate the avoidance of some challenges and pitfalls when the integrated curriculum is widely put into practice in all Kazakhstani secondary schools.

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### 3.4. Site and Sampling selection

This section indicates the type of research sampling used in the study and describes the process of selecting participants. The following methods of data collection were used in this research: one-to-one interviews, document analysis, and lesson observations. To select participants for this unique case study purposeful sampling was used as it fits with the small-scale nature of the study and allows the researcher “intentionally select individuals and sites who can best help to understand the central phenomenon” (Creswell, 2014, p. 228). There were two strategies used within a purposeful sampling: maximal variation sampling and homogeneous sampling.

Overall, two groups of participants were involved in the study – teachers and administrators. The purpose of selecting two groups of respondents was to analyze different perspectives of experience of the implementation of the integrated curriculum; the administration staff were supposed to bring their perspectives on those issues that may have arisen at the school level, as they are responsible for organizing and managing the initial process of implementation of the integrated curriculum. On the contrary, the teachers were supposed to give their understanding of the pitfalls they faced when they put the integrated curriculum into practice and explain the opportunities that the new curriculum provided

**3.4.1. Homogeneous Sampling.** The administration staff (a principal, a vice principal for Academic Affairs and a vice principal for Methodological Work) were sampled using purposeful homogeneous sampling. A homogeneous sampling is characterized by the selection of “certain sites or people because they possess a similar trait or characteristic” (Creswell, 2014, p. 208). The administration staff was similar in that they met the following criteria:

1. they have to be responsible for the implementation of the integrated curriculum;
2. they should have at least two years of experience in managing the educational process.

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**3.4.2. Maximal Variation Sampling.** The researcher selected teachers using maximal variation sampling. A maximal variation sampling was employed in this study because it allows examining “cases or individuals that differ on some characteristic or trait” (Creswell, 2014, p. 229). The teachers were varied on the following characteristics: teaching experience and subject because this provided in-depth understanding of what challenges and opportunities teachers faced in the process of implementation of the integrated curriculum. All specified individuals were contacted by phone and email and invited to take part in the study as respondents. This was important since the researcher tried to create comfortable atmosphere for the participants in order to get their assistance in the research.

**3.4.3. Sampling for observations.** The researcher used the same classes at the same school for observations that she usually observes as part of her responsibilities. The reason for choosing those particular classes was the fact that those classroom teachers had put the integrated curriculum into practice. The researcher varied teachers using the following criteria: (1) teachers of the primary school because they implement an integrated curriculum in their teaching practice and work collaboratively with NIS, and (2) teachers of Kazakh and English languages that take part in teacher professional courses focused on implementation of an integrated curriculum and use an integrated curriculum in their practice. These criteria were important because they provided in-depth understanding of what challenges and opportunities teachers faced when they implement the integrated curriculum.

**3.4.4. Sampling for document analysis.** The researcher used the administration and teachers’ monthly and annual reports that she has as part of her responsibilities. The researcher was given a folder with all monthly and annual reports by the vice principal who is responsible for the implementation of integrated curriculum in this pilot school. Seven teachers and two vice-principals who implemented the integrated curriculum wrote these reports in the

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beginning of the school year, in the end of each semester and by the end of the school year. It was decided to use only those reports of teachers and vice principals that contained information about the challenges and opportunities the school met in the process of implementation of the integrated curriculum

### 3.5. Data Collection Methods

In this section, the research methods, which were used to gather the data for this study, will be defined. First, the tools for gathering the data will be distinguished and the applicability of their usage will be clarified. Second, the characteristics of the research tools will be defined and details of how they were used in this study will be given.

In this study, one-to-one semi-structured interviews were administered to collect the data to answer research question 1. In particular, Research Question 1 is *how are the purposes of the implementation of the integrated curriculum understood by school administration and teachers?* Punch and Oancea (2014) highlight interviews within the qualitative research help to get an in-depth understanding of “people’s perceptions, meanings, and definitions of situations and constructions of reality” (p. 182). The one-to-one interviews with secondary school teachers and school leadership team showed what difficulties the teachers, school administration faced every day, and how they coped with these issues as well as the opportunities they seized.

Semi-structured interviews were used for the data gathering process. As Creswell (2014) states, “in qualitative research, our approach relies on general interviews or observations so that we do not restrict the views of participants” (p. 227). Moreover, Creswell (2014) points out that,

The main aspect of qualitative data collection is to identify the types of data that will address to the conducted research. Thus, it is important to become familiar with the

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questions and topics and to review them prior to deciding upon the type of qualitative data that you will collect (p. 234).

Generally, the data was gathered by the use of in-depth semi-structured one-to-one interviews with open-ended questions. The interview questions were focused on participants' experiences during the process of implementation of the integrated curriculum, which contributed to the development of their understanding of their roles as the practitioners who put the integrated curriculum into action. Appendix A provides the table that shows links connecting the interview questions with the research sub-questions.

Two methods were used to answer research questions 2 and 3. Specifically, Research Question 2 is *what challenges arise in the implementation of integrated curriculum at the school level?* Research Question 3 is *what opportunities teachers and administrators have when they implement an integrated curriculum at the school level.* First, the document analysis approach was employed. Creswell (2014) points out that documents represent a good source for text (word) data for a qualitative study. Moreover, Creswell (2014) highlights that those documents are beneficial for research because of the use of initial language and words and thoughtful attention paid to them by the participants. These documents are easier to use due to their readiness for analysis without the necessary transcription, which is required with observational or interview data (p. 223).

The public documents such as teacher and administration monthly and annual reports that reflect the process of implementation of the integrated curriculum at school were collected. These sources were valuable because they provided information that helped the researcher to understand the central phenomenon in this case study design (specifically, the experience of putting the integrated curriculum into practice). The researcher asked permission to use these documents in her study from the administration staff, particularly the principal, who is the main gatekeeper at this school. The analysis of the administration and teachers reports were

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examined in order to distinguish the challenges and opportunities the whole school faced when they implemented the integrated curriculum in the educational process.

Second, the method of observation was used to answer these research questions in order to give additional information about the school setting. According to Creswell (2014), observation is “the process of gathering open-ended, firsthand information by observing people and places at research site” (p. 235). At the beginning, the researcher sought permission from the gatekeeper (specifically from the principal) to collect observational data in the pilot school. The researcher was in the role of an “inside” participant observer. She was involved in lessons at the research site that gave her opportunities to witness participants in action. Class observations gave data about the challenges teachers faced in the lessons as well as opportunities the integrated curriculum provided. Moreover, information about barriers and opportunities that teaching staff have encountered in the process of implementation of the integrated curriculum was collected with the help of this approach.

### **3.6. Data collection instruments**

Three types of data collection instruments were used in this qualitative research design unique case study. First, the interview protocol was employed in the one-to-one semi-structured interview to gather information about the understanding by the school administration and teaching staff of the purposes of implementation of the integrated curriculum (see Appendix B for the Interview Protocol). This interview protocol included, as per recommendation of Creswell (2014) a range of information such as the research theme and instructions, interview questions and space for necessary notes and reflections (Creswell, 2014). The interviews contained open-ended questions with the following information: 1) questions addressing

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biographical information about the participant; 2) questions regarding the participant's experience of implementation of integrated curriculum at the school.

The last part of interview questions were designed based on the research subsidiary questions and the themes presented in the related literature. Since the researcher aimed to identify the challenges that teachers and school leadership team encountered and opportunities that an integrated curriculum gave them, the interview questions were put into two categories: 1) questions that shed light gained by school administrators of the experience of the implementation of the integrated curriculum; 2) questions that helped to get information related to the experience gained by teachers of the implementation of the integrated curriculum.

Second, an observation protocol was used to collect data focused on challenges and opportunities the school faced in the process of putting the integrated curriculum into practice. It consisted of two parts: descriptive and reflective field notes (see Appendix C for the Observation Protocol). It was applied for "taking field notes during an observation" (Creswell, 2014, p. 249). On this form, descriptive and reflective field notes were employed. The descriptive field notes gave information based on a description of the setting, people and their activities aimed at the implementation of the integrated curriculum. Reflective field notes were used to record the researcher's personal thoughts related to themes that emerged during the observation.

Finally, specific document analysis protocol was not applied to gather data to identify the barriers teachers and school leadership team faced in everyday practice when they implemented the integrated curriculum since the researcher used the original copies of monthly and annual teachers and administrators' reports. The analysis of these documents was done by the use of thematic coding.

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### 3.7. Data Collection Procedures

From the beginning, the research project was conducted in accordance with ethical principles and standards. Regarding Creswell (2014), “the process of gaining the access to participants and sites is one of the most important procedures before the data collection” (p. 227). Approval from the Graduate School of Education Ethical Review Committee and confirmation of access to the research site through potential gatekeepers (i.e. school principal) were gained. After gaining approval from the GSE Ethical Review Committee, the data gathering process started with the identification of the participants in the educational study. The participants were chosen on a voluntary basis with the help of the gatekeeper. The gatekeeper from the school was the principal, who was contacted a week before the data collection process began. Informing the gatekeeper in advance helped to create trusting relationships with the participants.

The schedule for conducting interviews was broken into two parts because two different groups of respondents took part in interviews. First, the interviews with the school leadership team were conducted. Then, the interviews with subject teachers took place. In this study, the process of data collection was different for each group of respondents due to different specifics for contacting these individuals.

**3.7.1. For school administration.** The school principal, the vice principal for Academic Affairs and the vice principal for Methodological Work were contacted to confirm their agreement to participate in the research. They were sent all necessary information such as the theme of the research, time of the interview and its duration, possible risks and benefits, described in the informed consent forms. The interview protocols were developed and all interviews were tape-recorded in their entirety with the interviewees’ permission. During the interview notes were taken, which were shown to the interviewee, so he or she had a chance to

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make corrections or remove something, in case I did not understand them correctly. The interviews lasted for about 40-50 minutes. During the interviews, some sub-questions (probes) were used to gain more information for clarification. The researcher thanked the respondents for participation in the research.

**3.7.2. For teachers.** First, the researcher analyzed the list of teachers given by the school leadership staff and selected individuals who matched the criteria. Then, these teachers were invited to participate in the research. At the beginning, the researcher had agreed on the appropriate place and date with the respondents and the meetings were arranged individually. Before the interview, each interviewee was again informed about the main purpose, significance and confidential nature of the research. They were given two copies of the consent form to sign, one of which they kept for themselves. In general, the next steps of the interviews were the same as for the administration staff.

Document connected with the implementation of new curriculum as well as observations were examined in order to gain an understanding of the renewals of the current secondary curriculum and identify the reasons for the changes in the educational process, the barriers teachers and school leadership team faced in everyday practice. First, the researcher identified monthly and annual reports that reflect the process of implementation of the integrated curriculum to answer the research questions. Second, the researcher took the permission of the principal and teachers to use these documents in the current study to examine the challenges teachers and school leadership team faced in everyday practice. Third, the reports were examined for accuracy, completeness and usefulness in answering the research questions in the present study. Finally, the information from the documents were recorded.

### **3.8. Data Analysis Methods**

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In this section, the process of data analysis is described. The data analysis process started at the data collection stage when the researcher began to reflect on the process and make sense of the raw material. According to Creswell (2012), analyzing qualitative data requires the researcher to understand “how to make sense of the text and images in order the researcher can answer his/her research questions analyzing of qualitative data” (p. 236). Thus, the data analysis was conducted through texts, interpretations, and meanings.

Large amounts of qualitative data required manipulation and selection. First, several folders had been created to store the information which would be revealed over the course of the study. Then, the interviews were conducted in Russian and transcribed for analysis (see Appendix E for the Interview Sample). During the data analysis process, only significant quotes were selected for reporting and translation into English.

After transcribing all the interviews, the software Atlas.ti was applied in order to facilitate the process of data organization. The decision to use this software was based on the fact that it “directs the researcher, through use of different types of codes that enhances formulation of categories and themes, thus reducing time used to analyze data manually” (Ngalande & Mkwinda, 2013, p. 1). Nevertheless, this software was employed only for assisting the data organization process and coding. The actual data analysis was done via thorough analysis according to the research sub-questions. A thematic approach of data analysis was implemented in this research design. For that reason, different thematic categories were created within the sub-questions. The thematic coding was used because it assists in determining the participants’ most essential ideas for in-depth analysis and explanation of the central phenomenon of this research (see Appendix F for a Coded Sheet Sample). Regarding Creswell (2012) the object of the coding process is “to make sense out of text data, divide it into text or image segments, label the segments with codes, examine codes for overlap and redundancy, and collapse these

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codes into broad themes” (p. 243). The most meaningful information was placed and saved for analysis in a separate document. The researcher emphasized understanding of the purposes of implementation of the integrated curriculum by the teaching and school leadership team, distinguishing the challenges and opportunities they experienced in the process of putting the integrated curriculum into practice. These thematic codes were examined and narrowed down to specific sub-themes for analysis and further presentation.

The same thematic coding was used to analyze information from lesson observations. In general, this qualitative analysis provided understanding of how a pilot school’s staff experienced the implementation of the integrated curriculum in the teaching and learning process.

The content analysis of the document was used in this study. Specifically, the administration and teachers’ monthly and annual reports were collected and examined in order to identify information containing challenges and opportunities these stakeholders encountered when they put the integrated curriculum into practice. Thematic coding was also used to analyze the reports. The data was divided into different thematic categories that were thoroughly examined and narrowed down to specific sub-themes for analysis and further presentation.

### **3.9. Ethical Issues**

In this section, the process of ensuring that this study followed research ethics will be described. The special official letters from the Nazarbayev University Graduate School of Education aimed at informing the gatekeeper of the purposes and principles of the study were written and sent to the site. Furthermore, each participant received the informed consent form two days before the interview (see Appendix D for the Informed Consent Form).

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Some potential minimal risks of conducting the interviews were associated with spending the participants' personal time during their workday. To address this issue, the interviews were conducted at the most convenient time for the interviewees.

Another potential risk was associated with identifying the personalities of the interviewees due to one particular research site chosen for the research and due to the participants' characteristics: the school leadership team and teachers who put the integrated curriculum into practice. To minimize the mentioned risk, the researcher did not reveal the choice of the research site in the final dissertation. Instead of naming the research site the researcher addressed it as "one of the pilot schools". Since there are 30 schools in Kazakhstan, the names and personalities of the participants were not identified. No names and personal data were revealed anywhere in the study without personal agreement of the participants. Pseudonyms in the data analysis process were used instead of the real names to ensure confidentiality. The data was not available to the administrators of the participants' schools and will not be used to evaluate their performance as part of any school or system evaluation. Their employers (school administrators and educational officials) were not informed as to what the researcher and participants discussed during the interviews. The method of member checking was used to avoid any misinterpretation.

One more minimal potential risk, associated with future research, was that the participants might have been easily identified if the interviews had taken place at the research site. To address this issue, the interviews were conducted at a place outside the school, which was convenient for the interviewees.

