

**Students' perceptions on the role of their NIS experience in their current academic
performance at Nazarbayev University**

Ainur Almukhambetova

Submitted in partial fulfillment of the requirements for the degree of

Master of Science

In Educational Leadership

Nazarbayev University Graduate School of Education

July, 2014

Word count: 18107

NUGSE RESEARCH APPROVAL DECISION LETTER

The NUGSE Research Committee reviewed the project entitled Students' perceptions on how their NIS learning experiences related to their academic performance at university by Ainur Almukhambetova and decided:

- To grant approval for this study
- To grant approval for this study subject to minor changes, to be signed off by supervisor
- To request additional information/clarification to determine approval
- To refer the application for IREC review

Minor changes and approval: The study is approved subject to minor changes. Your supervisor has a record of the revisions that need to be made. You need to discuss these changes with your supervisor, revise your proposal accordingly, and then ask your supervisor to check the revised proposal and sign and date it. The revised proposal will be kept on file.

Once these changes are made, the approval is effective for the life of the study. However, any time you change any aspect of your project (e.g., recruitment process, administering materials, collecting data, gaining consent, changing participants) you will need to submit a request for modification to the NUGSE Research Committee. Make sure to address all of the information requested on the request for modification form(s). Please be advised that in some circumstances, changes to the protocol may disqualify the project from approval.

Sincerely,

NUGSE Research Committee

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been submitted for the award of any other course or degree at NU or any other educational institution, except where due acknowledgement is made in the thesis. This thesis is the result of my own independent work, except where otherwise stated, and the views expressed here are my own.

Signed:

Date:

Abstract

Government support of gifted children in Kazakhstan is based in understanding human capital as a main component of the country's further successful economic development. In 2009, the government of Kazakhstan launched a project of intellectual schools, a policy which has the aim to accelerate the development of education system and in turn, the country. Since 2010, graduates of NIS have been entering higher education institutions in Kazakhstan and abroad. It is thus interesting to examine how the students undergo their transition from secondary school to post-secondary education and how well they are prepared to study at the university. This study seeks to understand the ways NIS graduates value their educational experience in terms of developing necessary skills for education at the university. Results of this mixed methods research study indicate that NIS graduates value greatly the knowledge and skills that they received at school and highly rate their preparedness for academic rigors at the university. However, findings also indicate that there are some areas that need improvement. The study also reveals that NIS graduates, like the majority of other students, face a set of challenges within the transition period from school to university. This study contributes to the understanding of gifted children education in Kazakhstan by providing information on how NIS graduates assess their school experience in terms of preparation for university. Findings of the research have implications for the teachers and administrators of NIS, university administrators and policy-analysts.

Acknowledgements

First of all, I would like to express my gratitude to my supervisor, Professor Duishon Shamatov, who gave me his support, advice, assistance and guidance throughout the study. Secondly, I would like to express my gratitude to Professor Daniel Hernandez-Torrano, who being my tutor, helped me to choose the topic of the research and gave me his valuable assistance throughout the study, almost for its every stage and, especially, for its quantitative part.

My special thanks are to Professor Jason Sparks, who made a great contribution to the development of my academic writing and conceptual understanding of the study. Also, I would like to thank the participants of this study, who kindly agreed to participate in this research and shared their valuable insights with me.

And finally, I would like to thank my family, my husband and sons, who patiently supported and helped me throughout this project.

Table of Contents

NUGSE RESEARCH APPROVAL DECISION LETTER	ii
Acknowledgements	v
Table of Contents	xi
Chapter One: Introduction	1
Contextual Background	1
Nazarbayev Intellectual Schools (NIS)	5
Significance of the Study.....	6
Purpose of the Study.....	8
Research Questions	8
Chapter Two: Literature Review	10
Developing 21 st Century Skills at Schools	10
Gifted Education.....	13
Transition from Secondary School to University	14
Relationship between School Background and Academic Performance at the University...	16
Chapter Three: Methodology.....	19
Research Design	19
Sampling	19
Data Collection Instruments	23
Piloting	26
Data Analysis.....	26
Ethical Considerations	28
Chapter Four. Findings and Discussion.....	30
Graduates' Perceptions about Knowledge, Skills and Competencies at NIS.....	30
Factors that Enabled Students' Learning.....	43
NIS Graduates' Perceptions of Transition to University.....	47
Role of NIS School Experience in University Performance	49
Discussion.....	53
Chapter Five: Conclusion and Implications	59
Implications for the Further Improvement of NIS.....	60
Policy Implications	61
Suggestions for the Further Research.....	62
Limitations of the Study	63
The Researcher's Final Reflection of the Study.....	64
References	65
Appendixes	71

Chapter One: Introduction

This study is about the perceptions of Nazarbayev Intellectual Schools' (NIS) graduates on their schools experience. Nazarbayev Intellectual Schools is an ambitious project of the network of the special Intellectual schools for gifted children, which is one of the major reforms in the secondary education in Kazakhstan. NIS started to operate in 2009 and since 2010 the first graduates of NIS have started entering the higher education institutions in Kazakhstan and abroad. I conducted the study at Nazarbayev University in Astana city. The participants of the study are the first graduates of NIS.

This study allowed the NIS graduates, through their unique experience of being the first cohort, to provide insights into their preparedness to the academic rigors of the university life, the quality of knowledge and skills, they had got at NIS, their transition from school to university and their reflection on how their school experience relates their current performance at the university of international standard.

This chapter briefly discusses the setting of the study, the background information about the implementation of the reform, explains the rationale behind this study and presents the purpose of the study, the research questions and the main limitations of the study. The chapter concludes, outlining the whole structure of the study.

Contextual Background

Kazakhstan, which is a size of Western Europe, is the biggest country of the Central Asia, bordering with Russia, China, Kyrgyzstan, Turkmenistan (Asanova, 2007). According to international reports, Kazakhstan belongs to the group of upper-middle income economies. According to the certain results, in 2011 Kazakhstan ranks N 49th among 192 countries of the world with a GDP of 186.198 million US dollars (National Report on Education, 2012). Nowadays, Kazakhstan with its enormous oil and gas resources after gaining its independence

appears in the global economy as one of the major places in Central Asia and it has been called one of the most politically and economically developed countries of the region (Asanova, 2007). The breakup of the Union in 1991 led to “a severe economic downturn that persisted throughout the 1990s” (OECD report, 2014, p.28). Since 1999, Kazakhstan has been involved in rapid economic growth because of the profitable conditions for the export of oil and new discoveries of oil and gas (Pomfret, 2012). The oil-boom of the millennium and higher prices of oil and gas has provided a wonderful opportunity to “overcome the errors and missed opportunities of 1990s” (Pomfret, 2012, p. 871), and to sufficiently improve the economic situation and to experience rapid economic growth. Up to date, Kazakhstan is experiencing greater economic stability and economic growth in comparison to other countries of the Middle Asian region (Zhunisbai, 2010).

Simultaneously, Kazakhstan is striving to place itself on a political map. Owing the 9th world’s largest territory and having favorable geographic position, in the 2000s Kazakhstan started to play an important role in international business and politics. Nowadays, Kazakhstan is building political relations with world community and international organizations. Since 1992, Kazakhstan has a member of the United Nations, and actively participates in its initiatives. Kazakhstan has become a visible player on the world political stage. Both the economic and political successes of Kazakhstan are recognized internationally. For instance, Kazakhstan was chosen as a chair nation at both the OSCE and the Organization of Islamic Cooperation (Zhumagulov, 2012)

According to the scholarly debates, Kazakhstan’s development was shaped by “...past traditions, local dynamics, and the broader context of globalization” (Asanova, 2007, p. 73). In 2010 Kazakhstan joined the Bologna process and immediately became a member of international “world intellectual progress” (Gurevich, 2011, p.65). Kazakhstan is attempting to make

sufficient reforms in its educational system to meet the demand of the new socio-cultural and education environment as it finds itself in the modern arena. It is making a great attempt to achieve a high quality of education in order to integrate into shifting economic and social environment.

Kazakhstan's attempt to radically reform its education system is aimed to meet the needs of a knowledge-driven society. Kazakhstan, as a recently independent country, sees itself part of as westernized and globalized, geopolitical, industrial and educational nexus of socio-economic demands. These new demands dictate the urgent need to modernize the education system (Bekishev, 2011, p. 594). The main aim of educational reforms in Kazakhstan is to reform the educational system so it meets the requirements of the social and economic circumstances of the contemporary world. That is why the country's President, Nursultan Nazarbayev initiated extensive reforms in the educational system, as they are seen as important component of Kazakhstan's attempt to join the club of the fifty most competitive countries (Lillis, 2007).

Another rationale for the urgency of a radical reform of educational system of Kazakhstan is a lack of skilled professionals with a high level of ICT, language and leadership competency able to contribute to the accelerated socio-economic development of Kazakhstan. In modern world, education is one of the strategic sectors, investments to which are considered to be the most profitable instruments, as it is a basis of success of the whole country, its 'societal capital' (Coleman, 1988).

In the preceding transition period to a new economic and socio-political dispensation, Kazakhstani universities have been unable to accommodate to the needs of the recently independent country. According to Stetar and Kurakbayev (2010), after the breakup of the Soviet Union, Kazakhstani universities "suffered from poor resources, low faculty salaries, and an outdated choice of specialties" (p.28). It was the period when Kazakhstan was at "its deepest

economic recession in its recent history” (Dairova, Higher Education Leaders Forum, 2013). Under these circumstances, the President of the Republic of Kazakhstan created the “Bolashak” international scholarship program via national resolution dated November 5, 1993. In its various stages, the “Bolashak” scholarship was aimed matching the needs of the country reflecting the socio-economic changes taking place in the society.

To ensure that new workforce will fit the demands of social and economic circumstances of new era of globalization the government has implemented some other reform initiatives. In 2010, the government of Kazakhstan has launched the National Program of Education Development for 2011-2020. This national Program of Education defined its main purpose – “to increase the competitiveness of education, to develop human capital through providing the accessibility of the quality education for stable growth of economy” (National report on the state and development of educational system, 2012, p.16)

Another initiative, suggested by the President Nazarbayev - “Intelligent Nation-2020” project, aimed to educate leaders with core skills, who would be able to lead the others behind themselves. The Presidential Decree on State Support and Development of Schools for Gifted Children has brought the work done with the gifted children to a new level (Bekishev, 2013). At that time a new “Daryn” (which is translated as “Gift” from Kazakh language) centre was established and there are 34 schools for gifted students, dependent to the Daryn centre (Bekishev, 2013). The establishment of this centre and schools for gifted children was a fundamental basis for the further radical reforms of the secondary education in Kazakhstan.

All the above mentioned initiatives of the Government served as a starting point to change the overall strategy of educational reform in Kazakhstan. There was a great need of a driving force, ‘a vehicle’ that could lift up the whole system of Kazakhstani secondary education to a new level (Yakavets, 2013, p.10).

Nazarbayev Intellectual Schools (NIS)

In this great striving forward to reform the current system of education in Kazakhstan, the implementation of a new project on the establishment of 20 intellectual schools with physical- and mathematical and chemical-and-biological specializations has started in 2009. According to Bekishev (2013), the main idea of these new intellectual schools is aimed at quality education of the future scientific elite, top managers and leaders for all the spheres of the Kazakhstani economy. The schools were given a status of autonomous organizations, as the experience of special schools for gifted children was used, and the negative impact of being dependent to MOES and “Daryn” centre and generalized curriculum was widely explored. There is much freedom in choosing the curriculum and textbooks and many other innovative methods of teaching and upbringing. The schools are expected to transfer successful experience and practices to the wider system of education in Kazakhstan.

The NIS model of gifted education is characterized with the following distinctive features:

- 1) These schools are state-funded, full-day schools with two specializations: in physics and mathematics and chemistry–biology and one school has an internationally recognized curriculum (the IB-International Baccalaureate).
- 2) The system of governance of NIS is completely different from the mainstream schools, schools are not dependent to the Ministry of Education and Science and the High Board of Trustees and a Board of Trustees are the main executive body. The NIS Board of Trustees consists of the key figures from the Government such as the former Vice-Minister, Minister of Finance, and also an international member. According to Yakavets (2013), the vision behind this strategy is ‘to provide a high level of support, expertise, accountability and transparency to the process of reform and development of project’ (p. 12).

- 3) The NIS have academic freedom (for instance, in selecting their own curricula and choosing textbooks)
- 4) The schools have implemented trilingual policy.
- 5) The NIS have established strategic partnerships with major international educational providers.

The mission of the NIS is to contribute to the development of the nation's 'intellectual elite' by offering a curriculum based on internationally recognized standards (Yakavets, 2013, p.14). The NIS state, that graduate of the school is "an individual with high intellectual capacity, able to think critically and creatively, strong in spirit, able to apply his/her knowledge for the benefit of social progress" (NIS Annual Report, 2011, p.14).

