

**Teachers' perceptions of gender and academic achievement: Gender Stereotypes
among teachers in single-gender schools in Kazakhstan**

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Abstract

Single-gender education is considered to have a positive impact on student achievement and is an alternative form of education to co-educational settings. In Kazakhstan, single-gender education is well established with schools such as “Bilim-Innovation” lyceums and provides full engagement of both genders in all curriculum subjects. However, for some time, the research has attempted to address common myths concerning gender-related stereotypes and the academic achievement of boys and girls in certain subjects. These common myths still persist today and may influence the practices of teachers and how they perceive the academic potential of their students. The present study examined attitudes of ten single-gender school teachers in Kazakhstan towards single-gender education and their beliefs about how they feel gender may affect students’ academic achievements in single-gender schools. The present study collected qualitative data from the semi-structured interviews with ten teachers from two single-gender schools in Kazakhstan. The findings indicate that the participants believe that single-gender education has a positive influence on student learning over co-educational school settings. The ten teachers from single-gender schools believe that the gender of the teacher affects student achievement, hence female and male teachers have a different impact on students. Furthermore, the present study is particularly relevant for teachers, administrators and researchers by providing insight into the attitudes and beliefs of teachers in single-gender schools in Kazakhstan.

Keywords: single-gender education, single-sex schools, single-gender schools, teachers, stereotypes, academic achievement.

Аңдатпа

Бірыңғай гендерлік білім беру оқушылардың оқу үлгеріміне оң әсер етіп, жалпылай орта білім берудің балама оқыту түрі болып табылады. Қазақстанда бірыңғай гендерлік білім беру “Білім-Инновация” лицейлері сияқты мектептермен жақсы жолға қойылған және оқу жоспарының барлық пәндеріне екі жыныстың да қатысуын қамтамасыз етеді. Алайда, біраз уақыттан бері зерттеу жұмыстары гендерлік стереотиптер мен ұлдар мен қыздардың академиялық жетістіктері туралы мифтерді шешуге тырысты. Бұл жалпы мифтер әлі күнге дейін сақталған және мұғалімдердің іс-тәжірибелеріне және олардың оқушылардың академиялық озаттығын қалай қабылдауына әсер етуі мүмкін. Осы зерттеуде Қазақстандағы он бірыңғай гендерлік мектеп мұғалімдерінің бірыңғай гендерлік білімге қарсы көзқарасы мен сезімі, оқушылардың оқу жетістіктеріне әсер етуі туралы сенімдері зерттелген. Бұл зерттеуде Қазақстандағы екі бірыңғай гендерлік мектептердің он мұғалімімен жартылай құрылымдалған сұхбаттардан сапалы деректер жиналды. Зерттеу нәтижелері қатысушылардың бірыңғай гендерлік білім беру оқушылардың оқу үлгеріміне оң әсерін тигізеді деп санайды. Бірыңғай гендерлік мектептердің он мұғалімі, мұғалімнің жынысы оқушылардың үлгеріміне әсер етеді деп түйіндейді. Сонымен бірге, бұл зерттеу мұғалімдерге, мектеп меңгерушілеріне және зерттеушілерге, әсіресе Қазақстандағы бірыңғай гендерлік мектептердегі мұғалімдердің көзқарастары мен сенімдері туралы түсінік беру арқылы өте маңызды болып табылады.

Түйін сөздер: бірыңғай гендерлік білім беру, бірыңғай гендерлік мектептер, мұғалімдер, стереотиптер, оқу жетістіктері.

Аннотация

Считается, что раздельное обучение оказывает положительное влияние на успеваемость учащихся и является альтернативной формой обучения обычным школам. В Республике Казахстан данный вид обучения хорошо зарекомендовал себя благодаря таким школам, как "Білім-Инновация" лицеи, где осуществляется раздельное обучение мальчиков и девочек. В течении некоторого времени, было проведено немало исследований, целью которых было развеять самые распространенные мифы, касающиеся гендерных стереотипов и академических достижений мальчиков и девочек по определенным предметам. Данные шаблоны, все еще существуют и могут влиять как на практику учителей, так и на то, как они воспринимают академический потенциал своих учеников. В настоящем исследовании изучалось отношение учителей из школ с раздельным обучением, к данному виду обучения, и их субъективная оценка тому, как гендерные особенности могут влиять на успеваемость. В исследовании собраны качественные данные полуструктурированных опросов с десятью учителями из двух школ с раздельным образованием, по результатам которых, было заключено, что респонденты согласны с тем, что раздельное обучение положительно влияет на успеваемость. Также все респонденты считают, что пол учителя играет важную роль и учителя-женщины и мужчины по-разному влияют на успеваемость учащихся. Кроме того, настоящее исследование особенно актуально для учителей, администраторов и исследователей, поскольку дает представление о позиции и убеждениях учителей в данных школах.

Ключевые слова: раздельное обучение, школы с раздельным обучением, учителя, стереотипы, академическая успеваемость.

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Chapter One: Introduction

1.1 Introduction

Gender is considered to be a social phenomenon and a social construct, as distinguished from sex that is biologically determined (Momsen 1991; Mbilinyi 1992); it includes concepts such as power, equality of labour, and domination (as cited in Yokozeki, 1999). Similarly, gender is a concept that does not always correlate with biological or sex differences of females and males, and includes psychological, social, perceptual and emotional differences between them (Männynsalo, 2008). In addition, the term “gender” specifies traits and attitudes that a specific culture are judged to be norms for males and females (Woolfolk, 2016). It is well accepted that ‘sex’ and ‘gender’ are not the same concept. Whereby sex is considered by biological and genetic factors, and gender by the way in which a person perceives their identity (Woolfolk, 2016). The present study will investigate teachers' perceptions of differences between male and female students in single-gender/single-sex schools in Kazakhstan, and the way they believe these differences impact on student achievement. For the purpose of this research, the term “single-sex schools” will be referred to as “single-gender schools” as they are known as in the Kazakhstani context. This is because gender in the research context is seen as biologically determined, and is acknowledged only in binary terms as male or female (Brannon, 2002; Deaux, 1993).

For many decades now, gender stereotypes and differences between females and males have been debated and have held the attention of researchers particularly in the spheres of sociology and psychology. Recently, the word “gender” has become major element in the

field of education, through research that often shares a common root with feminist theories (Yokozeiki, 1999).

From a historical perspective, single-gender education in the western context, began with public education in the United States in single-gender schools, then “evolved to coeducational schools late in the 19th century” (Bracey, 2006, p.3). At those times, boys attended single-gender schools, whereas girls were typically educated at home until the late 1800s when single-gender schools were established for girls. Similarly, Kazakhstan's primary education system followed a similar trajectory with single-gender schools, where boys attended schools and girls were at home-schooling (Ashwin, 2012).

Single-gender education has been practiced in many countries such as the United States and the United Kingdom as an alternative form of education to co-educational settings, and has shown beneficial outcomes for the education system (Smyth, 2010). Research indicates that in these countries, single-gender schools and single-gender classes are particularly beneficial in the development of male students (Smyth, 2010). However, much of the research on gender in education has focused on differences between boys and girls. For example, according to some studies (Askew & Ross 1988; Francis 2004; Howe 1997), boys typically contribute more to classroom activities than girls, and differences between single-gender and co-educational settings depend on the dominant presence of boys in classroom interactions (as cited in Smyth, 2010). Moreover, boys might be more active and disruptive in classroom settings, thus they can have a negative impact on girls' academic performance (Smyth, 2010).

According to Sunderland (1994) gender can influence classroom settings depending on the teachers' attitude, and how much and what kind of attention is given to boys and girls (as

cited in Männynsalo, 2008). Sometimes this has concerned how gender may influence academic performance across different fields such as maths or physics (Männynsalo, 2008). In addition to the above-mentioned statements, the teacher plays a major role in guiding boys and girls and helping students to overcome certain challenges in a school environment (Männynsalo, 2008).

1.2 Background of the Study

1.2.1 Education system in Kazakhstan.

Kazakhstan is the ninth largest country in the world by land surface which is located in Central Asia. The country has borders with Russia in the North, Kyrgyzstan and Uzbekistan in the South, The Caspian Sea in the West, China in the South-East and Turkmenistan in the South-West (Organisation for Economic Cooperation and Development [OECD], 2015). According to statistics by the United Nations (United Nations [UN], 2020), the current population of Kazakhstan is 18,751,427.

Kazakhstan has a nine-year mandatory education regulation for young people and according to the Constitution of the Republic of Kazakhstan (Kazakhstan, 1995, art.30), citizens are guaranteed to receive free secondary education in state schools. The education system has four levels: pre-primary (3-6 ages), primary (7-10 ages), secondary (11-17 ages) and tertiary education (18-22 ages) (United Nations Education Scientific and Cultural Organisation [UNESCO], 2020). Primary and secondary education is compulsory from age 9 to age 15, and free of charge for all students. The duration of primary education is four years, and students enter primary schools at the age of six or seven (OECD, 2015). Lower secondary education lasts for five years, followed either by two years in general upper secondary

education or from two to four years in technical and vocational education. After the completion of upper secondary schools, students have a choice to enter technical and vocational colleges or to continue on to higher education.

Kazakhstan is a country with nearly 130 ethnic groups, thus the education system in the country is very diverse in terms of ethnicity, religion and language (OECD, 2015). The national language of the country is Kazakh, and Russian is considered to be an inter-ethnic language; as it is understood by around 94% of the population. Recently, Kazakhstan has introduced a trilingual system of education, however, only 15.4% of the population are fluent in English (OECD, 2015). School education in Kazakhstan is offered in 21 languages, and state mainstream schools provide education in one of the two languages, whether Kazakh or Russian and in other minor languages for students from ethnic cultures (OECD, 2015).

In Kazakhstan non-discrimination and gender equality remain a priority across all state sectors, including education. This is highlighted and described in the Constitution of Kazakhstan (Kazakhstan, 1995, art.14), in the developed and implemented Strategy for Gender Equality (Ministry of Justice [MJ], 2015), as well as in the Law “On State Guarantees of Equal Rights and Equal Opportunities for Men and Women” (Kazakhstan, 2009).

1.2.1 Single-gender schools in Kazakhstan.

After Kazakhstan gained independence from the Soviet Union in 1991, single-gender schools were established in 1992 and located in urban cities and rural areas of the country (Kocak, 2019). Single-gender schools in Kazakhstan are typically a set of boarding schools, where students have an option to live either in a dormitory or at home. There are nearly 30 branches of single-gender schools with dormitories, where secondary school students study

separately according to their gender cohort (Kocak, 2019). According to the results of the study conducted by researcher Kocak (2019), the dormitory system of single-gender schools is a major element in the educational process of these schools; as it enables students to focus on education; to enhance their academic performance and character development without being disrupted by external factors. Similarly, a dormitory system provides extra time for students to work on their homework and assignments. Additionally, this boarding system includes teacher assistants (tutors) who help students in their academic and social activities. Teacher assistants' and students' gender is supposed to be correlated with each other. In addition, the boarding school system is presumed to be a beneficial model for a single-gender environment to meet the special requirements of students according to their gender cohort (Kocak, 2019).

Furthermore, a set of single-gender schools in Kazakhstan have gained authority among the governmental organizations, parents, students, and their graduates for its positive contribution to the education system of Kazakhstan. Additionally, from the foundation of single-gender schools, there has been a history of demonstrating high levels of academic performance in national and international olympiads (International Educational Fund “Bilim-Innovation” [IEFBI], 2018). Similarly, single-gender schools in Kazakhstan are considered to be for high achieving students, thus these schools are considered to be part of the elite and more prosperous educational institutions in Kazakhstan (Kocak, 2019). Moreover, students from male and female schools take part in different types of projects and olympiads, such as the national olympiad “Zharkyn Bolashak” in Kazakh language, and other science projects. According to the statistics of these schools (IEFBI, 2018), about 27,000 applicants participate

in the preliminary examination annually, and nearly 1,700 of participants are enrolled in the 7th grade.

The academic curriculum of single-gender schools in Kazakhstan is adapted according to international educational standards, that is partly based on the State Standard of the Republic of Kazakhstan, and partly on the academic system of a set of single-gender schools in Kazakhstan (Kocak, 2019). Likewise, single-gender schools apply a trilingual system of education, mostly scientific subjects, such as maths, biology, physics, informatics are taught in English (IEFBI, 2018). Furthermore, other humanities and state subjects are taught in Kazakh and Russian.

According to the findings of the research conducted by Kocak (2019), these single-gender schools do not adopt special gender-based instruction on their academic curricula. Kocak (2009) has also found that in the professional development of single-gender school teachers, there appears to be no special gender-based methodology and strategy for teaching. In terms of gender-based classroom management, there is no difference found between boys' and girls' schools. Furthermore, the study (Kocak, 2019) indicates that there are differences in the dormitory, sports facilities, and in social activities, not in the academic curricula of single-gender schools.

1.2.3 Teachers' beliefs and gender.

Teachers are key actors in students' learning and academic performance. Owing to this point, teachers' perceptions and behaviours are some of the main determinants of investigating gender issues in educational research (Li, 1999). Likewise, teachers' attitudes are framed by teachers' beliefs that directly impact on students' beliefs and attitudes (Li, 1999). Additionally, teacher gender is considered to be a major variable in the sphere of

education. According to researchers, a teacher's gender has an impact on their beliefs and behaviours towards their students' gender (Sansone, 2017), and how teachers treat their students and evaluate them depending on their own gender-based biases (Lavy, 2008).

Gender differences between males and females in particular subject areas such as mathematics and science have been argued by researchers, whereas teacher gender and its relationship with student achievement has often been neglected in educational research literature. However, there are few studies that discuss and demonstrate significant literature according to the nature and the purpose of the present study, that will be presented in the literature review section of the paper.

1.3 Statement of the Problem

As there are many common myths concerning gender stereotypes and education such as females having challenges in maths or physics rather than males, and male students not being as successful as female students in humanities subjects (Kane & Mertz, 2012). Many research studies have sought to investigate the factors associated with differences in attainment levels between girls and boys with varying results (Tiedemann, 2000). These factors have been proposed to be biological in nature, culturally influenced, or even as the result of limited opportunities. These common myths still persist today and research has shown that they can influence the practices of teachers and how they perceive the academic potential of their students (Jussim, 1989; Jussim & Eccles, 1992; Tiedemann, 1995; Tiedemann & Steinmetz, 1998). Thus, it is important to understand the attitudes and the perspective of teachers in Kazakhstan, particularly the opinion of those in single-gender

schools as often they have worked in other educational contexts in order to gain a clearer picture of the factors that influence their beliefs and practices. Single-gender schools in Kazakhstan provide full engagement of both genders in all subjects (scientific and humanities). As there is little research on this topic in Kazakhstan and Central Asia in general, it will be useful to provide a more in-depth understanding of the beliefs and attitudes of teachers toward gender and education and educational attainment in this context.

1.4 Purpose of the Study

The purpose of the current study is to examine the beliefs and attitudes of single-gender school teachers towards a single-gender education and how they believe this may impact on students' academic achievement in single-gender schools in Kazakhstan. In addition, this study investigates to what extent teachers believe that gender has an impact on students' achievements in single-gender schools. Moreover, the current study is aimed to find out if teachers in single-gender schools believe that boys have advantages over girls in certain subject areas and what kind of factors influence academic achievement between boys and girls. In addition, the current research aims to examine factors that influence the opinion of teachers such as if the gender of a teacher or years of teaching experience influence their beliefs on differences between boys and girls on academic achievement in single-gender schools in Kazakhstan.

1.5 Theoretical Framework

The thesis project is framed around Bandura's self-efficacy theory (1997). According to Bandura (1997), self-efficacy is concerned with one's belief and perception in his capabilities to achieve a particular outcome. Self-efficacy may differ depending on people's field of interest and on their purpose in which sphere they would like to cultivate their efficacy (Bandura, 2006). In terms of generality, strength and level, efficacy beliefs vary depending on wide range activities or particular activity domains that people do and set goals to achieve certain outcomes. Self-efficacy theory is widely practiced in various fields of psychology, economics, and education.

In particular, this study focuses on teachers' self-efficacy in terms of how their beliefs and attitudes may influence their approach to students' academic performance. Research on teachers' self-efficacy indicates that teachers' sense of efficacy can be specified as teachers' beliefs that they can reach any student to help them to learn (Woolfolk, 2016). Moreover, teachers with high self-efficacy tend to be more hardworking and patient while working students, even when they are difficult to teach. The reason is that those teachers believe in themselves and in their students. If teachers' self-efficacy is high, it will have a more positive impact on students' learning and academic performance. In accordance with researchers (Fernet, Guay, Senécal, & Austin, 2012; Fives, Hamman, & Olivarez, 2005; Klassen & Chiu, 2010) teachers with a high self-efficacy do not experience burnout much and are more satisfied with their jobs in comparison with others (as cited in Woolfolk, 2016).

Moreover, teachers have a high self-efficacy when the school's administrative and teaching staff have high expectations for their students, and when teachers know that they can get help from the principals in coping with instructional and management issues. One of the

major findings of the research conducted on teachers' self-efficacy (Woolfolk, 2016) claims that self-efficacy increases when teachers see successful academic achievements of their students, not only from the moral support of colleagues. Owing to the point, single-gender schools in Kazakhstan are set schools for gifted students, and relying on the findings of the research teachers in single-gender schools might have a high self-efficacy. Hence, these schools provide gifted education, and students are assigned to different kinds of olympiads, and teachers have high expectations from their students.