Moreover, during the process of data analysis, the list of e-mail addresses of participants, contact details, and interview transcriptions were stored electronically in a

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password-protected folder. Thus, only the researcher had access to the files that would be completely deleted after the end of the study.

The researcher informed the respondents of their rights of not answering any questions with which they were not comfortable. Furthermore, the researcher notified them about their rights to withdraw at any time during the interview.

Observation did not present any danger in terms of revealing a teacher's identity because is a normal part of the researcher's responsibilities to observe the same school and the same classes. Hence, the people who were observed were not able to tell if the researcher conducted observations for professional or research purposes.

There were also some particular benefits for all participants. First, the research was beneficial for the participants in the form of their self-reflection on experience gained during the process of implementation of the integrated curriculum at the school level. Therefore, they were able to analyze the pitfalls and opportunities they encountered in this process, which led to the improvement of school performance. Second, policymakers and educational authorities could refer to the findings of the research in determining which barriers should be eliminated when the integrated curriculum is widely put into practice, which will result in a less stressed implementation of the integrated curriculum.

During the process of data analysis, only two people (the student and the advisor) had access to the data, which was stored in a password-protected file. After data transcription, the recorded interviews were completely deleted from the tape-recorder and computer.

### **3.10. Limitations and Delimitations.**

After describing the methodology of this study, it has been recognized that there are several limitations, which should be addressed in future research on issues regarding implementation of the integrated curriculum.

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The first limitation of this study is that the results cannot be generalized due to the small number of participants in this study as well as the nature of sampling approach.

The second limitation of this study relates to the duration of the fieldwork, which lasted for only two weeks. Taking into account the complexity of the phenomenon investigated in this research, namely the experience of the implementation of the integrated curriculum, more longitudinal studies are needed to address this limitation.

Finally, this research ignores the fact that there is a range of external factors that could have influenced the school leadership team and teaching staff regarding the purposes of the implementation of the integrated curriculum. This limitation was impossible to address in a qualitative inquiry. Thus, future research might want to control for the impact of external factors.

### **3.11. Conclusion**

In this chapter, the overview of the methodology used in this study has been provided. In particular, it demonstrated the design of this research, which incorporated two sampling techniques. The procedures of data collection and data analysis have been described. In addition, ethical issues regarding this study have been analyzed. Finally, limitations and delimitations of some aspects of the study have been provided. In the following chapter, the findings of this study will be presented.

## **Chapter Four: Findings**

### **4.1. Introduction**

In this chapter, the findings of this study, which is focused on the experience of implementation of integrated curriculum in Kazakhstani secondary pilot schools, will be presented. The purpose of this study was to explore the initial experience of the implementation of the integrated curriculum in Kazakhstani secondary pilot schools. Additionally, the research aimed to investigate how Kazakhstani school administrations and teachers understand the purposes behind implementation of an integrated curriculum, to shed light on the possible barriers that may occur in the process of putting the integrated curriculum into practice, and attempted to identify the opportunities that the integrated curriculum can afford to students as well as teachers.

For the purpose of this study, the following central question was addressed at the beginning of the study: What is the experience of the implementation of the integrated curriculum in pilot schools? The sub-questions were: (1) How are the purposes of implementing integrated curriculum in pilot schools understood by administration and teachers? (a) How do school administrations understand the purposes? (b) How do teachers understand the purposes? (2) What challenges arise in the implementation of integrated curriculum at the school level? (3) What opportunities present themselves in the implementation of integrated curriculum at the school level? To answer these research questions and get more insightful answers from participants, a qualitative research design, in particular, unique case with interview-based, document analysis and lesson observation methods was used.

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In this chapter, the perspectives of two groups of respondents were investigated: (1) school administration (a principal, a vice principal for Academic Affairs and a vice principal for Methodological Work) and (2) teachers who put integrated curriculum into practice. The reason for choosing these particular groups of participants lies in the intention to acquire a more profound understanding of the problem by looking at it from both perspectives. Moreover, teachers and vice principals' reports as well as lesson observations helped to collect additional information about the challenges and opportunities that school leadership team and teachers encounter in a daily practice of integrated curriculum implementation. The collected data was transcribed and analyzed by hand. Then, it was coded into specific themes and sub-themes in accordance with the sub-questions of the present research.

The chapter is divided into three main parts aligned with sub-questions of the study. The first part is dedicated to the first sub-question and describes the understanding of the purposes for an integrated curriculum implementation by school administration and teachers. The second part gives an answer to the second sub-question and provides a list of particular challenges that teachers and school leadership team face when they put an integrated curriculum into practice. The third part distinguishes the opportunities that an integrated curriculum gives to teachers and school administration. The data is supported by tables, which summarize the number of participants, who indicated particular challenges and opportunities.

### **4.2. Characteristics of Participants**

The following chart indicates the categories of respondents who participated in interviews and provides information on the participants' area of specialization. This information will be useful in the analysis of findings. The codes shown in the Table 1 will be used throughout the paper instead of participants' names in order to keep their confidentiality.

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Overall, ten participants took part in the interview. More specifically, there were two groups of respondents: school administration (a principal, a vice principal for Academic Affairs and a vice principal for Methodological Work) and teachers who put integrated curriculum into practice. As it can be seen from Table 1, there was a variety of respondents with different areas of specialization. The teaching experience of teachers in this study varies from 7 months to 20 years of working at school. The experience of school administration on a leadership position varies from 2 to 25 years.

Table 1

*General Information about Respondents*

<b>Types of respondents</b>	<b>Respondent code</b>	<b>Age</b>	<b>Years of experience on a leadership position</b>	<b>Position</b>
School administration	Respondent № 1	55	25	A principal
	Respondent № 2	32	2	A vice principal for Academic Affairs
	Respondent № 3	38	7	A vice principal for Methodological Work
<b>Types of respondents</b>	<b>Respondent code</b>	<b>Age</b>	<b>Years of teaching experience</b>	<b>Area of specialization</b>
School teachers	Respondent № 4	37	13	Kazakh language
	Respondent № 5	32	7	English language
	Respondent № 6	38	9	Russian language
	Respondent № 7	43	16	Russian language
	Respondent № 8	21	Less than 1 year	Primary school teacher
	Respondent № 9	45	20	Primary school teacher
	Respondent № 10	33	5	Psychologist

Overall, fourteen reports were studied in this research. More specifically, there were fourteen reports from two groups of respondents: school administration (a principal, a vice

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principal for Academic Affairs and a vice principal for Methodological Work) and teachers who put integrated curriculum into practice (see Table 2).

Table 2

### *General Information about Documents*

<b>Types of documents</b>	<b>Number of reports</b>	<b>Report author</b>
School administration semester and annual reports	1	A principal
	2	A vice principal for Academic Affairs
	1	A vice principal for Methodological Work
<b>Types of documents</b>	<b>Number of reports</b>	<b>Report author</b>
Teacher monthly and annual reports	2	Kazakh language
	2	English language
	3	Russian language
	3	Psychologist

Overall, three lessons were observed in the same class during this research (see Vignette

1.

### Vignette 1

#### *Description of a Classroom where observations took place*

The students of the second grade are taught based on an integrated curriculum for two years. There are 12 students in this class: four boys and six girls. One of the students is the boy with mental impairments. Three of these students have pre-school education, i.e. they attended the kindergartens. Six of them live with their grandparents and two of the students are from single parent families. Students' behavior is different on all three lessons, probably this happens due to the fact that they were taught by different teachers: the Kazakh, the English and the Primary School teachers.

### **4.3. The Purposes of the Implementation of Integrated Curriculum**

To answer the sub-question 1, the respondents were asked to explain how they understand what integrated curriculum means and try to identify the purposes for its implementation. After

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thorough analysis of the participants' responses, four main purposes for integrated curriculum implementation were distinguished: (1) to develop a holistic view of learning, (2) to make learning applicable in practice, (3) to increase teacher and student motivation to teaching and learning, and (4) to make national education more aligned to western standards. The number of participants, who specified these purposes, is shown in Table 3.

Table 3

*Number of References to the Purposes of the Implementation of an Integrated Curriculum in the Transcripts*

<b>Themes</b>	<b>Number of respondents</b>
To develop a holistic view of learning	7 respondents (2 school leaders and 5 teachers)
To make learning applicable in practice	6 respondents (2 school leaders and 4 teachers)
To increase teacher and student motivation to teaching and learning	6 respondents (2 school leaders and 4 teachers)
To make national education more aligned to western standards	1 respondent (teacher)

**Expected findings: 4.3.1. To develop a holistic view of learning.** At least three reasons mentioned by teachers were expected based on the literature review. One of the reasons mentioned by teachers is the development of a holistic view of learning. According to the literature, a holistic view of learning implies that when dealing with a particular topic it is broken down into related sub-topics, which are simultaneously covered at several subjects. Many teachers in our sample believe that the best way for students to learn is to divide a particular topic into meaningful concepts. These concepts should be studied at several subject areas from different perspectives. Thus, students have deeper understanding of concepts and can see the big picture of a learning event. As one of the teachers mentioned:

An integrated curriculum is the program that allows exploring cross-subject links on one subject. This integration can be achieved by covering “cross-cutting” topics on several

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subject areas. For example, we can study the “Travel” topic throughout all subjects. In the “Literacy” (Obuchenie Gramote) course, we learn how to create the correct routes for travelling or what items we need to pack. The “Art” course allows students draw or paint the places and sights that they want to visit. In addition, the “Knowledge of the world” (Poznanie Mira) course gives students a possibility to study the nomadic history of our nation. (Respondent 7)

Another reason for implementation of an integrated curriculum is the development of students’ critical thinking skills to prepare them to the demands of rapidly changing world in new society members. In the past, teaching was mostly focused on students’ abilities in memorization and recitation of isolated facts and figures. However, these skills are not enough to be competitive in our century. These days it is essential for learners to be able to make connections between concepts, to solve problems by looking at multiple perspectives, and to incorporate information from different areas. Teachers in our sampling consider that critical thinking improves as the result of curriculum integration because in integrated classrooms students are always asked to look at the phenomena from different points of view, to solve the problems by providing different solutions and to incorporate information from different areas.

One of the teachers said:

Due to the changes that exist in our world, there is a demand in new members of society. We have heard a lot about...the competitive individuals who can justify their points of view. Nazarbayev Intellectual Schools’ teachers cover topics from different perspectives by integrating of several subjects. Integration enables students to express and justify their points of view. Meanwhile, students from regular schools cover learning material from one perspective only. In the past students who graduated from our pilot school, when they entered universities could not express their thoughts and support their ideas with multi-perspective arguments. Nowadays our pilot school teaches students to discuss and study the learning events from different perspectives, to express thoughts and justify their points of view from the first grade. That is why in mainstream schools teachers should also implement an integrated curriculum (Respondent 8).

The last reason to put an integrated curriculum into practice is two-fold: (1) it aims to help the teacher to deal with a diverse classroom and (2) to increase student tolerance for diversity. Integration allows students to develop their abilities to express, justify and respect their and other people’s points of view when they work in groups. Kazakhstani teachers have

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mentioned that they have diverse classrooms. An integrated curriculum implementation enables teachers to create an environment where all students feel that their ideas, contributions and work are valued. These learners feel confident to express their ideas and are tolerant to each other.

Learning is social, in other words it requires watching and interacting with each other. Our school has diverse classrooms where children with different social status do not want to work together. Integrated curriculum gives teachers an opportunity to create real-life situational tasks that students have to solve together. They are to share their ideas in small groups, to listen to each other, to respect each other. Now we see that all children in the first and second grades play together. They are not split into groups according to their social status as students from higher classes (Respondent 10).

**4.3.2. To make learning applicable in practice.** Teachers and school administration perceive an integrated curriculum implementation as an opportunity to make learning more applicable in practice for students. During the Soviet Union, which was when most Kazakhstani teachers were trained, coverage of the topics of teaching was very theoretical. The current introduction of curriculum integration allows teachers to make tasks and assignments less theoretical and more real life. Students regularly work on practical problems with real life examples. Methodologically curriculum integration implies that students are frequently given real life situations to analyse from different points of view. A range of teachers in my sampling believes that students gain in-depth conceptual comprehension when they acquire learning events in meaningful contexts from different perspectives and applying them in real-life situations. Integration of several subjects reinforces, provides repetition and expands students' knowledge and skills in all curriculum areas. Consequently, students quickly comprehend the relationships between learning in all curriculum subjects and apply gained knowledge in practice throughout each of the school subjects. As one of the respondents noticed:

Our students gain knowledge better when we focus on one particular topic on several courses. For instance, when students learnt the letter “Я” and its sound on the “Literacy” course, I used the list of animals that have this letter in its names. Then, on the

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“Knowledge of the World” course, student gained the information about these animals and they were given a task to identify the sounds that the letter “Я” consists of. In addition, their homework assignment was to draw, paint or make an animal and prepare a short information report about an animal that has the letter “Я” in its name. This integration of different tasks made learning interesting for students and they actively participated in the lessons (Respondent 6).

**4.3.3. To increase teacher and student motivation to teaching and learning.** One of the purposes to implement an integrate curriculum that revealed in the interviewees’ responses is a rise of teacher and student motivation to teaching and learning. Teachers who put an integrated curriculum into practice on a daily basis mention that they are more self-confident and secure in terms of teaching students because when they plan lessons they can explore the learning phenomenon from different perspectives. These teachers spend time planning the lessons with other subject teachers to find the connections in their disciplines. Thus, when students ask questions clarifying concepts from different subject areas, teachers feel more confident and comfortable to respond them. One of the respondents noted:

Implementation of an integrated curriculum is necessary for improvement of teaching practice. Working with other teachers who put this integrated curriculum into practice, I can share issues that arose in my teaching practice and find solutions to these problems together with more experienced teachers. Moreover, I can discuss the materials that students will cover on my course with subject teachers who can give me additional materials or explanations for the questions that students may ask during my course. Additionally, we investigate new teaching strategies that are more relevant in teaching a particular concept on different subjects (Respondent 8).

In addition, students tend to be more motivated to learning as the curriculum integration occurs in the educational process. Students attend school more regularly; they miss the classes less often since they study concepts in the connection with a range of subjects. Teaching staff has noticed that students are more engaged in learning because they incorporate information from different subject fields; learners revise learning phenomena on a various subjects that leads to knowledge retention. They work together to complete the real-life situations by giving

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examples from their experience. As a result, they are active during all subjects, they complete homework assignments more often since these assignment are linked to several subjects.

Since we started implementing an integrated curriculum, our students' attitudes towards learning and their work habits have changed. Almost every child becomes motivated to learning, specifically when it comes to dealing with research projects. For example, on the "Literacy" course our students read a story about Jack and the Beanstalk. They wanted to check how many days the bean needed to grow. On "Knowledge of the World" course, students studied about the types of beans and conditions for their growth. On the "Art" course, they painted the story and made a role-play (Respondent 9).