Significance of the Study

There are no in-depth studies in Kazakhstan of the graduates' perceptions on f their school experience. Thus, I hope this study will fill this gap. The study seeks to understand the ways NIS graduates assess their educational experience in terms of development of necessary skills for achievement at university. The study also explores how the NIS graduates study at the university of international standard and how they assess the skills that they got at school.

The study also contributes to the general discussion of the skills agenda in the 21st century, what skills and competencies are important for the graduates in different levels of education. There is a dearth of literature on the issue of the graduates' preparedness to higher education, study and employability skills in Kazakhstani context. A better understanding of the important skills and competencies can help the educators to prepare highly qualified specialists for all the sectors of Kazakhstani economy.

This study is significant for my career. I have been a University teacher for 16 years. During my work, I noticed that the students differ because of the level of their preparedness to

university life. Some students come to the university very prepared, possessing necessary knowledge and skills. The others, who are not, have to cope with a lot of challenges, affecting their academic performance. Also, I have noticed that the graduates of the schools for gifted children are completely different from the graduates from mainstream schools. Thus, my interest in exploring the school background of the university students, have arisen from informal discussions with the students and my own observations. I hoped to gain an in-depth understanding of the quality of the knowledge and skills the NIS graduates got; the challenges the gifted students were coping within transition from school to university and their overall reflections of their unique school experience. I hope this study will help me to become a more effective educator.

The study also contributes the literature on the students' transitions from school to postsecondary education and more specifically to the gifted students' experience in Kazakhstan.

This study enables the graduates of NIS, participating in this study to express their views and concerns. This is very important, as knowing graduates' perceptions about their school experience; it is possible to make conclusions about the lack or presence of some core skills and knowledge that are necessary at the university level. The results of this study are especially important, as it is expected that these NIS graduates, after graduating from university, will become future leaders in all the sectors of Kazakhstani economy (Bekishev, 2013).

The results of the research can be interesting for the teachers, administrators and school officials of Nazarbayev Intellectual Schools, the university faculty. The results provide the information for discussion, debates on effectiveness of NIS in preparedness to university. The study can have policy implications. The study might be of substantial value to the policy-makers, as it, to some extent, analyses the outcomes of the reforms in the field of Gifted Education and it may help to draw conclusions to improve the further implementation of the NIS project.

The study can make a contribution to the general development of empirical literature in Kazakhstani context. There is a lack of research-based literature, devoted to the educational reforms in Kazakhstan, especially in the field of Gifted Education.

The study might be interesting for other researchers, to make some analysis and conduct further research.

Purpose of the Study

It is very important to know if the gifted students are provided with necessary knowledge and skills, required for the modern world, during their study at the special schools for gifted students. The reform outcomes should be supported by the research studies as without the scientific evidence it is impossible to draw any conclusion about the effectiveness of the reform. Devoting time, money and attention to their education does not necessarily imply that the effort is being utilized wisely or profitably. Thus, the purpose of this study is to examine NIS graduates' perceptions about the role of their school experience for current academic performance at university of international standard.

Research Questions

In order to achieve the identified research purpose, three research questions were employed:

1. What are the NIS graduates' perceptions of the knowledge and skills that they got at school?
2. What are the NIS graduates' perceptions about their transition from school to university?
3. How do NIS graduates assess their NIS school experience in terms of preparation for further successful performance at the university of international standard?

Structurally, the work consists of five chapters, including introduction and conclusion chapters. The first chapter introduced the study. The second chapter is devoted to the literature review, the third focuses on the methodology, adopted in the study and data collection instruments, also covering the sampling procedure and ethical considerations of the study. The fourth chapter presents the major findings of the study and discussion. The fifth Chapter presents the conclusion, the limitations and the implications of the research.

Chapter Two: Literature Review

This chapter presents the review of the literature, relevant to my study. The chapter has four sections: one examines the literature on the developing the 21st century skills at school; the second discusses the international and Kazakhstani experience on education of the gifted students; the third and the fourth sections discuss the literature sources on the students transition from school to university and the relationship between the school background and performance at the university respectively.

Developing 21st Century Skills at Schools

Nowadays, considerable changes are taking place at the global economy and societal life of the people in the 21st century. The most important underlying reason is the great expansion of information and communication technology (ICT) (Claxton, 2008). These new trends in the information technology along with the new requirements at the transforming labor market and development of competitive economies demand the advanced skills and competencies of the new workforce (Partnership for 21st century skills, 2011). In the contemporary reality of quickly changing world, people need to possess different advanced skills, which are necessary ‘for work, citizenship and self-actualization’ (Dede, 2010, p. 51) in comparison with the previous one hundred years. There is a shared opinion across the people that these new ‘21st century skills’ are needed for new globalized economies of the 21st century. The supporters of the ‘skills agenda’ in industry and government claim, that changes toward understanding the ‘key skills’ are needed, as they prepare the graduates for employment and life-long learning in the reality of great transformations in the modern knowledge (Washer, 2007, p.58).

Social and economic transformations, happening in the twenty first century are posing new demands and consequently, new challenges on the education policies and practices

(Johnston, Conneely, Murchan & Tangney, 2014). It is becoming evident, that the certain educational strategies should be aimed at the development of new learners with a high level of new competencies and dispositions which include certain skills and deep basic knowledge (Johnston et al., 2014). According to Claxton (2006), the education needs to be aimed at the development of the people, able to learn and possessing transferable learning competencies rather than those, who are able just to receive and reproduce received information.

Thus, the 21st century education got an emphasis to the development of certain skills and dispositions and there is a certain number of conceptual frameworks and resources dedicated to this idea and which have been developed ‘to delineate content and processes that teachers should convey as part of students’ schooling’ (Dede, 2010, p.51). The most famous ones are Partnership for 21st century skills in the USA (2006, 2011) and Organization of Economic Cooperation and Development (OECD) Definition and Selection of Competencies (DeSeCo) project, eight ‘key competences’ for tomorrow’s world, elaborated by the European Commission (OECD, 2013) and Tony Wagner’s ‘seven survival skills’ (Wagner, 2008). According to the Partnership for 21st century skills, the key competencies are collected under umbrella categories as ‘learning and innovation skills’; ‘information, media and technology skills’ and ‘life and career skills’ (Partnership for 21st century skills, 2011). Wagner’s seven survival skills are : ‘critical thinking and problem solving’; ‘collaboration across networks and leading by influence’; ‘agility and adaptability’; ‘initiative and entrepreneurship’; ‘effective oral and written communication’; ‘accessing and analyzing the information’ and ‘curiosity and imagination’ (Wagner, 2008). Eight competencies for lifelong learning are : ‘communication in the mother tongue’; ‘communication in the foreign language’, ‘mathematical competence’; ‘digital competence’; ‘learning to learn’; ‘social and civic competencies’; ‘sense of initiative and entrepreneurship’ and ‘cultural awareness and expression’ (OECD, 2013).

It is important to mention that the term ‘key skills’ was introduced in Dearing Report in Higher Education in the Learning Society (Murphy & Macintosh, 1999). The key skills, mentioned in the project were: ‘communication’, ‘numeracy’, ‘the use of information technology’ and ‘learning how to learn’. It is interesting that most of the frameworks and resources about the key skills and dispositions are very similar to each other and mostly discuss the same notions and competencies. But yet, there is no single exact definition of the ‘key skills’ for use in both secondary and higher education and this fact causes a number of debates across the ‘skills agenda’ about the definition of these skills (Washer, 2007). Moreover, the terms ‘generic skills’, ‘core skills’, ‘personality skills’, ‘employability skills’ are often used “interchangeably” along with such words as ‘competencies’, ‘capabilities’ and ‘dispositions’ (Washer, 2007, p.58).

After understanding that there are some key skills and dispositions, necessary for the new economic and social demands, it is important to mention, that mostly the scholars agree that graduates are lacking these core skills. Symonds (2011) in his study argues that US employers increasingly complain that young adults lack 21st century skills. According to Leese (2010), sometimes students lack some essential skills while entering the university and she mentioned ICT skills in particular. According to Breivic (2005), to be successful in preparing contemporary students for lifelong learning in the 21st century, there must be an “unprecedented cooperative effort” between higher education and secondary schools “to incorporate” some key skills into the basic curriculum (p. 27).

So, taking into account the current state of research in this field, we can conclude that in the today’s shifting and quickly developing economic environment, even before entering the university, the school graduates should possess a certain range of skills and knowledge that are

highly important for further academic and professional development of the person and his or her successful future.

Gifted Education

The current education reform agenda in Kazakhstan is inspired by the argument that “investment in human capital through elite institutions for gifted children can lift up the whole system of education” (Yakovets, 2013, p. 1). There is a common opinion that gifted people are the generators of the most innovative ideas (Savinina, 2009, as cited in Yakovets, 2013). Tomlinson (2008) presents another dimension of current reform agenda: that behind the policies to select gifted students and provide them with special education, there is one idea, that the modern world is now a global knowledge economy (p. 67).

The Europe 2020 strategy, adopted by European heads of state and governments in 2010, is focused on human capital as “a key component of European development” (Ederer et al. 2011, as cited in Yakovets, 2013). According to one definition, the concept of human capital refers to ‘the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of social and economic well-being’ (OECD, 2001), and this sort of capital is seen as an important factor in the development of economic competitiveness in the form of investment through education.

If to look to international experience, the education for gifted and talented is provided in most of the developed countries. For example, “Europe is ambivalent towards selecting and providing for gifted students” (Persson, 2009, p.1). Giftedness is a notion actively promoted by UK authorities (Persson, 2009). According to Persson (2009), The United Kingdom is the leading country in the Europe in terms of Gifted Education. 1997 in the Great Britain was marked by the launch of the National program for support of gifted children: Education of Gifted and Talented Youth. In England the policy of the government is inspired by the ideology that investment into

human capital are will help the country to succeed in the conditions of knowledge-based economy (Tomlinson,2008).

In Spain, gifted students are given support by a Royal Decree (1995). But Spain, together with Germany, Italy, France, Portugal and Switzerland, is considered to be inclusive, in the question of Gifted Education (Persson, 2009). Several legislations and acts exist in support of gifted in Hungary. In 2001 Australian Senate recommended a strategy to work with gifted and coordinate the programs across the states. Taiwan's government exclusively supports special education, including programs for gifted (Karnes & Stephens, 2009). The United States have been developing special educational programs for gifted children since 1970s (Karnes & Stephens, 2009).

One of the previous researches was focused on the topic of education of the gifted in Kazakhstan; it examined the problem of reforming society through education of gifted (Yakavets, 2013). It presented descriptive data about the implementation of the legislation, which gave the academic freedom for Nazarbayev Intellectual Schools to use the new innovative educational programs and use the best international practice in Gifted Education (Yakavets, 2013). According to Yakavets (2013), project of NIS was launched after intensive preparatory work which involved searching for the best national and international practices. Policies and programs in the Russian Federation, the UK, Singapore, Finland, Japan, Switzerland, the Netherlands, Luxemburg and many others countries were thoroughly explored and applied (Yakavets, 2013).

Transition from Secondary School to University

Students' transitions from school to university can be compared with entrance to unknown alien environment (Askham, 2008) and are likely to have a sufficient impact on further university achievement of the students. Successful transition from school to university is a

crucial factor for further successful academic performance of the student at the university (Nel et al., 2009). It is very important to study the students' experience within the transition from school to university, because the majority of them do not perceive this transition as a positive experience (Lowe & Cook, 2003). According to Parkinson and Forrester (2004), the reason of this negative perception is because of the 'gap' between their expectations of the university life and the real experience at university. Most of the scholars agree, that the majority of the students remember their first year at university, as an unpleasant period, and reflect, that this negative experience might be a reason of their loss of confidence and low self-esteem (Longden, 2004; Haggis, 2006).

Students' abilities to adapt to university life and factors that are predictors of successful transitions have been of great interest the last decades as the higher education administrators have a great desire to improve their retention rates (Hurtado, Carter & Spuler, 1996). Most of the withdrawals occur during the first year at the university, it is the most difficult time for the 'new students' experience, causing certain difficulties adjusting to a new academic environment (Tinto, 1993). Roberts and Higgins' study (1992) revealed that those students who attended schools with similar regimes with the university, perceived the transition from secondary school to university relatively easily. Lowe and Cook's study's (2010) findings showed that there was a certain amount of the students, who had academic and psychological challenges at the university and perceived their transition to university life as negative experience. Unsuccessful transitions have a negative impact on students' academic performance at the university, which can lead to sufficient loss in academic achievement with 'accompanying levels of psychological distress' (Mendaglio, 2013, p.3).