1.6 Research Questions

RQ1. What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?

a. What do they see as the benefits, opportunities or challenges?

RQ2. Do teachers in single-gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?

a. What do teachers believe are the factors that influence the academic achievement of boys and girls in single-gender schools?

RQ3. What factors have shaped teachers' beliefs and attitudes towards single-gender education?

1.7 Overview of Methodology

The present research study is broadly phenomenological as it involves the lived experiences of teacher's beliefs and attitudes about the academic potential of their students (Cohen, Manion, & Morrison, 2011). The research design is considered as a case study, because it involves a bounded system, as Creswell (2014) describes a class or school community to be. Likewise, the present study is qualitative and based on one-on-one semi-structured interviews. An interview is a convenient, adaptable data collection tool, and a powerful instrument for the researcher, which allows the interviewer to obtain a complete and in-depth response on the participants' experiences (Cohen, Manion, & Morrison, 2011).

The data for the current study was obtained at two single-gender schools in Kazakhstan. The participants of the research study were ten teachers, with whom one-on-one interviews conducted. All ten teachers work at single-gender schools in Kazakhstan, five from girls' schools and five from boys' schools.

1.8 Significance of the Study

In Kazakhstan, gender education has built its base from single-gender schools, where female and male students study separately according to their gender cohort. Single-gender schools are one of the first schools in Kazakhstan where students are segregated by gender from one another; they provide the ideal research site for this kind of research.

Research studies indicate that teacher-student interaction impacts on students' academic success and performance in an educational context (Männynsalo, 2008). The gender of a teacher and their students can affect academic achievement and classroom

interactions (Sansone, 2017). For this reason, researchers and scholars have been studying this topic, regarding the context of Kazakhstan, there are no concrete studies concerning single-gender education.

The findings of the present study are particularly relevant for all teachers and school administrators of single-gender schools and to some degree for mainstream schools when working with male and female students in the Kazakhstani context. Therefore, the importance of this study stands on the classroom interactions of teachers with female or male students. The content and the findings of the study will be useful for informing teaching practices and also teacher training programs in Kazakhstan in the context of single-gender schools. Owing to the fact that there is little research-based literature intended to teacher's perceptions and attitudes towards gender, and particularly in single-gender schools in the Kazakhstani context, the present study might be beneficial for researchers by contributing to the improvement of that particular research area.

1.9 Definition of Variables

Gender - is defined as a social phenomenon and a social construct, as distinguished from sex which is biologically determined (Momsen 1991, Mbilinyi 1992, et.al).

Academic achievement — is identified from both formal and informal assessments. It includes formative and summative information to learn students' knowledge of the educational context (Fry, 2009; Nattress, 2013).

Achievement gap — is a discrepancy of groups of students in academic achievement. In general, the achievement gap includes performance gaps between ethnic groups, it also includes areas such as gender (Dahlin & Cronin, 2010).

Heterogenous education — is educating male and female students in the same environment at the same time to meet their academic needs (Anfara & Mertens, 2008).

Single-gender schools — are schools in Kazakhstan whose main purpose is to meet the academic needs of a single-gender, either male or female (Bracey, 2007).

Single-gender classrooms — are classrooms where all students are enrolled in the class are one gender, either male or female (Bracey, 2007).

1.10 Thesis Outline

This thesis study consists of six chapters, including the current introductory section (Chapter One: Introduction). The current chapter provided an introduction to the study, outlining the background of the study, the purposes of the study, the research questions, the significance of the study and the definition of variables. The subsequent chapters of the research project are organized in the following way. Chapter Two (Literature Review) is devoted to a review of the relevant literature related to the research problem. This chapter discusses gender theories in education, single-gender education and single-gender schools; teachers' beliefs and attitudes towards gender; impact of teacher gender on student achievement in the field of single-gender education. Chapter Three (Methodology) outlines a detailed explanation of the methodology used for this research, discusses the rationale for the chosen methodology and research tools. Moreover, the chapter also demonstrates a description of the sampling procedure and data analysis procedure of the study. Chapter Four

(Findings) reports the major data findings of the study structured by each research question. Chapter Five (Discussions) critically and analytically reports and discusses the results of the study. In particular, in these two chapters, the major findings and results of the study are discussed in relevance to the research questions and the literature review of the study. The final chapter of the study Chapter Six (Conclusions and Recommendations) demonstrates conclusions arising from the discussions, including the final concepts on teachers' perceptions towards gender in the context of single-gender schools in Kazakhstan. Likewise, this chapter includes recommendations and limitations of the study, and implications for future research.

Chapter Two: Literature Review

2.1 Introduction

The previous chapter presented the introduction and the background of the present study according to what is relevant and significant to the field of education with the aim of exploring teachers' attitudes towards a students' gender and its influence on their academic achievement in single-gender schools in Kazakhstan.

A review of the literature has shown that numerous factors can influence students' academic achievement, including that of gender. This chapter aims to summarize theories and stereotypes of gender and education and cover relevant literature on the topic. The chapter also provides an overview of gender theories in education, an analysis of the key issues and concepts, and reviews of previous studies relating to the topic and purpose of the present study. Based on the theoretical framework concerning teachers' self-efficacy and their beliefs and attitudes, the chapter concludes with findings from previous research studies related to teachers' beliefs concerning gender and education.

2.2 Gender Theories in Education

The term “gender” is defined as a social phenomenon and social construction (Momsen, 1991), rather than a biological aspect; thus it distinguishes gender from the sex of the person (Brannon, 2002; Deaux, 1993). According to researchers (Patterson, 1995; Ruble, Martin, & Berenbaum, 2006) an individual's identity regarding gender has two features of gender identity and gender-role behaviours (as cited in Woolfolk, 2016). Gender identity

refers to a “person's self-identification as male or female” (Woolfolk, 2016, p.256). Gender-role behaviours are common beliefs and features that a culture associates towards each gender (Woolfolk, 2016).

Gender in education research is considered to be a category of analysis and an expression of social identity that involves some common stereotypes and certain models of thought toward gender (Dillabough, 2001). One of the most researched and discussed topics on gender is the difference between female and male students in their academic achievement. Scholars define this term as a gender gap in education between female and male students (Francis, 2000; Martino & Meyem, 2001). This is a certain construction or a common stereotype towards gender which claims that boys have an advantage over girls in scientific subjects, such as maths or physics, whereas, girls are more successful at humanities subjects, such as history, language, and arts (Goldstein, 1993). Additionally, other recent studies have claimed that female students show high academic performance over male students in particular subject areas (Skelton & Francis, 2005; Francis & Skelton, 2009). Furthermore, according to Francis (2000), these differences in educational achievement between male and female students are only socially constructed and commonly believed stereotypes. Moreover, except for gender, there are other social factors, such as ethnicity, race, social class, status and disability that play a major role in education and the academic achievement of both genders (Berger & Guidroz, 2009; Dill & Zambrana, 2009).

2.3 Single-Gender Education

Before the 1970s, studies in the area of single-gender education were small-scale and had limitations. One of the first large-scale research about single-gender education was conducted by Dale (1969, 1971, 1974) in the British context (as cited in Smyth, 2010). Dale's research indicated that a coeducational setting provides a basic preparation for the adult life of both males and females (Smyth, 2010). According to Smyth (2010) the academic performance of female students, it was found that in co-educational school settings girls have a disadvantage in particular fields, especially in mathematics and science. Later, other studies (Ormerod 1975; Spender & Sarah 1980; Deem 1984) claimed that girls in single-gender classes or schools tend to be more successful and indicate higher academic performance in science and mathematics subjects (as cited in Smyth, 2010).

The benefits of the single-gender education system have been measured by the academic performance and achievement of students in certain subject areas (Smyth, 2010). The scholars Smithers and Robinson (2006), after reviewing studies on the advantages and disadvantages of single-gender education, concluded that there are no concrete findings that claim that single-gender education is either effective or ineffective. Thus far, the research has shown the limited effects of both types of school settings - single-gender, and coeducational - in school environments and there are research limitations that may or may not successfully pinpoint pieces of evidence on whether single-gender education is beneficial for boys or girls (Smithers & Robinson, 2006).

According to some scholars, the major reason for implementing single-gender education is the biological differences between males and females and the possibility of these differences manifesting themselves within the learning environment and affecting teaching

practices (Piechura-Couture et al., 2011). Along with the biological differences between boys and girls, several other features differentiate females from males. A meta-analysis conducted by Bonomo (2010) that highlighted brain-based, sensory-perception-based, physical, and biological differences of boys and girls. The study (Bonomo, 2010) reviewed literature and conducted a meta-analysis of 13 previous research studies regarding the gender-based differences of young males and females in terms of their biological, intellectual and physical development. The date range of those studies in this meta-analysis was various, the earliest study was conducted in 1963 and the latest study was in 2009. Furthermore, the research examined the ambient temperature of classrooms in single-gender classes and presented unanticipated results (Bonomo, 2010). One study, conducted by Sax (2006), indicated that male students learn better in chilly temperatures, whereas female students prefer a warm, heated environment (as cited in Bonomo, 2010). Moreover, in a warm classroom males become sluggish and sleepy. According to ergonomic specialists, the perfect ambient temperature is about 71°F (22°C) for young men and 77°F (25°C) for women. Owing to this, the scholars suggested that the ideal ambient temperature in a classroom would mostly be about 2°F lower, 69°F (21°C) for boys and 75°F (24°C) for girls in single-gendered settings (Bonomo, 2010).

On the whole, the literature indicates that there are differences between males and females based on their biological, cerebral, physical and psychological development. Additionally, researchers have investigated that there is a combination of developmental factors and differences that affect on the brain, sensory-motor and physical development of boys and girls (Bonomo, 2010). Therefore, the previous studies suggest that a single-gender educational context has beneficial outcomes for both male and female students with respect to

their gender differences, thus teachers need to have knowledge of those gender differences and be familiar with gender-based teaching strategies.

2.4 Single-Gender Schools and Classrooms

According to the researchers, the impacts of gender are far outweighed by ability, social background, race, and ethnicity (Smithers & Robinson, 2006). Smithers and Robinson (2006) concluded that there are both successful coeducational and single-gender schools, and there are excellent reasons for that. Other researchers (Datnow et al., 2001) reported that a single-gender setting helped to avoid some of the social distractions of coeducational settings and allowed the learners to focus more on academics, and it also opened communication on social issues such as teen pregnancy and dating (as cited in Moore, 2015). Therefore, the major goal of single-gender schools is not to remove flirting and other types of distractions. Instead, the concept of single-gender education came from the ideology that males and females process information in different measures and learn in different ways (Moore, 2015). Consequently, a single-gender context increases concentration of students and helps to prevent disruptive factors that may exist in co-educational settings.

According to Meder (2012), the achievement gap between male and female students is seen in the middle and secondary school levels, during these stages students really can gain advantages from single-gender educational settings (as cited in Moore, 2015). In addition, Kommer (2006) stated that gender roles are best investigated in the adolescent stage of education. Likewise, the researcher claimed that “finding their ways through this potential mindset is complicated and challenging for secondary school learners” (Kommer, 2006, p. 247).

Secondary or middle schools have provided an appropriate and effective model for single-gender classrooms. Taking into account the fact that, starting from the secondary school period, students face complex changes in their lives, they change physically, emotionally, and intellectually faster than they do at any other point in their lives (Ferrara, 2005). During this time, their academic studies play an initial role in their future careers (Ferrara, 2005). Moreover, those differences between both genders are noticeable (Bonomo, 2010). Researchers strongly believe that these gender differences have an impact on students' learning and academic achievement. Likewise, the research results do not indicate that female and male students learn in different ways. However, there are important and noticeable differences between both genders and on brain development in terms of size, structure, and intelligence (Bonomo, 2010). With reference to Bonomo (2010) “the male brain is 10 to 15 percent larger and heavier compared with the female brain” (p.257).

Taking into consideration the biological differences of female and male students, single-gender classes are an effective way to educate secondary school learners, as this helps teachers to manage classroom activities, and leads to the use of differentiated instruction (Chadwell, 2007). Differentiated instruction is defined as an instructional design that guarantees that students learn a subject, how they learn it and how they show that what they have learned corresponds to that student's readiness level, interests and favoured mode of learning (Bohannan, 2016). This instructional approach is aimed at maximizing the potential educational outcomes for each student by meeting their current educational needs and supporting them through the learning process (Bohannan, 2016).

Moreover, secondary school students start to face colossal changes physically and psychologically, and teachers in a single-gender environment can guide and manage all those

changes. Furthermore, teachers have the chance to make academic achievement and learning a primary goal. Single-gender school teachers have the opportunity to help students to be successful in their learning and to motivate, support students' academic achievement not only by segregating genders, but also by providing differentiated instruction strategies according to the needs of their students (Chadwell, 2007). Furthermore, Chadwell (2007) claimed that the gender segregation of learners without the instructional strategies and methods that consider gender differences, can be a failure and a major drawback of single-gender education. Just separating students by gender, without including instructional changes into academic curricula is defined as a structural change rather than an instructional change (Chadwell, 2007). Thus, teachers in single-gender schools or classrooms need to adapt curricula to differentiate instruction according to their students' gender cohort.

2.5 Teachers' Beliefs and Attitudes Towards Gender

Teachers play an important role in students' learning. Therefore, teachers' beliefs are a major variable in the study of gender issues (Li, 1999). The review of the literature on teachers' beliefs towards students' gender and gender differences indicate that there are few substantial studies conducted in the educational sphere (Li, 1999). Nevertheless, the following section presents several studies that are relevant to the nature of the current study regarding teachers' perceptions and behaviours towards gender and differences between male and female students in certain subject areas.

With reference to Li (1999), teachers' attitudes towards students are essentially shaped and even determined by their beliefs. Moreover, these attitudes substantially influence

students' beliefs and attitudes. In addition, Li (1999) claimed that teachers' perceptions about males and females, and the different views of male and female teachers towards the nature of this subject, academic curricula, and other factors, impact their attitudes, and later on their students' academic performance. Several studies indicate that teachers' perceptions of students' academic performance were framed by biased stereotypes according to their students' gender (Tiedemann, 2000; Sansone, 2017). Previous research conducted by Tiedemann (2000) about teachers' and parents' beliefs on the academic performance of students in mathematics, stated that teachers' perceptions of their student's performance in mathematics were considered to be influenced by the student's gender but also correlates to students' previous grades in that subject. The study by Tiedemann (2000) applied a quantitative research design and conducted in Germany including only German participants. The participants of this study were 489 elementary school students, including 343 mothers, 270 fathers, and 28 elementary school teachers. Additionally, the findings of the study conducted by Tiedemann (2000), claim that teachers' perceptions towards the gender of their students are shaped by parents' beliefs towards their child's gender, it is based on their gender-stereotyped beliefs.

In addition to above-mentioned concepts, it appeared that mothers' beliefs, especially, and gender-based stereotypes influence students' academic performance and thus also impacts teachers' perceptions towards students (Lavy, 2008; Tiedemann, 2000). For instance, researchers (Eccles et al., 1990) state that in childhood and adolescence, most parents overestimate their son's abilities in maths and science subjects, and underestimate the capabilities of their daughters (as cited in Lavy, 2008). Thus, students are affected by their parents and by their parents' perceptions of them (Tiedemann, 2000). The findings of these

studies mentioned above indicate that parents' beliefs, especially mothers' beliefs have an impact on students' academic performance. Consequently, the studies demonstrate that parents' beliefs also influence teachers' beliefs and attitudes towards their students.

2.5.1 Teacher gender influences student achievement.

Most of the previous studies investigated the differences between males and females in academic performance, particularly in mathematics and science subjects. However, the gender of teachers has not been investigated in a substantial manner in the sphere of education (Li, 1999). Owing to that, there is a little research about teacher gender and its impact on students' achievement. Nevertheless, there are several studies that provide some relevant literature that relates to the current study concerning teachers' gender and its influence on students' academic achievement. In contrast, the following section demonstrates some of the major findings of previous studies on teacher gender and its relationship with academic performance.

Teacher gender has been shown to play a role in teaching and communicating with students (Lavy, 2008). Likewise, a teacher's gender also influences their perceptions and attitudes towards their students' gender. In addition to that, teachers might have gender-based biases that may influence how they treat and assess their students (Lavy, 2008). In accordance with findings by Sansone (2017), teacher gender may influence teacher behaviour and attitudes. This longitudinal study (Sansone, 2017) investigated high school math and science teacher's gender influences student interest and self-efficacy in STEM (science, technology, engineering and math), and the survey design had two levels, one was conducted

in 2009, the second one in 2012. The participants of this study in the first phase included 26 000 high school students from 940 private and public schools in the United States, in the second level 30 students from each school have been recruited to take part in interview surveys with their parents. In addition, the findings of this study (Sansone, 2017) indicate that a teacher's gender may impact students in several ways, for instance, being role models, eliminating stereotype threats.