**Unexpected findings: 4.3.4. To make national education more aligned to western standards.** The only unexpected finding emerged from the interview with participants. One of the purposes was to make national education more aligned to the western educational standards. National secondary education can be at the same level of prestige as western or European education. This may happen because Kazakhstan attempts changing the educational system for its improvement. A range of international teachers shares their experience in terms of teaching students and supporting local teachers at Nazarbayev Intellectual Schools. As a representative of a pilot school that works closely with Nazarbayev Intellectual Schools, the teachers participated in the current study, have a chance to develop their teaching quality by attending seminars and workshops organized by the international teachers. As one of the participants mentioned:

Kazakhstani government makes reforms in school education because our national education should be similar to the international ones. We usually compare our educational system with the western education and we can see that there are some issues in our teaching. Thus, I think that implementation of an integrated curriculum is aimed at putting our educational system to the same level as the international one. Our education should integrate the best Kazakhstani and international experiences in the educational area (Respondent 4).

To sum up, four purposes for implementation of an integrated curriculum in secondary schools were identified based on the school administration (a principal, a vice principal for Academic Affairs and a vice principal for Methodological Work) and teachers' responses.

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There were no any differences identified in terms of school administration and teachers understanding of the purposes of an integrated curriculum implementation. Three of the distinguished purposes have been previously discussed in the literature review chapter, while one finding is regarded as unexpected. For better understanding of the experience of the implementation of an integrated curriculum in Kazakhstani secondary pilot schools, it was decided to study not only the purposes for implementation of an integrated curriculum. The researcher tried also to distinguish the challenges that schools met in the process of putting the new curriculum into practice, which are analyzed and presented in the next section of this chapter.

### **4.4. Challenges met in the implementation of curriculum reforms.**

To answer the sub-question 2, the respondents were asked to highlight the challenges they face when they put an integrated curriculum into everyday practice. In addition, document analysis of school administration and teachers' reports (6 reports) and lesson observations (3 lessons) were conducted for distinguishing the barriers that these stakeholders face in curriculum integration. After thorough analysis of participants' responses, school reports and lesson observations, five challenges that teachers faced were identified: (1) lack of instructional resources, (2) insufficiency of required, ongoing professional development for all participants working with an integrated curriculum, (3) lack of time necessary for preparation, (4) multilingual teaching barrier, and (5) parent-student's unpreparedness. In terms of understanding the barriers, perceptions of the administrative staff vary a little from the perceptions of teachers. For instance, some of the points that were common for the school administrators and teachers were the following: (1) lack of instructional resources, (2) insufficiency of required, ongoing professional development for all participants working with an integrated curriculum, and (3) challenges connected with multilingual teaching of core

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subjects. Only teaching staff have reported lack of time necessary for preparation and parent-student's unpreparedness for an integrated curriculum implementation as the challenges for an integrated curriculum implementation. The number of participants, who indicated these issues as pitfalls in the process of implementation, is demonstrated in Table 4.

Table 4

*Number of References to the Challenges Met in the Implementation of Curriculum Reforms in the Transcripts*

<b>Themes</b>	<b>Number of respondents</b>
Lack of instructional resources	9 respondents (3 school leaders and 6 teachers)
Insufficiency of required, ongoing professional development for all participants working with an integrated curriculum	4 respondents (1 school leader and 3 teachers)
Lack of time necessary for preparation	7 respondents (7 teachers)
Challenges connected with multilingual teaching of core subjects	5 respondents (3 school leaders and 2 teachers)
Parent-student's unpreparedness	2 respondents (2 teachers)

**Expected findings: 4.4.1. Lack of instructional resources.** Almost all the participants of the study (the principal, the vice-principals and teachers) identified lack of instructional resources as the main pitfall in the process of the implementation of an integrated curriculum. To gain better understanding of this challenge, further analysis is provided based on the following sub-themes: (1) lack of teaching and learning resources, (2) deficit in teaching techniques and strategies and (3) classroom diversity.

***Sub-theme 1: lack of teaching and learning resources.*** The results of the study show that there is not enough teaching and learning resources such as books, didactic materials, computers, etc. Although the Kazakhstani government tries to provide schools with books and Nazarbayev Intellectual Schools' teachers have created a web site with the lessons plans in

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accordance with an integrated curriculum, the teachers' sampling in the present study complain that they have no sufficient number of resources. Deficit in teaching and learning resources causes a huge issue for an integrated curriculum implementation since the teachers have to buy or provide some of the instructional resources themselves. As one of the teachers mentioned,

The deficit in teaching and learning resources plays an important role in the implementation of an integrated curriculum. I have to bring everything from home in order to make different experiments and research. The accessibility of an interactive whiteboard at school could sometimes be useful because I can demonstrate some videos for students on it. However, for a complete and deep understanding of the definition or concept, many learners need to touch or make some actions with them (Respondent 4).

The analysis of teacher reports and lesson observations has also demonstrated the shortage of teaching and learning materials and aids. For instance, during lessons some teachers used only books as teaching and learning tools without any additional supporting stuff. Students were acquiring information through reading books or listening to the teachers' explanations. Only in some cases, they were watching videos or listening to the songs when they learnt new themes.

### *Sub-theme 2: lacking knowledge of relevant teaching techniques and strategies.*

Almost a half of participants have noted the shortage of teaching techniques and strategies necessary for teaching integrated curriculum. They complained in the interviews that they face difficulties in teaching techniques when they plan an integrated lesson. It is evident from lesson observations and teacher reports that teachers who put an integrated curriculum into practice sometimes do not know what teaching method is more appropriate in particular lesson. As respondent 7 noted,

There are no resources that provide teachers with a range of teaching techniques and methods to work with an integrated curriculum. We always have to search the Internet in order to find different teaching methods that explain the better ways of integrating subjects.

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Lesson observations give evidence that some teachers do not know how to ask high-order thinking questions; they ask only the questions that check students' memorization and understanding skills; they do not give students an opportunity to practice analysis, synthesis or evaluation skills. Some students cannot give full answers to the teacher's questions. They use only short phrases to answer the teacher's questions. In other words, use of lower-order thinking questions leads to teacher's focus on students' abilities in memorization and recitation of isolated data. Thus, students seize the opportunity to develop their critical thinking skills, which are very essential in integrated curriculum implementation. The teachers believe that those teachers who ask high-order thinking questions give students a great opportunity to make connections between concepts, solve problems by looking at multiple perspectives and integrate information from different subject areas since learners are able to put the relevant experience received from one subject area into practice in other subjects.

***Sub-theme 3. Classroom diversity.*** Classroom diversity also plays an important role as some of the interview participants mentioned. While any challenges that can be identified with curriculum integration were not found, specifically one of the challenges that the interviewees talked about was regarded to curriculum integration. Specifically, student diversity and unpreparedness was also evident from the reports.

Students are not ready to study in the integrated curriculum classroom because they have low level of preparedness to learning. Moreover, most of the students have low level of cognitive skills and their attention and assiduity are less developed (Report 2)

During the interviews, three respondents from school leadership team and two participants from teaching staff have noted that the diversity of students causes some challenges in the implementation of an integrated curriculum when they teach and learn students. Many teachers in the present study mentioned that some students who did not have pre-school education (children who did not attend kindergartens) have difficulties when they attend

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integrated classrooms. These learners are narrow-minded; they do not have enough experience to apply it on the lessons.

Our children are not ready to the life in society. They do not know where they live, their addresses, cities of Kazakhstan. We worked hard to teach these to our learners. Moreover, some learners from low-social status families were not motivated to study at school. They were passive learners who just attend lessons but did not try to gain new information (Respondent 10).

**4.4.2. Insufficiency of required, ongoing professional development for all participants working with an integrated curriculum.** It was interesting to notice that almost all respondents told that they have a range of seminar and coaching, lesson demonstrations and workshops conducted by Nazarbayev Intellectual Schools' teachers on how to implement an integrated curriculum and courses organized by the Centre for Teacher Professional Development. However, four interview participants (three of them are from school leadership team and one experienced teacher) indicated that teachers still have difficulties in understanding of new educational technologies and thus, teachers need more support in their professional development. The main barrier is that teachers are not provided with the effective professional preparation and the reasons for that are categorized as the following:

(1) the fact that ongoing professional development for all participants working with an integrated curriculum is more theoretical and less practical;

(2) the fact that professional development is conducted by teachers who are not currently practicing teachers and have never implemented an integrated curriculum practically; and

(3) the fact that professional development does not involve ongoing support and it is mostly incidental.

***Reason 1. Ongoing professional development for all participants working with an integrated curriculum is more theoretical and less practical.*** It is a well-known fact that any

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educational reform requires ongoing professional development for teachers who are the main players in changes connected with education in general. An integrated curriculum implementation is not an exception. It is worth noting that teachers who put an integrated curriculum into practice in this case have a range of ongoing professional preparation and support. A large number of seminars, workshops, coaching, and lesson observations are organized for Kazakhstani teachers who implement an integrated curriculum in pilot schools. Nevertheless, while teachers receive a lot of theoretical preparation, they do not get any practical opportunities to practice new concepts. As one of the teachers mentioned:

I attend lots of different professional development courses focused on an integrated curriculum implementation. However, these courses, seminars and coaching are not effective since they are mostly theoretical. I do not have a chance to apply gained theory in practice while I am attending these courses. Thus, when I implement knowledge gained during the professional development courses in my classroom, I am not sure if I do correct or wrong things. My trainers do not see me in practice and cannot give any advice for improvement (Respondent 5).

***Reason 2. Professional development is conducted by teachers who are not currently practicing teachers and have never implemented an integrated curriculum practically.***

Another reason that professional development is not efficient is because the trainers of preparation courses are not the teachers practicing the curriculum integration. They are not currently working as teachers and not implementing curriculum integration themselves. Many teachers in the present study noted that trainers organize professional development seminars and courses based on theory they gain from methodological books. Moreover, these trainers cannot give any practical examples from their own experience of an integrated curriculum implementation because they have no such experience. As a result, these trainers can give only theoretical advice that is not always practical.

I have attended a course organized for the teachers who implement an integrated curriculum. This course was conducted by the trainer from the Centre for Teacher Professional Development. In general, the course was more theoretical than practical. In

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addition, the trainer is the teacher who has never put an integrated curriculum into practice. Thus, this trainer could not give me practical advice when a range of questions appeared in our classroom. I think this course is not efficient enough since I need more practical support than theoretical (Respondent 8).

***Reason 3. Professional development does not involve ongoing support and it is mostly incidental.*** The last reason that professional development is not efficient is the fact that ongoing support is not provided for teachers. A range of teachers in the present study noticed that most of training is incidental; it is conducted once or twice in two or three months. Teachers of pilot schools have rare meetings with the representatives of Nazarbayev Intellectual Schools who are their mentors and the main supporters in integrated curriculum implementation. Their lesson planning is infrequent and communication between both schools' teachers happen mostly via phones or emails. As one of the teachers claimed:

I had an experience of co-teaching the lesson with a teacher from Nazarbayev Intellectual School (NIS). We planned the integrated lesson via phone and email that was extremely inconvenient for both of us. It would be efficient if we had planned the lesson together sitting face-to-face. I felt inexperienced and uncomfortable since the NIS representative had planned the lesson by herself and I had no chance to share my point of view based on this lesson (Respondent 5).

Document analysis revealed a little information about the challenges connected with professional support for teachers who implement an integrated curriculum. In general, the information in these reports is positive; school administrators and teachers state that they have enough and adequate support in terms of professional development for teachers who implement an integrated curriculum. Moreover, the thorough analysis of the report, written by the end of school year showed that school administration is satisfied by the quality of ongoing professional support provided by Nazarbayev Intellectual teachers and trainers of the Centre for Teacher Professional Development.

To get additional information that may shed the light on the challenges that teachers face in integrated classrooms lesson observations took place in the present study. The researcher

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has observed three lessons in the same classrooms (the same students) where an integrated curriculum is implemented. It is noteworthy to mention that one of the teachers did not have any challenges when she conducted the lesson. Her students were very active and demonstrated great enthusiasm in learning (see Vignette 2). Overall, the lesson was planned well, the lesson objectives are clearly set in the lesson plan and the integration can be seen in the planned activities.

### Vignette 2

#### *Description of an Activity from the Integrated Lesson Observation in Classroom A*

Students watch a fairy tale about the Russian letter ‘Я’ on an interactive board.

The letter ‘Я’ is represented as different animals, which have this letter in their names. For example, the letter ‘Я’ is represented as a snake because the Russian word ‘змея’ has this letter in its name. All students are fascinated by this fairy tale and pay a great attention to the scene. They are smiling and repeating the names of the animals.

After watching the video the teacher asks the question:

- ‘Which words with the letter ‘Я’ do you remember?’

The students raise their hands (Everyone wants to answer the question because it is seen in their gestures and faces. They are smiling and some of them are shouting “May I answer, please?” Some of the students even jump out of their seats, demonstrating their impatience to give answers to the teacher.).

The teacher gives every learner an opportunity to answer the question. Moreover, the students named the animal who has the letter ‘Я’ in its name and explained where this animal comes from, what it likes to eat and what colour is this animal. This information was studied on the Knowledge of the World course.

On the contrary, another teacher faced difficulties in teaching an integrated lesson with the same students at her lesson. The students who were very active and involved in the learning process in one subject area showed a very negative attitude to learning in the other course. In general, the lesson was not planned appropriately. According to the lesson plan, teacher’s goal was to revise an English alphabet by naming a letter, naming an animal that is painted next to

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the letter, and telling where this animal comes from, what colour it is and what it likes to eat (see Vignette 3). The teacher had a challenge to integrated students' knowledge and experience from one subject area in her course. This challenge was met because the teacher does not have enough experience in integrated curriculum implementation. The conversation with the teacher showed that this teacher does not clearly understand the meaning of integrated curriculum and the purposes for its implementation.

### Vignette 3

#### *Description of an Activity from the Integrated Lesson Observation in Classroom B*

The students are very quiet and indifferent in their learning. Some of the students are even afraid of the teacher (it can be seen in their gestures and faces). The students' faces are sad whereas on the previous lesson they were happy.

The teacher attempts to revise an English alphabet and asks students to name the letter. (Initially, the teacher's goal was to revise an alphabet by naming the letter, an animal that is painted next to each letter, and giving information about these animals. But, in fact, the teacher forgot to ask the information about the animals since the students were inactive during the task and did not name even the letters that the teacher showed them.) The students do not raise their hands to answer the question. Moreover, it seems as some of the students want to hide under their desks since they lowered their heads to the desks. The students give answers only when the teacher calls their names and points to the letters. The students' voices are trembling when they answer. The teacher even shouts at them when a student cannot name a letter that the teacher shows him or her.