Surprisingly, very few studies were found that explored the transition of gifted students to university. According to Mendaglio (2013), the first year at university is unexpectedly

challenging period for gifted students. Smith (2006) investigated the predictive effect of achievement loss in the transition from middle school to high school. He found that those gifted students who experienced achievement loss in the transition from secondary school to university, were more likely to leave the college they attended. Gomez-Arizada and Conejeros-Solar's study (2013) explored the perceptions of the gifted students of their success and failure within their first year at university. The study revealed that gifted school graduates experienced certain initial problems, fitting to a new academic environment. However, the study also revealed that gifted students displayed strong motivational and personal traits to be successful in their studies. The results of this study are consistent with Hummond, McBee and Hebert's study (2007), which claims that the motivation and academic achievement of gifted students are linked to each other.

Thus, the current state of the literature tells us that the first year at university is in general a very important stage for all 'new students', though very little research was aimed to reveal gifted students' challenges after exiting secondary school. We know very little how gifted students adapt and adjust to university life; cope with all of the challenges within this important stage- transition to university, since these issues were addressed only partially by the previous research.

Relationship between School Background and Academic Performance at the University

Students' educational outcome and academic success is greatly influenced by the type of school which they attend. Usually the school the students attends, is the certain environment that sets the certain parameter of a students' learning experience. The environment, that the school provides, can influence further academic achievement (Kyoshiba, 2009). This echoes what Considine and Zappala (2002) claim in their study that the type of school a child attended, influences further academic success or failure. The way, how the students are prepared in their schools definitely influences students' expectations of higher education (Clark & Ramsey, 1990).

Lowe and Cook's study (2010) was aimed to compare the pre-school expectations of school graduates with their experience after one year at the university. The results of the study indicated that most of the students expected that academic requirements of the university would be similar to those they had at their schools. Previous research has also revealed that school study habits influence academic performance at the university. Abbott-Chapman, Hughes and Wyld's study (1992) has revealed that those students who didn't possess strong study habits at school are more likely to fail at the university or have some problems while adjusting the university life.

According to Berger (2009), during the period of study at the middle school and the early years of high school, appropriate strategies can assist students in further academic performance. An academic plan, effective work-study habits, a highly developed time-management, decision-making, critical thinking skills will help the students to establish a sense of direction for further university performance (p.152). This echoes another study: according to Entwistle and Ramsden (1983), productive study habits are characterized by good time management skills and strategic studying.

According to Adelman's study (2006), the quality of school curriculum had more influence on the graduates' success during their first year at the university, than the scholastic aptitude test (SAT) or their college test scores. Muratori, Colangelo, & Assouline (2003) in their research concluded that most of the gifted college students were not satisfied with the academic preparation they got at school, due to some factors as lack of teachers' preparation and knowledge, a big number of meaningless assignments and slow pace of study in their classes. Another finding of this study is that giftedness itself is not enough to be successful at the university, there is a certain set of skills that help the graduates to organize their process of study and reach academic success is more important.

Gomez-Arizada and Conejeros-Solar's study (2013), has also found out that most of the graduates' who studied at vocational high schools experienced a certain level of discomfort with their academic preparedness to university life. They displayed difficulties while adjusting to a new academic environment and felt themselves 'less' gifted than their peers.

Coleman's study (2002) revealed that gifted students perceived the transition to university as a hard process, because at school they used to be successful with little personal effort. This author found out that gifted students were shocked with the high demands and academic rigor at the university and this strongly affected their understanding what kind of skills they possess. Another study (Hertzog, 2003), indicated that those students who participated in the special programs for the gifted children, were very satisfied with their preparation and the skills that they have developed within this special programs and appreciated this experience, reflecting that it increased their self-esteem.

So, based on literature we can say that academic performance at university is dependent to the school background, but we need to know what skills are important for university life. The literature review has also revealed that there is relatively little research on the students' transition from school to university and the relationship between the school experience and academic performance at the university. And there is a certain lack of the literature the gifted students' experience on these topics. Moreover, there is a dearth of literature on the gifted student's perceptions on their learning experience, the development of the 'key skills' and students' transition from school to postsecondary education in Kazakhstani context. Thus, reviewing the literature, I have shaped the research questions to address the lack of the literature in this field.

Chapter Three: Methodology

This chapter presents the research design and methodology that guided the study. I discuss my rationale for a mixed method design. Then I describe sampling and my selection of participants. Next, I present the data collection instruments, how I collected data and how analyzed the data. The chapter also outlines the ethical consideration. The chapter closes with a brief summary.

Research Design

To explore the NIS graduates' perceptions about the role of their school experience for university performance, I employed explanatory sequential mixed methods research design. A mixed methods research design is a procedure for collecting, analyzing, and "mixing" both quantitative and qualitative methods in a single study or a series of studies to understand a research problem (Creswell & Plano Clark, 2011). When one combines quantitative and qualitative data; "we have a very powerful mix" (Miles & Huberman, 1994, p. 42). By assessing both outcomes of a study (quantitative and qualitative), I can develop "a complex" picture of social phenomenon (Greene & Caracelli, 1997). According to Muijs (2011), quantitative approach will fail when we want to explore the problem in depth, in this case they are "too shallow". So, to really "get under the skin of the phenomenon", the researcher will also need to go for interviews or other qualitative techniques (Muijs, 2011, p.7). Thus, first I conducted the quantitative phase of my research, developed the general picture of the phenomena, then to get better understanding of the research problem, I conducted the qualitative phase of my research (Creswell, 2012).

Sampling

Sampling involves decisions of the researcher about how to use time within the data collection period, who will be participants of the study. I started sample selection immediately after gaining clearance from the NUGSE Ethics Committee. For qualitative part, I selected 10 students with the help of purposeful sampling. According to Creswell, purposeful sampling identifies participants and sites based on the places and people, “who can best help us to understand the central phenomena” (p. 205). Thus, it was agreed to study the perceptions of Nazarbayev University students, who graduated from the Nazarbayev Intellectual schools. I selected two categories of participants for this study. Ten students had participated in two focus group interviews. For quantitative research, my sample included 74 students of Nazarbayev University.

I contacted Nazarbayev University’s Registrar’s office to obtain details of the NU students, who came from Nazarbayev Intellectual Schools.

Respondents of quantitative research.

First, I contacted Nazarbayev University’s Registrar’s office to obtain details of the NU students, who came from Nazarbayev Intellectual Schools. According to the data, provided by the Registrar Office of Nazarbayev University, there are 113 graduates of Nazarbayev Intellectual Schools, who are elder than 18, studying at Nazarbayev University. I then contacted those students by e-mail, asking their consent for participation in my study.

A cover letter explaining the purpose and nature of my study was also shared with the students. I inquired if they would agree to participate in an on-line questionnaire. Those 74 students, who responded are students of both male and female gender, and are approximately aged between 18 and 20 years.

In total there are 15 Nazarbayev Intellectual Schools for gifted children operating currently in different regions of Kazakhstan, but the study embraces only the graduates of five Nazarbayev Intellectual Schools, who study at the moment at Nazarbayev University: NIS Astana, NIS Oskemen, NIS Semey, NIS Kokshetau, NIS Taldykorgan, as these were the first NIS schools and operate since 2009.

In total, 74 students responded to the survey and these were the students of 5 Nazarbayev Intellectual Schools from NIS Astana, NIS Semey, NIS Uralsk, NIS Kokshetau and NIS Taldykorgan. The response rate to the survey consisted 65.5%, which is a rate, sufficiently high for on-line survey (Nulty, 2008).

I used SPSS descriptive statistics to present the data about the respondents to the survey questionnaire, as there were three background questions about their year of study, school at Nazarbayev University and school, they have graduated from.

Table 1 presents the percentage of students, participated in the study according to the year of study.

Table 1: students' background

Year	Number	Percent
1 year	45	60,8
2 year	22	29,7
3 year	7	9,5
Total	74	100,0

Thus, majority of the students, who responded to the survey, are first year students of NU, while 29.7 % are the second year students and 9.5 % are the third year students.

Table 2 presents the percentage of the students, participated in the study, according to the schools at Nazarbayev University.

Table 2: Students according to their schools

School at NU	Frequency	Percent
1. School of Science and Technology	34	45,9
2. School of Engineering	23	31,1
3. School of Humanities and Social Sciences	17	23,0
Total	74	100,0

The data indicates that 45.9 % of the NIS graduates, participated in the study, are the students of the School of Science and Technology, 31.1% study participants are from the School of Engineering and 23% are from the School of Humanities and Social Sciences. Table 3 reports percentage of the students, participated in the study, according to the type of school they graduated from.

Table 3: Students and their NIS schools in Kazakhstan

School location	Total	Percent
NIS Astana	35	47,3
NIS Kokshetau	7	9,5
NIS Oskemen	9	12,2
NIS Taldykorgan	8	10,8
NIS Semey	15	20,3
Total	74	100,0

The data reports that majority of the NIS graduates (47.3%), who participated in the study, are from NIS Astana. 20.3% are from NIS Semey and only 9.5 % are from NIS Kokshetau.

Participants for qualitative research.

The participants for the qualitative research were invited to participate in the interview by placing a letter on the announcement board at Nazarbayev University and with the help of snowball sampling, when some NIS graduates came to participate, then, suggested the names of other students to be included. Initially, it was planned to conduct individual interviews, but then I changed it into focus group interviews in which to get diverse ideas of the students in more informal discussion form. This was very successful, as I think that the study benefited greatly from the focus group discussions, as the students felt free agreeing and disagreeing with each other and expressing their own opinions.

Data Collection Instruments

To answer the research questions and to collect data, I have used such instruments as survey questionnaire and interview. The combination of these instruments to collect the data is justified in terms of methodological triangulation, which leads to higher reliability and validity and lets the researcher get the in-depth understanding of the researched topic (Gorard and Taylor, 2004).

Survey questionnaire.

Questionnaire, based on the survey design was implemented in the first part of the study to address the research questions. Questionnaires are often used by the researchers as it is a less time consuming instrument, than other instruments, but it allows collecting data from the considerably large number of respondents (Muijs, 2004). Using the survey approach also allows the researcher a possibility to generalize the results of the survey to a larger population (Nardi, 2002). Also, surveys are usually used by the researchers, whose main purpose is to explore people's attitudes, beliefs and perceptions toward definite issue or phenomenon (Neuman, 2003).

By using questionnaire in this study I also maintained the anonymity of the respondents, as the respondents did not need to write their names on questionnaire. The usage of the questionnaire has one more advantage, as once collected, it can be very easily analyzed by the researcher because of its “structured and manageable form” (Wilkinson and Birmingham, 2003, p.7).

Close-ended questionnaire was used as instrument for quantitative part of the research. It included 2 types of questions: background questions and questions related to obtaining opinions or attitude (see Appendix A for the questionnaire items).

The survey instrument included a total of 22 questions, 19 required responses in a five point Likert scale from ‘strongly agree’ to ‘strongly disagree’; 3 questions required a simple check box response. The main questions of the survey could be divided into three groups: questions from 1 to 7 were the questions, grouped as ‘learning and innovation skills’; questions from 8 to 10 were ‘ICT and information literacy skills’ and questions from 9 to 18 were grouped as questions about ‘life and career skills’. In the question #19, the students were asked to rate the quality of knowledge and skills that they gained at NIS from 1 to 5.

Despite the abovementioned advantages, the questionnaires have particular disadvantages, which should be taken into consideration while analyzing them. The questionnaire is often limited in its length and the obtained data is of standardized character and may prevent the researcher to get the in-depth understanding of the researched issue (Muijs, 2004). To address the issue of limited data, I used interviews as a tool for collecting qualitative data.

Interviews.

Qualitative interview-based research design was implemented in the second part of my study.. In the second part of the study I was focusing on a smaller number of people and that enabled me to study them in depth and get richer data from them.

Open-ended questions were used for the focus group interviews with Nazarbayev University students, who have already graduated from the Nazarbayev Intellectual Schools (see Appendix B for the interview questions). The interview is often the best way for the researcher to get detailed information about the topic of interest (Wilkinson & Birmingham, 2003). As for the interview type, the semi-structured interview was used. This type of interview is characterized by the number of established questions, but allows the researcher to be flexible about the order and content of the questions, if there is an issue, that according to the researcher's opinion, needs some clarification (Pole & Lampard, 2002). It allowed me to address some points, which have been arisen during the interviews with the students and helped me to cover some unexpected additional issues.

The discussions were held separately, using pre-established questions and sought the participants' opinion on their perceptions on how their NIS school experience relates their successful performance at Nazarbayev University, their level of satisfaction with the development of generic skills, which are necessary for their performance at university and their recommendations on the further improvement of NIS preparation of its graduates for the entrance to Nazarbayev University. The interviews enabled me to get the rich detailed and descriptive data in the participants' own words. Initially, it was planned to conduct the interview in English, as the NU students have English as a language of instruction, but during the interview it was decided to conduct it in Russian for the participants' convenience. The advantage of the focus group interviews is in the possibility for the participants to interact with each other, agree or disagree about some issues and highlight some aspects, which seem to be more interesting for them (Bell, 2010). The focus group interviews gave me the possibility to be not only the interviewer, but also a facilitator of the interesting discussion.