According to Saha (1983) male and female teachers influence their students' academic performance in different ways (as cited in Li, 1999). The major findings of this study claimed that male teachers have more advantages than female teachers in teaching mathematics and science. Likewise, students with male teachers showed high academic performance in mathematics and science, in comparison with students with female teachers (Li, 1999). Additionally, the previous literature (Li, 1999) on teacher gender with the aim to increase comprehension on how gender differences develop and relate to teachers' beliefs and summarized the main concepts of those studies. Li (1999) and studies conducted by Carnoy (1971) and Klees (1974) demonstrated similar findings claiming that male teachers have an advantage over female teachers in teaching mathematics and science (as cited in Li, 1999). Moreover, the researchers Warwiche and Jatoi (1994) stated that teacher gender has more influence on the students' achievement in mathematics compared to student gender, and students of male teachers attained higher test scores than those of female teachers (as cited in Li, 1999). The research by Warwiche and Jatoi (1994) was the first national survey conducted in primary schools in Pakistan (as cited in Li, 1999). In contrast, the recent study conducted by Sansone (2017) on teacher gender in the sphere of economics indicates that teacher gender has a minimal (possibly null) impact on students' performance and interest. According to the

major findings of this study, building a positive learning environment, treating each and every student equally, and being passionate about teaching are the key drivers in students' academic achievement (Sansone, 2017).

Most studies that have examined teacher gender and gender differences have implemented a quantitative design as a research methodology. Therefore, according to Li (1999), a qualitative design would be more relevant to the obtention of more in-depth data and insights from this field of research. Thus, in the present study, a case study in single-gender educational context was designed to obtain insights of teachers that is described in detail in the next chapter.

2.6 Summary

This chapter has examined the findings of previous studies relevant to the topic and purpose of the current study. In particular, single-gender education and teacher gender have been discussed. Moreover, this chapter has discussed a range of literature on teacher gender and its impact on student achievement and learning, including teachers' beliefs on gender differences. The following chapter presents a description and justification of the methodology employed in the present study.

Chapter Three: Methodology

3.1 Introduction

The purpose of the current study was to examine the beliefs that Kazakhstani teachers hold towards gender and gender stereotypes, and the influence that they believe may have on their academic achievement in single-gender schools. Furthermore, the present study investigated to what extent teachers believe that boys have advantages over girls in certain subject areas and what kind of factors influence academic achievement between boys and girls. In addition, the current research examined if the gender of a teacher or their years of teaching experience influence their beliefs on the academic achievement of boys and girls in single-gender schools in Kazakhstan.

3.2 Research Design

The present research study was broadly phenomenological as it involved the lived experiences of teachers, and captured their beliefs and attitudes about the academic potential of their students (Cohen, Manion, & Morrison, 2011). The research design can be considered a case study because it involved a bounded system, as Creswell (2014) has described a class or school community to be. However, this study also considered the context of single-gender schools and the culture of Kazakhstan. Therefore, Yin (2002) defined the case as “a contemporary phenomenon within its real-life context, especially when the boundaries between a phenomenon and context are not always clear and the researcher has little control over the phenomenon and context” (p.13). In addition, this definition of a case study, is considered to be more a legitimate method of research for the nature and topic of the present

study, as other research designs that involve quantitative methods, such as experimental and survey, may not be able to provide the researcher with the relevant depth in data (Yazan, 2015). Thus, Yin (2002) describes the case study as an utterly novel “comprehensive research strategy” intended to study real-life contexts (p.14).

The study employed a purposeful qualitative sampling method, where the researcher intentionally or purposefully selected individuals and sites for his/her research to learn or understand the central phenomenon (Creswell, 2014, p.228). As the purpose of this particular study intended to investigate teachers' beliefs and experiences, it was necessary to select participants who fit the criteria of the study (teachers working in single-gender schools) and who have knowledge relevant to the topic under investigation. In this way the researcher can obtain an in-depth and clearer understanding of the way they make assumptions concerning the academic potential of their students.

3.3 Research Site

The data for the current study was obtained at two single-gender schools in Kazakhstan. These schools were for students that were considered to be high achieving students, and were located in one large urban city in Kazakhstan. The researcher has chosen single-gender schools as research sites because the context and educational process, social class background, and academic ability of students, typically differ between single-gender and coeducational settings (Hannan et al. 1996). Moreover, Bonomo (2010) stated that gender differences influence the way students learn and the researcher attributed this to the achievement gap between male and female students. According to the findings of a previous study, single-gender education from teachers' perspectives had a positive impact on the

students' academic achievements (Moore, 2015). Taking into account differences between gender and school settings and relying on other research studies conducted in this field single-gender schools were chosen to be a relevant research site.

3.4 Participants

The target population of the study were teachers working in each of the schools. From this target population, a total of ten participants, (five teachers from each school) were recruited to take part in the data collection process of the study. After obtaining ethical approval from the university ethics committee, each of the school principals were contacted by phone. The researcher met with each of the school principals individually and explained the purpose of the research study. After the researcher obtained agreement and signed consent forms from the principals (Appendix A) to conduct interviews, potential participants of the study (teachers) were contacted by email. The purpose of the research was explained in the email and teachers were asked to volunteer to participate. Once ten teachers had been recruited, information and informed consent documents (Appendix B) were provided to them in three languages (English, Kazakh, and Russian). Prior to the interviews, teachers were offered the opportunity to ask any questions they had about the research and their participation in the study. The participants of the study were not chosen according to their gender or years of experience. The respondents of the study were a mix of female and male teachers who teach opposite or same gender students in single-gender schools in an urban city in Kazakhstan. The participants' teaching experience in a secondary school context (see Table 1) ranges from one year to 14 years, and average teaching experience indicated 6 years and 7 months (6.7 years). Furthermore, subjects that they have been teaching at single-gender

schools were various, some teachers had teaching experience in humanities and science subject fields as well. Among the respondents, some teachers have practiced teaching in mainstream schools as well, where boys and girls study together in one classroom setting. Moreover, some of them have experienced working at both single-gender schools, only with boys and only with girls. Others, mostly young teachers, have practiced teaching either in boys or in girls' schools.

Table 1. Participants' Profiles

Participant code	Gender	School type	Experience	Subject field	Gender experience
P1	Female	Girls' School	12 years	English	Mixed schools, girls' schools
P2	Female	Girls' School	1 year	Mathematics	Only girls' school
P3	Male	Boys' School	7 years	Computer Science	Mixed school, boys' school
P4	Male	Boys' School	14 years	Mathematics	Only boys' school
P5	Male	Boys' School	2 years	Biology	Only boys' school
P6	Female	Boys' School	4 years	English	Only girls' school
P7	Male	Boys' School	2 years	Physics	Only boys' school
P8	Female	Girls' School	10 years	History	Boys' school, girls' school, mixed school
P9	Male	Girls' School	11 years	English	Boys' school, girls' school, mixed school
P10	Female	Girls' School	4 years	Computer Science	Only girls' school

3.5 Instrument

The present study is qualitative and was based on one-on-one semi-structured interviews. The interview tool was constructed from similar research conducted in other contexts and from the theoretical framework applied in this study (Appendix C). Questions were based on teachers beliefs and attitudes and the experiences that shaped these attitudes and beliefs according to Bandura's (1997) self-efficacy theory. An interview was a convenient, adaptable data collection tool, and a powerful instrument for the researcher. The interviews allowed the interviewer to obtain a complete and in-depth response from the participants based on their experiences (Cohen, Manion, & Morrison, 2011).

3.6 Data Collection

The participants were invited to have the interviews conducted in the language they felt most comfortable with so they could freely express their ideas and opinions. All ten interviews were conducted in the participants' workplace according to their schedule and comfort. The interviews were also recorded for transcription purposes with the permission of the participants and to ensure that the researcher could capture all responses to the interview questions. Each interview had taken approximately 30 minutes, with 5-10 minutes to get acquainted with a set up for the interview session, overall each participant has spent approximately 40 minutes for an interview.

3.7 Data Analysis

To analyze the data, the interviews of the participants were first transcribed and typed on a Microsoft Word document. Data collected from the interview process was coded according to Saldana's (2012) first and second cycle coding method. According to researchers (Miles, Huberman, & Saldaña, 2014) in the first cycle coding stage, codes were allocated as prompts or triggers using chunks or keywords for collected data. In this first cycle, the researcher applied in vivo coding, using participants' own words or short phrases (Miles, Huberman, & Saldaña, 2014). The second cycle coding method summarizes the first cycle codes, generated by the keywords or the chunks of phrases or keywords. In this coding cycle, pattern coding was used to summarize the collected data. The responses of the interviewees were transcribed by hand and typed on a word document (Appendix D) and analysed using a coding system of data analysis. Once the coding was completed, the codes were arranged into broader themes or categories and then the responses of the participants were analyzed, the first and second cycle coding system and in vivo coding.

The first research question, “What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?” was analysed using first cycle coding, where the keywords and chunks of the collected data were taken. Those keywords and chunks of the data were presented and analysed by using in vivo coding, where parts and phrases of the participants' have taken.

The second research question, “Do teachers in single gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?”, was presented using the first cycle and in-vivo coding system. To get an answer to this question,

the chunks and keywords of the teachers were taken and analysed according to the interview coding system.

The final research question of the study, “What factors have shaped teachers’ beliefs and attitudes towards single gender education?”, was analysed by using the in vivo coding method, where the participants' phrases from their interviews were taken and analysed.

3.8 Ethical Considerations

Ethical regulations and standards were followed at all times according to the terms set out under ethical approval provided by the university school ethics committee. Participation in the research process was voluntary. Therefore, participants were made aware verbally and within the written consent form that they could withdraw their participation or data from the study at any time. It was explained to participants that voluntary withdrawal would not have any detrimental impact on their employment or relationship with their employer or Nazarbayev University. The researcher has taken all the required procedures to maintain the confidentiality of the participants and their data. The identity of the participants was only known to the researcher. Confidentiality was maintained by the allocation of codes to each participant's name before undertaking the data collection. Interview transcripts with participants' coded identities were stored in a password-protected file on the researcher's personal computer which was also password protected. A document that contained the identity of participants and their allocated codes were stored with the signed information and consent sheets in a hardcopy file that was locked in the researcher's office. This has minimized the risk of being breached ethical requirements concerning confidentiality. All

electronic password-protected information will be deleted from the computer one year after the research is completed and consent forms, coded identities, and any manual notes will be destroyed at the same time by shredding.

3.9 Risks and Benefits

The present study did not recruit participants from vulnerable populations nor discuss topics that can be considered as sensitive or psychologically harmful, and as such could be overall considered as posing a minimal risk.

The participants in the study may not receive any direct benefits from participation in the research, however, by having the opportunity to reflect on their practice, this might indirectly improve their awareness and pedagogical practice in teaching particular gender cohorts. Furthermore, results from the present study might be beneficial for school programs, policy, and informing pre-service or in-service teacher training programs.

3.10 Summary

This research project was designed to identify the single-gender school teachers' perceptions and attitudes towards the gender differences of their students and their influence on academic achievement. The procedures that have outlined in the current chapter were constructed to obtain data about teachers' beliefs and attitudes towards single-gender education and gender stereotypes. The current study gathered information on their thoughts and perceptions regarding participants' teaching experience, subject area, teacher's gender, the academic performance of students, student behaviour, and students' attitudes towards single-

gender education. The data collection procedure and analysis section of the study has outlined how the data were gathered and analyzed. The next chapter will demonstrate the major findings of the data collected from ten teachers in single-gender schools in Kazakhstan.

Chapter Four: Findings

4.1 Introduction

The previous chapter provided a detailed explanation and justification of the research design, methods, and data analysis of the present study. This chapter analyzes the data that was collected from the one-on-one interviews. The goal of the current study was to examine the beliefs that single-gender school teachers hold towards gender and gender differences, and the influence that they may have on students' academic achievement in single-gender schools in Kazakhstan. Likewise, this study was aimed at finding out to the extent to which teachers in single-gender schools believe that boys have advantages over girls in certain subject areas and what they believe are the factors that influence academic achievement between boys and girls. In addition, this study investigates the factors that may influence teachers' beliefs on the academic achievement of boys and girls in single-gender schools in Kazakhstan. After categorizing the data using a qualitative coding system the findings are reported and summarized here. This chapter is structured in the following way: the major findings of the data are grouped according to each research question including both expected and unexpected results.

4.2 Results Pertaining to RQ1: What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?

- a. What do they see as the benefits, opportunities or challenges?

Single-gender education exists as an alternative form of education to co-educational schools. Similarly, one of the participants of the study highlighted the fact that single-gender education is successfully practiced around the world.

For many years, I thought that single-gender schools are inherent to the oriental culture, but then I figured out that some schools in Europe and in South Korea have the same style as well. So, it is a global practice. (P7)

According to the participants of the study, single-gender education is believed to be one of the most beneficial strategies for students to attain high academic achievements. *"Of course, from my personal experience, single-gender school students tend to have higher academic achievements." (P9)*

Another participant added that:

Since I have studied in such a school I could be very biased. But I think that single-gender schools tend to show better academic achievements. There are many advantages on the academic performance of students in single-gender education.(P7)

The majority of the participants believe that single-gender education influences positively on students' academic achievement, and also that these kinds of school settings avoid some disruptions that might affect boys and girls. In particular, one of the participants of the study has highlighted the fact that a major benefit of single-gender education might, indeed, be the avoidance of such disruptive factors. Thus, students in single-gender schools are more likely to be concentrated on their studies rather than on their physical appearance.

I think that students are more concentrated on their studies, rather than on their appearance. Girls are more focused on the material and subject, than how they look, speak and if they say something wrong, boys will laugh at them. It is the same for boys. One of the main benefits of single-gender education is that students are enrolled in these schools when they are in puberty, when all these kinds of thoughts and feelings take place. And they get rid of such distracting thoughts.(P8)

In addition, one of the male teachers claimed that when boys and girls are together in one class, they can be easily distracted by each other. *"During my university years, I have been in a mixed-gender environment and I have noticed that students get distracted easily by the opposite sex."* (P7)

Likewise, another respondent shared his own experience of working with boys both in a single-gender and mixed-gender environment.

Boys are more concentrated on their studies in a single-gender environment. In the mixed-school, boys were less active than girls. Girls in the mixed-gender schools tried to be more active in front of boys. But here in the single-gender school boys do not have complexes and they are not shy about asking some questions. (P3)

According to his experience, boys are more open to any kinds of questions and concentrate on their studies better in a single-gender environment than in a mainstream setting.

Taking into account the above-mentioned discussions, classroom management and instructions might be arranged considering the differences between boys and girls. Moreover, another teacher pointed out her views, which were similar to this. She added that the differences between boys and girls also exist due to the age correlation of students.

In a 13-15 age group, the academic achievements of girls are higher. Girls at this age tend to be more focused. Boys start to take over in terms of their academic results and become more responsible in higher grades. When I was teaching in a single-gender class for girls I noticed that the females tended to be more responsible and focused at the beginning of secondary school and then they lost their focus at the end of the term. (P1)

Most of the teachers think that it is easier to arrange and manage a class in a single-gender context, as teachers use a different way of communicating ideas and explaining concepts with boys and girls.

From the teacher's perspective, it is easier to address your thoughts and ideas to a certain gender. For example, if it is a male only environment, you follow one way or strategy of communication and a different one in the females only presence. It becomes challenging to follow this rule in mixed-gender classrooms. (P9)

Moreover, it is believed that, for teachers, it would be more convenient to motivate and involve their students in a single-gender environment, as they differentiate instructions for students according to their ability and other special needs.

It is easier to engage and inspire students when they are all one gender. Because we try to divide classes into categories, the advantage is that students are given extra time. If we find a special curriculum design for students, it will be more convenient and effective for studying and teaching in single-gender schools. (P3)

On the whole, the participants consider that single-gender education has a positive impact on students' academic performance, as boys and girls are not distracted by external disruptive factors. In contrast, it was found that students in single-gender schools are more likely to be focused on their learning and on enhancing their academic performance. Additionally, the participants (teachers in single-gender schools) assume that teaching only one gender cohort is more convenient and beneficial, as it enables teachers to manage and design classroom interactions according to their students' gender.

4.2.1 Benefits and opportunities for students in single-gender schools.

The findings indicate that some teachers in Kazakhstan believe that single-gender education provides opportunities for students to achieve similar academic goals. Some of the teachers explained that a single-gender environment can increase students' concentration and confidence in their studies.

Talking about the benefits of single-gender schools, I think that when students are divided into genders, they are more concentrated on their studies. On the other hand, if they study together in one class, boys and girls learn to work together and respect each other. (P4)

In a single-gender school, students can feel free to ask any kind of question from a teacher without being embarrassed or stressed. A male teacher who works in a girls' school shared his own experience of being a student in a single-gender school.

From my own experience, before the 6th grade I studied in a mainstream school and after that, I joined a single-sex school. It was much easier to share my thoughts and opinions in a boys-only classroom because I did not feel any of the pressure that I felt before. I was more confident and it has positively affected me. (P9)

Moreover, one of the advantages of being a student at single-gender schools can be the good behaviour of students. One of the participants, who work at a boys' school highlighted that males from single-gender schools, rather than boys from mainstream schools, are more likely to act like gentlemen and be kind and respectful to females.

“At the time of my olympiads participation, I remember myself treating girls kindly and with respect. I haven't noticed such behavior in boys from mixed-gender schools.”

(P7)

According to one of the female teachers, one of the main opportunities for students in single-gender classes is the collaboration of students. Girls and boys in such classes are very collaborative, helpful and act kindly to each other. *“In my opinion, one of the biggest opportunities that girls have in single-gender classes is collaboration. It is easier for girls to work together and help each other in such an environment.” (P1)*

In contrast, one male teacher who works at a boys school contradicts the former participants' point of view claiming the following:

I think that if both genders studied together they might be more social and cooperate. Another thing is that when they study together, they start to look after their appearance. If there are only boys in the class, male students might be more noisy and active, if there is an opposite gender, both genders start to think about embarrassing aspects. (P4)

On the whole, the findings reveal that single-gender context is beneficial for both genders in terms of their academic performance. Hence, students seem to be not distracted by each other and are more likely to concentrate on the learning process. However, the participants consider that in a mixed-gender environment boys and girls might be more collaborative and look at their physical behavior and appearance.