**Unexpected findings: 4.4.3. Lack of time necessary for preparation.** One of the unexpected findings that emerged in the interviews with the participants is the lack of time necessary for preparation. An integrated curriculum implementation requires sufficient amount of time necessary for preparation. One of the barriers that teachers face is lack of time necessary for preparation for complex integrated classes. Compared with a regular class, the class where curriculum integration takes place requires much more effort and planning. Meanwhile, the teacher has a huge teaching load, and does not have enough time for planning. Many teachers

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in the present study indicated that they have difficulties in lesson planning. They need to spend a large amount of time when they are preparing for the lessons. It is obvious that to plan one good lesson requires a through work, sufficient timing and considerable efforts. Thus, implementation of an integrated curriculum in primary school is quite challenging because a primary school teacher usually teaches four or five lessons per day.

As a primary school teacher, I have not enough time to plan and prepare for my lessons. Every day I have to spend about six or eight hours to plan and prepare four lessons. The deficit of resources and teaching aids also influences my planning. I have to search a range of extra activities and additional materials on the Internet. Sometimes I have to buy some additional teaching aids (Respondent 5).

In addition to that, another challenge is the amount of paper work required. All teachers in the present study have highlighted the necessity of writing many written reports as well as filling of a range of forms and tables that focus on the teacher and school administration work in terms of implementation of an integrated curriculum. This causes a negative impact on teaching as it takes a large amount of time that could be spent on lesson planning or extra work with students. This challenge was also indicated in teacher reports as one of the main barriers in their teaching practice.

I am overloaded with paperwork that I have to do on a daily basis. I have to fill in many documents for each student's portfolio. Besides this, I write a range of reports on the work done at the end of each term and after each visit of Nazarbayev Intellectual School's representatives or our visit to Nazarbayev Intellectual School. Tons of reports for city department of educations, for our vice principals and principal, reports for teacher-parent meetings (because parents should also know about the new program and their children's outcomes). Every diagnostic test on each subject also requires a report in the form of an element-by-element analysis for each student with recommendations and plans for further work (Respondent 9).

#### **4.4.4. Challenges connected with multilingual teaching of core subjects.**

Implementation of an integrated curriculum may affect teaching in a high school when students learn core subjects such as Math, Physics, Chemistry, Biology and ICT in English. There is a deficit in teachers that can teach these subjects in Russian or Kazakh, thus teaching them in

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English is a big issue especially for mainstream schools. Many teachers as well as a school principal and vice principals in the current study concern about an issue of teaching core subjects in English. They consider that students of their school have problems in studying their own languages i.e. Kazakh and Russian; thus, it can also be difficult for those learners acquire English. Moreover, Kazakhstani secondary schools experience the deficit of English teachers and they have a few subject teachers who are able to teach their subjects in English. The issue of the shortage of subject teachers with English-speaking instructions can be considerable.

I think the problems with language, specifically with English-speaking abilities will arise in the future. We know that in high school students will be taught the core subjects in English. Our children have difficulties in learning their native languages. We also have no subject teachers who can teach in English. Thus, I will have to solve the issue of subject teacher shortage in the nearest future (Respondent 1).

**4.4.5. Parent-student's unpreparedness.** Another unexpected finding that occurred in the interviews, document analysis, and lesson observations is parent-student's unpreparedness to study based on an integrated curriculum.

Curriculum integration especially when it happens in the form of project work requires greater participation of parents. Many teachers in the present study noted that they face challenges when they work with parents particularly when students are given a task to complete their project works at homes. Nevertheless, parents are too busy; psychologically unprepared and have never experienced this before, so they do not provide the necessary support for students.

I have difficulties in working with parents. My students are to do a lot of project work integrated on different subjects. Since my students are too young, they need parental support in preparing their projects. Unfortunately, most of my students live with their grandparents who do not support them in learning and have no experience in project work. For example, one of the homework assignments for my students was to make animals from the vegetables and present them in three languages. Some students were not ready with this task since their grandparents did not help those students (Respondent 7).

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Interviews with the research participants have revealed the barriers in the process of implementation of an integrated curriculum. Many teachers in the present study believe that students who did not attend kindergartens have more challenges during the learning process in comparison to those students who attended pre-school education centers.

Students who did not attend kindergartens have low level of skills and abilities in comparison with learners who have pre-school education. I have three students who went to a kindergarten. Their level is slightly different. They were familiar with geometric figures; they could find and understand what angle is. Such concepts were formed in them (Respondent 8).

Students who did not attend the kindergartens were not ready to learn. They did not know the letters and could not read or write. They gave short answers (only two or three word phrases) to respond the questions. An ability of groups work was also poorly developed (Respondent 6).

The document analysis shed the light on the problem of students' unpreparedness to school. An integrated curriculum requires a pre-school education for students of the first grades. Students have to deal with some mathematical and functional literacy. This issue of unpreparedness was highlighted not only in teacher interviews, but was also mentioned in school leadership's reports, which stated that the absence of pre-school education has a negative influence on students' performance in primary school. The following challenges were mentioned in their reports as the main barriers that they face when they put an integrated curriculum into practice:

- low level of readiness of students for learning activity;
- insufficient concentration of attention, perseverance;
- most students have cognitive skills at a low level;
- low level of motivation of students;
- insufficient level of student's vocabulary;
- lack of communication and teamwork skills.

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Students' unpreparedness was also evident during the lesson observations. Some students do not know how to write letters (printed and capital letters). Some of them do not distinguish English letters from Kazakh or Russian alphabet. Some of them cannot differentiate letters and sound. The participants of the present study also mentioned that those students who did not have a pre-school education have difficulties in learning Math because they do not know geometric figures and other concepts.

In summary, five challenges that school administration and teachers meet with in the implementation of an integrated curriculum in secondary schools were identified based on the school administration and teachers' responses. Document analysis and lesson observation methods of qualitative research design have also shed light on the barriers that school administrators and teachers face. Two of these identified challenges have been previously discussed in the literature review chapter and were mentioned by both groups of participants: school administration and teaching staff. Another three findings are regarded as unexpected and were highlighted by the teaching staff only. For better understanding of the experience of the implementation of an integrated curriculum in Kazakhstani secondary pilot schools, the opportunities, which implementation of an integrated curriculum gives to schools, are analyzed and presented in the next section of this chapter.

### **4.5. Opportunities Presented by Implementation of Integrated Curriculum**

To answer the sub-question 3, the researcher interviewed school administrators and teachers to identify the opportunities they receive when they implemented an integrated curriculum in their teaching practice. Next, out of 20 documents that the researcher looked at, only six reports were identified as the resources where teachers distinguish opportunities. Finally, three lesson observations took place to reveal the opportunities that these teachers perceive in their practice with an integrated curriculum implementation. After thorough

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analysis of participants' responses, school reports and lesson observations, six opportunities that school has taken up were identified:

(1) deep understanding of their surroundings and making connections between the learnt material and their experience,

(2) application of gained information in practice,

(3) enhancement of independent learning and development of leadership qualities,

(4) increase of student's motivation to learning,

(5) creation of conditions for children with special needs, and

(6) professional development of teachers. Interestingly, most of the participants highlighted mainly student-related opportunities that implementation of an integrated curriculum provides students with. Only one finding was teacher-related opportunity. The number of participants, who indicated these items as opportunities in the process of implementation, is presented in Table 5.

Table 5

*Number of References to the Opportunities Presented by Implementation of Curriculum*

*Reforms in the Transcripts.*

<b>Themes</b>	<b>Number of respondents</b>
Deep understanding of their surroundings and making connections between the learnt material and their experience	5 respondents (2 school leaders and 3 teachers)
Application of gained information in practice	6 respondents (teachers)
Enhancement of independent learning and development of leadership qualities	6 respondents (1 school leader and 5 teachers)
Increase of student's motivation to learning	5 respondents (2 school leaders and 3 teachers)
Curriculum integration creates opportunities for children with special needs	5 respondents (2 school leaders and 3 teachers)

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Professional development of teachers	10 respondents (3 school leaders and 7 teachers)
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**Expected findings: 4.5.1. Deep understanding of their surroundings and making connections between the learnt material and their experience.** A half of participants of the present study indicated students' deep understanding of their surroundings and making connections between the learnt material and their experience as one of the benefits that integrated curriculum implementations provides. This is due to the integration of two or three subjects that leads to making connections between the learnt material and students' experience and assists in understanding our surrounding better. Many teachers of the present study also mentioned that integrated curriculum implementation gives students an opportunity to understand learning phenomena from multiple perspectives. Moreover, students are able to connect the learnt material from one subject area with information and experience gained on other subjects. As one of the respondents noted,

Once I have observed the "Art" lesson. The learners drew a sketch; they used this technique to draw a horse. The teacher presented that theme successfully. She presented horse as a valuable animal for the Kazakh people. In fact, the learners learnt what the horse is for the Kazakh people, why we should care about these animals. I can say that through the origins of a small and large homeland, they have come out on such a valuable stratum. It was exciting. Therefore, in this respect, the integration of subjects plays an important role in students' learning. This is one of the small virtues of an integrated curriculum (Respondent 3).

This opportunity was also emerged in teachers' reports and lesson observations. Teachers in their reports noted that an integrated curriculum implementation rises in students' in-depth understanding of core values of our society and acceptance the diversity of people. Students have better understanding of learning phenomena because teachers present learning themes in meaningful concepts that are interconnected on several subject areas. In addition, it was noticed

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that learners are able to use their experience and apply acquired knowledge in practice when they solve real-life situational tasks.

Finally, three lesson plans of the lessons where lesson observations took place were looked through to identify the opportunities students received when they attend integrated classrooms. First, the researcher looked at the lesson plans of teachers to identify the opportunities they have. Methodologically, it was decided to look at the purposes to what extent the curriculum integration is reflected in the lesson objectives and to what extent it is reflected in the methods used in the classroom in order to help students understand their surroundings and make connections between the learnt material and their experience. The analysis of three lesson plans showed that one of the teachers has clear understanding of the purposes for integration of the lessons that made her lesson more beneficial for students in terms of acquiring learning information thoroughly and making connections between learnt information in several courses. Her lesson objectives were put up reflecting the integration of a particular topic that was studied in several subjects such as Literacy, Art and Knowledge of the World and teaching strategies used in the classroom clearly demonstrated the integration in the tasks that students solved (refer to vignette 2 in the previous subsection).

**4.5.2. Application of gained information in practice.** Another finding that emerged from the interview participants' responses is the advantage of application of gained information in practice by students. An integrated curriculum requires learners to apply a range of strategies to understand, analyze, synthesize and evaluate gained knowledge. Many teachers of the present study believe that integrated curriculum implementation gives students an opportunity to apply gained knowledge in practice in several subject areas since they cover learning material in meaningful concepts on a range of curriculum programmes. As one of the respondents mentioned:

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Our students gain knowledge better when we focus on one particular topic on several courses. For instance, when students learnt the letter “Я” and its sound on the “Literacy” course, I used the list of animals that have this letter in its names. Then, on the “Knowledge of the World” course, student gained the information about these animals and they were given a task to identify the sounds that the letter “Я” consists of. In addition, their homework assignment was to draw, paint or make an animal and prepare a short information report about an animal that has the letter “Я” in its name. This integration of different tasks made learning interesting for students and they actively participated in the lessons (Respondent 6).

Furthermore, the opportunity of applying gained knowledge in practice, teachers in the present study also noticed that integrated curriculum implementation gives students a possibility to improve their critical thinking skills that are required in the new century. Many teachers participating in the present study think that students’ critical thinking skills improve as the result of curriculum integration because students of integrated classrooms are usually given tasks that require studying a phenomenon from multiple perspectives, evaluating and analyzing the information and drawing conclusions based on their observations. Additionally, learners are asked to solve the problems by providing different solutions and to incorporate information from different areas.

I have to create tasks that develop students’ high-order thinking skills as well as the ability to apply gained knowledge in practice. The realization of an integrated curriculum gives me great opportunities in teaching students critical thinking that allows them to use their knowledge in real- life situations, develop the necessary skills and an adequate understanding of a variety of phenomena and situations, which give them confidence and will ensure confidence and success in a rapidly changing world. Children give detailed answers with examples from their own experience (Respondent 8).

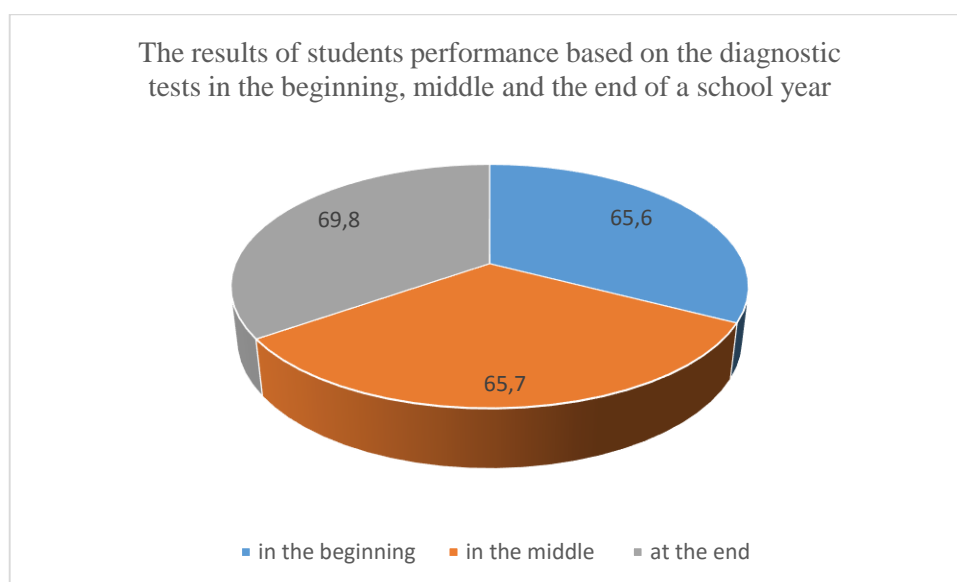
A thorough analysis of teachers’ reports revealed that students of integrated classrooms perform better on different tests in comparison to students of traditional classrooms. Students where an integrated curriculum is implemented usually study themes and topics from different perspectives in interconnection with several subjects. Moreover, learners solve the tasks connected with everyday real-life situations that require higher order thinking skills. They learn to analyze, synthesize and evaluate learning phenomenon and apply gained knowledge in practice. As a result, the quality of students gained knowledge improves. One of the reports

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described the students' performance based on the diagnostic tests that were held in the beginning, middle and the end of school year. These results are demonstrated in Table 6. The results of diagnostic tests showed the dynamics of the growth of the quality of knowledge in the majority of students.

Table 6

*The Average Results of Students Performance Based on the Diagnostic Tests in the Beginning, Middle and the End of School Year*



It was evident from the lesson observation that students in integrated classrooms take advantages of acquiring learning phenomena from different perspectives and applying gained information in practice in several subject areas. For instance, students learnt the names of the animals and their habitats at the Knowledge of the World course; then, they applied this experience at the Literacy course when they revised the animals' names and their places of living while they studied the Russian letter "Я". Finally, students consolidated their knowledge on animals' names and their habitats during English course when they revised the English alphabet.