The interviews were conducted in the participants' natural settings in the Nazarbayev University campus. Each discussion was audio-taped, with the permission of the participants, and later transcribed for thematic analysis. I also took notes during the discussion as it helped me to record the ideas that emerged during the interviews.

Piloting

According to Bell (2010), the data collection instruments need to be piloted, as the researcher needs to know how long it takes the respondents to complete them. The questionnaire needs to be of appropriate length in order not to lose the respondents' interest, which may result in missing data and incomplete questionnaires (Oppenheim, 1992). The questionnaire was piloted twice, before it was emailed to the students, once with one of the Master students, who also is a graduate of special school for gifted children and also with one of the NIS graduates, who study at Nazarbayev University at the foundation course. Piloting was also very useful for avoiding the ambiguous questions and choosing the right wording of the questions.

Data Analysis

Data analysis process is a long and comprehensive process of systematic analysis and arrangement of collected data (Bogdan & Bicklen, 1998). The data, to be analyzed were obtained with the help of questionnaires that were completed by 74 people and two focus interviews with 10 participants.

The quantitative data was analyzed with the help of SPSS Statistics software. SPSS is known as one of the most commonly used and reliable software for descriptive statistics in educational research (Muijs, 2004). The descriptive statistics is used to describe numerical data and the simplest way to do it is using frequency distribution. Frequency distribution tables are used to show the number of cases in each category (Neuman, 2006).

The answers were pre-coded before entering them to the SPSS database. For example, for Likert scale questions with options as 'strongly agree', 'agree', 'neither agree or disagree', 'disagree' and 'strongly disagree', the answers were coded as 'strongly agree'=1, 'agree'=2, 'disagree'=3, 'neither agree or disagree'=3, 'disagree'=4 and 'strongly disagree'=5. So, when entering the data to SPSS database, only the numbers from 1 to 5 were entered.

For quantitative analysis, I used SPSS descriptive statistics to calculate the mean and standard deviation of the responses. Cronbach's α coefficient for quantitative data was .89.

For the qualitative data analysis, I first organized the data, transcribed the interviews and translated them from Russian into English. The quality of the recorded data was also an issue, because I tried to take the interviews in the students' natural settings at the campus of the university, because the data collection period was during the students' examination session. Then, I obtained the general idea of the material and coded the data. The data was coded into the themes and categories, which were connected to the proposed research questions and empirical literature, discussed in the Literature review chapter (see Appendix C for codes and themes). After the inductive analysis, I developed deeper understanding of students' perceptions of their school experience.

When both the quantitative and qualitative data were coded and categorized, the overall information, gathered by two research instruments was triangulated in order to reach the higher reliability and validity. The analysis of the overall data was conducted with connection to the proposed research questions and as a result, categorized, according to the following themes: students' perceptions of knowledge and skills gained at NIS, students' perceptions of the factors that enabled their learning at NIS; perceptions on their experience of transition to university and perceptions of the value of their NIS preparation for studying at a university.

Ethical Considerations

Throughout the study I followed the ethical standards and considerations, bearing in mind all the researchers' ethical principles. According to Hartas (2010), the informed consent form is the "heart of the ethical research practice" and incorporates all the basic research principles, as "clarity of purpose, trust, honesty and integrity" (p. 118). Therefore, the first step to collect the data from the participants is to provide them with informed consent form (see Appendix D for informed consent form). Participants were selected on a volunteer basis and they were fully informed of the purpose and nature of the study. As the participants were the students of Nazarbayev University, who are elder than 18, there was no need to get signed informed consent forms from their parents. Participants also were explained that they would have a right to withdraw from the study at any time if they wished to do so. They were also explained that in case they choose to withdraw from the study, all information they provided (including tapes) would be destroyed after the study is completed. In order to provide higher response rate for the survey, I sent the NU students a cover letter, which explained the purpose of the study and suggested the participants sharing the results of the study when it is fully completed, in case they are interested (Wilkinson & Birmingham, 2003).

After getting the informed consent form, it was necessary to maintain the issues with assurance of anonymity and confidentiality. In terms of anonymity, as it was mentioned before, the questionnaires are the perfect tools for gathering the data, as they do not require any personal information to be included to the responses and it is impossible "to match particular responses with individual subjects" (Grey et al., 2007, p.86). As for the interviews, though the identities of the participant are known for the researcher, I assured the participants that I would keep any information about participants private and use pseudonyms instead of names. I also have ensured participants that the tapes and questionnaires will be kept in a safe place, locked with a key, other

people would not have an access to the place. Assuring anonymity allows the respondents to be more honest, expressing their opinions and perceptions, which as a result will lead to higher reliability and validity of the results (Cohen et al., 2005).

I provided the participants with the information that they may receive a copy of the study when it is finished if they wish to and they were very interested in the results of the study.

In this chapter, I discussed the research design and methodology that guided this study, explained the rationale for the sampling procedure and presented the data collection instruments, statistical data about the respondents of the survey questionnaire and ethical considerations of the study.

Chapter Four. Findings and Discussion

This chapter presents the findings of the study which explored the perceptions of Nazarbayev University students who graduated from Nazarbayev Intellectual Schools about the knowledge and skills they got at NIS and about how they were prepared to study at a university when studying at NIS. In this chapter, I present the findings from focus group interviews and survey questionnaires conducted with the students of Nazarbayev University who graduated from NIS schools across Kazakhstan. The findings are described according to the following three sections: (a) graduates' perceptions about the knowledge, skills and competencies that they got at NIS; (b) the factors that enabled students' learning; (c) NIS graduates' perceptions on their transition from school to university and (d) value of the NIS school experience for current performance at the university.

Graduates' Perceptions about Knowledge, Skills and Competencies at NIS

The quality of the knowledge and skills that the student gets at school, has a significant impact at further academic performance at the university, further professional development of the person and his or her successful future. The study showed that the participants of the study, who are the students of Nazarbayev University and were graduates of Nazarbayev Intellectual Schools (NIS), strongly assessed their education they got at NIS. The findings are categorized around the following themes: knowledge and skills related to the school subjects; critical thinking, problem solving and analytical skills; English language competencies; research skills; ICT and information literacy skills and life and career skills.

Knowledge and skills related to the school subjects.

The students shared that they got very good knowledge at NIS and they particularly appreciated that they got in-depth understanding of subjects. One student stated:

My interest to Physics developed at NIS, I started to love Physics namely at school. I didn't like it much before. Exactly the teachers and extended curriculum in Physics helped me to improve my knowledge in Math and Physics (personal communication, March, 2014).

Another student agreed, "I can tell you that level of teaching of Physics and Math was very high at NIS". One more graduate reflected on his experience at NIS:

Before NIS, I studied at school with Physics and Math direction and I can tell that my Math abilities developed sufficiently at NIS. Now I am a student of Engineering Department at Nazarbayev University. All that I have studied at NIS, all this knowledge now helps me here at NU (personal communication, March, 2014).

They felt that their knowledge and skills have improved a lot since they joined NIS, and they appreciated the teaching of their NIS teachers. The students compared their education with the students from other schools. For example some students felt that they have in-depth knowledge in comparison with the students from Kazakh-Turkish schools. A student said:

In some schools for example in Kazakh-Turkish Lyceums, if the student is good at one subject, he takes part in Olympiads and wins, he is allowed not to study such subjects as Geography, History and he doesn't have deep knowledge in these subjects. At NIS we didn't have such practice. If you have for example, Geography, you must know this subject. The same is History and other subjects. Nobody cared about how many Olympiads you won (personal communication, March, 2014).

This is also confirmed by the quantitative data. The following table demonstrates the responses of the survey respondents to the questions about the effects of NIS on their in-depth understanding of all subjects and their favorite subjects.

Table 4: percentage ratio of the answers

Students' understanding	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
In-depth understanding of subjects	18.9%	55.4%	18.9%	5.4%	1.4%
In-depth understanding of favorite subject	27%	36.4%	22.9%	10.8%	2.9%

Thus, majority (74.3 %) of the respondents shared that NIS helped them to develop in-depth understanding of the subjects, while 18.9% of the students strongly agreed that they had developed in-depth understanding of the subjects. The respondents were asked the same question about the role of NIS in developing their in-depth understanding of their favorite subjects. Almost the same portion (73.4%) of students shared that they had developed in-depth understanding in their favorite subjects at NIS and only 13.7 % disagreed with this statement.

Developing critical thinking, analytical and problem solving skills.

The students observed that they had developed their critical thinking, analytical and problem-solving skills at NIS. They noted, that their schools focused much on the development of such skills as ability to use the knowledge creatively and problem-solving skills. They shared that at NIS they had a number of special activities in everyday school life, aimed at the development of these skills. As one of the participants commented:

At NIS we had very creative teachers, who constantly tried to develop our creativity by posing unusual tasks and assignments. We had also creative projects in many subjects, even ordinary subjects as Russian Literature and History were designed creatively, not as dull as we used to have them in my old school. Very often we had even drama and problem-solving tasks in our lessons (personal communication, March, 2014).

The students also said that unlike their previous teachers from the mainstream schools, their teachers at NIS had developed their students' higher order thinking skills according to Benjamin Bloom. Thus, the students did not simply memorize and retell their understanding of the material, on the contrary, they were encouraged to share their own opinions and seek alternative solutions.

The study participants commented that their teachers had used many tasks which developed their creativity and critical thinking, and they have examples of critical thinking essays, debates and other activities. One student said, "Our teachers developed our critical thinking in critical thinking lessons, but they also did so in all other ordinary classes too". Another student added "Our teachers tried to integrate critical thinking into every subject we had".

The findings from the quantitative data also confirmed this. The respondents of the survey questionnaire also scored highly on the effects of their NIS learning experiences in developing their critical thinking and problem-solving skills. The following table presents the students' responses.

Table 5: the percentage ratio of the answers:

Skills	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Problem-solving skills	35.1 %	40.7 %	17.5 %	4%	2.7%
Critical thinking skills	15%	41%	29%	12.3%	2.7%
Analytical skills	23.2%	47.9%	19.1%	8.2%	1.6%

A high percentage of the students recognized that their problem solving skills were developed in NIS: and that was 75.8% in total who scored “strongly agree” and “agree”, with 35.1 % responded ‘strongly agree’; 40.7 % responded ‘agree’.

Almost the same number of graduates (71%) agreed that NIS developed their analytic skills, while slightly lower percentage of the students (56%) responded that they “strongly agree” and “agree” to the question whether they had developed their critical thinking skills at NIS.

Thus, the students who graduated from NIS greatly appreciate the fact that they had developed their critical thinking, analytic and problem-solving skills while at NIS. The students’ responses on their critical thinking skills were lower than their analytic and problem-solving skills, although in reality these are very closely connected concepts.

At the same time, some participants of the focus group interviews commented about difficulties of teaching critical thinking. One of them said that ‘it is impossible to teach the student critical thinking, it is not a subject, it is something when the person is able to think critically or not’. Another participant commented, that integration of critical thinking to other subjects ‘was not very successful sometimes’; another commented that ‘because of that

integration, critical thinking, our tasks were sometimes strange'. These comments confirm the survey responses about critical thinking skills.

Developing English competencies.

Another important area that the students valued about their learning at NIS was their competency of English language. As a matter of fact, medium of instruction at NIS is English and students really appreciated that they improved their English at NIS. They agreed that competences improved to an extent that they could successfully enter and study at Nazarbayev University. They recognized that they would not be able to study at NU if they had not developed their English at NIS. In particular, they appreciated the fact that their teachers had very good English and also they used very good textbooks. Plus, facilities were also enabling for them to master English. One student observed, "Well, we had English language preparation on a high level"; while another student said, "my level of English sufficiently improved after I entered NIS". One more student observed, "I took additional language courses after school hours as I had higher motivation to study English. I realized the importance of English language, knew what is IELTS and other English tests. Namely at NIS I learnt all these things and they helped me to improve".

However, there were some students who felt that their English skills were not well developed at NIS. One student said, "Sometimes foreign teachers' lessons were not effective, because they just talked with us on different topics". Another student agreed, "It was an interesting experience to have a foreign teacher of English, it is interesting to talk to a person who is from different country, but as a language preparation it was not effective". Another student remarked "I didn't like my English teachers at NIS, both Kazakhstani and foreign. I studied English myself in the language courses outside school". One of the students commented on the reasons why their knowledge was not good.