4.2.2 Challenges of single-gender education for students.

As the findings of the data indicate, gender segregation has a more positive impact on students' academic achievement rather than in their social life. However, the participants claimed that there are some challenges for students from single-gender schools with interacting with the opposite sex at university. These respondents highlighted the issue that boys and girls might have challenges, not in the academic sphere, but in the social aspect of their lives. One of the teachers says that most of the graduates of single-gender schools experience a form of culture shock when they enter a university.

When students are separated by gender, one of the challenges can be in the social sphere of their life after graduation. For instance, boys from single-gender schools experience some problems interacting with the opposite sex. My students always tell me this and sometimes they even ask for some advice from me on this issue. (P6)

Moreover, according to one male teacher, challenges of single-gender school context might relate to your peers not being well-mannered. As he explained,

As a graduate student of a single-gender school and as a teacher here, I can say that it depends on your class, classmates and personal cases. Drawbacks of single-gender settings might be if your classmates are not well-behaved. (P5)

One female teacher outlined some disadvantages of a single-gender environment for both male and female students.

From my point of view, the disadvantage in the process of teaching in single-gender classes is that if it is a girls' school, they are more relaxed. They do not care about their speech, behavior, or intonation. Talking about a boys' school, the disadvantage is, again, that they do not act like gentlemen; they might lose those manners and behavior in front of girls. (P8)

Some of the participants highlighted that while being separated by gender, males and females are not distracted by the disruptive manners of the opposite sex. Girls and boys do not care very much about their physical appearance, and they feel free to ask their teacher any kinds of questions if they have misunderstood something.

4.3 Results Pertaining to RQ2: Do teachers in single-gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?

a. What do teachers believe are the factors that influence the academic achievement of boys and girls in single-gender schools?

The majority of the respondents claim that a single-gender setting has a positive impact on students' academic achievement. According to them, both genders' benefit from a single-gender environment in their studies. Likewise, according to one participant, single-gender

schools positively influence students from a psychological perspective. *“In my opinion, single gender schools have a good psychological impact on students.”(P7)*

In addition to that, one female teacher expressed her point of view regarding the gender peculiarities and differences of boys and girls in a single-gender environment. Concerning this, teachers should consider those differences and peculiarities of both genders while interacting with and guiding students. For instance, according to P8:

For example, sometimes you need to be stricter with boys; you can use direct and disciplined ways of communication. But, this method does not work with girls, if you use that kind of language, they may cry and be upset, and leave the class, or even will not do that task. Instead, with girls, you need to be more delightful and delicate.(P8)

According to this participant, teachers may need to use different ways of interaction while giving instructions to boys and girls. Similarly, girls may prefer delightful language, whereas boys may need more disciplined and strict communication, instruction.

4.3.1 Gender differences in academic achievement.

According to the viewpoints of the participants, there are differences between boys and girls during class time and these differences influence the academic performance of both genders. It may happen due to the differences and peculiarities of males and females in the way they perceive the knowledge presented and receive information. One female teacher who has practiced teaching boys and girls in mainstream and single-gender settings shared her thoughts on this point:

According to the studies conducted by psychologists, when a lesson starts, girls are active at the beginning of the lesson, the first 20 minutes of the lesson girls listen and catch the new topic. Boys start to be active at the end of the lesson

and so they can miss important pieces of the main topics. It is a difference in perceiving the knowledge by boys and girls. (P8)

Likewise, she mentioned that due to these perceptual differences between boys and girls, in mainstream schools girls tend to be more successful.

In average mainstream schools, the majority of high-achieving students are females. It does not mean that girls have more intellectual abilities than boys, it is not because of that. It is about those differences, that girls are active for the first 20 minutes of the class, whereas boys are engaged in the lesson at the end of the class. Thus, boys miss important parts and materials of the lesson when passive parts of the lesson are demonstrated, such as self-study or practical tasks. As they have missed those important elements. (P8)

Taking into account those peculiarities and differences between boys and girls, teachers in single-gender schools can arrange classroom activities and instruction by considering their students' gender.

Owing to this fact, in single-gender schools, teachers can plan and manage their lessons due to the gender of their students. If it is a boys' school, include all key information at the end of the lesson, and for girls to provide important topics at the beginning of the lesson. (P8)

Moreover, most of the teachers believe that boys and girls perceive information and knowledge differently due to their biological, psychological and physical characteristics. Furthermore, the majority of the teachers believe that single-gender education has a positive effect on the academic achievement of students.

4.3.2 Gender stereotypes from teachers' perspective.

The participants think that gender stereotypes regarding the academic performance of both genders in certain subjects are untrue. The common stereotypes and beliefs that people

hold towards gender are that females are better at social and theoretical subjects, whereas males are successful in scientific subjects. The majority of the teachers do not believe these myths, and feel that they are stereotypes. According to their teaching experiences, the majority of the participants believe that intellectually, both genders show the same potential for their academic performance. For instance, P2 outlines the following: *"As we have seen that generally male students prefer scientific subjects, in comparison with female students. However, some boys are good at theoretical subjects and chose them as their main profession."* (P2)

Another participant outlined the following:

Personally, I think that these beliefs are just stereotypes, and I do not believe that boys are better at scientific subjects than girls. Scientifically, boys and girls can achieve and be successful at the same level. I prefer to believe that we are all equal. I believe that boys and girls can achieve the same goals. Yes, maybe girls need to put much more effort than average boys, but the same result can be achieved. (P5)

Likewise, another respondent claimed:

It is just a stereotype, not based on research findings. I know such women scientists who are really successful at difficult subject areas, such as engineering and astrology. Whether one is a female or a male, the opportunities and chances to achieve academic goals are equal for both of them. The factors that influence the academic performance of students might be teacher quality, the school system, parents, peers, and the society that surrounds students. In this case, gender does not impact students' academic achievement. (P8)

With reference to these findings, female students can have an advantage in scientific subjects, as well as males, if they put in the required effort. Likewise, one of the participants explained that due to such stereotypes about females, girls avoid using all their potential to perform better in scientific subjects. *"I think because of this stereotype girls do not want to*

perform better. I strongly believe that girls have the same intellectual potential in those subjects as boys." (P1)

Similarly to this statement, another participant pointed out that social beliefs and stereotypes about genders have an impact on people's actions and attitudes.

Gender stereotypes of our society tell us how to act and then we start doing as society tells and thinks about us. For instance, in our society it is believed that girls are not as good at maths as boys, and after such thoughts, girls may think that anyway I am not good at maths and keep being weak at maths. (P5)

One of the participants who teaches mathematics in a girls' school said that only a few students perform better in maths, not all of them. Similarly, she shared her own experience from her university years where some of the male students had chosen a scientific field, just because of their gender.

As a maths teacher, I can say that only a minority of my students are good at maths. In some cases this stereotype is true. But again, due to such stereotypes, males tend or have to apply for scientific fields. From my personal experience, I can say that I had my group mates who studied maths or physics just because they were boys. An interesting thing is that, after a year they switched their major to social or theoretical fields according to their wishes. (P2)

On the other hand, some of the participants are of the opinion that due to the psychological and behavioral aspects of both genders, these kinds of stereotypes might be true. One male teacher from a boys' school shared his opinion which was based on his previous teaching experience. From his point of view, girls are likely to be better at theoretical subjects than boys because they are more focused, whereas boys are less concentrated than girls.

Based on my teaching experience girls tend to grasp theoretical subjects, as they are more concentrated, and they can sit in one place and read. But their logical

understanding is much different compared to boys. Male students have some difficulties with concentration, they cannot sit in one place, which makes it hard to control them sometimes in the classes. In this case, boys are more active than girls. (P3)

Similar to the previous concept, one male teacher claimed that in science olympiads boys get higher results, whereas girls succeed in theoretical and language subject fields.

“According to some statistics, there is a tendency for boys to achieve higher results in math olympiads and girls in language related subjects. Of course, there are some exceptions, but overall we can notice such a trend.”(P9)

Most of the participants claimed that both boys and girls are capable of achieving the same goals. In this case, they need to make more of an effort, but eventually, both can succeed academically. This concept can be summarised from a biological perspective according to the perception of one male teacher.

As a biology teacher I can say that it is all about neuron connections. There are no limitations, if one wants to learn, he or she can learn anything. If girls put in enough effort, they can achieve and be as successful at maths as boys. I believe that boys and girls can succeed at the same level. (P5)

On the contrary, one male teacher who had worked with both genders in single-gender schools stated that in some cases he thinks that the stereotypes are true. *“I agree that boys are better in a technical field and girls in the humanities. After graduating our schools 80 percent of boys choose technical subjects.”(P9)*

In addition, one of the female teachers who teaches maths and geometry in a girls' school, raised the issue in the educational system.

The education system plays a significant role in the academic performance of students. Now I teach geometry to seventh-grade students. There is only one hour per week given for geometry, it is not enough. As my students are females, they need more time to understand the subject, at least two hours in a week must be given for this subject. (P2)

She claimed that, due to the lack of teaching hours, most of her students have difficulties learning maths and geometry. She also highlighted that this may happen because of her students' gender, as they were females. They might have faced some challenges in scientific subjects because by nature girls tend to be successful in theoretical subjects.

4.3.3 Factors that influence student achievement in single-gender schools.

The findings of the study demonstrate that there are several factors that have an impact on students' academic performance. According to the participants of the study, gender segregation is not the only aspect that creates an advantage in the academic achievement of students in single-gender schools. Therefore, the educational system, and the quality of teachers, the boarding school system and other social factors influence the academic performance of single-gender school students. Similarly, one of the participants highlighted the fact that one of the key factors is the teacher and their quality.

In my opinion, it depends on the class teacher and the teacher's quality. There is no guarantee that just gender-segregation is the solution for good academic achievement. There are lots of things that influence academic achievement, such as the system, teacher, vice-principal, and family. (P5)

Furthermore, there is another concept that supports the claim that a teachers' professional performance rather than their gender plays a major role in academic performance.

The professional performance of a teacher is more important than gender. Sometimes I see teachers who work at schools just for economic purposes. I strongly believe that a teacher's job is bigger than this and a true teacher should have higher values and motivation. (P9)

In addition to the above-mentioned statements, according to one male teacher, a major factor is a teacher's emotional stability and quality.

The most important factor is the happiness and quality of teachers. If a teacher is not happy, nothing will work with the students. It does not matter whether we are in a single-gender or coeducational school, if teachers are overloaded and not satisfied, there are no advantages and benefits of these kinds of schools. Happy teachers equal happy students. (P5)

He pointed out that if a teacher is unsatisfied, they cannot succeed in their teaching career. Thus, it will negatively affect students' academic and social performance. Owing to his point of view, there is no difference as to whether it is a mainstream or single-gender school; teachers should, first of all, be happy with what they do.

As stated by the participants who outlined the importance of teacher quality and emotional stability, other factors embedded in the educational system of single-gender schools such as facilities, resources, and the arrangement of classes and study time play an important role in student achievement.

Despite dividing students into genders, these schools chose gifted individuals and quality teachers. In addition to that, these schools are boarding schools, they have a dormitory system, where students can stay and live there, and study at any time, which also can be one of the factors of the academic achievement of students. But the most important factor is the system and academic curricula of the school, rather than just dividing students into genders. (P4)

Here is another statement concerning the positive impact of boarding schools, which includes its education system, on student achievement in single-gender schools.

By staying in a dormitory and living with other peers, students will develop their social skills and can be ready for further adult life. In this case, the boarding

school system may have a positive impact on students' self-learning socially and academically. Likewise, single-gender schools use a complex system of education, rather than gender segregation, there is a whole system of education, such as, qualified teachers, differentiated instruction, dormitories and tutors, who look after the emotional and social aspects of students. (P8)

Moreover, as one of the participants highlighted above, another factor might be the boarding school system. Similarly, one of the participants mentioned the brotherhood system, where senior students help freshmen students with their assignments and inspire them to study.

For instance, older students come to grade students in the lower grades to explain lessons and motivate these younger students of the school. They motivate younger students morally and spiritually, saying things like, you are men, you need to take responsibility for your family and home. (P5)

In addition, as one of the respondents pointed out, the teaching atmosphere also impacts students' academic performance.

I think that the teaching atmosphere influences the academic process. For example, in our lyceum we give more freedom to students. They are free to choose activities that they want to be involved in. Our school is more student-oriented. (P6)

As the participant highlighted, one of the effective educational strategies of single-gender schools is the student-centered learning system. Students are allowed to have academic freedom in class activities.

In summary, several factors emerged from the participants to highlight their belief regarding the factors that influence students' academic achievement in single-gender schools. Other than merely due to having a single-gender environment, it is also the educational system, the quality of teachers, professional development for teachers, and the boarding system of single-gender schools that have an impact on students' academic achievement. In addition, according to the participants, there are other social factors that influence student

achievement. In particular, it seems to be that due to cultural aspects, female students tend to have less freedom and more imposed boundaries than males do. One of the respondents claimed that parents, mostly in traditional Kazakh families do not allow their daughters to study abroad, preferring that they stay close to their families. *"In traditional Kazakh families parents are not likely to encourage their daughters to study abroad. Since girls start to feel these limits and boundaries, they are not as motivated as boys."* (P1)

Additionally, here is another point similar to the previous one:

Likewise, culture also plays a role. For instance, one of my students wanted to apply to a European university abroad, but her mother did not want her to enter that university. Because of her gender, as she is a female, they prefer her to stay in Kazakhstan and be next to her parents. (P2)

This issue, which is due to fear and stereotypes based on cultural beliefs, might take a place in many Kazakh families. It is often believed that parents do not allow their daughters to develop their careers. When female students have such boundaries and limits imposed on them from their parents, they might lose their motivation to perform at a high academic level. These kinds of stereotypes and perceptions might be one of the challenges and obstacles posed for girls in their future academic career and social life. Moreover, some participants felt that female students are more responsible and obedient compared with male students and conversely parents would have to exert more effort to control boys more than girls. One of the participants highlighted this issue among families.

From my point of view, I can say that families pay much more attention to boys than girls, in their education. From the parents' perspective, they think that girls anyway will study and get high marks without great effort, and that's why they focus on boys more than girls. (P2)

According to one female teacher, when growing up high-school students start to be less influenced by their parents and family; instead they try to listen to their teachers. As she explained: *"In higher classes students are less affected by family and more by teachers. Especially, girls tend to be more impressed."*(P1)

The major findings indicate that along with gender factors, there are several other factors that affect student achievement in single-gender schools in Kazakhstan. In particular, the quality of teachers, educational system and the boarding school system play an important role in student learning in single-gender schools.

4.4 Results Pertaining to RQ3: What factors have shaped teachers' beliefs and attitudes towards single-gender education?

The findings indicate that the teacher's experience and practices have an impact on their perceptions toward student gender. Teachers' beliefs and attitudes on gender differences and peculiarities arise from their experiences gained working in specific types of schools. For instance, those teachers who have worked with both genders in single-gender schools, are more knowledgeable about the behaviors, attitudes, and similarities and differences between male and female students.

One female teacher, who has experienced working in both mainstream and girls' schools said that teaching in a girls' class and a mixed-gender class is almost the same.

In general, I see no difference in teaching mixed and single-gender classes. As a teacher, I see no difference in the way they fulfill my instructions. Their psychology is the same as well. I have to point out that I was teaching in mixed classes and only girls' classes. I have no experience in instructing boys only classes. Maybe there are some peculiarities in teaching boys classes. (P1)

The results demonstrate that teachers' experiences play a role in their beliefs and attitudes towards their students' gender. In particular, it was investigated that teachers' perceptions on gender differences are based on their experiences gained working in specific types of schools, whether boys/girls' or mixed-gender schools.

4.4.1 Teachers' reflections on how they feel their own gender influences learning.

According to the data, the participants consider teaching the opposite gender to be more beneficial than teaching the same gender students. They believe that boys respect female teachers more, whereas girls are more appreciative of male teachers. In cases where there is the same gendered teacher, students start to compete with them and become slightly unmanageable. For instance, according to P1:

I think I would be more successful as a teacher in a boys-only class. I believe that opposite-sex chemistry exists and plays a big role. As a female teacher in a girls-only class, I experienced some competition between me and my students. (P1)

Almost all female teachers who took part in this study claimed that they feel more comfortable working with boys rather than girls. Some of the male teachers, who have mostly taught female students before, prefer to teach at a girls' schools. In this case, it is significant that those teachers who shared that working with the opposite gender is more convenient for them are those who had teaching experience with the opposite gender. Indeed, according to P8:

To tell the truth, personally for me working with boys is much easier and more comfortable than with girls. Girls are too emotional, when they get unsatisfactory marks or when you raise your voice to be more strict, they start to cry. In this case, I would like to work more with boys and I feel more comfortable working with them, because you can use more direct and strict language when it is needed. (P8).

Similarly, another female teacher who teaches in a boys' school emphasized that from her perspective she would like to teach boys rather than girls. She explained it in this way:

By nature, I am close to males, physics and science explain this like plus and minus. I chose this boys' school because boys respect female teachers more. I like boys' attitude towards me, in front of me they act like gentlemen, during holidays they present me cards and flowers. (P6)

Furthermore, most of the female participants explained that they prefer to work with male students. On the contrary, most of the male teachers who have been working with boys would prefer to teach in a boys' school. For instance, a male teacher who has practiced teaching in a mixed school and in a boys' school said that as a male teacher, he would prefer to work only with boys. He believes that in a girls' school he would face some challenges while interacting with girls and understanding their psychology.