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**4.5.3. Enhancement of independent learning and development of leadership qualities.** The next finding that revealed in participants' answers is the development of students' leadership skills and enhancement of independent learning. This is evident because an integrated curriculum requires students to take part in project works, and to prepare and give presentations. Teaching staff of the present study has noticed that students improved their leadership skills and enhanced their independent learning because they did a range of project work while covering learning material on several subject that are interconnected and interrelated to each other.

Children write a range of projects, learn to acquire knowledge independently. In other words, few year ago we explained a new material to children by ourselves, now students try to study the new material through solving the real-life situational tasks and make their own conclusions on the topic studied in several subjects (Respondent 4).

A wide range of resources is intended for the implementation of an integrated curriculum. These resources develop student's ability to conduct a research and write projects (Respondent 7).

**4.5.4. Increase of student's motivation to learning.** The last expected finding connected with opportunities for curriculum implementation is connected with student's attitude to learning. Many teachers believe that students are more motivated and have positive attitude to learning when the curriculum integration takes place in a classroom. The teachers in the present study noticed that learners started to take an active part in different school research projects and small projects in their classrooms. Moreover, the students became more active in all subject areas that are taught in interconnection with each other and completed all homework assignments that they were set up. As one of the teachers claim:

Since we started implementing an integrated curriculum, our students' attitudes towards learning and their work habits have changed. Almost every child becomes motivated to learning, specifically when it comes to dealing with research projects. For example, on the "Literacy" course our students read a story about Jack and the Beanstalk. They wanted to check how many days the bean needed to grow. On "Knowledge of the World" course, students studied about the types of beans and conditions for their growth. On the "Art" course, they painted the story and made a role-play (Respondent 9).

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### **Unexpected finding: 4.5.5. Creation of conditions for children with special needs.**

The first unexpected finding connected with opportunities for curriculum implementation is connected with student's attitude to learning, particularly in inclusive classroom. Interestingly, this finding emerged during the lesson observation while there was nothing about this opportunity in the interviews and school administrators and teachers' reports. The lesson observation took place in the inclusive classroom with a mentally challenged boy. While the teacher was presenting the new theme during the Literacy course, this boy was taking an active part in learning. For example, the whole class was given a task to do the phonological analysis of the words with the Russian letter "Я". The boy who was mentally challenged was painting the pictures with the animals who have the Russian letter "Я" in their names. The teacher helped this boy to identify the Russian letter "Я" in the animals' names; then, the boy coloured the animals and explained the teacher where these animals live and what they eat. Finally, the boy tried to identify the sounds that Russian letter "Я" produces. This ongoing support during completing the task and teacher's personal attention to him to connect learnt themes from the Knowledge of the World course and made the learning process interesting and feasible for the boy who needs special support and help. As a result, the student was motivated to learning during the whole lesson.

**4.5.6. Professional development of teachers.** Only one finding connected with the opportunities that teachers receive in the integrated curriculum implementation appeared in the present study. All of the participants have mentioned their improvement of their teaching practice by participation in a range of seminars and workshops, coaching and lesson observations, and courses provided by the Centre for Pedagogical Excellence. Teachers develop professionally in different areas. Many teachers in the present study mentioned that they improved their skills in writing articles and doing research. In addition, they have

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improved their skills in giving presentations and working with a large audience with a range of teaching experience and leadership position in the educational area.

I have written several articles about our school's experience of an integrated curriculum implementation. This gave me an opportunity to participate in several conferences and seminars for our region teachers. I started working on action research project in our school by creating a group of teachers who are also interested in this. We do research on the ways that develop teachers' teaching practice (Respondent 2).

Teachers in our school have completed the third level professional development courses that focus on teaching strategies. Now these teachers are joined in the creative group who work on the lesson study project. They focus on the strategies that develop students' high-order thinking skills. In addition, the participation in the implementation of an integrated curriculum in our schools gives me a great opportunity to take part in writing books for our students. Now I create formative tasks on functional literacy for the fourth grade students (Respondent 1).

Document analysis of school administration and teachers' reports has also showed that teachers who put an integrated curriculum into practice conduct a large number of seminars and workshops where they explain what an integrated curriculum means and teach other teachers how to use this curriculum in their teaching practice. Using new strategies of teaching that an integrated curriculum provides, teachers could develop their teaching skills, their abilities to speak to a large audience and develop their leadership skills.

In brief, six opportunities that school administration and teachers experience in the implementation of an integrated curriculum in secondary schools were identified based on the school administration and teachers' responses. Thorough document analysis and lesson observation also shed light to the opportunities that stakeholders receive when they implement an integrated curriculum in their teaching practice. Four of them have been previously discussed in the literature review chapter, while two findings are regarded as unexpected.

### **4.6. Conclusion**

The purpose of this chapter was to present the findings gathered through three methods: interviews, document analysis, and lesson observations. All sections of the Findings Chapter

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were addressed to the research questions. First, the purposes of the implementation of an integrated curriculum were analyzed and presented. Second, the challenges met in the process of an integrated curriculum implementation by school staff were analyzed and describe in the next section of this chapter. Finally, the third section of this chapter was devoted to the opportunities that an integrated curriculum implementation provides for students, teachers and school administration. The results of the study are further discussed in relevance with previous research in the next chapter.

## **Chapter Five: Discussion**

### **5.1. Introduction**

In the previous chapter, the findings arisen from the present study were reported. The purpose of this chapter is to discuss the major findings, which emerged during a thorough data analysis. Additionally, the major findings are discussed in accordance with the literature. Several unexpected findings are explained. The discussion is presented according to the sub-questions, which were set at the beginning of this study:

4. How are the purposes of implementing integrated curriculum in pilot schools understood by administration and teachers?
  - c. How do school administrations understand the purposes?
  - d. How do teachers understand the purposes?
5. What challenges arise in the implementation of integrated curriculum at the school level?
6. What opportunities present themselves in the implementation of integrated curriculum at the school level?

The central question of this study was: What is the experience of the implementation of the integrated curriculum in pilot schools? The answer to this question, which is an overall summary of the main sub-questions, will be presented in the next chapter (Chapter 6: Conclusions and Recommendations).

### **5.2. Discussion Related to Sub-Question 1.**

The results of the present study showed that both school administrators and teachers consider the main purposes to implement an integrated curriculum as the following: (1) the development of a holistic view of learning, (2) increase of teacher and student motivation to teaching and learning, (3) making learning applicable to practice, and (4) making national

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education more aligned with western standards. These findings are in line with the previous research and were expected in the course of the data analysis. Some of them are further discussed in relevance with the previous studies followed by the unexpected findings of the current research.

The results of the present study showed that Kazakhstani pilot school' administrators and teachers perceive the development of a holistic view of learning as a significant goal of the integrated curriculum implementation. The main goal of the integrated curriculum implementation is similar to a number of studies on curriculum integration (Caine & Caine, 1991; Capelutti, 1995; Humphreys et al., 1981; Palmer, 1991; Shoemaker, 1989). In a study by (Lake, 1994) it was found that teachers believe that learning occurs faster and more comprehensively when it is presented in meaningful contexts, "with an experiential component" (p. 6). In another study by Jacobs (1989), teachers said that integration allows interdisciplinary understanding of a particular "central theme, issue, problem, topic, or experience" that is examined on several subjects (p. 8). Similar to Everett (1991), teachers believe that the integrated curriculum encourages "to combine several school subjects into one active project since that is how children encounter subjects in the real world-combined in one activity" (p. 25). In line with Willett (1992), Levitan (1991), and Friend (1984), the participants of this study found that, their students have a deeper understanding of concepts and can see the big picture of learning phenomenon that reflects the real world, when they can see interconnectedness and interrelationships among disciplines. In other words, students explore knowledge broadly when a learning event is integrated in several subjects related to certain aspects of their environment.

Many prior studies linked integrated curriculum to different skills associated with higher-order skills in Bloom's taxonomy. For example, Lipson et al. (1993) pointed that critical

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thinking improves as the result of curriculum integration because in integrated classrooms students are always asked to look at the phenomena from different points of view, to solve the problems by providing different solutions and to incorporate information from different areas. According to Lake (1994), critical thinking skills rocket when all of the students' knowledge and higher level thinking from all curriculum areas are tapped (p. 19). Students who are taught in relation to the integrated curriculum can quickly identify the relationships between several subjects. Similarly, teachers of the current study report that curriculum integration gives students a chance to expand their knowledge and skills through reinforcement and retention of covered topics. Students of the integrated classrooms have a chance to review the learning phenomenon on several subjects that allows them to re-conceptualize the covered topics and apply gained knowledge in practice within interconnection on several subject areas. Their subject knowledge and critical thinking skills has increased.

In prior studies (Shoemaker, 1989; Good, 1973; Dressel, 1958), diversity seems to be one of the purposes clearly identified in studies as a link to curriculum integration. For instance, Adamu (2003) mentioned that people live and learn in a progressively diverse world and integrated learning prepares students to live in that world. He mentioned that integrated learning helps teachers to create a friendly and comfortable atmosphere in their classrooms. These classrooms make all children feel that their work, thought and ideas as well as contribution to everything they do are valued. Thus, learners are successful in learning. In addition, the participants of the present study also mention that the integrated curriculum implementation helps teachers to deal with a diverse classroom and raises students' tolerance for diversity. Integrated lessons permit students to improve their skills to express, justify and respect every person's point of view when they work in groups. The learners are confident to

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present and explain their thoughts and ideas as well as to listen to and accept other students' points of view.

The studies undertaken by Hargreaves et al. (2001), Bonds et al. (1993) and Aschbacher (1991) revealed that teachers implement an integrated curriculum to make learning applicable in practice. An integrated curriculum allows learners to consolidate, make revisions and enhance learners' skills and knowledge in all curriculum areas. Moreover, when students gain learning phenomena in meaningful contexts from various perspectives and apply them in real life situations, they acquire in-depth of conceptual comprehension. As a result, students quickly comprehend the relationships between learning in all curriculum subjects and apply gained knowledge in practice throughout each of the school subjects.

Kazakhstani teachers who put the integrated curriculum into practice have also noticed that students in integrated classrooms are more involved in the learning process as they gain information in interconnection and interrelationship within several subjects and the real world. Learners can link gained knowledge from a range of subject areas and apply this knowledge in their own lives. They are able to solve the tasks that are close to real-life situations since their critical thinking skills become more developed.

In prior studies (MacIver, 1990; Vars, 1965; Jacobs, 1989), it was highlighted that curriculum integration leads to the development of students' motivation to learning. MacIver (1990), for instance, mentioned that students tended to have an extremely raised team spirit and improved their attitude and work habits when they attended the classrooms where the integrated curriculum was implemented. Vars (1965) also noticed an optimistic attitude to learning in students who were taught in accordance with the integrated curriculum. He stated that students' motivation has improved since learners cope with real-life situations and issues that are common in integrated curriculum. Moreover, he said that learners are motivated and

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their behavior improves as these students take an active participation in planning their learning, expressing their thoughts, and studying learning phenomena from different perspectives.

Teachers in the present study have also highlighted the same improvements in their students. Teachers mentioned that learners started to attend school more often since they study learning events in connection within several subject areas. In addition, Kazakhstani teachers highlighted that learners are more involved in their learning process since they unite information from a range of subject areas; students have an opportunity to consolidate their knowledge because of curriculum integration that leads to knowledge retention. Group and pair work on various tasks helps students to connect the learning phenomenon with their experience on different subjects, which leads to students' active participation in all subject areas and complete the homework assignments more often since these assignment are linked in several subjects.

One finding connected with understanding of an integrated curriculum implementation purposes of the present study that has not be mentioned in literature before is to make national education more aligned to the western educational standards. Teachers of the present study believe that Kazakhstani education can be at the same level as western or European education because Kazakhstani government makes reforms in its educational systems for its improvement. It is evident that teachers of a pilot school have developed their professional skills because they work collaboratively with Nazarbayev Intellectual Schools' teachers as well as the international teachers. This collaborative work occurs through seminars, workshops, coaching, and lesson observations.

On the other hand, understanding of the integrated curriculum implementation purposes as making national education more aligned to the western educational standards can be problematic. Many Kazakhstani teachers think that any innovation brought to NIS by

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Westerners would make the educational system more Western-like. Thus, this perception of an integrated curriculum implementation purposes can be a signal that the person does not clearly understand the purposes of curriculum integration and is confusing the purposes with other goals of educational reform in general. This can be a sign that teachers are not explained the goal properly and are not properly trained or have to implement too many reforms simultaneously, which creates confusion.

In short, there is no difference in school administrators and teachers' understanding of the purposes of the integrated curriculum implementation. However, the present study revealed that some teachers do not clearly understand or worse understand the purposes for curriculum integration. These teachers tend to face more challenges in their classrooms than teachers who clearly comprehend the purposes for curriculum integration.

### **5.3. Discussion Related to Sub-Question 2.**

The results of the present study showed that both school administrators and teachers distinguish the following challenges when they implement the integrated curriculum: (1) lack of instructional resources, (2) insufficiency of required, ongoing professional development for all participants working with an integrated curriculum, (3) lack of time necessary for preparation, (4) challenges connected with multilingual teaching of core subjects, and (5) parent-student's unpreparedness. Whereas the first two challenges have been mentioned by school administration and teachers, the last three barriers were noted by teachers only. In addition, the last three challenges have not been previously mentioned in the literature and will be discussed later as the unexpected findings of the study.

The results of the present study showed that lack of instructional resources could be divided into three categories: (1) lack of teaching and learning resources, (2) deficit in teaching techniques and strategies and (3) classroom diversity. Sibulwa (1996) reported that curriculum

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integration is challenging if teachers do not have sufficient funding capacities. She highlighted that the deficit of teaching and learning materials hampers teaching and learning because teachers have to make great effort in finding and adapting required instructional aids. Similarly, Kelly (1999) pointed out that lack of instructional resources creates a barrier for integrated curriculum implementers. Many teachers of the present study also mentioned that instructional resources shortage is a challenge for them because they have to buy or provide some of the instructional resources themselves. These teachers usually bring some teaching aids from home in order to make different experiments and research.

The studies undertaken by Shoemaker (1989), Good (1973) and Dressel (1958) revealed that classroom diversity is another challenge for teachers who work with the integrated curriculum. For example, Shoemaker (1989) mentioned that teachers who implement an integrated curriculum have to deal with a diverse classroom and raise students' tolerance for diversity. According to him, integrated lessons allow students to improve their skills to express, justify and respect every person's point of view when they work in groups. In addition, children who attend kindergartens are usually broad-minded and can link the learning phenomenon from one subject with the materials on other subject areas.

Many teachers of the present study also noted that some learners who did not have pre-school education (children who did not attend kindergartens) have difficulties when they attend integrated classrooms. These learners are narrow-minded; they do not have enough experience to apply it at the lessons. Their speaking and thinking skills are not well developed. They have difficulties in understanding the learning phenomenon from different perspectives and justification of their own and others points of view. In addition, they are lack of skills that allow them to link the learning material from one subject area with the topics on other subjects.