When we came to NIS, we were divided into groups. But they were not the groups according to the level of knowledge of English. The students with high level and students with lower level studied together... We all came from different schools and when the teacher explained something that I already know, I felt bored as didn't get anything new. When she explained something difficult, others didn't understand (personal communication, March, 2014).

The graduates agreed that though the language preparation at NIS was intensive enough, though some improvement in terms of more effective grouping and teaching strategy is needed with some emphasis on the development of writing skills.

This is also confirmed by the quantitative data. The majority of the NIS graduates, responded to the survey agreed that they developed their English language competency at NIS: 37.8 % strongly agreed; 37.8 % agreed; 5.4 % of the respondents disagreed with this statement; 4 % strongly disagreed; 15 % gave the answer 'neither agree nor disagree'.

The table below presents the means and standard deviations of the various items related to in-depth understanding of school subjects and students' favorite subjects, development of problem-solving, critical thinking and analytic skills and the development of the English language competencies.

Table 6 presents the means and standard deviations of all the skills, which can be grouped as 'learning and thinking skills'.

Table 6: Students' learning and thinking skills

	Mean	Std. Deviation
Problem-solving skills	4,2055	,79859
Critical thinking skills	3,9315	,78756
Analytic skills	4,0959	,67008
Inner understanding of the subject	4,1096	,65747

Skills of communication and collaboration	4,0548	,70495
English language competency	4,1370	,87106
Ability to study favorite subjects in-depth	4,0915	,78949

The data from the table, analyzed with the help of SPSS statistics, indicates that in general, the graduates value various skills and competences developed at NIS. Their responses are high and shows that NIS graduates greatly appreciate their school education, and most of their responses were higher than 4 out of 5 point scale, and specifically, they noted that they improved their problem-solving skills (4.20 out of 5), followed by their English language competences (4,13 out of 5), then in-depth understanding of school subjects and analytical skills (both 4,0946 out of 5). According to this data, it is possible to draw a conclusion that there is an agreement in majority of NIS graduates that they had sufficient opportunities to develop their ‘Learning and thinking skills’ at NIS and especially they valued their problem-solving skills, analytic skills and English language competency.

The survey responses about the development of skills of communication and collaboration revealed the following results: 21 % of the graduates responded “strongly agree”; 44 % of the graduates responded “agree”; only 10% of the graduates disagreed with the statement and 25% of the graduates neither agreed, nor disagreed that their skills of communication and collaboration were developed at NIS.

Developing research skills.

The study participants also shared that they had developed their research skills at NIS. In particular, they learned how to access and find information from various sources and analyze

them. Many students also participated in NIS research projects such as “*Altyn kazyk*”¹ and “*Tugan zherge tagzym*”². One student responded:

Almost all of my classmates participated in some research projects, beginning from the 8th class, mostly in such subjects as Physics, Chemistry, History. We were helped sufficiently in this direction. Some of us even went abroad to international competitions with their projects (personal communication, March, 2014).

However, some students commented that the research that they have done at school was not a ‘real research’ and now when they are students at NU they feel that research is totally different. One student stated, “What we did at NIS was more like a mini-research or simple research or a primary level research and we learned how to do a real research at our foundation course at NU”.

The quantitative data, gathered regarding the development of the research skills and skills of independent work revealed the following results: 16.6 % strongly agreed that NIS developed their skills of research and independent work; 33.3 % agreed; 29.1 % gave the answer “neither agree or disagree”; 15.2 % of the graduates disagreed that their skills of research and independent work were developed at NIS and only 5.5 % strongly disagreed with this statement.

ICT and information literacy skills.

Another important area that the students had mentioned that they developed their skills was their ICT and information literacy. One student commented:

My teacher of ICT constantly motivated and sometimes pushed us to learn some new programs. For example at university we have a Web-programming course, for me this course is very easy as I have already learnt some things from this course at school (personal communication, March, 2014).

¹Altyn Kazyk’ is an annual competition of the students’ research projects in different subjects. The winners of this competition take part in the Republican Competition of Scientific and Creative projects.

As for the quantitative data from the survey, the NIS graduates were asked three questions regarding their ICT and information literacy skills. The first item was: “At NIS, I learnt how to evaluate information critically and competently and this now helps me in my studies”. 8.1% of the respondents to the survey answered ‘strongly agree’; 36.5% answered ‘agree’; 36.5% neither agreed nor disagreed with this statement; 16.2 % of the graduates disagreed with the statement and 2.7% strongly disagreed.

The second item was “At NIS, I learnt how to access information efficiently in terms of time management and effective sources (and resources) and this now helps me in my studies”. 12.5 % of the survey respondents answered ‘strongly agree’; 20.8% of the respondents agreed with this statement, 37.5% neither agreed nor disagreed; 25% disagreed that this skill was developed during their study at NIS and 4.2 % gave the answer ‘strongly disagree’.

The third item was: “At NIS, I got all necessary ICT skills, and this now helps me in my studies.” 11.1 % of the graduates gave the answer ‘strongly agree’; 29.1% gave the answer ‘agree’; 44.4% neither agreed, nor disagreed and 12.7 % disagreed with this statement and 2.7% gave the answer ‘strongly disagree’.

The table 7 is presented as an evidence of the abovementioned results, displaying the percentage ratio between the answers of the respondents.

Table 7: responses of students on ICT skills

²‘Tugan zherge tagzym’ is research expedition organized annually by NIS administration to different regions of Kazakhstan.

ICT and information literacy skills	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Ability to evaluate the information critically and competently	8.1%	36.5%	36.5%	16.2%	2.7%
Ability to access the information efficiently in terms of time management and effective sources	12.5%	20.8%	37.5%	25%	4.2%
I got at school all the necessary ICT skills	11.1%	29.1%	44.4%	12.7%	2.7%

Table 8 below represents the means and standard deviations of the survey responses.

Table 8 represents the means and standard deviations of students' survey responses:

	N	Mean	Std. Deviation
Ability to access information efficiently in terms of time management and effective sources	74	3,7973	0,77601
Ability to evaluate information critically and competently	74	3,8493	0,63838
ICT skills	74	3,7838	0,78112

Thus, the quantitative data indicates that generally NIS graduates perceive their ICT skills and information literacy quite high. However, unlike their in-depth understanding of school subjects, critical thinking, analytic and problem solving skills, and English competencies, the students' responses were lower.

Life and career skills.

One more important area that the students had mentioned they developed their life and career skills. In addition to skills described above, these life and career skills are crucial in the future opportunities of NIS graduates and they help them become more successful people.

Amongst life and career skills, the students mentioned that they have developed their leadership skills. For instance, during the focus group interview, the students reflected on how they developed their leadership skills at NIS. One student observed, "At school I was a leader in all kinds of events and this helped me to develop and practice my leadership skills. I am very grateful to the teachers who always motivated me to participate and be a leader". Another participant said that he developed his confidence and presentation skills. He said: "I developed my ability to speak and to present in front of the people as we always made presentations in our classes."

There were also such comments as "After school, I was confident, what specialty to choose, as I was good at Math, I applied to the School of Engineering at NU without any doubt", "I learnt to be responsible at school. We had to pass a lot of exams the last year at school. It was a great responsibility as I didn't want to lag behind". Another comment:

The process of choosing a specialty was not very difficult, I have discussed it with my teachers at school and they advised me to apply to the School of Humanities and Social

Sciences, as I performed well in humanities at school(personal communication, March, 2014).

The NIS graduates also indicated that at school they didn't get proper time management skills and lack of time management skills caused a number of challenges at university. As one of the participants commented:

At school we always had the possibility to ask the teacher for the extra time for preparation or submission of our written assignments. You can go to the teacher, explain the reason and you can always get permission. At the university this will not work. We really had very hard time during the first term at university, trying to develop our time management skills (personal communication, March, 2014).

It means that at school the students did not develop the proper time management skills and the teachers were doing something like 'unintentional disservice' for their students, letting them have more time for doing their assignments than it was discussed before.

These findings from the qualitative source are also confirmed by the quantitative data from the survey responses. The NIS graduates were asked seven questions regarding their life and career skills, developed at NIS.

Table 9 represents the means and standard deviations from the survey responses:

	N	Mean	Std. Deviation
Ability to tackle with problems at university	74	3,9865	0,65152
Ability to choose a specialty after graduation from school	74	4,1757	0,74683
Ability to plan work at university	74	3,9459	0,77445
Ability to be flexible and adaptable for university challenges	74	3,9865	0,85196
Ability to manage time and goals in university	74	3,8378	0,81134
Ability to be responsible to others	74	4,0405	0,76640

Leadership skills	74	3,9054	0,77934
-------------------	----	--------	---------

The data from the table indicates that the life and career skills that the graduates value most of all are the ability to choose a specialty after graduation from school and ability to be responsible to others. The competency that was valued lower than others is an ability to manage time and goals at the university.

Thus, the students really appreciated all the skills, knowledge and competences they gained at NIS. By gaining the useful knowledge, skills and competences, these students valued greatly their preparedness to the university life. The analyses of the overall data, regarding the students' perceptions on the quality of knowledge and skills that they gained at NIS has revealed that they valued greatly their preparedness to the university life in terms of knowledge and skills. This is clearly reflected through the survey responses to the item: "How do you rate the quality of knowledge and skills that you got at NIS?" the students rated from one to five and the mean rate is 4.12, which indicates that the NIS valued greatly their knowledge and skills, developed at school.

Factors that Enabled Students' Learning

This section presents the factors that assisted students' learning and they are as follows:

Strong student intake.

Many students mentioned that one of the main factors that assisted in their learning was the strong peers with whom they studied. They commented that all the students were selected from different schools, where they had been the strongest students, and the procedure of entrance to the schools was highly competitive. The applicants should pass through rigorous examinations, which consist of two levels: test in four subjects and a written examination in

Mathematics and Physics. The admission to NIS was recognition of the student's good knowledge, but it was also a very difficult choice for them as they had to leave behind their old friends at their old schools and even move to another city. As one of the participants commented:

I decided to enter the NIS as I wanted to check my knowledge and to check whether I deserve to study in such kind of school. I studied in Karaganda in my old school and passed the test to Astana NIS. When I was admitted I had to make a decision and it was very hard, as I hesitated. If I didn't go to NIS, I would happily live in my home city and never suspect that there is a better learning opportunity, a great chance to change my life. It was a giant step forward in my life. I made this decision and never regretted (personal communication, March, 2014).

As the result of rigorous selection procedure, only the best students study at NIS. One of the participants shared, "The students, as a norm, come from good quality gymnasiums and lyceums or special schools for gifted children under "Daryn" umbrella or very gifted children". One student observed that NIS selects the most capable students at an age which is most favorable for their personal and psychological development. He said:

It is very smart of NIS to select the gifted students at the certain age, as because of the heavy workload, it will be very difficult to develop something very important from the very beginning. When the student is 13, he is gifted and he is old enough to continue and improve his abilities when he enters this school. And in this age it is easier to further improve his talents and gifts in a certain direction, but not develop from the very beginning (personal communication, March, 2014).

They were selected according to their talents and abilities, that's why they were similar to each other. One of the participants commented: "At NIS all the students were very pleasant people...we studied together as one family".

Rigorous curriculum and assessment.

The study findings also demonstrated that curriculum and assessment systems at NIS were very rigorous, and thus different from other mainstream schools. In fact, the students had always compared the NIS with their ‘old school’. The study participants really liked the learning experiences at NIS and believed that because of rigorous curriculum and assessment system of NIS, they could improve their knowledge and skills. However, they were also critical of their NIS learning experiences as they spoke about ‘heavy workload’, ‘constant monitoring of knowledge’, ‘atmosphere of competition in the class, ‘rating of knowledge’. The other challenge was the fact that the system of assessment changed several times during their study. At first, they had “ten-grade system of assessment, later the criteria-based assessment was introduced and now they even have summative-formative types of assessment”. As they were the first cohorts of students at NIS, they felt themselves sometimes as “being involved into some kind of experiment”, sometimes “the requirements changed too quickly”, “curriculum was changed very often”, but they realized that these challenges they were facing were because of the fact that the NIS project was a new one and serves as experimental site. As one of the students commented: “NIS was like an experimental laboratory, but I never regret that I had this experience. Not a single day.”

Resources, facilities and supportive school environment.

The study participants observed, that the resources and the facilities at NIS were very good and they positively influenced their learning. They mentioned modern equipment in laboratories, modern laptops in the computer classrooms, new building, sport facilities including gyms and sport grounds- all enabled them study well. As one of the participants commented:

When somebody asks about the learning environment, I always think about learning conditions of school. The conditions were really very favorable, both for learning and

personal development. It is not arguable. The conditions were great. We had all of the possible facilities at school. After main classes it all depended on your wish, if you want, you can do your homework, you can go to the gym and do some sport. All the learning conditions were on the high level (personal communication, March, 2014).