For me as a male, it is easy to work with boys, as I can understand their thoughts and wants. If I worked in the girls' school, it would be much difficult for me to cope with girls. (P3)

Likewise, another male teacher pointed out a similar opinion to the previous one.

It is much easier for me to teach boys because I understand them. I know what they feel and what kind of biological changes they experience at different ages. Furthermore, I don't have any problems with teaching and communicating with girls because I have two sisters. So, I might also be comfortable with teaching girls. (P7)

Similarly another male teacher stated that it is better to teach students of the same gender as that of the teacher. He claimed that if students' and teachers' gender coincide, it would be more advantageous and comfortable to interact with students.

I think that for male teachers it is good to teach male students because male teachers can understand boys well and give commands and educate. It is the

same for girls, female teachers understand and guide female students better than male teachers do. For instance, if in a boys school there is a female teacher, they can face some challenges managing the class. From my perspective, it is beneficial when students and teachers are of the same gender. (P4)

Likewise, another male teacher emphasized that female teachers for male students might not be the right decision for teaching. He stated that due to the biological development of boys during puberty, they can be attracted to female teachers, and he believes that this would negatively influence students' academic performance.

I think that female teachers for male students is not the right decision. As we know, from a biological perspective, boys in the puberty period, they start to be attracted to females, if there is a female teacher in the class, due to their biological development and hormones they might have some inappropriate feelings towards the opposite gender of a teacher. (P5)

He concluded by claiming that it would be more effective for both genders to have a male teacher; especially for boys, male teachers are preferable to female teachers.

From my point of view, I think that it would be really beneficial and useful if teachers would be males rather than females for both genders. Males are more preferable to be a teacher for male students. (P5)

In addition to that he stated that there is a demand for male teachers in Kazakhstan.

Thus, he suggested increasing the number of qualified male teachers in schools.

Instead of having more single-gender schools, there is a need to develop the number of qualified male teachers in our country. Based on statistics, in our country 80% of teachers are females, whereas, 20% are male teachers, it is not correct and is ineffective. (P5)

The responses of the participants indicate that female teachers who have experienced teaching in a boys' school would prefer to work with boys. The female teachers assume that girls are too emotional. Likewise, the male participants who have been teaching only in different types of schools settings (girls' school or boys' school, mixed-gender school)

generally prefer to work only with boys, as they think that teachers and students should be the same gender.

4.4.2 Teacher gender influences student achievement.

According to the participants of the study, a teacher's gender also influences the academic achievement and behavioral aspects of single-gender school students. In single-gender classes, there are four categories of teacher-student interaction: male teacher-male students, male teacher-female students, female teacher-male students, and female teacher-female students. The participants explained that they felt that these four categories of interaction could have an impact on students' performance. The participants hold the common opinion that the gender of a teacher matters and influences students. For example, according to P7: *"Based on my experience I think that the gender of a teacher matters a lot for students. I remember myself treating male and female teachers differently".(P7)*

Some participants claim that girls tend to be more influenced by male teachers, rather than female teachers. One of the female teachers from a girls' school shared her opinion: *"Male and female teachers may have a different impact on girls. For example, based on my experience, girls are kind and sympathetic to male teachers and influenced more by them."(P1)*

Likewise, one female teacher shared one case from her teaching experience.

The teacher's gender influences interactions with students. For example, I worked with girls for three years as a mentor, and we had a female class teacher. There were 25 girls in the class. For three years, we did everything to collaborate and manage them, but we were unlucky. After that the school principal changed the class teacher to a male teacher. Interestingly, the girls

started to change, their attitude, behavior, tone of their voice changed, they began to listen to their new male teacher and interacted with him very well with great enthusiasm. (P8)

Summarizing this participant's thoughts, a teacher's gender influences female and male students in a different way. To follow up on this idea, another participant added that girls are more attracted and influenced by male teachers rather than female teachers.

For instance, working in a girls' school, I have noticed that, when a male teacher enters the class, girls start to show interest, and try to listen attentively. But when there is a female teacher, girls do not show such interest as for male teachers. (P2)

One female teacher pointed out that interaction between female teachers and male students can be beneficial for students.

Therefore, there are cases when male students had a good interaction with female teachers rather than with male teachers. With male teachers boys can have some competitive issues, and with female teachers they will not have such issues and thoughts. (P8)

Some of the participants explained that it might be advantageous when there is a teacher from the opposite gender. In some cases, female teachers might understand male students better than male teachers do. One male teacher explained his point of view concerning this issue.

There are cases when female teachers manage and interact with boys better than male teachers. Also, as a male teacher when I communicate with boys, while they are noisy and misbehave, I can act more strictly, and it might negatively affect students. Maybe, in this case, if there is a female teacher, she might be like their mother, they might communicate and manage all problems more softly and solve them in a polite, positive way. (P4)

Similar to this point of view, one male teacher who works in a girls' school emphasized that sometimes male teachers might be strict, whereas female teachers manage

their classes in a soft and quiet way. *“Based on my own experience I find male teachers more strict and demanding. I have noticed that students in classes where women are instructing tend to be calmer and quieter.” (P9)*

However, some claims contradict the previous statement; one female teacher from a boys' school made her point by referring to the results of a survey among male students from her school. According to the survey results, male students seemed to prefer male teachers as their educators, rather than female teachers.

Yes, the gender of a teacher is important. For example, in our school we had a survey and many boys responded that they prefer male teachers more. The reason was that male teachers are closer and female teachers are more strict with them.(P6)

Likewise, another participant also believes that a teacher's gender impacts on teacher-student interaction. Concerning this concept he shared his own experience of becoming a teacher in a single-gender school for boys.

I think that the gender of a teacher plays a role while interacting and working with students. One of the main reasons for choosing a teaching career is that I wanted to be a role model for my students. Nowadays in our society, there are lots of divorced mothers and single parents. I can be a role model and reference point for my students, how a man should act and be treated. In our school, there are lots of male students who have only mothers. Maybe the primary reason for giving their children to single-gender schools is to fill those empty places or puzzles in the treatment of their sons/daughters. (P5)

He raised a worrying issue in contemporary society and in the educational system. The above-mentioned concept and claim can be one of the benefits of having single-gender education. If this is so, students and parents might gain some advantages from the social and behavioral aspects of single-gender schools alongside the academic achievement of their

children. Similarly, one female teacher outlined that: *“Regarding boys, male teachers can be a role model of a father if students come from single-mother families.”* (P8)

The participants claim that teacher gender has an impact on student achievement, and female and male teachers influence students in different ways. Similarly, the majority of the teachers believe that if a teacher’s and students' gender is the opposite, it might have a positive effect on student performance.

4.4.3 Challenges concerning teacher gender.

The participants of the study did not face any challenges concerning the gender factor throughout the teaching career. For instance, according to P8: *“Personally, I have not faced any problems concerning my gender while working with boys and with girls as well.”* (P8)

Yet, there were some difficulties regarding a teacher's age and teaching experience. One of the young specialists from a boys’ school shared his own experience:

As I am a young teacher I face some challenges while interacting with students and also in front of their parents. Concerning the gender factor, from my perspective, it is easier to work with female students. At this school, I do not have challenges concerning my gender, I sometimes have difficulties concerning my age and my teaching experience. (P5)

Regarding the challenges that teachers might have faced due to their gender, most of the respondents answered that it was not an issue while teaching in single-gender schools. However, there were some difficulties concerning the involvement and motivation of students in certain classes. According to one teacher, as students' level of knowledge differs from each other’s, the latter sometimes loses inspiration during classes. *“I had some difficulties in the*

inspiration and engagement of students. They are not interested sometimes in the lesson and their level of knowledge is different." (P3)

Another male teacher from a girls' school shared his personal experience:

Personally, I haven't experienced any issues related to teaching boys or girls only. But it was harder for me to teach girls in Astana than in Kyzylorda. Maybe the culture in Astana is a bit different. (P9)

As he mentioned, he had no difficulties concerning his and his students' gender throughout his teaching career. However, due to his students' mentality and the cultural differences between rural and urban cities, he faced some challenges.

Summarizing the perceptions of the participants concerning gender, almost all teachers stated that they have not faced any challenges regarding their gender. Furthermore, some of them had difficulties with other factors, such as classroom engagement, the teacher's age and teaching experience.

4.5 Summary

The current chapter has presented the major findings of the study, outlining the responses of the participants from the one-on-one interviews. Likewise, this chapter has demonstrated the data for each research question of the study. In addition, the present study investigated that teachers in single-gender schools consider that single-gender education is beneficial and advantageous for students and their academic performance. Moreover, the results demonstrate that students in single-gender schools are likely to be more concentrated in their learning rather than those students in coeducational settings. Similarly, it was examined that single-gender schools have several advantages and positive outcomes for

students' academic achievement, including the educational system and boarding school system of single-gender schools in Kazakhstan. However, the findings indicate that students from single-gender schools can face some social challenges during university life, when they start to communicate with the opposite sex in a mixed-gender environment. Furthermore, the major findings present that the participants assume that there are gender differences concerning biological and physical development of boys and girls. However, they believe that despite these gender-based differences both boys and girls can achieve the same goals. Moreover, the participants hold the idea that gender-related stereotypes are just commonly believed myths, and intellectually boys and girls can have equal abilities. Nevertheless, the results demonstrate that these gender-based stereotypes and myths might have an impact on students' and their academic performance. Additionally, the findings indicate that teachers' beliefs and attitudes on gender differences arise from their experiences gained working in specific types of schools. Similarly, the results reveal that teachers' gender affects students, hence female and male teachers have a different impact on students' academic success. The next chapter will synthesize and analyze the major findings of the data, summarizing them along with the relevant reviewed literature according to the purpose and the nature of the study.

Chapter Five: Discussion

5.1 Introduction

The previous chapter presented the key findings from the one-on-one interviews with the participants of the study. The aim of this chapter is to discuss the major findings that were examined during the data analysis process in relation to the literature that is relevant to the nature and purpose of the study. These findings are presented according to the research questions that were outlined in the introductory chapter (see Table 2). Moreover, the major findings are discussed according to their relevance to each research question of the study (Appendix E).

Table 2. The Distribution of the Major Findings by Research Question

Research questions	Findings code
RQ1. What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?	Finding 1 Finding 2
a. What do they see as the benefits, opportunities or challenges?	Finding 3
RQ2. Do teachers in single-gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?	Finding 4 Finding 5
a. What do teachers believe are the factors that influence the academic achievement of boys and girls in single-gender schools?	Finding 6
RQ3. What factors have shaped teachers' beliefs and attitudes towards single-gender education?	Finding 7 Finding 8

5.2 Discussion Pertaining to RQ1

5.2.1 Finding 1. Participants believe that single-gender education has a positive impact on student achievement in single-gender schools.

The first finding of this study suggests that the participants (teachers in single-gender schools) believe that single-gender education in single-gender schools in Kazakhstan has a positive influence on students' academic achievement. Nevertheless, the study conducted by Smithers and Robinson (2006) contradicts this finding claiming that there are no substantial findings that indicate whether single-gender education is beneficial or not for both male and female students. In contrast, the present study found that students from single-gender schools do indeed tend to have higher academic achievements in certain subject areas. This could be due to gender segregation but on the other hand, there may be other factors, which were mentioned by the participants, that could influence students' academic achievement. However, it may be too simplistic to measure the advantages of single-gender education by academic achievement and academic performance alone (Smyth, 2010).

In addition, the participants believe that single-gender schools result in beneficial outcomes both for boys and girls in their academic performance. In particular, in the previous research, Smyth (2010) states that female students in co-educational school settings have disadvantages in particular fields, especially in mathematics and science. Similarly, the findings of the present study indicate that the participants believe that girls are likely to have advantages on mathematics and science subjects in single-gender schools rather than in co-educational settings. This finding is in line with other studies by Deem (1984), Ormerod (1975) and by Spender and Sarah (1980) which claim that girls tend to be more successful

and indicate a higher academic performance in science subjects and mathematics in single-gender school settings (as cited in Smyth, 2010). However, the cited studies are quite old, and contemporary perceptions about gender and sex are now very different.

Overall, the data from this study indicates that from teachers' perspectives, single-gender education has a positive and beneficial impact on boys' and girls' academic achievement. Furthermore, the participants (teachers in single-gender schools) consider that teaching single-gender cohorts is more convenient and beneficial, as it enables teachers to manage and design classroom interactions according to their students' gender. Along with their beliefs concerning academic performance, single-gender education might have varying advantages and disadvantages from a social perspective. These social factors are discussed in the next sections.

5.2.2 Finding 2. Single-gender education allows students to concentrate on academics, avoiding social distractions.

According to the findings of the study, the participants felt that students from single-gender schools are likely to be more focused on the academic sphere than those in co-educational settings. Their comments indicated that they believe single-gender education avoids some disruptive behaviors and interactions between boys and girls. This finding is in line with the previous research (Datnow et al., 2001), who claimed that single-gender education helps to prevent some social distractions and allows students to concentrate more on their learning (as cited in Moore, 2015). Therefore, in single-gender settings, boys and girls are less likely to be distracted by the presence of the opposite gender in the classroom, by being embarrassed and caring about their physical appearance. Instead, male and female

students in single-gender schools can focus more on their studies rather than adopting disruptive manners and being interrupted by negative and disruptive behaviour of the opposite gender. In particular, the meta-analysis study conducted by Smyth (2010) claims that boys might be more active and disruptive in classroom settings, thus negatively impacting girls' academic performance.

Furthermore, the findings of the present study along with previously published literature (Datnow et al., 2001) indicate that single-gender education can help to avoid other social issues among young males and females, such as teen pregnancy and dating (as cited in Moore, 2015). Nevertheless, as is argued in the research (Moore, 2015), the major aim of single-gender education is not to eliminate social distractions; instead, the idea and philosophy behind single-gender education is that males and females perceive information and learn in different ways. However, the findings of the current research suggest that teachers believe that single-gender education provides a setting where young males and females are shielded from social distractions, helping them to achieve high academic success. Likewise, students who are enrolled in single-gender schools during puberty are less attracted to the opposite gender rather than those in co-educational settings. Thus, the results of this study indicate that a single-gender environment allows students to avoid disruptive thoughts and the external factors which would disturb them in their studies.

5.2.3 Finding 3. Benefits, opportunities and challenges of single-gender education for students in single-gender schools in Kazakhstan.

The previous sections discussed how teachers see some of the advantages and beneficial outcomes of single-gender education for students' academic performance. This

section discusses what teachers see as the major benefits, opportunities and challenges of single-gender education for students in single-gender schools in Kazakhstan.

In particular, the results of the current study demonstrate that teachers believe that the boarding school system is one of the beneficial features of single-gender schools in Kazakhstan in that it has a positive impact on students' academic performance and social development. This finding concurs with the previous literature (Kocak, 2019) which states that dormitories are essential elements of the educational process in single-gender schools in Kazakhstan. This system enables students to improve their academic achievement and character development by allowing them to concentrate on their education without being distracted by disruptive factors. Likewise, the boarding school system includes teacher assistants (tutors) who provide academic, social support and assist students in extracurricular activities. Furthermore, the tutors' gender is correlated with students' gender.

According to the findings of the present study, there are some possible challenges for students who are enrolled in single-gender schools in Kazakhstan. The teachers highlighted that students in single-gender schools are unlikely to have challenges from an academic perspective, but there can be some in social interaction. In particular, the participants raised the issue of students facing some challenges while interacting with the opposite gender after graduating from single-gender schools and entering university. Although no literature was to either support or reject this claim, it would be worthwhile to investigate this subject. Understanding the psychological and emotional impact of students from single-gender schools who enter the much more relaxed context of university would help prevent the development of other aberrant behaviour such as drinking or pregnancy (Moore, 2015).

5.3 Discussion Pertaining to RQ2

5.3.1 Finding 4. Participants believe that male and female students have their own gender-related peculiarities and differences that influence their academic performance.

The findings of the current study indicate that teachers in single-gender schools in Kazakhstan hold the idea that there are biological and perceptual differences between boys and girls. Moreover, the literature (Bonomo, 2010) and the findings of the current study suggest that there are gender differences between females and males that are brain-based, physical, biological, sensory-perception-based, and psychological. In accordance with the previous research (Piechura-Couture et al., 2011), the main reason for implementing single-gender education is the biological differences between boys and girls; thus, these differences might impact the learning and teaching process of students.

As the literature has indicated, single-gender education can be beneficial for both genders if teachers differentiate their instruction according to their students' gender cohort (Chadwell, 2007). Moreover, the present findings suggest that the teachers believe that boys and girls perceive knowledge and analyze information in different ways; hence, in single-gender contexts teachers have the opportunity to consider the gender-related peculiarities of their students during classroom instructions and interaction. This belief is in alignment with findings of previous research (Chadwell, 2007) which outlines that the single-gender school context is considered to be an effective way to educate students as it provides differentiated instruction strategies that take into account the biological differences between boys and girls.