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In prior studies (Park, 2008; MacMath, 2011), it was highlighted that the qualitative ongoing professional development of teachers who implement an integrated curriculum prevents challenges in integrated curriculum implementation. For instance, MacMath (2011) reported that teachers that are not supported with professional development courses could not integrate a learning phenomenon on several subject areas. Similarly, teachers of the current study also emphasized the importance of ongoing professional preparation and support from school administrators and trainers of the Centre for Teacher Professional Development. On the one hand, teachers of the present study seem to have satisfactory number of seminars, workshops, and coaching focused on integrated curriculum implementation. All of the participants of this study have attended courses that were organized to prepare these teachers for work with integrated curriculum. On the other hand, teachers are not contented with the quality of these courses. Almost all of the participants underline the following reasons as the facts that make provided professional development ineffective:

(1) the fact that ongoing professional development for all participants working with an integrated curriculum is more theoretical and less practical;

(2) the fact that professional development is conducted by teachers who are not currently practicing teachers and have never implemented an integrated curriculum practically; and

(3) the fact that professional development does not involve ongoing support and it is mostly incidental.

One finding connected with challenges that teachers face when they implement the integrated curriculum that has not be mentioned in literature before is lack of time necessary for preparation. Teachers sampled for the present study stress that the integrated curriculum implementation demands sufficient amount of time necessary for preparation. The teachers of the pilot school do not have enough time to prepare for complex integrated classes. Compared

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with a regular class, the class where curriculum integration takes place requires much more effort and planning. Many teachers in the present study indicated that they have difficulties in lesson planning. These teachers usually spend a lot of time preparing for the lessons. It is evident that planning one good lesson requires a thorough work, sufficient timing and considerable efforts. Thus, implementation of the integrated curriculum in primary school is quite challenging because a primary school teacher usually teaches four or five lessons per day. Moreover, what was noticed is the person who has better understanding seems to experience less challenges with actual integration (refer to vignette 2 for details in the Findings Chapter). She uses a variety of strategies to do that. She seems to be very skilled in doing that. Children seem to pay more attention to what she is doing. On the contrary, the teacher who has worse understanding of the purposes for integrated curriculum implementation seems to have more challenges with actual integration (refer to vignette for details in the Findings Chapter). Thus, it can be said that confusion in understanding of the purposes for curriculum integration affects negatively teacher effectiveness. When a teacher has clear understanding of the purposes for curriculum integration, he/she is able to have a lot positive experience from this integration, whereas teachers with worse understanding of purposes tend to be too critical to innovations and reforms in education in general.

In addition, another challenge connected with integrated curriculum implementation is the amount of paper work required. All teachers of the present study have emphasized the necessity of writing many written reports as well as filling of a range of forms and tables that focus on the teacher work in terms of implementation of the integrated curriculum. This causes a negative impact on teaching as it takes a large amount of time that could be spent on lesson planning or extra work with students. Probably, this challenge has appeared because of the high level of accountability in Kazakhstani schools. The Ministry of Education requires excessive

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amounts of reports from teachers that show the process of integrated curriculum implementation. Thus, teachers prepare reports on students' achievements and the process of integrated curriculum implementation in general for city department of education, school administration, representatives of Nazarbayev Intellectual Schools, and parents.

It seems that administration is not aware that teachers also experience difficulties in integrated curriculum implementation. Perhaps, administration clearly understands the purposes for implementation. But, one of the reasons why teachers are more functioning is because the administration is not even aware of what kind of challenges teacher face, even they are not aware of the fact that some of the teachers do not clearly understand what the purpose of curriculum integration.

The next unexpected finding revealed in the present study are the challenges connected with multilingual teaching of core subjects. Many teachers as well as school administration staff believe that the deficit of English-speaking subject teachers may affect teaching in a high school when students learn core subjects such as Math, Physics, Chemistry, Biology and ICT in English. They consider that students of mainstream school have problems in studying in their own languages i.e. Kazakh and Russian; thus, it can also be difficult for those learners acquire subject material in English. Moreover, Kazakhstani secondary schools experience the deficit of English teachers and they have a few subject teachers who are able to teach their subjects in English. The issue of the shortage of subject teachers with English-speaking instructions can be considerable that will cause huge pitfalls for integrated curriculum implementation. This finding is also important for other countries who introduce multilingual instruction and integration reforms simultaneously because they may face the same barrier.

The last unexpected finding corresponded to challenges the teachers face when they put the integrated curriculum into practice is parent-student's unpreparedness to study based on an

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integrated curriculum. Many teachers of the present study noted that they encounter challenges when they work with the parents particularly when students are given a task to complete their project works at homes. Parents are too busy; psychologically unprepared and have never experienced this before, so they do not provide necessary support for students. This challenge is probably appeared because the pilot schools have students with different social status. In comparison to ordinary mainstream schools, gifted and talented children usually study at Nazarbayev Intellectual Schools. These students take part in difficult selection tests focused on such core subjects as Maths, Kazakh, Russian, and English languages and on the abilities tests that focus on critical and logical thinking skills. Thus, it is not difficult to implement an integrated curriculum at Nazarbayev Intellectual Schools because their students are wide-minded and can express their thoughts and ideas from multiple perspectives.

In general, there was nothing in the reports about challenges and opportunities for curriculum integration. However, some of the challenges that the researcher identified were common for curriculum integration in general, such as insufficiency of required, ongoing professional development for all participants working with an integrated curriculum, and parent-student's unpreparedness.

To sum up, it seems that teachers identify two types of challenges: student-related and teacher-related challenges. However, administration sees only student-related challenges and they are not aware and do not want to be aware of the fact that teachers do not understand the purposes. Therefore, we see that teachers struggle in the classroom when they implement the integrated curriculum. This study attempted to shed light on some common and uncommon challenges that teachers and school administrators in the process of integrated curriculum implementation.

### **5.4. Discussion Related to Sub-Question 3.**

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The results of the present study showed that both school administrators and teachers receive the following opportunities when they implement the integrated curriculum: (1) deep understanding of their surroundings and making connections between the learnt material and their experience, (2) application of gained information in practice, (3) enhancement of independent learning and development of leadership qualities, (4) increase of student's motivation to learning, (5) creation of conditions for children with special needs, and (6) professional development of teachers. These findings are in line with the previous research and were expected in the course of the data analysis. Some of them are further discussed in relevance with the previous studies followed by the unexpected findings of the current research.

The results of the present study showed that Kazakhstani pilot school' students have deep understanding of their surroundings and are able to make connections between the learnt material and their experience as the opportunity, which they receive in an integrated classroom. Moreover, learners improve independent learning and develop their leadership skills as the result of integrated curriculum implementation. These received opportunities are similar to the studies of Montgomery (1999) and Saravanan (2005). For example, according to Montgomery (1999), students are able to apply a range of methods and strategies to understand, analyze, synthesize and evaluate gained knowledge. They can make conclusions based on their experience and interactions to make meaning of the provided information. In addition, Saravanan (2005) emphasized on students' development of leadership skills since in the integrated classrooms teachers use student-centred strategies that allow students to lead during the lessons and take responsibility for their learning. Students are asked to solve the tasks that are studied from many different perspectives and to prepare a range of projects on several subject areas based on the gained materials that are studied in interconnection with each other.

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Similarly, teachers of the present study have also mentioned that students' in-depth understanding of learning phenomena increases because they are taught learning themes in meaningful concepts that are linked to several subject areas. Moreover, learners develop an ability to use their experience and apply gained knowledge in practice when they solve real-life situational tasks. These types of tasks provide students with an opportunity to improve independent learning because students are usually asked to complete a project work by the end of a particular topic or theme, which was covered during several subject areas in connection with each other as a part of integrated curriculum.

In prior studies (MacIver, 1990; Vars, 1965; Jacobs, 1989; Greene, 1991), it was highlighted that curriculum integration leads to the development of students' motivation to learning. For example, Greene (1991) noticed an optimistic attitude to learning in students who were taught in accordance with the integrated curriculum. He stated that "educationally disadvantaged" learners improve their performance since they consolidate their knowledge and connect the learning experience in all subject areas.

Interestingly, there is no any research about students' attitude to learning in inclusive classrooms. The present study shed light to students' attitudes to learning in classrooms with inclusion because Kazakhstani teachers sometimes are challenged working in inclusive classrooms. The teachers of the pilot school where the research took place have also classes with inclusion. The boy who is mentally challenged received an opportunity to take an active part in the learning process because the teacher helps him a lot during the lessons and pays much more attention to him in comparison with ordinary students. I consider that children who are mental or physical impairments are more motivated to learning because teachers are to pay attention to these learners during the lessons. Teachers use a range of teaching techniques to facilitate these children and integrated curriculum helps them to improve their knowledge since

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learning themes are taught in meaningful context throughout the whole curriculum in integration with all subject areas. However, if a teacher does not understand the purposes for curriculum integration or is not qualified enough to implement integrated curriculum, it may cause negative effect on students' learning in general. Thus, Kazakhstani teachers need to have a lot of ongoing professional development support from school administrators and official representatives in educational area to understand and meet all students' needs and interests.

Another finding connected with opportunities that the integrated curriculum implementation provides teachers of the present study that has not be mentioned in literature before is professional development of Kazakhstani teachers. Many teachers of the present study believe that they improve their teaching practice by participation in a range of seminars and workshops, coaching and lesson observations, and courses provided by the Centre for Pedagogical Excellence. Teachers develop professionally in different areas. Many teachers sampling the present study mention that they improve their skills in writing articles and doing research. In addition, they develop their skills in giving presentations and working with a large audience with a range of teaching experience and leadership position in the educational area.

In brief, an integrated curriculum implementation provides schools with a range of opportunities. Whereas there are some teacher-related opportunities, the majority of the received benefits are student-related because learners are the main stakeholders in educational area.

### **5.5. Conclusion**

The purpose of this chapter was to discuss the major findings, which can give answers to the questions set in the beginning of this study. Overall, major findings have been discussed and analyzed in comparison with the previous studies, which were presented in the Chapter 2 (Literature Review).

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Based on the discussion of the findings, general conclusions have been formed pertaining to each sub-question. These conclusions are presented in the next chapter.

## **Chapter Six: Conclusions and Recommendations**

### **6.1. Introduction**

In this chapter, a summary of the major findings from a current study will be presented and the recommendations for practice and future research will be provided. This qualitative research investigated the initial experience of the integrated curriculum's implementation in Kazakhstani secondary pilot schools.

To achieve the purpose of the study, the following overarching question was addressed:

“What is the experience of the implementation of the integrated curriculum in pilot schools?”

Based on this question, there were three following sub-questions:

SQ 1: How are the purposes of implementing integrated curriculum in pilot schools understood by administration and teachers?

- a. How do school administrations understand the purposes?
- b. How do teachers understand the purposes?

SQ 2: What challenges arise in the implementation of integrated curriculum at the school level?

SQ 3: What opportunities present themselves during the implementation of integrated curriculum at the school level?

This study employed a qualitative research design, in particular a single unique case study. Specifically, ten participants (three school administrators: a principal, a vice-principal for Academic Affairs and a vice-principal for Methodological Work, and seven teachers) were interviewed to identify how they understand the purposes of integrated curriculum implementation. In addition, document analysis and lesson observation methods were used to

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identify the challenges the school faces when integrated curriculum is used in teaching practice, as well as the opportunities with which integrated curriculum implementation provides school administrators and teachers. The data was analyzed by coding and categorized by themes and sub-themes.

This chapter consists of two sections. In the first section the summary of the answers to research questions and main conclusions drawn from the findings are presented. The second section is devoted to recommendations, which are based on the major conclusions of the study.

### **6.2. Revisiting Research Questions**

**6.2.1. How are the purposes of implementing integrated curriculum in pilot schools understood by administration and teachers?** To answer this sub-question it was decided to divide this question into two parts: (1) How do school administrations understand the purposes? and (2) How do teachers understand the purposes? The results of this study clearly show that there are no any differences in school administrators and teachers' understanding of the purposes of an integrated curriculum implementation. Both of groups consider that integrated curriculum should be implemented since it develops a holistic view of learning, makes learning applicable in practice, raises teacher and student's motivation to teaching and learning. However, the present study revealed that some teachers do not clearly understand the purposes of curriculum integration. These teachers tend to face more challenges in their classrooms than teaches who clearly understand the purposes for curriculum integration. Thus, it can be concluded that in order to implement an integrated curriculum successfully, the whole teaching staff should clearly understand the purposes of learning curriculum programs in integration with each other.

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**6.2.2. What challenges arise in the implementation of integrated curriculum at the school level?** The next major conclusion suggests that teachers and school administrators mainly identify two types of challenges: student-related and teacher-related challenges. Some teachers do not afraid of telling their challenges in the integrated classrooms, however as the findings show, school administration is not aware of those challenges. For instance, administration staff did not know that some teachers do not understand the purposes of integrated curriculum implementation in their practices. Therefore, it is assumed that teachers who do not clearly understand the purposes of curriculum integration struggle with its implementation in the classroom more than their colleagues who have better understanding of these purposes.

In addition, it is noteworthy to mention that while school administrators state that teachers receive a lot of required ongoing professional development training, teachers complain that this professional development preparation is mainly focused on theoretical context rather than practical. As the result, teachers struggle with practicing integrated curriculum in the classroom. Therefore, it is important to organize more practical support for teachers who work in integrated classrooms.

**6.2.3. What opportunities present themselves in the implementation of integrated curriculum at the school level?** The results of this study revealed that schools receive a range of opportunities when they implement integrated curriculum in teaching practice. Despite the fact that there are some teacher-related opportunities, the majority of the received benefits are student-related, since the learners are the main stakeholders in educational area.

It should be also noted that the study revealed the finding, which has not been widely discussed in prior studies. In this research, it was found out that students of inclusive classrooms have more benefits in comparison to students of regular classrooms. It happens

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because children who are mentally challenged have a chance to gain learning phenomena in meaningful concepts on several subject areas. Thus, integrated curriculum implementation increases knowledge retention since these learners can consolidate the learnt material, connect their experience from several subjects and apply acquired information in practice. Moreover, teachers who has better understanding of the purposes for curriculum integration in the classrooms with inclusion tend to pay much more attention and provide special support for learners with mental impairments and make learning more positive for them. As a result, learning attitude of these students is positive and they are more engaged in lessons.

**6.2.4. Central question: What is the experience of the implementation of the integrated curriculum in pilot schools?** After summarizing answers on each sub-question and taking into consideration the evidence from the prior studies an overarching question of this study can be answered. The results of this study suggest that Kazakhstani pilot schools have more negative than positive experience of integrated curriculum implementation. Mostly, schools are struggling when they implement integrated curriculum due to the fact that teachers have lack of understanding of curriculum integration purposes. As the consequence, teachers face range of challenges in their classrooms, which enables them to drop curriculum integration and return to traditional teaching practice. Another reason for struggle is the fact that ordinary schools are not ready to implement integrated curriculum in their classrooms. An integrated curriculum implementation is challenging because these school do not have sufficient support from the government and diverse classrooms in comparison to Nazarbayev Intellectual Schools (NIS). NIS are well-equipped and have more gifted and talented students who go through strict selective test on core subjects and psychological ability tests. As a result, teachers of NIS do not meet the same challenges as teachers of ordinary mainstream schools do. Finally, teachers of pilot schools receive some opportunities that integrated curriculum implementation provides

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them with. However, these opportunities can be obtained if teachers clearly understand the purposes of curriculum integration and they are motivated and ready to overcome the difficulties they face in the process of implementation. Thus, the experience of integrated curriculum implementation in Kazakhstani pilot mainstream schools is not as positive as it could be with proper planning, training, and support positive and it may take time to change the situation.