Nis graduates perceived the resources and facilities at their NIS schools as very modern and new. These resources and facilities are very important for the development of deep knowledge and skills at the school level.

The majority of the participants agreed that the school learning environment was very comfortable for NIS students. As one of the graduates commented:

The learning environment was very supportive. Teachers cared about us, encouraged to participate in Olympiads, research projects. The students were given much attention in this question. The teachers always told that every NIS student must do the research work. They provided us with many opportunities to start scientific projects. They hired teachers if there was a need to prepare to the Olympiads, they could replace the other lessons with special preparatory classes. Last year, we were given the freedom to choose the subjects and given time to prepare for the research projects. In Nazarbayev Intellectual Schools they care about students, about their results and their future (personal communication, March, 2014).

The whole process of study is quite different from the process of study in other mainstream schools or gymnasiums: the students usually had classes till four o'clock and after the lunch they had electives and self-preparatory classes. According to the participants' reflections, during the self-preparation it was possible to meet with the teacher to clarify the questions that the student didn't understand during the lesson. It was also possible to do the home task during the self-preparatory classes. As one of the participants commented: "We did

our home tasks together, it was interesting experience, because we could share ideas and those who didn't achieve very well could ask for the help from more able ones". Another participant commented:

Our NIS cared not only about our academic achievement but also about social skills. We had very many different extracurricular activities, which were very interesting and even in the holidays we went to the camps together, participated in charity events and travelled as research groups across Kazakhstan. Our teachers and vice directors always tried to develop our personality traits, giving us different tasks and involving us to different activities (personal communication, March, 2014).

The students also appreciated the English speaking environment at schools and presence of international teachers with whom they could practice their English. The graduates thus had very positive perception of the learning environment at NIS. Another positive reflection about the learning environment is about the supportive atmosphere at school. As one of the participants noted: 'what I liked most of all was the school atmosphere... School atmosphere is much friendlier, than the atmosphere at university. It is one year already since I have graduated, but I still miss my school so much.'

NIS Graduates' Perceptions of Transition to University

The students were also asked about their perceptions of transition from school to university. This question aimed to explore how the NIS graduates cope with the important period in their lives-that is transition from school to university.

Challenges at university.

Generally, most of the participants agreed that their first year at university was a very challenging period for them. Their responses varied from the fact that they had a lot of 'psychological challenges', by being at "completely new atmosphere", "new life", thus

experiencing “sense that you are lost” to “sense of freedom” and “sense that you can do everything”. Others mentioned the challenges with adjustment into students’ community and great responsibility issues, which they were not ready to cope with. As one of the participants commented: “at school, we were all the time under supervision of tutors; they constantly reminded to us what to do. Here, at NU, we have an adult’s life. If you do not do anything on time, it’s your fault. Any silly excuses will not work”; “when we came here we realized that in the Moodle, you have definite time or deadline, and if you are late only for one minute, your paper will not be accepted”.

One of the interesting themes that emerged during the discussion in the focus groups was the issue with students who applied to the first year directly, so called “directs” and the foundation course. Those who applied ‘directly’, reported about the psychological challenges during the adjustment into the students’ community. As they reported, mostly the reason was that the students had very close friendly relations within foundation program and it was difficult to enter this community for those who applied directly, without studying in the foundation course. It was a kind of a “closed community” of former classmates, who studied together at school. However, after coping with these initial problems of adjustment to the students’ community, these graduates displayed strong motivation and high perseverance to cope with academic challenges and combined efforts to reach their educational goal.

Another challenge for some of those who applied ‘directly’, was that during the foundation course the students were prepared to cope with academic rigors of international curriculum at NU. Those who applied directly didn’t have such preparation and it was more challenging for them during the first year of study. As for those, who studied at the foundation course, they agreed in the opinion that it was very easy for them to fit university requirements, as the foundation course was very similar to their last year at school. There were comments, like:

“we had enough knowledge to fit the foundation program”; “my knowledge of Physics and Math was deep enough for foundation program”; “Well... the foundation course was not challenging for me...” “the workload at foundation course was not hard enough...” This period was some kind of “relaxing period” to those students, who had very good results at school as they didn’t get much new knowledge in foundation course and had a feeling of “comfort zone” within university. As one of the participants informed: “I have group-mates from mainstream schools, for whom, the foundation course was really a challenging period. They always complained that we, NIS graduates, already know so much and it is easy for us, we just revise our knowledge”. But the participants agreed in the opinion that this experience of “comfort zone” during foundation course “played an evil joke” with them, as they were “too relaxed” and those who studied hard, were able to concentrate on studies and now they are achieving much better.

According to one of the participants:

When I was at school, I was accustomed to hard workload and constant work, but after the foundation program, I felt relaxed and this led to my poor achievement during the first year of study. I regret about it (personal communication, March, 2014).

So, having analyzed their experience during the foundation program, the NIS graduates displayed their strong motivation to academic success in the studies and ability to analyze challenges and their underlying reasons and weak sides.

Role of NIS School Experience in University Performance

The research question about the value of the NIS experience for successful academic performance at the university was proposed with an intention to provide the NIS graduates’ voices for the assessment of their academic preparedness to the university and its connection to their successful performance at university. The gifted NIS graduates generally perceived that

their school experience was very useful for the transition from secondary school to academic performance at the university. One of the participants highlighted:

In our school we were purposefully trained to enter Nazarbayev University. Especially, during the last year, we were prepared to the exams like SAT, SET, IELTS. We were given an exact goal- to enter NU, and it was the highest standard for us (personal communication, March, 2014).

Other participants commented:

We were given a high quality preparation for the entrance exams within the school itself. We didn't pay anything. We didn't dedicate an extra time for our preparation for the entrance exams, it was done within the school, within the classes. For the entrance to the Nazarbayev University, NIS is a perfect place for preparation (personal communication, March, 2014).

Other comments were as follows: "For me, my NIS experience was very valuable both for the entrance procedure and for the further process of study at the university"; "If I were not the student of NIS, I would probably enter NU, but I would probably spend much time and much more resources for the preparation to the university."

Quantitative data from the survey questionnaire supported the above arguments. At the end of the questionnaire, the students were asked to answer to the following statement: "Overall, I am satisfied with the preparedness that NIS gave me to cope at the university. In other words, I think my NIS experience was very helpful in terms of preparation for university" and 40.7 % answered 'strongly agree'; 41.8% answered 'agree'; 10.8% answered 'neither agree nor disagree'; 4% answered 'disagree' and 2.7% answered 'strongly disagree'. It means that overwhelming majority - 82.5% of the NIS graduates, responded to the survey, agreed that their

school experience was very helpful in terms of preparation for the university and only 6.7 % disagreed with this statement.

The interview participants also agreed in that their school experience was very useful for their transition from secondary level to the university academic life, but they highlighted some of the important skills and dispositions, that were not mentioned in the interview questions and were not reflected in the survey questions.

The participants suggested that NIS and NU administrators should improve their cooperation to assist students' better preparation to the entrance to the university. As some of the graduates commented:

Why don't they [NU and NIS administration] combine their efforts to provide all the NIS graduates the opportunity to apply 'directly' to the Bachelor's program? It will be great opportunity. If we had the opportunity to study some things that we were taught at the foundation program at school, we won't have to lose the whole year of study (personal communication, March, 2014).

One of the participants expressed his suggestion to the improvement of the NIS curriculum in terms of integrating knowledge from foundation course:

School is the most important period in the life of person. The more knowledge and skills you get during the school time, the better is for you. I can draw this conclusion from my own experience. At school I was able to soak the information like a sponge, my brain was much more productive. Now it seems to me that now I am swimming on that basis which I have built in school. Sometimes I regret that I missed some things at school, I should have studied harder. Each year kids become smarter and smarter, that's why the knowledge which is gained at school should be broader and richer, as school children are able to cope with much of the information. Some things that are taught in the foundation

course can easily be taught within the school curriculum, that will be a constructive decision (personal communication, March, 2014).

The other ideas which were presented by NIS graduates are that the school should pay more attention the development in their students' strong personal qualities, such as sense of self-improvement, sense of patriotism, sense of responsibility, sense of duty. It is important to mention, that there were no pre-established questions about these skills and disposition in the interview. The comments were as follows:

They [NIS students] should be very strong person and be able to face any challenges in the academic life and cope with them, they must be a type of people who are not satisfied with what they know now, they must be people trying to become better than they were yesterday... It is a constant sense or skill of self-improvement. Other skills will come over the time. This sense is the most important skill (personal communication, March, 2014).

Another comment on the development of the personal qualities of NIS graduates:

It will be great if the school paid attention to the development of such qualities as patriotism. The NIS student should understand that he is taught on the money of the taxpayers and the government spends much resource to educate him. NIS graduate must be a patriot of his country, feeling a great responsibility, a duty to pay back to hundred times more to his Motherland with all the knowledge, he got at school and do something for the sake of the prosperity of his home country (personal communication, March, 2014).

This theme emerged during the focus group interview and all of the participants of the focus group discussion agreed with the speaker. It is important to mention, that the interviewed students put a great emphasis on their words about the development of these dispositions at schools, because as they perceived, these qualities and dispositions are even more important than

knowledge of subjects or other generic skills, for the benefit of the students themselves but also for the benefit of the state.

Discussion

The purpose of this study was to explore the NIS graduates' perceptions on how their school experience relates their current academic performance at the Nazarbayev University. The conclusions from this study follow the research questions and the findings and address four areas: a) graduates' perceptions of knowledge and skills gained at NIS; b) graduates' perceptions on the factors, enabled their learning; c) graduates' perceptions on their transition from school to university; d) graduates' perceptions on how they valued their NIS experience for the current performance at the university. Following is a discussion of the major findings of the study:

The first major finding is that in general Nazarbayev Intellectual Schools developed necessary generic skills and basic knowledge for the entrance to the Nazarbayev University. The NIS graduates, participated in the study, valued greatly how they developed the in-depth understanding of the subjects, critical thinking skills, problem-solving and analytic skills. This finding is also confirmed by the empirical literature. Wagner (2010) emphasizes that work, learning and citizenship in the 21st century requires the young people "to reason, analyze, weigh evidence, problem solve and to communicate effectively" (p xxiii). According to Wagner (2010), critical thinking and problem solving skills are "the first survival skill" and essential component of the new global 'knowledge economy' (p. 15). This finding indicates that changes in Kazakhstani education toward understanding the 'key skills' are needed, as they prepare the graduates for employment and life-long learning in the reality of great changes in modern education (Washer, 2007).

My finding suggests that this successful experience of NIS in terms of development of analytical, problem-solving skills and in-depth understanding of the subjects can be transmitted

to mainstream schools. Regarding critical thinking skills, some participants mentioned that teaching critical thinking was not successful sometimes. Thus, some improvement in terms of effective teaching of critical thinking skills is needed. Moreover, as this skill is considered to be one of the 'key skills' for successful performance both at university and further career, some courses of teaching critical thinking should be included to the curriculum of teachers' training institutes and universities.

The second major finding was that in general they valued their ICT skills as developed sufficiently, but according to their reflections, these skills needed further improvement. This finding echoes to what Leese (2010) has found in her study. Her findings indicated that sometimes students lack some essential skills while entering the university and she mentions ICT skills in particular. This finding refers to the worldwide requirements to modern university students to be able to carry out some tasks without aid, such as finding information in the digital libraries and databases, to be able to critically evaluate the information and sort the information in terms of effective sources and resources, downloading and uploading information and to be able to present their project in the courses that will require using software, etc. (Dede, 2010). It is important to mention, that mostly in Kazakhstani universities the ICT and information literacy is not taught as a subject, except for the specialties, where this subject is a part of curriculum. It means that basically, the young people develop their main ICT skills at school. Thus, the important conclusions should be made by the educators to improve teaching ICT and information literacy skills in Kazakhstani schools with an emphasis to of critical evaluation of the information and effective sources and resources.

The third important finding, connected to the previous one, is that some of the NIS graduates indicated that they lack time management skills, which is one of the core requirements for novice students. According to this finding, the lack of this important skill influences the

students' academic performance at the university. This finding echoes to the statement, that effective time-management skills increase academic performance of the students (Campbell & Swenson, 1992). This finding indicates that some improvement in teaching effective time-management strategies to the students of Nazarbayev Intellectual Schools is needed. Moreover, the whole understanding of the time management construct should be revised by educators at different levels, as this important skill wasn't paid proper attention in Kazakhstani educational institutions before. According to various studies, effective time management behaviors lead to less academic stress and anxiety among the students (Misra & McKean, 2000). Such notions as "time management" and "deadline", common to the international students' practice, are still not so common in Kazakhstani education and need to be paid a proper attention.