Furthermore, the findings of the current study reveal that girls are more likely to be active and receptive to information at the beginning of the lesson, whereas boys start to be engaged in the second part of the lesson. Consequently, for girls, key information and the main topic of the lesson should be demonstrated during the first half of the class, whereas for boys, this should be done prior to the end of the lesson. Therefore, it was suggested that if teachers follow these strategies and arrange their curricula based on their students' gender peculiarities, then both female and male students might benefit from single-gender education. Consequently, the previous literature (Chadwell, 2007) highlights the responsibility and key role of teachers in managing single-gender classrooms and providing differentiated instruction strategies according to their students' gender cohort.

Overall, the major findings of the present study along with the previous literature claim that there are gender-based differences between boys and girls regarding their biological and perceptual differences. Furthermore, the findings of the previous research (Bonomo, 2010) state that even classroom temperature can affect boys and girls differently, hence, it may be useful to provide the comfortable temperature ranges for each gender. However, the findings point out that, in spite of these differences boys and girls can achieve the same results in certain subject areas and have equal advantages in academic performance. These factors are broadly discussed in the next section.

5.3.2 Finding 5. Gender-based stereotypes are just common beliefs, intellectually boys and girls can have equal advantages in academic achievement.

The previous studies (Tiedemann, 2000; Sansone, 2017) indicated that teachers' attitudes towards their students' academic performance are framed by their biases towards

student gender. On the contrary, the findings of the present study demonstrate that the ten teacher participants in single-gender schools in Kazakhstan hold the idea that gender-related stereotypes about gender differences between males and females in particular subject areas are simply common myths. This finding is in line with the previous research (Francis, 2000), which indicates that differences in academic achievement between girls and boys are merely socially constructed beliefs about gender differences and commonly believed stereotypes.

In addition, the majority of the teachers in the present study believe that, intellectually, boys and girls have the same potential and can attain equal goals in academics if they put much effort into their learning. Moreover, it was found that these teachers believe that girls can be as successful as boys in mathematics and science subjects, whereas boys can also have an advantage in humanities and theoretical subjects. Furthermore, the results demonstrate that these common stereotypes and myths about gender and gender differences affect students' beliefs and attitudes. Thus, these stereotypes seem to guide males and females on how to act.

Further, the findings demonstrate that besides gender factors, there are several other factors that influence the academic achievement of students in single-gender schools. These factors are demonstrated in the upcoming section.

5.3.3 Finding 6. The factors that teachers believe have an impact on student achievement, in single-gender schools.

The findings of the present study in line with the previous literature (Li, 1999) indicate that teachers believe that one of the major factors that influence student achievement in single-gender schools is the teacher and their quality. The participants highlighted the importance of teachers' professional development and also the emotional stability of teachers

in single-gender schools in Kazakhstan. The theoretical framework of this study (Bandura, 1997) reveals that teachers with high self-efficacy are unlikely to experience burnout, instead they are more satisfied with their jobs rather than those with low self-efficacy. Moreover, the findings show that gender segregation cannot be effective and beneficial for students if teachers are not professionally qualified and dissatisfied with their job. Nevertheless, there was no literature to either support or reject this statement, it would be beneficial to investigate this subject further.

Furthermore, another important factor that emerged in the present study is the importance of the educational system of single-gender schools in Kazakhstan. The educational system includes academic curricula and boarding school systems with dormitories and teacher assistants (tutors). Consistent with the previous literature (Kocak, 2019), the findings of the present study demonstrate that the boarding school system is considered to be an effective model for a single-gender environment to meet the special requirements of students according to their gender cohort.

Moreover, the results of the present study illustrate that teachers believe that family plays a role in students' academic performance in single-gender schools in Kazakhstan. Hence, the present findings indicate that teachers believe that parents' cultural beliefs and gender-based stereotypes can affect student achievement. It is consistent with the previous research (Tiedemann, 2000), which claims that students are affected by their parents and by their parents' perceptions of them. Moreover, it was found that teachers felt that parents have different attitudes towards their sons and daughters, and treat them differently. This finding is in line with the previous literature (Lavy, 2008), which states that parents overestimate their sons' capabilities in certain subjects, such as mathematics and science, whereas they

underestimate the abilities of their daughters. Therefore, parents are likely to set limits to their daughters' achieving high academic goals such as studying abroad or choosing technical professions.

5.4 Discussion Pertaining to RQ3

5.4.1 Finding 7. Teacher gender and teaching experience shape their beliefs and attitudes towards single-gender-education.

In line with the previous literature (Lavy, 2008), the results of the present study demonstrate that teachers believe that teacher gender plays a part in the way they teach and communicate with students. Likewise, this finding indicates that teachers believe that a teacher's gender has an impact on how they interact with students based on the latter's gender. The findings of the present study are consistent with others in the literature (Li, 1999; Sansone, 2017), who suggest that teacher gender may impact teacher behaviour and attitudes, and that teachers' attitudes towards their students are essentially framed by their beliefs about gender.

Furthermore, the results of this study indicate that teachers' beliefs and attitudes towards single-gender education can be shaped by their own gender and teaching experience. Teaching experience in the present study is considered to be the type of context in which teachers have been teaching, whether it is a boys' or a girls' school. In particular, the female teachers from this study (four out of five) who have practiced teaching in different settings (only boys or only girls' schools, mixed-gender schools), pointed out that they prefer to work in boys' schools. These four female teachers have either worked in both types of single-

gender schools or only in boys' schools. One female teacher who had chosen a girl's school, had no experience teaching boys; she was a young specialist. In turn, the male teachers (five) shared that they prefer to work in boys' schools, thus teaching the same gendered students was more effective and comfortable for them. Previous research (Tiedemann, 2000) claims that teachers' perceptions towards students' gender are framed by parents' beliefs towards their child's gender, and these beliefs are based on their gender-related stereotypes. In particular, mothers' beliefs substantially influence teachers' beliefs and the latter's attitudes towards students, which, in turn, affect students' beliefs and behaviors. Consequently, teachers' beliefs towards their students can also be shaped by their self-efficacy, influencing their approach to students' achievement. Consistent with the previous literature (Woolfolk, 2016) teachers' self-efficacy can be defined as teachers' beliefs in themselves that they can reach any student to educate. Hence, in the present study teachers' self-efficacy might consider that teachers can help to any student to learn, whether it is a boys' or girls' school.

5.4.2 Finding 8. Teachers believe that female and male teachers have different impacts on students' academic achievement.

The findings of the present study reveal that participants believe that the gender of a teacher plays a major role in students' learning and academic achievement in single-gender schools in Kazakhstan. This finding is in agreement with the previous literature (Li, 1999) which states that male and female teachers have a different impact on students' academic achievement. In contrast to these findings, the results of the previous research (Sansone, 2017) demonstrate that teacher gender has a minimal influence on student achievement, outlining the importance of other teacher factors, such as where a teacher creates a friendly

learning environment and treats all students equally. Nevertheless, the findings of the current study indicate that all ten teachers highlighted the importance of a teacher's gender and its impact on student achievement. Moreover, the participants believe that female and male teachers exert different types of influence on their students' behaviour and performance. The participants claim that opposite gendered teachers might have a beneficial impact on student achievement in single-gender schools in Kazakhstan; they believe that students might be differently affected by male and female teachers. Furthermore, the results of this study demonstrate that the female teachers consider that working in boys schools is more convenient for them, as they (female teachers) think that girls become emotional and competitive when there is a female teacher. In particular, the male teachers assume that working with boys is more preferable, as they feel more comfortable teaching in boys' schools. Additionally, the participants suggest increasing the number of male teachers in single-gender and co-educational school settings in Kazakhstan, hence they believe that mostly male teachers have a beneficial impact on both boys and girls.

5.5 Summary

The purpose of this chapter was to present a discussion on the major findings of the study to provide answers to the research questions set in the introduction of this study. The major findings of the study demonstrate that the participants (teachers in single-gender schools) consider single-gender education as having a positive impact on students' academic performance in single-gender schools in Kazakhstan. Furthermore, it was found that in single-gender schools, girls are more likely to have advantages in mathematics and science in

that context. In addition, the results pinpoint several advantages of single-gender schools, including the educational and boarding school systems. Nevertheless, the findings indicate that students from single-gender schools can face some social challenges when they enter a mixed-gender university. Moreover, the major findings present that the participants consider that there are gender-based differences regarding biological and physical development of boys and girls. Furthermore, the participants assume that gender-related stereotypes are just commonly believed myths, and intellectually boys and girls can have equal abilities.

Additionally, the results demonstrate that teachers' beliefs and attitudes on gender differences arise from their experiences gained working in specific types of schools. Likewise, the findings show that teachers' gender has an influence on students, thus female and male teachers have a different impact on students' academic success. Overall, eight major findings have been discussed and analyzed in accordance with the literature that was introduced in the literature review section (Chapter Two). These findings are grouped and summarized according to the main research questions of the study. The summary of these findings is presented in the next chapter.

Chapter Six: Conclusions and Recommendations

6.1 Introduction

This chapter provides a summary of the main findings of the present study, and includes recommendations for future research and possible implications arising from the study. The following questions were examined in the study: (1) What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education? Question 1 included the following sub question: What do they see as the benefits, opportunities or challenges?; (2) Do teachers in single-gender schools in Kazakhstan believe that there are differences in academic achievement between girls and boys? The sub question for question 2 was: What do teachers believe are the factors that influence the academic achievement of boys and girls in single-gender schools?; (3) What factors have shaped teachers' beliefs and attitudes towards single-gender education?

This chapter organized in the following way. The first section is devoted to the results of each research question and provides the conclusions of the study. The second section suggests recommendations which are based on the main findings of the study.

6.2 Revisiting the Research Questions

6.2.1 What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?

The findings of this study indicate that the participants (teachers in single-gender schools in Kazakhstan) believe that single-gender education has a positive impact on students' academic achievement. Likewise, these teachers believe that single-gender schools

are advantageous for both boys and girls in the enhancement of their academic performance. In particular, the findings indicate that the teachers feel that single-gender schools are advantageous for girls in mathematics and science subjects. In addition, the findings highlight the fact that the teachers believe that one of the main advantages of single-gender education is students' improved concentration on their learning. They feel that students from single-gender schools are more likely to focus on academics in comparison with those who are enrolled in coeducational settings. The research literature has also indicated that single-gender education tends to avoid some disruptive behaviors and interactions between boys and girls. Hence, in single-gender schools, they are less likely to be distracted by the presence of the opposite gender in a classroom, and are not embarrassed in the classroom or care about their physical appearance. Instead, it is believed that students in single-gender schools are more focused on their studies rather than the interruptions caused by the disruptive and possibly negative manners and behaviours of the opposite gender. Furthermore, these findings illustrate that boarding school systems with their teacher assistants (tutors) might also contribute to one of the beneficial outcomes for students in single-gender schools in Kazakhstan. Along with the advantages and benefits of single-gender education, the findings indicate that our teachers believe that there are some possible disadvantages for students in single-gender schools in Kazakhstan. Although these students tend not to have challenges from an academic perspective, they can have some difficulties from a social perspective. The findings demonstrate that graduates of single-gender schools can face challenges interacting with the opposite gender once they start attending a mixed-gender university.

6.2.2 Do teachers in single-gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?

The major findings of the study pinpoint the participants' beliefs that there are biological and perceptual differences between boys and girls in their academic performance. Furthermore, it was explained that teachers in single-gender schools assume that boys and girls perceive knowledge and analyze information in different ways; thus, providing teachers in single-gender contexts the opportunity to take into account the gender-related peculiarities of their students during classroom instruction and interactions. Additionally, teachers believe that girls tend to be more engaged at the beginning of the lesson, whereas boys start to be active in the second part of the lesson, so key information or the main topic should be taught taking these differences into account. Therefore, it was suggested that if teachers in single-gender schools follow these strategies and plan classroom instruction with regard to their students' peculiarities, then both boys and girls might benefit from single-gender education. In addition, the results of this study demonstrate that the participants assume that gender-related stereotypes about gender differences between boys and girls in particular subject areas are mere myths. Therefore, they believe that both genders can reach the same performance level if they put sufficient effort into their studies. Consequently, teachers consider that girls might have the same advantages as boys in mathematics and science, whereas boys can be as successful as girls in humanities and social sciences. Moreover, according to our participants the common gender-based stereotypes and myths mentioned earlier might affect students' beliefs and attitudes. Furthermore, the major findings indicate that there are several gender-unrelated factors that contribute to students' academic performance in single-gender schools. One of these main factors possibly influencing student achievement in a single-gender

context is the teacher and their quality and ability, highlighting the importance of teachers' professional development and emotional stability in single-gender schools in Kazakhstan. Likewise, our teacher respondents assume that single-gender education might not be effective or beneficial for students if teachers in single-gender schools are not professionally qualified and are dissatisfied with their job. Moreover, it emerged that another important factor that impacts students' academic performance in a single-gender setting is the educational system of single-gender schools in Kazakhstan that includes appropriate academic curricula and boarding school systems with dormitories and teacher assistants (tutors). Additionally, teachers in single-gender schools believe that family, specifically parents play a role in students' academic performance as parents' cultural beliefs and gender-based stereotypes influence student achievement. Similarly, teachers consider that parents' varying attitudes towards their sons and daughters likely limit the abilities and achievement of their daughters, impeding the latter from studying abroad or choosing technical professions, unlike for their sons.

6.2.3 What factors have shaped teachers' beliefs and attitudes towards single-gender education?

The major findings of the present study demonstrate that a teacher's gender in a single-gender context is one of the main variables that affects teacher-student interactions and student achievement. Furthermore, it was found that teachers' attitudes towards their students are shaped by their beliefs about gender. In addition, it was seen that teachers' beliefs and attitudes towards single-gender education is based on their own gender and teaching experience. In the current study, teaching experience refers to the context in which teachers

have been teaching in either a boys' or girls' school. In addition, the findings indicate that female and male teachers exert different types of influence on their students' attitudes and performance. Similarly, the participants assume that opposite gendered teachers might positively affect students and their performance in single-gender schools. In this respect, the female teachers from this study who have practiced teaching in different single-gender settings pointed out that they would prefer to work in boys' schools. In turn, the male teachers shared the fact that teaching male students is more comfortable for them, as they believe that male teachers are the most appropriate role model figure for working with boys. In addition, the participants suggest increasing the number of male teachers in single-gender and co-educational schools in Kazakhstan; they assume that male teachers might have a beneficial impact on boys and girls concerning their academic achievement.

6.3 Recommendations

In view of the conclusions reached in this study, some recommendations have been put forward. These recommendations are mainly addressed to teachers and administrators in single-gender schools in Kazakhstan. They can also be beneficial for co-educational schools when teachers work with male and female students in the Kazakhstani context. Additionally, the recommendations might be advantageous for informing teaching practices and teacher training programs in Kazakhstan in the context of single-gender schools. Owing to the fact that there is little research-based literature intended to examine teacher's perceptions and attitudes towards gender, and particularly in single-gender schools in the Kazakhstani context, some recommendations for further research have been formulated. The present recommendations might be useful for researchers by contributing to the literature of this

particular research area and by providing insight into the attitudes and beliefs of teachers in single-gender schools in Kazakhstan.

6.3.1 Recommendations for teachers and administrators in single-gender schools.

The findings of this study suggest certain recommendations for teachers and administrators in single-gender schools in Kazakhstan. These recommendations can be useful to improve the educational system and student learning in single-gender schools in Kazakhstan.

The results of the current study suggest implementing differentiated instruction strategies with respect to students' gender cohort to make learning a beneficial outcome for boys and girls in single-gender school settings. Additionally, the participants believe that teachers in single-gender schools have the opportunity to take into account the gender-related peculiarities and learning differences of their students during classroom instructions and interaction. This suggestion is in alignment with the previous research (Chadwell, 2007) which outlines that the single-gender school context is considered to be an effective way to educate students if only it provides differentiated instruction that considers the biological differences between boys and girls. Furthermore, the findings of the present study in line with the previous research (Kocak, 2019) reveal that single-gender schools in Kazakhstan do not adjust special academic curricula according to students' gender cohort. Therefore, the results of the current study suggest that teachers and administrators in single-gender schools need to provide special curriculum and differentiate instructions concerning students' gender and their gender-related differences.

Furthermore, the following recommendation is addressed to administrators and principals of single-gender schools in Kazakhstan to enhance academic success of their students by increasing teachers' self-efficacy. The theoretical framework applied in this study (Bandura, 1997) states that teachers with high self-efficacy are unlikely to experience burnout, in turn, they are more satisfied with their jobs rather than those with low self-efficacy. Therefore, single-gender school administrators can raise the self-efficacy of their teaching staff by providing support in coping with management issues and encouraging them to attain different types of professional development trainings for teachers.

6.3.2 Recommendations for further research.

The findings of the present study imply some recommendations that might be advantageous for further research by providing insight into the perceptions of teachers in single-gender contexts. The results of this study demonstrate that gender segregation cannot be beneficial for students if teachers are not professionally qualified and dissatisfied with their job. However, there was no concrete literature to either support or reject this statement, thus the present study suggests that it would be beneficial to research this topic. Therefore, it might be worthwhile to understand how the quality of teachers and their emotional stability may affect students and their academic achievement in a single-gender context.

Furthermore, the findings present that the teachers consider that students in single-gender schools are unlikely to have challenges from an academic sphere, but there can be some in social interaction. Additionally, the teachers stated the issue of students having possible challenges at the impact at university level in relation to social adaptation after graduating from single-gender schools. In particular, students can face challenges while

interacting with the opposite gender and adjustment from coming out of the controlled boarding school system. Nevertheless, no concrete study either supports or rejects this finding, it would be worthwhile to investigate this particular area in further research. Therefore, the investigation of this subject will help to get insights into possible challenges that students from single-gender schools might face from a social perspective.