### **6.3. Recommendations**

This part includes suggestions for school administration and some recommendations for further research in this area.

**6.3.1. Suggestions for school administration.** Several suggestions were formed for Kazakhstani school administration, which they can use in implementing curriculum integration based on the lessons from the experiences of the pilot school.

First, it would be better if school administration introduces and explains teaching staff the purposes for integrated curriculum implementation in the beginning of the academic year. Such explanation will allow teachers to overcome some barriers they face in the process of putting an integrated curriculum in their teaching practice. In, addition, it is necessary to control the teacher understanding of the purposes for the whole year, as there are some cases when new teachers are hired in the middle of a school year. School administration should provide seminars that focus on theory and practice of the teachers understanding of the purposes for curriculum integration.

Second, school administration should pay more attention to teacher-related challenges because teachers are the primary agents who implement an integrated curriculum on a daily basis in their teaching practice. Therefore, students will gain more benefits from integrated

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classrooms if teachers are capable to overcome the barriers they face in every day integrated curriculum implementation practice.

Finally, NIS teachers and trainers from the Centre for Teacher Professional Development should focus more on practical content of professional development courses and workshops rather than theoretical content. This focus on practical professional development will provide teachers with the teaching strategies and methodological support that make the process of integrated curriculum implementation more productive. Moreover, Kazakhstani mainstream schools teachers need additional support from psychologists since they have inclusive classrooms that adds some challenges in teaching practice.

**6.3.2. Suggestions for further research.** This study included a limited sample of primary school female teachers and school administrators. To address this limitation, the further research should involve a more diverse group of respondents, including secondary school teachers and science teachers apart from Kazakh, Russian and English as well as male representatives of the profession.

A longitudinal study may work better for an in-depth investigation. Taking into account a complexity of the phenomenon investigated in this research, namely the experience of an integrated curriculum implementation that last for at least one academic year, more longitudinal studies are needed to address this restriction. Therefore, mixed methods or embedded multiple-case design with methods of data collection such as survey questionnaires and observations of multiple cases would give a better picture of the phenomenon.

School administrators and teachers involved in this study were representatives of the same school that makes it difficult to analyze the effectiveness of integrated curriculum implementation experience in Kazakhstan in general. Future research may use a bigger sample and more research sites for more generalized results. In addition, future studies could

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investigate the differences between the experience of integrated curriculum implementation in urban and rural mainstream schools in Kazakhstan. Specifically, future studies could give more details on challenges and benefits of the integrated curriculum implementation in inclusive classrooms since there is lack of research in this area.

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**Appendix A**

**Linkages of the Interview Questions with Research Sub-questions**

<b>Sub-questions</b>	<b>Interview questions (for school administration)</b>	<b>Interview questions (for teachers)</b>
<p>1. How are the purposes of implementing integrated curriculum in pilot schools understood by administrators and teachers?</p> <p>a. How do school administrators understand the purposes?</p> <p>b. How do teachers understand the purposes?</p>	<p>1. How do you understand what the integrated curriculum is?</p> <p>2. In your understanding, why does the school implement the integrated curriculum?</p> <p>3. What do you think is your role in implementation of the integrated curriculum? Can you explain what does this role entail?</p> <p>4. To what extent do you think your teachers understand what the integrated curriculum is and what the purposes of implementation of the integrated curriculum are?</p>	<p>1. How do you understand what the integrated curriculum is?</p> <p>2. In your understanding, why does the school implement the integrated curriculum?</p> <p>3. What do you think is your role in implementation of the integrated curriculum? Can you explain what does this role entail?</p>
<p>2. What challenges arise in the implementation of integrated curriculum at the school level?</p>	<p>5. What kind of support do you offer to teachers in the implementation of the integrated curriculum?</p> <p>6. How do you discuss with teachers any challenges in implementation of the integrated curriculum?</p> <p>7. In what ways do you collect the information from your teachers about the challenges they face when they implement the integrated curriculum?</p> <p>8. What are some of the challenges you have faced in your role as a curriculum manager?</p>	<p>4. What kind of support do you have as a teacher in the implementation of the integrated curriculum?</p> <p>5. How do you discuss with teachers any challenges in implementation of the integrated curriculum?</p> <p>6. What are the major challenges you have faced in implementing the integrated curriculum?</p> <p>7. How do you manage the challenges you face in implementation of the integrated curriculum?</p>
<p>3. What opportunities present themselves in the</p>	<p>9. According to your opinion, what opportunities</p>	<p>8. According to your opinion, what</p>

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implementation of integrated curriculum at the school level?	did the implementation of the integrated curriculum give you as an administrator and your school?	opportunities did the implementation of the integrated curriculum give you as an administrator and your school?
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**Appendix B**

**Interview Protocol (English version)**

**Project title:** The experience of the implementation of the integrated curriculum in  
Kazakhstani secondary pilot schools: challenges and opportunities at school level

**Time of interview:**

**Date:**

**Place:**

**Interviewee:**

**Position of Interviewee:**

[After introducing yourself, tell the participant about (a) the purpose of the study, (b) the measures assuring the confidentiality of the interviewee (the name of the participant and other people mentioned in his stories will not be revealed), and (c) the approximate time for the interview.]

[Ask the interviewee to read carefully and sign the consent form.]

[Ask the interviewee's permission to use the tape recorder.]

[Test tape recorder.]

**Questions for school leadership team**

**Part One: Biographical Questions**

1. What is your name?
2. How old are you?
3. What is your experience in leadership positions?
4. Tell me about your job responsibility.

**Part Two: Research questions**

1. How do you understand what the integrated curriculum is?
2. In your understanding, why does the school implement the integrated curriculum?

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3. What do you think is your role in implementation of the integrated curriculum? Can you explain what does this role entail?
4. To what extent do you think your teachers understand what the integrated curriculum is and what the purposes of implementation of the integrated curriculum are?
5. What kind of support do you offer to teachers in the implementation of the integrated curriculum?
6. How do you discuss with teachers any challenges in implementation of the integrated curriculum?
7. In what ways do you collect the information from your teachers about the challenges they face when they implement the integrated curriculum?
8. What are some of the challenges you have faced in your role as a curriculum manager?
9. According to your opinion, what opportunities did the implementation of the integrated curriculum give you as an administrator and your school?

**Questions for the teachers:**

**Part One: Biographical Questions**

1. What is your name?
2. How old are you?
3. What is your teaching experience?
4. Tell me about your teaching and non-teaching responsibilities.

**Part Two: Research questions**

1. How do you understand what the integrated curriculum is?
2. In your understanding, why does the school implement the integrated curriculum?

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3. What do you think is your role in implementation of the integrated curriculum? Can you explain what does this role entail?
4. What kind of support do you have as a teacher in the implementation of the integrated curriculum?
5. How do you discuss with teachers any challenges in implementation of the integrated curriculum?
6. What are the major challenges you have faced in implementing the integrated curriculum?
7. How do you manage the challenges you face in implementation of the integrated curriculum?
8. According to your opinion, what opportunities did the implementation of the integrated curriculum give you as an administrator and your school?

(Thank respondents for participating in the interview. Assure them again about the confidentiality of received information. Acknowledge them about the possibility to do a member check.)

Source: Creswell, 2014

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**Interview Protocol (Russian version)**

**Протокол интервью**

**Название проекта:** Опыт внедрения интегрированной образовательной программы в средние пилотные школы Казахстана: барьеры и возможности на школьном уровне.

**Время интервью:**

**Дата:**

**Место:**

**Интервьюируемый:**

**Должность интервьюируемого:**

[После представления себя, ознакомь участника с (а) целью исследования, (б) мерах, обеспечивающих конфиденциальность интервьюируемого (имя участника и других людей, упомянутых в его рассказах, не будут раскрыты) и (в) приблизительной продолжительностью интервью.]

[Попроси интервьюируемого внимательно ознакомиться и подписать форму информированного согласия.]

[Спроси разрешения интервьюируемого на использование диктофона.]

**Вопросы для административного состава:**

**Часть первая: Биографические Вопросы**

1. Как Вас зовут?
2. Сколько Вам лет?
3. Каков Ваш опыт работы на руководящих должностях?
4. Расскажите о Ваших должностных инструкциях.

**Часть вторая: Исследовательские вопросы**

1. Как Вы понимаете, что такое интегрированная образовательная программа?
2. В вашем понимании, почему школа реализует интегрированную образовательную программу?

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3. Как Вы думаете, какова Ваша роль в реализации интегрированной образовательной программы? Можете ли Вы объяснить, что влечет за собой эта роль?
4. В какой степени Вы считаете, что Ваши учителя понимают, что такое интегрированная образовательная программа и каковы цели реализации интегрированной образовательной программы?
5. Какую поддержку Вы оказываете учителям во время реализации интегрированной образовательной программы?
6. Как Вы обсуждаете с преподавателями любые проблемы, возникающие в ходе реализации интегрированной образовательной программы?
7. Каким образом Вы собираете информацию от своих учителей о проблемах, с которыми они сталкиваются, когда они реализуют интегрированную образовательную программу?
8. Каковы некоторые из проблем, с которыми Вы столкнулись в Вашей роли в качестве руководителя процессом внедрения интегрированной образовательной программы?
9. По Вашему мнению, какие возможности открылись перед Вами, как директору и Вашей школе, во время реализации интегрированной образовательной программы?

### **Вопросы для преподавательского состава:**

#### **Часть первая: Биографические Вопросы**

1. Как Вас зовут?
2. Сколько Вам лет?
3. Каков Ваш педагогический стаж работы?
4. Расскажите о Ваших обязанностях в урочное и внеурочное время.

#### **Часть вторая: Исследовательские вопросы**

1. Как Вы понимаете, что такое интегрированная образовательная программа?

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2. В вашем понимании, почему школа реализует интегрированную образовательную программу?
3. Как Вы думаете, какова Ваша роль в реализации интегрированной образовательной программы? Можете ли Вы объяснить, что влечет за собой эта роль?
4. Какая поддержка Вам как учителю оказывается во время реализации интегрированной образовательной программы?
5. Как Вы обсуждаете с преподавателями любые проблемы, возникающие в ходе реализации интегрированной образовательной программы?
6. Каковы основные проблемы, с которыми Вы столкнулись при реализации интегрированной образовательной программы?
7. Как Вы справляетесь с проблемами, с которыми Вы сталкиваетесь в процессе реализации интегрированной образовательной программы?
8. По Вашему мнению, какие возможности открылись перед Вами во время реализации интегрированной образовательной программы?

(Поблагодари респондентов за участие в интервью. Заверь их о конфиденциальности полученной информации. Расскажи о возможности сделать проверку правильного понимания полученной информации).

Ресурс: Creswell, 2014

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**Appendix C**

**Observation protocol (English version)**

<b>Observational field notes</b>		
<b>Focus: Challenges and opportunities teachers face in the process of implementation of the integrated curriculum in Kazakhstani secondary pilot schools</b>		
<b>Setting: classroom №</b>		
<b>Observer: X</b>		
<b>Role of observer:</b> Observer of challenges and opportunities have met in a classroom		
<b>Time:</b>		
<b>Length of observation:</b>		
<b>Elements of focus for classroom observation</b>	<b>Descriptive notes</b>	<b>Reflective notes</b>
<p><b>1. Challenges:</b></p> <ul style="list-style-type: none"> <li>- Asking correct questions (Teachers should be able to ask the correct questions (in particular open-ended questions) in order to develop students' high order thinking skills)</li> <li>- Content knowledge (This part of observation will show if teachers have a suitable level of content knowledge because he/she needs to integrated different subjects in teaching practice)</li> <li>- Clear instructions (This part of observation aims to give evidence that teacher uses the appropriate teaching strategies with student-</li> </ul>		

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<p>centred focus of classrooms) - Feedback (This part of observation will shed light at the teachers ability to give correct feedback that helps to improve teaching and learning process)</p>		
<p><b>2. Opportunities:</b> - Asking correct questions (Teachers should be able to ask the correct questions (in particular open-ended questions) in order to develop students' high order thinking skills) - Content knowledge (This part of observation will show if teachers have a suitable level of content knowledge because he/she needs to integrated different subjects in teaching practice) - Clear instructions (This part of observation aims to give evidence that teacher uses the appropriate teaching strategies with student-centred focus of classrooms)</p>		

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- Feedback (This part of observation will shed light at the teachers ability to give correct feedback that helps to improve teaching and learning process)		
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**Source:** Creswell, 2014

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Протокол наблюдения (Russian version)

<p><b>Заметки по наблюдению</b>  <b>Фокус: Трудности и возможности, возникающие у учителей в процессе внедрения интегрированной образовательной программы в средних пилотных школах Казахстана</b></p>		
<p><b>Место: аудитория №</b></p>		
<p><b>Наблюдающий: X</b></p>		
<p><b>Роль наблюдающего:</b> Наблюдающие отслеживает трудности и возможности, с которыми учитель сталкивается в классе</p>		
<p><b>Время:</b></p>		
<p><b>Время наблюдения:</b></p>		
<p><b>Элементы, на которые необходимо обратить внимание во время наблюдения</b></p>	<p><b>Заметки описывающего характера</b></p>	<p><b>Заметки рефлексивного характера</b></p>
<p><b>1. Сложности:</b>          - Постановка правильных вопросов (Учитель должен уметь задать правильные вопросы (в частности вопросы, требующие полного ответа) для развития навыков высокого порядка у учащихся)          - Знание предмета (Эта часть наблюдения поможет собрать информацию об уровне знания учителей, т.к. им необходимо иметь подходящий уровень знания предмета для того, чтобы интегрировать разные предметы</p>		

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<p>в практике преподавания) - Четкие инструкции (Эта часть наблюдения поможет собрать информацию об используемых методах преподавания, где учащийся находится в центре класса) - Обратная связь (Эта часть наблюдения поможет собрать информацию о том, дает ли учитель обратную связь учащимся, которая поможет улучшить учебный процесс)</p>		
<p><b>2. Возможности:</b> - Постановка правильных вопросов (Учитель должен уметь задать правильные вопросы (в частности вопросы, требующие полного ответа) для развития навыков высокого порядка у учащихся) - Знание предмета (Эта часть наблюдения поможет собрать информацию об уровне знания учителей, т.к. им</p>		

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<p>необходимо иметь подходящий уровень знания предмета для того, чтобы интегрировать разные предметы в практике преподавания) - Четкие инструкции (Эта часть наблюдения поможет собрать информацию об используемых методах преподавания, где учащийся находится в центре класса) - Обратная связь (Эта часть наблюдения поможет собрать информацию о том, дает ли учитель обратную связь учащимся, которая поможет улучшить учебный процесс)</p>		
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**Ресурс:** Creswell, 2014

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**Appendix D**

**INFORMED CONSENT FORM (English version)**

**Implementation of the Integrated Curriculum in Kazakhstani Secondary Schools:  
Challenges and Opportunities in pilot schools at School Level**

**DESCRIPTION:** You are invited to participate in a **research study** on exploring the experience school administration and teaching staff have when they put the integrated curriculum into practice. Specifically, what challenges and opportunities they face when they implement the integrated curriculum. As part of the study, you will be asked to participate in a semi-structured one-on-one interview. If it is possible the interviews will be audio recorded with your permission. The tapes will be used only for data analysis purposes. The recorded audio files will be destroyed after transcribing the data. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. No one will use your name in reports, so your privacy will be protected. The results of the study will be used for scholarly purposes only.