The fourth important finding of my study is that the NIS graduates valued greatly their life and career skills that they have developed at their schools. This finding refers to understanding that there is a wider set of skills, not only the generic skills, which are closely connected to the lifelong career development. Many studies have indicated the economic and social importance of highly-developed life and career management skills in graduates at different levels of study (Bridgstock, 2009). Amongst the life and career skills, the NIS graduates valued the ability to choose the specialty after school. This finding indicates that NIS are very successful in the career orientation of their students and this experience can be successfully transmitted to the mainstream schools in Kazakhstan.

The fifth important finding is that according to the graduates' perception the research skills that are needed at the university are, to some extent, different from those, which they have developed at school, so the necessary consistency between the university requirements and school strategies should be developed as cooperative effort. Moreover, the NIS students can take part in the research activities of the Nazarbayev University within special summer programs

together with Nazarbayev University students and these internships might be a very useful experience and also an effective mentorship program for development of their research skills.

The sixth major finding was that the NIS graduates perceived their English language preparation as very good. This finding is very important as the English language proficiency is considered to be a predictor of successful academic performance at the universities with English as a language of instruction (Graham, 1987). The related finding is that some of them were not satisfied with the grouping strategies according to the prior knowledge of English. This finding suggests the possibility that the English language preparation needs some improvement in terms of more effective grouping and teaching strategies and better development of writing skills. A related finding is that more effective strategy in terms of organization of co-teaching of the foreign and local English teachers is needed.

The seventh finding was that among the factors that enabled their learning, they named the rigorous curriculum, strong teachers and peers and overall supportive learning environment at NIS. This fact is very important as student's perceptions of school experience and learning climate have a great impact on the development their self-esteem and self-perception and influence positively to the further professional development of a person (O. Samdal et al., 1998). This my finding indicates that the majority of NIS graduates perceived the learning environment of NIS as very positive and supportive and this successful experience of creating student-friendly supporting learning environments can be transmitted to the mainstream schools in Kazakhstan.

The study's eighth major finding is that as the majority of the secondary school graduates, gifted NIS graduates also face certain challenges in their transition period from school to university. NIS graduates named, as the most challenging period, the psychological difficulties of those students, who applied 'directly' who found it difficult to fit the requirements of the university academic life, highlighting that they were not accepted by the close community of the

students, who studied together at the foundation course. This finding echoes to what Mendaglio (2013) discusses in his study, emphasizing, that the great difference between school and university influence the academic achievement of gifted students and causes the psychological consequences (p.5). A related finding is that those students, who studied at the foundation program, also reported about the challenges within transition period. The major challenge for those who studied at the foundation program, was the comparatively easy curriculum at the foundation course, which according to their perceptions, was a boring period for them, as they possessed enough background knowledge to feel themselves in the “comfort zone”. My finding suggest the possibility that foundation course might be partially integrated to the last year at NIS and the best NIS students would get a possibility to apply ‘directly’, skipping the foundation course. This my finding indicates that graduates of NIS also experience a set of challenges while entering the Nazarbayev University. This finding suggests that more effective cooperation between the NIS and NU should be established and is consistent with Breivic’s (2005) findings, where he claims that to be successful in preparing contemporary students for lifelong learning in the 21st century, there must be an “unprecedented cooperative effort” between tertiary education and secondary schools (p. 27).

The ninth major finding of the study is that all of the interview participants and majority of the survey respondents in general valued greatly their school experience in terms of its relation to their academic performance at the university. They perceived that NIS provided excellent preparation to the entrance to Nazarbayev University. This my finding indicates that the school experience of NIS graduates is closely related to their current academic performance at university of international standard and is consistent with another study (Hertzog, 2003), which indicated that those students who participated in the special programs for the gifted children, were very satisfied with their preparation to university and the skills that they have

developed within this special programs and appreciated this experience, reflecting that it increased their self-esteem and influence their current academic performance.

The tenth major finding, which is to my opinion, one of the most important, states that according to the NIS graduate's perceptions, the NIS need to develop in their students such important dispositions as the sense of patriotism, sense of duty, the sense of responsibility and the sense of constant self-improvement, because as they perceived, these qualities and dispositions are even more important than knowledge of subjects or other generic skills, for the benefit of the students themselves but also for the benefit of the state. This my finding is fully consistent with the recent speech of the Prime Minister of Kazakhstan K. Masimov, where he expressed his concern that a lack of highly-qualified and talented people able to work in the new innovative economies in the developed countries can cause the brain drain from some developing countries, including Kazakhstan (Massimov, 2014, in press). He emphasized that there is a risk that highly-qualified gifted and talented people will leave the country and reported that the government has to consider this important question.

Thus, the issue of the development of such important dispositions as a sense of patriotism and sense of civic duty has to be revised by the educators at all the levels and has implications for the whole development of the country's economy.

Chapter Five: Conclusion and Implications

This chapter summarized the study's findings and reflects on its implications. It consists of three sections. The first section is devoted to the findings of the study, the second describes the study's implications for the NIS administrators and policy-makers, the third suggests areas for the further research, followed by the researcher's final reflection of the study.

To fit the demands of fast economic development, Kazakhstan took significant steps, reforming its educational system. One of the major reforms in secondary education was the establishment of the Nazarbayev Intellectual Schools. The rationale behind this reform is the human capital theory and the argument that investment to the education of the gifted can boost the economy of the country (Yakavets, 2013). The implementation of this ambitious project is characterized by competitive selection of the gifted students, the rigorous curriculum, new systems of assessment and innovative teaching strategies. Since 2010, the graduates of NIS are successfully entering the higher educational institutions in Kazakhstan and abroad.

Reviewed literature sources indicated that there is a scarcity of empirical research on Kazakhstani education of the gifted, especially addressing the gifted school graduates' reflection of their school experience. Therefore, the decision was made to conduct this study to know how the NIS graduates were performing at the university, how they were feeling and how valued their school experience and related it to their academic performance at the university.

The collected data are to the great extent consistent with the empirical literature in the field, however some interesting facts were also revealed. The overall purpose of the research was to find out how the students perceived their NIS experience and value it for the current academic performance at the university of international standard. In order to achieve the purpose, I set three Research Questions to be answered. The gathered data allowed me to answer the proposed

questions. While analyzing the obtained data, I came to the conclusion, that NIS graduates valued greatly the quality of knowledge and skills that they got at school and highly rated their preparedness to academic rigors at the university. However, some of the comments indicated that there are some areas, that need the improvement, as, for instance, the more effective strategies in grouping students according to their level of English and improvement of English writing skills, as well as more effective preparation in terms of time management, ICT and critical thinking skills is needed.

The study also revealed that the NIS graduates, like majority of other students, faced a set of challenges within the transition period from school to university. While analyzing the obtained data, conclusion was made that the graduates of NIS, as people who were the part of this project and directly affected by the outcomes of this reform, provided many valuable insightful views and valuable suggestions, which might be used as implications for the further improvement of NIS project.

Implications for the Further Improvement of NIS.

The most important finding of this study is that the participants of the study expressed a great desire to share their views and concerns on the topic of the NIS graduates' preparedness to university and its relation to university academic performance. Moreover, they expressed a great wish to highlight what to their opinion were the main skills and dispositions, which each NIS graduate should possess to be a successful student and citizen of Kazakhstan.

The first implication is to improve the preparation of NIS students in such aspects as English language competency and development of writing skills in English language; critical thinking skills; development of ICT and time management skills.

The second implication is to organize a better cooperative work between NU and NIS in order to improve the students' preparedness to NU with a possibility to all of the NIS students to

skip the foundation course and apply directly to the Bachelor's program. This can be done, integrating the courses from foundation program to the 12th grade at NIS.

The third implication is to pay more attention at the school not only to the development of key skills, but also some important dispositions as the sense of patriotism, the sense of civic duty, which will help to develop responsible strong personalities able to contribute the development of the country.

The fourth implication is to pay more attention to the development of strong personality traits at the students of Nazarbayev Intellectual Schools, such as ability to face the academic challenges, high order decision-making skills and also strong motivation to further self-improvement and self-development.

The fifth implication is to improve the selection procedure of the foreign teachers, using more advertisement in educational resources abroad.

Policy Implications

The study offers implications for the Kazakhstani educators and policy analysts and hopefully will initiate discussions and debates amongst them. The findings of the study indicated that NIS were very effective, preparing their students for the study at the university of international standard- Nazarbayev University. This successful experience might be successful transmitted to the mainstream schools in Kazakhstan. Unfortunately, the mainstream schools do not provide this level of preparation to their students.

The other experience, that might be transmitted to the mainstream schools is the supportive learning environment, created at NIS. According to the research, this factor is very important for the successful performance of the students.

Suggestions for the Further Research

This study provided some responses to the proposed research questions but, more significantly, opened the prospective for further exploration and raised many other questions.

The research outcomes of this study cannot be certainly generalized to a larger population as the sampling approach did not provide the highly representative sample. Another research might explore the perceptions of the NIS graduates, who study in other Kazakhstani universities and abroad. The perceptions of the faculty on how the NIS graduates are performing at the university and in what ways they are different from other students of Nazarbayev University might also be explored.

In this study I concentrated mostly on the school background, an academic factor, influencing the performance of the students at the university. In the further research, the social, emotional and demographic factors, influencing the performance of the students, might be explored.

In this study I focused mainly on the students, who currently study at Nazarbayev University. It might be interesting for the researchers to conduct the longitudinal study or follow up study of the NIS graduates and their life career and success. I am personally interested in following up my participants after several years and explore how successful they are in their career.

In this study I collected the data only with the help of questionnaires and interviews. For the further research, it might be interesting to go to Nazarbayev Intellectual Schools and conduct the observations of the study process and compare it with the study process in mainstream schools.

The descriptive statistics, conducted with the help of SPSS indicated that some of the Nazarbayev Intellectual Schools provide better preparation for the entrance to the Nazarbayev

University. It might be interesting for the further research to explore the level of preparedness, provided by the different NIS in different regions of Kazakhstan.

And finally, the researcher in this study mainly focused on the factor, influencing the successful academic achievement. But there is a certain percentage of the gifted students, who underachieve at university. The further research might explore the factors, related to the gifted students' underachievement at postsecondary level.

Limitations of the Study

One of the other limitations of the study is the non-representativeness of the participants. Only those NIS graduates, who study at Nazarbayev University, participated in the study. The study would be of more value, if the NIS graduates, who study abroad, participated in the study.

One more limitation is the fact that in the study the analysis of the GPA of NIS graduates in comparison with the GPA of the other students was not conducted. It could be more useful if in addition to the participants' perceptions, the actual evidence of their performance was presented.

Another limitation to be taken into account is that I developed the theoretical background of the study and the data collection instruments in English, though the interviews were conducted in the Russian language for the participants' convenience and were translated into English, which to some extent might influence on how the participants perceived the questions.

The last limitation of the study is that it was limited by time. I was only able to spend two weeks, collecting the data and the data collection period coincided with the examination session for the NU students, who were the main participants of the study. The study would be of more value if I was able to conduct more interviews with more NIS graduates and could divide them into the focus groups according to the schools they graduated from.

The Researcher's Final Reflection of the Study

This study was my first experience in empirical research. I am still relatively new at learning to become a professional researcher and would like to expand my knowledge how to do the quality research. I got familiar with two approaches to the research design, and such important concepts as ethics of the researcher, sampling procedure, data analysis and others. I learnt how to use the SPSS software, code and analyze the data. It was interesting for me to deal with two types of data. I found it interesting to design the questionnaire and to conduct the interviews. It was both challenging and fascinating experience. I enjoyed the whole process of the research, as the selected topic was a personal and professional interest for me. I hope that this study will be the first step in my career as the researcher.

The main participants of the study are the graduates of Nazarbayev Intellectual Schools. They are young and extraordinary people with strong personality traits and high motivation. I was strongly impressed by their comments, their great desire to contribute to the study and a great concern to improve the study process at NIS with the help of their reflections. I really enjoyed interacting with them. Notwithstanding the limitations of the study and implications for the further research, I consider the collected data as highly valuable, since the participants of the study are the students themselves, who are considered to be the main stakeholders in the reform. I am happy that this small-scale study may be viewed as a little contribution to the development of empirical research at the Kazakhstani context and a first attempt to evaluate the NIS reform initiative.

Apart from some implications for further improvement of the general implementation of the NIS project, revealed during the data analysis, the great positive outcomes of the NIS project and its great value in preparing strong and motivated students with highly developed knowledge and skills should be considered.