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Appendices

Appendix A

Written Informed Consent Form (Principal Version)

Teachers' perceptions of gender and academic achievement: Gender Stereotypes among teachers in single-gender schools in Kazakhstan

Description: Your school and the teachers in your school are invited to participate in a research study entitled “**Teachers' perceptions of gender and academic achievement: Gender Stereotypes among teachers in single-gender schools in Kazakhstan.**” The purpose of the current study is to examine the perceptions of teachers towards gender differences and academic achievement in gender-single schools in Kazakhstan.

Procedures: This information and informed consent document is provided in three languages (English, Kazakh and Russian). The teachers will be invited to give their interviews in any language they feel most comfortable with. The purpose of the study will also be explained to them verbally along with the voluntary nature of their participation. The teachers will be given the opportunity for the interviews to be conducted at their workplace or at a place outside of work time according to their schedule and comfort. The interviews will also be recorded for transcription purposes and to ensure that the researcher can capture all responses to the interview questions.

Time Involvement: The interview will take teachers approximately 30 minutes, with 5-10 minutes to get acquainted and set up for the interview session, overall each teacher will spend approximately 40 minutes for the interview.

Risks: The present study does not recruit participants from vulnerable populations nor discuss topics that can be considered as sensitive or psychologically harmful, and as such could be considered overall as minimal risk.

Benefits: The teachers in this study may receive no direct benefits from participation in the research, however, by having the opportunity to reflect on their practice, this may indirectly improve their awareness and pedagogical practice in teaching particular gender cohorts. Furthermore, results from the present study may be beneficial for school programs, policy, and to inform pre-service or in-service teacher training programs.

Confidentiality & Privacy: Any information that is obtained during this study will be kept confidential to the fullest extent possible. All efforts, within reason, will be made to keep your personal information and your teachers' research records confidential but total confidentiality cannot be guaranteed. Ethical regulations and standards will be followed at all times. The researcher will do everything possible to maintain the confidentiality and anonymity of the research sites, teachers, and their data. The identity of teachers will only be known to the researcher. Any subsequent publications will not disclose the research sites or the identity of the teachers.

Voluntary Nature of the Study: Participation in the research process is voluntary in nature and therefore, you and your teachers will be made aware verbally and in writing on the information and consent form that they can withdraw their participation or their data from the study at any time. Voluntary withdrawal will not have any detrimental impact on your or their employment or relationship with Nazarbayev University.

Points of Contact: It is understood that should any questions or comments arise regarding this project, or a research related injury is received, the Master's Thesis Supervisor for this student work, Professor Michelle Somerton, +7 708 801 06 01, Michelle.Somerton@nu.edu.kz should be contacted.

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

Statement of Consent.

I, _____

_____ Give my voluntary consent to participate in this study.

The researchers clearly explained to me the background information and objectives of the study and what my participation in this study involves.

I understand that my participation in this study is voluntary. I can at any time and without giving any reasons withdraw my consent, and this will not have any negative consequences for myself .

I understand that the information collected during this study will be treated confidentially.

Signature: _____ Date: _____

Researcher:

Signed _____ Date _____

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

Форма письменного информационного согласия
(версия для администрации школы)

**Восприятие учителями гендерных различий и академических достижений:
гендерные стереотипы о школах с раздельным обучением в Казахстане.**

Описание: Учителя Вашей школы приглашены принять участие в исследовании на тему **“Восприятие учителями гендерных различий и академических достижений: гендерные стереотипы о школах с раздельным обучением в Казахстане”**. Целью данного исследования является изучение восприятия учителями гендерных различий и академических успехов в школах с раздельным обучением.

Методика проведения: Настоящий документ и форма согласия к нему предоставлены на трех языках (английском, казахском и русском). Учителя могут пройти интервью на любом из трех языков. Добровольный характер участия и основная цель данного исследования также будут разъяснены участникам в устной форме. Учителям будет предоставлена возможность проведения собеседований на рабочем месте либо в местах вне рабочего времени в соответствии с их графиком и предпочитаемым комфортом. Интервью также будут записаны на диктофон для того, чтобы исследователь мог зафиксировать все ответы.

Затрачиваемое время: само интервью займет не более 30 минут, также минут 5-10 понадобится для ознакомления и подготовки к сеансу. В целом все собеседование займет около 40 минут.

Риски, связанные с исследованием: настоящее исследование не привлекает участников из уязвимых групп населения и не обсуждает темы, которые могут считаться чувствительными или психологически вредными. То есть риск в данном случае минимален.

Преимущества: преподаватели, принявшие участие не получают никаких прямых преимуществ от данного исследования, однако, они имеют возможность косвенно улучшить общую осведомленность и педагогическую практику в данной сфере. Кроме того, результаты данного исследования могут быть полезными для школьных программ и программ по подготовке и повышению квалификации учителей.

Конфиденциальность: Любая информация, полученная в ходе данного исследования будет сохраняться в максимальной степени конфиденциальности. Все усилия, в разумных пределах, будут направлены на то, чтобы ваша личная информация и исследовательские записи учителей были конфиденциальными, но полная конфиденциальность не может быть гарантирована. Этические нормы и стандарты будут соблюдаться на любом этапе исследования. Исследователь сделает все возможное, чтобы сохранить конфиденциальность и анонимность мест проведения исследований, учителей и их данных. Личность учителей будет известна только

исследователю. Любые последующие публикации не будут раскрывать места проведения исследований и личность учителей.

Добровольная природа исследования: участие в исследовательском процессе носит добровольный характер. В связи с этим, Вы и учителя будут уведомлены устно и письменно в форме информационного согласия о том, что участие и личные данные могут быть отозваны на любом этапе исследования. Добровольный отказ не несет никаких негативных последствий на работу учителей и их отношений с Назарбаев Университетом.

Контактная информация: В случае возникновения вопросов или комментариев в отношении данного исследования либо обнаружения любого академического вреда, необходимо связаться с научным руководителем студента по данному исследованию профессором Мишель Сомертон, +7 708 801 06 01, michelle.Somerton@nu.edu.kz.

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

Заявление о согласии.

Я, _____

_____ Даю свое добровольное согласие на участие в этом исследовании.

Исследователи ясно донесли до меня всю информацию и цели исследования, а также все то, что несет в себе мое участие в этом исследовании.

Я понимаю, что мое участие в этом исследовании является добровольным. Я понимаю, что вправе в любой момент отказаться от участия в данном исследовании без объяснения причин и это не будет иметь никаких негативных последствий для меня.

Я понимаю, как будут использованы собранные данные, и что доступ к любой конфиденциальной информации будет иметь только исследователь;

Дата подписания: _____

Исследователь:

Подписано _____ Дата _____

Дополнительная копия подписанной и датированной формы согласия предназначена для вас.

ЗЕРТТЕУ ЖҰМЫСЫ КЕЛІСІМІНІҢ АҚПАРАТТЫҚ ФОРМАСЫ

(Мектеп меңгерушісі нұсқасы)

Мұғалімдердің гендерлік айырмашылықтар мен оқу жетістіктерін қабылдауы: Қазақстандағы гендерлік бірыңғай мектеп мұғалімдерінің гендерлік стереотиптері

Сипаттама: Сіздің мектебіңіз бен мұғалімдеріңіз “Мұғалімдердің оқушылардың гендерлік айырмашылықтары мен академиялық жетістіктерін қабылдауы, Қазақстандағы бірыңғай гендерлік мектеп мұғалімдерінің гендерлік стереотиптері” бойынша зерттеу жұмысына қатысуға шақырылады. Зерттеудің мақсаты - Қазақстандағы гендерлік бірыңғай мектеп мұғалімдерінің гендерлік айырмашылықтар мен академиялық жетістіктерді қабылдауы болып табылады.

Зерттеу әдістемесі: Бұл ақпарат және зерттеу жұмысы келісімінің ақпараттық құжаты үш тілде (ағылшын, қазақ және орыс тілдерінде) ұсынылады. Мұғалімдер сұхбат беру үшін өздеріне ыңғайлы кез келген тілді қолдана алады. Зерттеудің мақсаты олардың қатысуының ерікті екенімен қатар ауызша түсіндіріледі. Мұғалімдерге өздерінің жұмыс орнында немесе жұмыс уақытынан тыс жерлерде өткізілетін сұхбаттарға олардың кестесіне және ыңғайына сәйкес мүмкіндік беріледі. Зерттеуші транскрипциялық мақсаттар мен сұхбат сұрақтарына берілген жауаптарды сақтай алу мақсатында берілген сұхбат таспаға жазылады.

Өткізілетін уақыты: Мұғалімдер шамамен 30 минутын сұхбат алу үшін, танысу және дайындық үшін 5-10 минут жұмсайды, сұхбат мұғалімнің шамамен 40 минут уақытын алады.

Зерттеу жұмысына қатысудың қауіптері: Зерттеу жұмысы осал топтардан қатысушыларды қамтымайды, сондай-ақ сезімтал немесе психологиялық жағынан зиянды деп санауға болатын тақырыптарды талқыламайды және осылайша, қатысудың қауіптері ең төменгі дәрежеде деп санауға болады.

Артықшылықтары: Зерттеудің мұғалімдерге тікелей пайдасы болмауы мүмкін, алайда өздерінің тәжірибесінде ой жүгіртуге мүмкіндіктері бар. Сонымен қатар мұғалімдер оқушыларды оқытуда өздерінің педагогикалық тәжірибесін жанама түрде жақсарта алады. Бұған қоса, осы зерттеудің нәтижелері мектептік бағдарламалар, саясат үшін пайдалы және алдын-ала қызмет көрсету немесе мұғалімдерге арналған оқыту бағдарламаларын хабардар етуге ықпалын тигізуі мүмкін.

Құпиялылық: Зерттеу барысында алынған кез-келген ақпарат мүмкіндігінше құпия түрде сақталады. Барлық күш-жігерсіз сіздің жеке ақпаратыңызды және мұғалімдеріңіздің зерттеу жазбаларын құпия сақтау үшін жасалатын болады, бірақ жалпы құпиялылық кепілдік берілмейді. Этикалық нормалар мен стандарттар әрқашан орындалады. Зерттеуші зерттеу мекенінің, мұғалімдердің және олардың деректерінің құпиялылығын және жасырын болуын қамтамасыз ету үшін барлық мүмкіндікті жасайды. Мұғалімдердің идентификациясы зерттеушіге ғана белгілі болады. Кез

келген кейінгі жарияланымдар зерттеу мекенін немесе мұғалімдердің жеке тұлғасын жарияламайды.

Қатысушы құқықтары: Зерттеу процесіне қатысу ерікті сипатта болады, сондықтан сіз және сіздің мұғалімдеріңіз ақпарат пен келісім формасында ауызша және жазбаша түрде өздерінің қатысуын немесе олардың деректерін кез-келген уақытта ерікті түрде бас тарта алады. Сіздің Назарбаев Университетімен немесе сіздің жұмыс орныңызбен қарым-қатынасыңызға қандай да бір зиянды әсер етпейді.

Байланыс ақпараты: Егер жүргізіліп отырған зерттеу жұмысының процесі, қауіп мен артықшылықтары туралы сұрағыңыз немесе шағымыңыз болса, келесі байланыс құралдары арқылы зерттеушімен хабарласуыңызға болады, бұл студенттік жұмысқа арналған магистрлік диссертациялық жұмыс жетекшісі, профессор Мишель Сомертон, +7 708 801 06 01, Michelle.Somerton@nu.edu.kz хабарласыңыз.

Дербес байланыс ақпараты: Егер берілген зерттеу жұмысының жүргізілуімен қанағаттанбасаңыз немесе сұрақтарыңыз бен шағымдарыңыз болса, Назарбаев Университеті Жоғары Білім беру мектебінің Зерттеу Комитетімен көрсетілген байланыс құралдары арқылы хабарласуыңызға болады: +7 7172 70 93 59, электрондық пошта gse_researchcommittee@nu.edu.kz .

Келісім туралы мәлімдеме.

Мен, _____

- Мен берілген формамен мұқият таныстым;
 - Маған зерттеу жұмысының мақсаты мен оның процедурасы жайында толық ақпарат берілді;
 - Жинақталған ақпарат пен құпия мәліметтерге тек зерттеушінің өзіне қолжетімді және мәлім болатынын толық түсінемін;
 - Мен кез келген уақытта ешқандай түсініктемесіз зерттеу жұмысына қатысудан бас тартуыма болатынын түсінемін;
 - Мен жоғарыда аталып өткен ақпаратты саналы түрде қабылдап, осы зерттеу жұмысына қатысуға өз келісімімді беремін.

Қолы: _____ Күні: _____

Қол қойылған және келісілген келісім формасының қосымша көшірмесі сіз үшін сақталады.

Appendix B

Written Informed Consent Form (Teacher Version)

Teachers' perceptions of gender and academic achievement: Gender Stereotypes among teachers in single-gender schools in Kazakhstan

Description: You are invited to participate in a research study entitled “**Teachers’ perceptions of gender and academic achievement: Gender Stereotypes among teachers in single-gender schools in Kazakhstan**”. The purpose of the current study is to examine beliefs about gender and academic achievement in gender-single schools in Kazakhstan.

Procedures: You are invited to give your interviews in any language you feel most comfortable with. This information and informed consent document is provided in three languages (English, Kazakh and Russian). The purpose of the study will also be explained to you verbally along with the voluntary nature of your participation. The interviews will also be recorded for transcription purposes and to ensure that the researcher can capture all responses to the interview questions.

Time Involvement: The interview will take approximately 30 minutes, with 5-10 minutes to get acquainted and set up for the interview session, overall each participant will spend approximately 40 minutes for the interview.

Risks: The present study does not recruit participants from vulnerable populations nor discuss topics that can be considered as sensitive or psychologically harmful, and as such could be considered overall as minimal risk.

Benefits: There are no direct benefits from participation in the research, however, by having the opportunity to reflect on your practice, this may indirectly improve your awareness and pedagogical practice in teaching particular gender cohorts. Furthermore, results from the present study may be beneficial for school programs, policy, and to inform pre-service or in-service teacher training programs.

Confidentiality & Privacy: Any information that is obtained during this study will be kept confidential to the full extent possible. All efforts, within reason, will be made to keep your personal information in your research record confidential but total confidentiality cannot be guaranteed. Ethical regulations and standards will be followed at all times. Your identity will only be known to the researcher. Any presentations or subsequent publications will not disclose the research site or your identity.

Voluntary Nature of the Study: Participation in the research process is voluntary and you can withdraw yourself or your data from the study at any time. Voluntary withdrawal will not have any detrimental impact on your employment or relationship with your employer or Nazarbayev University.

Points of Contact: It is understood that should any questions or comments arise regarding this project, or a research related injury is received, the Master's Thesis Supervisor for this student work, Professor Michelle Somerton, +7 708 801 06 01, Michelle.Somerton@nu.edu.kz should be contacted.

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

Statement of Consent.

I, _____

_____ Give my voluntary consent to participate in this study.

The researchers clearly explained to me the background information and objectives of the study and what my participation in this study involves.

I understand that my participation in this study is voluntary. I can at any time and without giving any reasons withdraw my consent, and this will not have any negative consequences for myself .

I understand that the information collected during this study will be treated confidentially.

Signature: _____ Date: _____

Researcher:

Signed _____ Date _____

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

Форма письменного информированного согласия (версия для учителей)

Восприятие учителями гендерных различий и академических достижений: гендерные стереотипы о школах с отдельным обучением в Казахстане.

Описание: Вам предлагается принять участие в исследовании на тему “**Восприятие учителями гендерных различий и академических достижений: гендерные стереотипы о школах с отдельным обучением в Казахстане**”. Целью данного исследования является изучение восприятия учителями гендерных различий и академических успехов в школах с отдельным обучением.

Методика проведения: Настоящий документ и форма согласия к нему предоставлены на трех языках (английском, казахском и русском). Вы можете пройти интервью на любом из них. Добровольный характер участия и основная цель данного исследования также будут разъяснены в устной форме. Интервью также будут записаны на диктофон для того, чтобы исследователь мог зафиксировать все ответы.

Затрачиваемое время: само интервью займет не более 30 минут, также минут 5-10 понадобится для ознакомления и подготовки к сеансу. В целом все собеседование займет около 40 минут.

Риски, связанные с исследованием: настоящее исследование не привлекает участников из уязвимых групп населения и не обсуждает темы, которые могут считаться чувствительными или психологически вредными. То есть риск в данном случае минимален.

Преимущества: преподаватели, принявшие участие не получают никаких прямых преимуществ от данного исследования, однако, они имеют возможность косвенно улучшить общую осведомленность и педагогическую практику в данной сфере. Кроме того, результаты данного исследования могут быть полезными для школьных программ и программ по подготовке и повышению квалификации учителей.

Конфиденциальность: Любая информация, полученная в ходе данного исследования будет сохраняться в максимальной степени конфиденциальности. Все усилия, в разумных пределах, будут направлены на то, чтобы ваша личная информация и исследовательские записи были конфиденциальными, но полная конфиденциальность не может быть гарантирована. Этические нормы и стандарты будут соблюдаться на любом этапе исследования. Ваша личность будет известна только исследователю. Любые последующие публикации не будут раскрывать места проведения исследований и Вашу личность учителей.