**TIME INVOLVEMENT:** Your participation will take approximately 40-50 minutes.

**RISKS AND BENEFITS:** There are no potential risks associated with this study since your identity will not be revealed and you will not be asked any sensitive questions. The benefit that is may reasonably expected for you as a participant is in form of their self-reflection on experience gained during the process of implementation of the integrated curriculum at school level. Therefore, you will be able to analyze the pitfalls and opportunities you have met in this process and obtain knowledge in participating in empirical educational research. Your decision whether or not to participate in this study will not affect your employment at school.

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

**CONTACT INFORMATION:**

**Questions:** If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Master's Thesis Supervisor for this student work, Aliya Kuzhabekova, [aliya.kuzhabekova@nu.edu.kz](mailto:aliya.kuzhabekova@nu.edu.kz), phone + 7 7172 70-93-60

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

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

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

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**The extra copy of this signed and dated consent form is for you to keep.**

# IMPLEMENTATION OF THE INTEGRATED CURRICULUM IN KAZAKHSTANI SECONDARY SCHOOLS: CHALLENGES AND OPPORTUNITIES IN PILOT SCHOOLS AT SCHOOL LEVEL

## INFORMED CONSENT FORM (Russian version)

### ФОРМА ИНФОРМАЦИОННОГО СОГЛАСИЯ

Опыт внедрения интегрированной образовательной программы в средние пилотные школы Казахстана: барьеры и возможности пилотных школ на школьном уровне

**ОПИСАНИЕ:** Вы приглашены принять участие в исследовании по исследованию опыта администрации и учительского коллектива школы во время внедрения интегрированной образовательной программы. В частности, с какими трудностями и возможностями они сталкиваются при внедрении интегрированной образовательной программы. В рамках исследования Вам будет предложено принять участие в индивидуальном интервью при Вашем разрешении записывать его на диктофон. Аудиозапись будет использоваться только с целью анализа данных. Записанные интервью будут уничтожены после транскрибирования данных. Если Вы не хотите отвечать на любые вопросы во время интервью, Вы можете сказать об этом, и интервьюер будет переходить к следующему вопросу. Никто не будет использовать Ваше имя в отчетах, так что Ваша конфиденциальность будет защищена. Результаты исследования будут использованы только для научных целей.

**ВРЕМЯ УЧАСТИЯ:** Ваше участие потребует около 40-50 минут.

### РИСКИ И ПРЕИМУЩЕСТВА:

Риски, связанные с исследованием: нет никаких потенциальных рисков, связанных с этим исследованием, так как ваша личность не будет раскрыта и вам не будут заданы деликатные вопросы. В качестве ожидаемых преимуществ в результате исследования для Вас в качестве участника исследования можно рассматривать Ваш самоанализ об опыте, накопленного во время процесса внедрения интегрированной образовательной программы в практику. Таким образом, вы сможете проанализировать, с какими трудностями Вы столкнулись и какие преимущества Вам дала интегрированная образовательная программа, а также получить опыт в участии в эмпирических исследованиях в области образования. Ваше решение о согласии либо отказе в участии никаким образом не повлияет на вашу работу.

**ПРАВА УЧАСТНИКОВ:** Если Вы прочитали данную форму и решили принять участие в данном исследовании, Вы должны понимать, что Ваше участие является добровольным и что у Вас есть право отозвать свое согласие или прекратить участие в любое время без штрафных санкций и без потери социального пакета, который Вам предоставляли. В качестве альтернативы можно не участвовать в исследовании. Также Вы имеете право не отвечать на какие-либо вопросы. Результаты данного исследования могут быть представлены или опубликованы в научных или профессиональных целях.

### КОНТАКТНАЯ ИНФОРМАЦИЯ:

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**Вопросы:** Если у Вас есть вопросы, замечания или жалобы по поводу данного исследования, процедуры его проведения, рисков и преимуществ, Вы можете связаться с исследователем, используя следующие данные: Алия Кужабекова, aliya.kuzhabekova@nu.edu.kz, телефон + 7 7172 70-93-60.

**Независимые контакты:** Если Вы не удовлетворены проведением данного исследования, если у Вас возникли какие-либо проблемы, жалобы или вопросы, Вы можете связаться с Комитетом Исследований Высшей Школы Образования Назарбаев Университета по телефону +7 7172 70 93 59 или отправить письмо на электронный адрес gse\_researchcommittee@nu.edu.kz

Пожалуйста, подпишите данную форму, если Вы согласны участвовать в исследовании.

- Я внимательно изучил представленную информацию;
- Мне предоставили полную информацию о целях и процедуре исследования;
- Я понимаю, как будут использованы собранные данные, и что доступ к любой конфиденциальной информации будет иметь только исследователь;
- Я понимаю, что вправе в любой момент отказаться от участия в данном исследовании без объяснения причин;
- С полным осознанием всего вышеизложенного я согласен принять участие в исследовании по собственной воле.

Подпись: \_\_\_\_\_

Дата: \_\_\_\_\_

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## Appendix E

### Interview Transcript Sample

#### Part One: Biographical Questions

**Interviewer:** What is your name?

**Interviewee:** My name is Katya (pseudonym)

**Interviewer:** How old are you?

**Interviewee:** I am 21

**Interviewer:** What is your experience in leadership positions?

**Interviewee:** Less than a year

**Interviewer:** Could you tell me about your job responsibility.

**Interviewee:** Well, during the class time I usually conduct the lessons; observe the behavior and discipline of my students. After school, I prepare, plan and conduct a range of extracurricular activities, fill in the register, prepare for the next lessons.

#### Part Two: Research questions

**Interviewer:** How do you understand what the integrated curriculum is?

**Interviewee:** An integrated curriculum is the program that allows exploring cross-subject links on one subject. This integration can be achieved by covering “cross-cutting” topics on several subject areas. For example, we can study the “Travel” topic throughout all subjects. In the “Literacy” (Obuchenie Gramote) course, we learn how to create the correct routes for travelling or what items we need to pack. The “Art” course allows students draw or paint the places and sights that they want to visit. In addition, the “Knowledge of the world” (Poznanie Mira) course gives students a possibility to study the nomadic history of our nation.

**Interviewer:** In your understanding, why does the school implement the integrated curriculum?

**Interviewee:** Mmm, I think the school implements the integrated curriculum because our students gain knowledge better when we focus on one particular topic on several courses. For instance, when students learnt the letter “Я” and its sound on the “Literacy” course, I used the list of animals that have this letter in its names. Then, on the “Knowledge of the World” course, student gained the information about these animals and they were given a task to identify the sounds that the letter “Я” consists of. In addition, their homework assignment was to draw, paint or make an animal and prepare a short information report about an animal that has the letter “Я” in its name. This integration of different tasks made learning interesting for students and they actively participated in the lessons

**Interviewer:** What do you think is your role in implementation of the integrated curriculum? Can you explain what does this role entail?

**Interviewee:** I am the teacher and I play different roles in my students’ lives. If we talk about the integrated curriculum, I think my primary role is a facilitator for students who helps them to understand new learning phenomena and gives directions to students to identify their learning pace and interests. I also play the role of a person who tests the integrated

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curriculum in real life with ordinary students and then, helps our city's teachers to deal with this program.

**Interviewer:** What kind of support do you have as a teacher in the implementation of the integrated curriculum?

**Interviewee:** Well, a lot of support is provided by our school administration, in particular, our principal conducts a range of seminars and individual meetings where she explains how to implement the integrated curriculum, how to work with learning objectives and how to improve my teaching practice. I also have studied on the courses focused on the implementation of the integrated curriculum organized by the Centre for Teacher Professional Development. Moreover, the Nazarbayev Intellectual School in our region organizes different seminars and workshops focused on the use of the integrated curriculum and the strategies that I can use in my teaching practice as a teacher.

**Interviewer:** How do you discuss with teachers any challenges in implementation of the integrated curriculum?

**Interviewee:** We usually have meetings with teachers and school administration once a week where we can discuss the challenges connected with the integrated curriculum implementation. Once a month the representatives of NIS come to our school and we work together on the challenges that we face in the process of the integrated curriculum implementation.

**Interviewer:** What are the major challenges you have faced in implementing the integrated curriculum?

**Interviewee:** I face a range of challenges when I work with the integrated curriculum. First, the deficit in teaching and learning resources plays an important role in the implementation of an integrated curriculum. I have to bring everything from home in order to make different experiments and research. The accessibility of an interactive whiteboard at school could sometimes be useful because I can demonstrate some videos for students on it. However, for a complete and deep understanding of the definition or concept, many learners need to touch or make some actions with them. Second, our students are not ready to study in the integrated curriculum classroom because they have low level of preparedness to learning. Moreover, most of the students have low level of cognitive skills and their attention and assiduity are less developed.

**Interviewer:** How do you manage the challenges you face in implementation of the integrated curriculum?

**Interviewee:** Mmmm, as I said above, I have to bring everything from home in order to make different experiments and research. I also buy many books and teaching aids that I need when I work with the integrated curriculum.

**Interviewer:** According to your opinion, what opportunities did the implementation of the integrated curriculum give you as an administrator and your school?

**Interviewee:** Since we started implementing an integrated curriculum, our students' attitudes towards learning and their work habits have changed. Almost every child becomes motivated to learning, specifically when it comes to dealing with research projects. For example, on the "Literacy" course our students read a story about Jack and the Beanstalk. They wanted to check how many days the bean needed to grow. On "Knowledge of the World" course,

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students studied about the types of beans and conditions for their growth. On the “Art” course, they painted the story and made a role-play.

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Appendix F

Sample of Data Analysis Table of Themes and Quotes

#	Research question	Expected/unexpected	Themes	Quotes
1	<b>SQ1: How are the purposes of implementing integrated curriculum in pilot schools understood by administration and teachers?</b>	Expected	To develop a holistic view of learning	<p><b>R.7:</b> “An integrated curriculum is the program that allows <b>exploring cross-subject links on one subject</b>. Such integration will <b>develop a holistic view of learning</b> that can be achieved by covering “<b>cross-cutting</b>” <b>topics on several subject areas</b>. For example, we can study the “Travel” topic throughout all subjects. In the “Literacy” (Obuchenie Gramote) course, we learn how to create the correct routes for travelling or what items we need to pack. The “Art” course allows students draw or paint the places and sights that they want to visit. In addition, the “Knowledge of the world” (Poznanie Mira) course gives students a possibility to study the nomadic history of our nation.”</p> <p><b>R. 8:</b> “Due to the changes that exist in our world, there is a demand in new members of society. We have heard a lot about...the competitive individuals who can <b>justify their points of view</b>. Nazarbayev Intellectual Schools’ teachers cover topics from <b>different perspectives by integrating of several subjects</b>. Integration enables students to express and justify their points of view. Meanwhile, students from regular schools cover learning material from one perspective only. In the past students who graduated from our pilot school, when they entered universities could not express their thoughts and support their ideas with multi-perspective arguments. Nowadays our pilot school teaches students <b>to discuss and study the learning events from different perspectives, to express thoughts and justify their points of view from the first grade</b>. That is why in mainstream schools teachers should also implement an integrated curriculum.”</p> <p><b>R. 10:</b> “Learning is social, in other words it requires watching and interacting with each other. Our school has diverse classrooms where children with different social status do not want to work together. Integrated curriculum gives teachers an opportunity <b>to create real-life situational tasks that students have to solve together. They are to share their ideas in small groups, to listen to each other, to respect each other</b>. Now we see that all children in the first and second grades play together. They are not split into groups according to their social status as students from higher classes.”</p>

IMPLEMENTATION OF THE INTEGRATED CURRICULUM IN KAZAKHSTANI SECONDARY SCHOOLS: CHALLENGES AND OPPORTUNITIES IN PILOT SCHOOLS AT SCHOOL LEVEL

	Expected	To make learning applicable in practice	<p><b>R.6:</b> “Our students <b>gain knowledge better</b> when we <b>focus on one particular topic on several courses</b>. For instance, when students learnt the letter “Я” and its sound on the “Literacy” course, I used the list of animals that have this letter in its names. Then, on the “Knowledge of the World” course, student gained the information about these animals and they were given a task to identify the sounds that the letter “Я” consists of. In addition, their homework assignment was to draw, paint or make an animal and prepare a short information report about an animal that has the letter “Я” in its name. <b>This integration of different tasks made learning interesting for students and they actively participated in the lessons.</b>”</p>
	Expected	To increase teacher and student motivation to teaching and learning	<p><b>R.8:</b> “Implementation of an integrated curriculum is necessary for improvement of teaching practice. Working with other teachers who put this integrated curriculum into practice, <b>I can share issues that arose in my teaching practice and find solutions to these problems</b> together with more experienced teachers. Moreover, <b>I can discuss the materials</b> that students will cover on my course <b>with subject teachers who can give me additional materials or explanations for the questions</b> that students may ask during my course. Additionally, <b>we investigate new teaching strategies</b> that are more relevant in teaching a particular concept on different subjects.”</p> <p><b>R.9:</b> “Since we started implementing an integrated curriculum, <b>our students’ attitudes towards learning and their work habits have changed</b>. Almost <b>every child becomes motivated to learning</b>, specifically when it comes to dealing with research projects. For example, on the “Literacy” course our students read a story about Jack and the Beanstalk. They wanted to check how many days the bean needed to grow. On “Knowledge of the World” course, students studied about the types of beans and conditions for their growth. On the “Art” course, they painted the story and made a role-play.”</p>
	Unexpected	To make national education more aligned to western standards	<p><b>R.4:</b> “Kazakhstani government makes reforms in school education because <b>our national education should be similar to the international ones</b>. We usually compare our educational system with the western education and we can see that there are some issues in our teaching. Thus, I think that <b>implementation of an integrated curriculum is aimed at putting our educational system to the same level as the international one</b>. Our education should integrate the best” Kazakhstani and international experiences in the educational area.</p>