Добровольная природа исследования: участие в исследовательском процессе носит добровольный характер. В связи с этим, Ваше участие и личные данные могут быть отозваны на любом этапе исследования. Добровольный отказ не несет никаких

негативных последствий на Ваше трудоустройство и отношения с Назарбаев Университетом.

Контактная информация: В случае возникновения вопросов или комментариев в отношении данного исследования либо обнаружения любого академического вреда, необходимо связаться с научным руководителем студента по данному исследованию профессором Мишель Сомертон, +7 708 801 06 01, Michelle.Somerton@nu.edu.kz.

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

Заявление о согласии.

Я, _____

_____ Даю свое добровольное согласие на участие в этом исследовании. Исследователи ясно донесли до меня всю информацию и цели исследования, а также все то, что несет в себе мое участие в этом исследовании.

Я понимаю, что мое участие в этом исследовании является добровольным. Я понимаю, что вправе в любой момент отказаться от участия в данном исследовании без объяснения причин и это не будет иметь никаких негативных последствий для меня.

Я понимаю, как будут использованы собранные данные, и что доступ к любой конфиденциальной информации будет иметь только исследователь;

Дата подписания: _____

Исследователь:

Подписано _____ Дата _____

Дополнительная копия подписанной и датированной формы согласия предназначена для вас.

ЗЕРТТЕУ ЖҰМЫСЫ КЕЛІСІМІНІҢ АҚПАРАТТЫҚ ФОРМАСЫ

(Мұғалім нұсқасы)

Мұғалімдердің гендерлік айырмашылықтар мен оқу жетістіктерін қабылдауы: Қазақстандағы гендерлік бірыңғай мектеп мұғалімдерінің гендерлік стереотиптері

Сипаттама: Сіз “Мұғалімдердің оқушылардың гендерлік айырмашылықтары мен академиялық жетістіктерін қабылдауы, Қазақстандағы бірыңғай гендерлік мектеп мұғалімдерінің гендерлік стереотиптері” бойынша зерттеу жұмысына қатысуға шақырыласыз. Зерттеудің мақсаты - Қазақстандағы гендерлік бірыңғай мектеп мұғалімдерінің гендерлік айырмашылықтар мен академиялық жетістіктерді қабылдауы болып табылады.

Зерттеу әдістемесі: Бұл ақпарат және зерттеу жұмысы келісімінің ақпараттық құжаты үш тілде (ағылшын, қазақ және орыс тілдерінде) ұсынылады. Сіз сұхбат беру үшін өзіңізге ыңғайлы кез келген тілді қолдана аласыз. Зерттеудің мақсаты мен қатысуыңыз ерікті екенімен қатар ауызша түсіндіріледі. Зерттеуші транскрипциялық мақсаттар мен сұхбат сұрақтарына берілген жауаптарды сақтай алу мақсатында берілген сұхбат таспаға жазылады.

Өткізілетін уақыты: Зерттеу жұмысына қатысушының шамамен 30 минуты сұхбат алу үшін, танысу және дайындық үшін 5-10 минут, жалпы алғанда сұхбат үшін шамамен 40 минут уақыт жұмсалады.

Зерттеу жұмысына қатысудың қауіптері: Зерттеу жұмысы осал топтардан қатысушыларды қамтымайды, сондай-ақ сезімтал немесе психологиялық жағынан зиянды деп санауға болатын тақырыптарды талқыламайды және осылайша, қатысудың қауіптері ең төменгі дәрежеде деп санауға болады.

Артықшылықтары: Зерттеудің сізге тікелей пайдасы болмауы мүмкін, алайда сіздің оқушыларды оқытуда педагогикалық тәжірибеңізді жанама түрде жақсарта алады. Бұған қоса, осы зерттеудің нәтижелері мектептік бағдарламалар, саясат үшін пайдалы және алдын-ала қызмет көрсету немесе мұғалімдерге арналған оқыту бағдарламаларын хабардар етуге ықпалын тигізуі мүмкін.

Құпиялылық: Зерттеу барысында алынған кез-келген ақпарат мүмкіндігінше құпия түрде сақталады. Сіздің жеке ақпаратыңызды және зерттеу жазбаларын құпия сақтау үшін барлық шара жасалатын болады, бірақ жалпы құпиялылыққа кепілдік берілмейді. Этикалық нормалар мен стандарттар әрқашан орындалады. Сіздің идентификациясыңыз зерттеушіге ғана белгілі болады. Кез келген кейінгі жарияланымдар зерттеу мекенін немесе сіздің жеке тұлғаңыңызды жарияламайды.

Қатысушы құқықтары: Зерттеу процесіне қатысу ерікті сипатта болады, сондықтан сіз кез-келген уақытта ерікті түрде зерттеу жұмысына қатысудан бас тарта аласыз. Сіздің Назарбаев Университетімен немесе сіздің жұмыс орныңызбен қарым-қатынасыңызға қандай да бір зиянды әсер етпейді.

Байланыс ақпараты: Егер жүргізіліп отырған зерттеу жұмысының процесі, қауіп мен артықшылықтары туралы сұрағыңыз немесе шағымыңыз болса, келесі байланыс құралдары арқылы зерттеушімен хабарласуыңызға болады, бұл студенттік жұмысқа арналған магистрлік диссертациялық жұмыс жетекшісі, профессор Мишель Сомертон, +7 708 801 06 01, Michelle.Somerton@nu.edu.kz хабарласыңыз.

Дербес байланыс ақпараты: Егер берілген зерттеу жұмысының жүргізілуімен қанағаттанбасаңыз немесе сұрақтарыңыз бен шағымдарыңыз болса, Назарбаев Университеті Жоғары Білім беру мектебінің Зерттеу Комитетімен көрсетілген байланыс құралдары арқылы хабарласуыңызға болады: +7 7172 70 93 59, электрондық пошта gse_researchcommittee@nu.edu.kz.

Келісім туралы мәлімдеме.

Мен,

—

- Мен берілген формамен мұқият таныстым;
 - Маған зерттеу жұмысының мақсаты мен оның процедурасы жайында толық ақпарат берілді;
 - Жинақталған ақпарат пен құпия мәліметтерге тек зерттеушінің өзіне қолжетімді және мәлім болатынын толық түсінемін;
 - Мен кез келген уақытта ешқандай түсініктемесіз зерттеу жұмысына қатысудан бас тартуыма болатынын түсінемін;
 - Мен жоғарыда аталып өткен ақпаратты саналы түрде қабылдап, осы зерттеу жұмысына қатысуға өз келісімімді беремін.

Қолы: _____ Күні: _____

Зерттеуші:

Қол қойылған және келісілген келісім формасының қосымша көшірмесі сіз үшін сақталады.

Appendix C

Teachers' perceptions of gender and academic achievement: Gender Stereotypes among teachers in single-gender schools in Kazakhstan

Interview Protocol

Location _____ Date/Time _____ Participant
Code _____

Hello, my name is Shakhrizada Kalilayeva and I would like to conduct an interview for my research study which concerns teachers' perceptions of gender and academic achievement. The aim of this study is to find out the beliefs and attitudes of teachers in gender-single schools toward gender stereotypes and academic achievement in Kazakhstan. The information collected from this interview will be used in my thesis dissertation and any subsequent presentations or publications.

You have been selected as one of ten participants who have been chosen because of their role as a teacher in a single-gender school in Kazakhstan. Your participation in this research is voluntary, and you can withdraw your participation at any time. If you feel uncomfortable answering any of the questions I ask you in this interview, you do not have to provide an answer. The interview will be recorded, however, no personal information about you or your answers will be revealed to others. You may choose to reveal the name of the organization where you work or not, depending on your preference but this is not necessary for data collection purposes. All personal information that you provide to me will be anonymized and be kept confidential as per the details provided on the information and consent form that I have here for you to sign. The interview will take approximately 40 minutes to conduct. Although there are no direct benefits associated with your participation, the results of this study may be useful to inform teaching training practices in Kazakhstan.

Prior to the interview you were given an information and consent form. I have here two copies printed for you now which you can read and sign if you agree to participate. You may keep one form for your own information. Do you have any further questions? If there are no questions may I begin?

1. Can you please tell me a little more about your work as a teacher and how many years you have been teaching for?

2. What other kinds of teaching experiences have you had?

3. How do you feel about teaching in a gender-single education? How would you describe it?

4. Do you think that the gender-single school settings have a positive or negative impact on students' academic achievement?

5. Do you think there are other opportunities or challenges for students enrolled in gender-single school settings?

6. Based on your previous teaching experiences do you think that there is a difference in academic performance between boys and girls? Prompt, if yes, what do you think is the reason for this? (e.g, socioeconomic status, ethnicity, culture, family etc.)

7. Do you believe that there are gender stereotypes regarding academic performance in certain subjects? For example, girls being more successful learners in theoretical subjects, such as language, history, etc.

8. What other kinds of factors may have influence on the academic achievement of students in gender-single schools?

9. Have you faced any particular challenges in your teaching career concerning gender?

10. Do you think that a teachers' gender plays a role in the way they communicate with students or their expectations of students? If yes, how? If no, why?

Thank you for your participation and impact for the current study.

Appendix D

Interview Transcript

Girls school female teacher P#8

Q1: Can you please tell me a little more about your work as a teacher and how many years you have been teaching for? I have experienced teaching in gender-single schools for boys and girls as well.

Q2: What other kinds of teaching experiences have you had? Also, I have worked in a coeducational college, where boys and girls study together in one class. Overall I have 10 years of teaching experience.

Q3: How do you feel about teaching in a gender-single education? How would you describe it? There are advantages and disadvantages of single-gender education. Let me start with disadvantages, from my point of view the disadvantage is in the process of teaching, in gender-single classes, if it is a girls school they are more relaxed. They do not care about their speech, behavior, intonation. They act more relaxed and cannot look after their appearance.

Talking about boys' school, the disadvantage is again they do not act like gentlemen, they might lose those manners and behavior in front of girls. In mixed schools, both genders act appropriately and look after their behavior and appearance. What I have mentioned during my teaching career, when the class is mixed it is more cooperative and collective.

Q4: Do you think that the gender-single school settings have a positive or negative impact on students' academic achievement? Talking about academic achievement, gender-single education influences positively to both genders, rather than co-educational settings. Because, firstly, biological and psychological differences of both genders. It is scientifically proved by psychologists and pedagog according to those studies, when the lesson starts, girls are active at the beginning of the lesson, first 20 minutes of the lesson girls listen and catch the new topic. Boys start to be active at the end of the lesson and they can miss important pieces of main topics. It is a difference of perceiving the knowledge of boys and girls. In average mainstream schools, the majority of high-achieving students are females. It does not mean that girls have over advantages intellectually than boys, it is not because of that. It is about those differences, that girls are active the first 20 minutes of the class, whereas boys at the end of the class are engaged in the lesson. Thus, boys miss important parts and materials of the lesson, when passive parts of the lesson are demonstrated, such as self-study or practical tasks. As they have missed those important elements. Owing to this fact, in gender-single schools, teachers can plan and manage their lessons due to the gender of their students. If it is a boys' school, include all key information at the end of the lesson, and for girls provide important topics at the beginning of the lesson.

Q5: Do you think there are other opportunities or challenges for students enrolled in gender-single school settings? Opportunities: I think that students are more concentrated on their studies, rather than their appearance. Girls are more focused on the material, subject, than how she looks, speaks and if she says something wrong, boys will laugh at her. It is the

same for boys. They are more concentrated well on the lesson and do not think about being embarrassed. One of the main benefits of single-gender education is that students are enrolled in these schools when they are in puberty, when all these kinds of thoughts and feelings take place. And they get rid of such distracting thoughts. From my perspective, being successful and getting high academic achievement is easier in a gender- single setting.

Q6: Based on your previous teaching experiences do you think that there is a difference in academic performance between boys and girls? Prompt, if yes, what do you think is the reason for this? (e.g, socioeconomic status, ethnicity, culture, family etc.) The main thing is the effort that they put into the academic sphere. There is not a thing that boys are more able than girls, or girls are less able than boys. As I have mentioned before, when boys and girls are segregated from each other, they are more focused on studies and they have more perspectives to study and be successful. Also, family and home play a major role in academic achievement of students.

Q7: Do you believe that there are gender stereotypes regarding academic performance in certain subjects? For example, girls being more successful learners in theoretical subjects, such as language, history, etc. I slightly do not agree with this stereotype. It is just a stereotype, not based on research findings. I know such women scientists who are really successful at difficult subject areas, such as engineering and astrology. There are equal opportunities for both genders in academic achievement. Despite being a female or male, opportunities and chances to achieve academic goals are equal for both of them. The factors that influence on academic performance of students might be teacher quality, school system, parents, peers, society that surrounds students. In this case, gender does not impact on students' academic achievement.

Q8: What other kinds of factors may have influence on the academic achievement of students in gender-single schools? Regarding those factors that may influence the academic achievement of students, in this case, it is an individual issue. If some of the students have family issues at home or an unfavorable home atmosphere, they prefer to stay at a dormitory, as it is a boarding school. Likewise, if students are from a single-parent family, or if parents are not emotionally, psychologically stable, or if they use drugs, alcohol, these kinds of factors also influence students' academic achievement. By staying in dormitory, these kinds of students may somehow be away or be out of those family issues. Of course, they are not isolated totally, but still they can be in this positive learning environment. There is a chance for them to be focused on their studies with their peers. But it does not mean that if students leave in a dormitory, they will be more successful or if they come from their home, they can achieve better. No, it is all individual, and depends on each student. Some students are getting used to studying at home in their rooms, they have their own lamp, desk, bed and cannot study and concentrate in one auditory with others. In this case, they might be successful in their studies. Therefore, there is an important factor for students to be a successful individual is socialization. By staying in dormitory and living with other peers, students will develop their social skills and can be ready for further adult life. In this case, the boarding school system may have a positive impact on students self-learning socially and academically. Sure, there will be challenges, but the right teaching system and strategies will solve those issues. So, there is a great responsibility for teachers and school administration. Likewise, gender-

single schools use a complex system of education, rather than gender segregation, there is a whole system of education, such as, qualified teachers, differentiated instruction, dormitory and tutors, who look after emotional and social factors of students.

Q9: Have you faced any particular challenges in your teaching career concerning gender? I would like to say not challenges, but peculiarities of boys and girls. For example, sometimes you need to be more strict with boys, you can use direct and disciplined ways of communication. But, this method does not work with girls, if you use that kind of language, they may cry and be upset, and leave the class, or even will not do that task. Instead, with girls you need to be more delightful and delicate. Personally, I have not faced any problems concerning my gender while working with boys, and with girls as well. But some of her colleagues had an issue in boys' school, she came to the school in short dress, and male students had shown a negative attitude towards this situation and they claimed that they do not like teachers wearing such clothes. They said that they want to see teachers more serious and accurate, and also it disrupts them to concentrate on the lesson. Teachers have always been role models and saints for students. Talking the truth, for me personally, working with boys is much easier and more comfortable than with girls. Girls are too emotional, when they get unsatisfied marks or when you raise up your voice to be more strict, they start to cry. In order not to make them upset and cry, you have to use soft and very delightful language while interacting with them. In this case, I would like to work more with boys and I feel more comfortable working with them, because you can use more direct and strict language when it is needed.

Q10: Do you think that a teachers' gender plays a role in the way they communicate with students or their expectations of students? If yes, how? If no, why? Sure, the gender of a teacher influences interaction with students. For example, I worked with girls for 3 years as a mentor, and we had a female class teacher. There were 25 girls in the class. During 3 years we have done everything to collaborate and manage them, but we were unlucky. They have done lots of unacceptable things, even once they have written a letter to a teacher that they do not want her as a current female teacher. After that the school principal changed the class teacher to a male teacher. Interestingly, the girls started to change, their attitude, behavior, tone of their voice have changed, they began to listen to their new male teacher and interacted with him very well with a great enthusiasm. Girls started to get his advice and to act relying on them. Regarding boys, male teachers can be a role model of a father, if students are from single-mother families. Therefore, there are cases when male students had a good interaction with female teachers rather than male teachers. With male teachers boys can have some competitive issues, and with female teachers they will not have such issues and thoughts.

Concluding, I would like to say that, till this time we have faced only positive sights of gender-single education in Kazakhstan.

Appendix E

A Sample Sheet to Indicate the Major Findings

Research questions	Finding codes	Major findings
RQ1. What are the attitudes of teachers in single-gender schools in Kazakhstan towards single-gender education?	Finding 1	Participants believe that single-gender education has a positive impact on student achievement in single-gender schools.
	Finding 2	Single-gender education allows students to concentrate on academics, avoiding social distractions.
a. What do they see as the benefits, opportunities or challenges?	Finding 3	Benefits, opportunities and challenges of single-gender education for students in single-gender schools in Kazakhstan.
RQ2. Do teachers in single-gender schools in Kazakhstan believe there are differences in academic achievements between girls and boys?	Finding 4	Participants believe that male and female students have their own gender-related peculiarities and differences that influence their academic performance.
	Finding 5	Gender-based stereotypes are just common beliefs, intellectually boys and girls can have equal advantages in academic achievement.
a. What kind of factors influence academic achievement of boys and girls in single-gender schools?	Finding 6	The factors that teachers believe have an impact on student achievement, in single-gender schools.
RQ3. What factors have shaped teachers' beliefs and attitudes towards single-gender education?	Finding 7	Teacher gender and teaching experience shape their beliefs and attitudes towards single-gender education.
	Finding 8	Teachers believe that female and male teachers have different impacts on students' academic achievement.