References

- Abbott-Chapman, J., Hughes, P. W., & Wyld, C. (1992). *Monitoring student progress: A framework for improving student performance and reducing attrition in higher education*. National Clearing house for Youth Studies.
- Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion From High School Through College*. US Department of Education.
- Askham, P. (2008). Context and identity: exploring adult learners' experiences of higher education. *Journal of Further and Higher Education*, 32(1), 85-97.
- Autonomous Educational organization “Nazarbayev Intellectual Schools” 2020 Development Strategy” (2011). Retrived from nis.edu.kz/site/nis/repository/file/CP%202012-2020%20англ.pdf.
- Bekishev, K. (2013). Trends in development of the educational system in the Republic of Kazakhstan. *Russian Journal of General Chemistry*, 83(3), 594-603.
- Breivik, P. S. (2005). 21st century learning and information literacy. *Change: The Magazine of Higher Learning*, 37(2), 21-27.
- Bridgstock, R. (2009). The graduate attributes we've overlooked: Enhancing graduate employability through career management skills. *Higher Education Research & Development*, 28(1), 31-44.
- Clark, E. E., & Ramsay, W. (1990). Problems of retention in tertiary education. *Education Research and Perspectives*, 17(2), 47-59.
- Claxton, G. (2013). *What's the point of school?: Rediscovering the heart of education*. Oneworld Publications.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, S95-S120.

- Cohen, L., Manion, L., & Morrison, K. *Research Methods in Education. London–New York: Routledge Falmer, 2005. 446 s.* ISBN 0-415-19541-1.
- Gómez-Arízaga, M. P., & Conejeros-Solar, M. L. (2013). Am I That Talented? The experiences of gifted individuals from diverse educational backgrounds at the postsecondary level. *High Ability Studies, 24*(2), 135-151.
- Considine, G., & Zappalà, G. (2002). The influence of social and economic disadvantage in the academic performance of school students in Australia. *Journal of Sociology, 38*(2), 129-148.
- Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research.*
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches.* Pearson Education.
- Dede, C. (2010). Comparing frameworks for 21st century skills. *21st century skills: Rethinking how students learn, 51-76.*
- Graham, J. G. (1987). English language proficiency and the prediction of academic success. *TESOL quarterly, 21*(3), 505-521.
- Greene, J. C., & Caracelli, V. J. (1997). *Advances in mixed-method evaluation: The challenges and benefits of integrating diverse paradigms.* Jossey-Bass Publishers.
- Gorard, S., & Taylor, C. (2004). *Combining methods in educational and social research.* McGraw-Hill International.
- Gurevich, L. I. (2011). On the reform of higher education and science in Kazakhstan. *Russian Education & Society, 53*(9), 63-70
- Hammond, D. R., McBee, M. T., & Hebert, T. P. (2007). Exploring the motivational trajectories of gifted university students. *Roeper Review, 29*(3), 197-205.

- Harbison, F. H. (1973). *Human resources as the wealth of nations* (Vol. 3). New York: Oxford University Press.
- Hertzog, N. B. (2003). Impact of gifted programs from the students' perspectives. *Gifted Child Quarterly*, 47(2), 131-143.
- Haggis, T. (2006). Pedagogies for diversity: Retaining critical challenge amidst fears of 'dumbing down'. *Studies in Higher Education*, 31(5), 521-535.
- Hurtado, S., Carter, D. F., & Spuler, A. (1996). Latino student transition to college: Assessing difficulties and factors in successful college adjustment. *Research in higher education*, 37(2), 135-157.
- Johnston, K., Conneely, C., Murchan, D., & Tangney, B. (2014). Enacting key skills-based curricula in secondary education: lessons from a technology-mediated, group-based learning initiative. *Technology, Pedagogy and Education*, (ahead-of-print), 1-20.
- Junisbai, B. (2010). A tale of two Kazakhstans: Sources of political cleavage and conflict in the post-Soviet period. *Europe-Asia Studies*, 62(2), 235-269.
- Karnes, F. A., & Stephens, K. R. (2009). Gifted education and legal issues. In *International Handbook on Giftedness* (pp. 1327-1341). Springer Netherlands.
- Leese, M. (2010). Bridging the gap: Supporting student transitions into higher education. *Journal of further and Higher Education*, 34(2), 239-251.
- Longden, B. (2004). Interpreting student early departure from higher education through the lens of cultural capital. *Tertiary Education & Management*, 10(2), 121-138.
- Lillis, J. (2007). A Political Shake-Up In Kazakhstan Strengthens Presidential Authority. *Eurasia Insight*, 12.
- Lowe, H., & Cook, A. (2003). Mind the Gap: are students prepared for higher education?. *Journal of Further and Higher education*, 27(1), 53-76.

- Martha, K. (2009). *Factors affecting academic performance of undergraduate students at Uganda Christian University* (Doctoral dissertation, Dissertation Report. Retrieved from [http://news.mak.ac.ug/documents/Makfiles/theses/Kyoshaba% 20Martha. pdf](http://news.mak.ac.ug/documents/Makfiles/theses/Kyoshaba%20Martha.pdf)).
- Mendaglio, S. (2013). Gifted students' transition to university. *Gifted Education International*, 29(1), 3-12.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.
- Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41-51.
- Muratori, M., Colangelo, N., & Assouline, S. (2003). Early-entrance students: Impressions of their first semester of college. *Gifted Child Quarterly*, 47(3), 219-238.
- Murphy, R., & Macintosh, H. (1999). Moving ahead with key skills?. *Perspectives: Policy & Practice in Higher Education*, 3(3), 94-96.
- Nardi, P. M. (2002). *Doing Survey Research: A Guide to Quantitative Research Methods*. Allyn & Bacon.
- Nel, C., Troskie-de Bruin, C., & Bitzer, E. (2009). Students' transition from school to university: possibilities for a pre-university intervention. *South African journal of higher education*, 23(5), 974-991.
- Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: what can be done?. *Assessment & Evaluation in Higher Education*, 33(3), 301-314.
- Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. Bloomsbury Publishing.
- Parkinson, G., & Forrester, G. (2004). Mind the gap?: Students' expectations and

- perceptions of induction to distance learning in higher education. In *British Educational Research Association annual conference, University of Manchester*.
- Persson, R. S. (2009). Gifted education in Europe.
- Pole, C. J., & Lampard, R. (2002). *Practical social investigation: Qualitative and quantitative methods in social research*. Pearson Education.
- Pomfret, R. (2005). Kazakhstan's economy since independence: Does the oil boom offer a second chance for sustainable development?. *Europe-Asia Studies*, 57(6), 859-876.
- Roselló, C. G., Sánchez, L. P., Costa, J. L. C., & Tarrida, A. C. (2000). Educational Policy and Practice Regarding More Able Students in Spain: Some Research Results. *Gifted Education International*, 14(3), 264-276.
- Samdal, O., Nutbeam, D., Wold, B., & Kannas, L. (1998). Achieving health and educational goals through schools—a study of the importance of the school climate and the students' satisfaction with school. *Health education research*, 13(3), 383-397.
- Stetar, J., Kurakbayev, K. (2010). The goals for higher education in Kazakhstan. *International Higher Education*, (59). *The Boston College Center for International Higher Education*, 28-30. Retrieved from http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/ihe_pdf/ihe59.pdf
- Symonds, W. C., Schwartz, R. B., & Ferguson, R. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century. *Report issued by the Pathways to Prosperity Project, Harvard Graduate School of Education*.
- Tomlinson, S. (2008). Gifted, talented and high ability: selection for education in a one-dimensional world. *Oxford Review of Education*, 34(1), 59-74.
- Washer, P. (2007). Revisiting key skills: a practical framework for higher education. *Quality in Higher Education*, 13(1), 57-67.

Wagner, T. (2008). Rigor redefined. *Educational Leadership*, 66(2), 20-24.

Wilkinson, D., & Birmingham, P. (2003). *Using research instruments: A guide for researchers*. Psychology Press.

Yakavets, N. (2013). Reforming society through education for gifted children: the case of Kazakhstan. *Research Papers in Education*, (ahead-of-print), 1-21

Appendixes

Appendix A. Questionnaire Items

Background questions

1. What school did you graduate from?
2. What school at NU do you study?
3. Indicate your year of study\

Questions which required answers from “strongly agree” to “strongly disagree”.

4. NIS helped me to develop the critical thinking skills, which are essential for my study at the university.
5. NIS helped me to develop the problem-solving skills, which are essential for my study at the university.
6. NIS helped me to develop the analytic skills, which are essential for my study at the university.
7. My NIS experience helped me to develop the inner understanding of subjects which are essential for my study at University.
8. NIS helped me to develop the skills of communication and collaboration which are essential for my study at University.
9. NIS provided me with enough English language competency to perform well at university.
10. NIS teachers allowed me to pursue my favorite subjects in depth and that has helped me in my studies at university.
11. At NIS, I learnt how to access information efficiently in terms of time management and effective sources (and resources) and this now helps me in my studies.

12. At NIS, I learnt how to evaluate information critically and competently and this now helps me in my studies.
13. At NIS, I got all necessary ICT skills, and this now helps me in my studies.
14. After graduation from NIS, I felt confident about tackling the unfamiliar problems that I might encounter at University.
15. After graduating from NIS, I had a clear idea what university and specialty to choose.
16. NIS helped me to develop the ability to plan my own work at university.
17. At NIS, I learnt to be flexible and adaptable for the challenges that I now face in my university life.
18. At NIS, I learnt to manage my goals and time at university.
19. At NIS, I developed my skills of research and independent work.
20. At NIS, I learnt to be responsible to others.
21. NIS helped me to develop my leadership qualities.
22. How do you rate quality of knowledge and skills that you got at NIS? Rate from 1-5.
23. Overall, I am satisfied with the preparedness that NIS gave me to cope at university. In other words, I think my NIS experience was very helpful in terms of preparation for university.

Appendix B. Interview questions

1. How would you describe the learning environment at your NIS (Nazarbayev Intellectual School)? What about learning environment at NU (challenging, very similar to NIS, etc.)

Describe/Explain: _____

2. What kind of knowledge and skills did you get at NIS? (academic skills, ICT skills, skills important for future life and career)

Describe/Explain: _____

3. How useful are the knowledge and skills that you got at school for you now that you are at university? Did they help you during your first days at university?

Describe/Explain: _____

4. What do you think was the most important knowledge/skill/disposition/ that you got at NIS?

Describe/Explain: _____

5. Can you describe your first months or first term at university?

Describe/Explain: _____

6. How do you characterize your achievement at university? Do you connect it with your school preparation?

Describe/Explain: _____

7. Do you achieve better or worse than other students who are not graduates of NIS? If better/worse, explain in what ways.

Describe/Explain: _____

Appendix C: Codes and Themes

	THEMES	CODES
1.	Learning and Thinking skills	<p>CODE 1: Analytic skills</p> <p>CODE2: Research skills</p> <p>CODE 3: Basic subjects (inner understanding and favorite subjects)</p> <p>CODE 4: Critical thinking skills</p> <p>CODE 5: Problem-solving skills</p> <p>CODE 6: English language preparation</p>
2.	ICT skills	CODE 7: ICT skills developed at NIS
3.	Life and career skills	<p>CODE 8: Leadership skills</p> <p>CODE 9: Ability to choose the specialty</p> <p>CODE 10: Presentational skills</p> <p>CODE 11: Sense of responsibility, ability to be flexible, etc.</p>
4.	Challenges at NIS	<p>CODE 12: Heavy Workload</p> <p>CODE13: Constant changes in assessment and learning</p>

		<p>strategies</p> <p>CODE 14: Rigorous curriculum</p>
5.	Skills which need further improvement	<p>CODE 15: critical thinking</p> <p>CODE 16: ICT skills</p> <p>CODE 17: Time –management skills</p>
6.	Preparedness to university	<p>CODE 18: Preparation within school</p> <p>CODE 19 : Exams (IELTS, SAT, etc)</p>
7.	Transition period	<p>CODE 20: Psychological challenges</p> <p>CODE 21: Challenges of those who applied directly</p> <p>CODE 22: Foundation program</p>
8.	Graduates’ perceptions on the most important skills that need to be developed at school	<p>CODE 23: Motivation</p> <p>CODE 24: Great wish to improve</p> <p>CODE 25: Ability to face the challenges</p> <p>CODE 26: Sense of patriotism, sense of patriotism, etc.</p>
9.	Benefits of learning at NIS	<p>CODE 27: Satisfaction with knowledge and skills</p> <p>CODE 28: Overall satisfaction with school</p>

		CODE 29 : Strong teachers and peers
--	--	-------------------------------------

Appendix D. Informed consent form

INFORMED CONSENT FORM

Title of the study

Students' perceptions on how their NIS experience relates their current academic performance at Nazarbayev University

DESCRIPTION: You are invited to participate in a research study on NIS graduates' perceptions on how their school experience relates their academic performance at university. You will be asked to answer survey questionnaire and participate in interview. If it is possible the interviews will be audiotaped with your permission. The tapes will be used only for data analysis purposes. No one will use your name in reports about this project, so your privacy will be protected. The responses to the questionnaire and interviews will be used only for research purposes. The report about this project will summarize the findings across the sample and will not associate the responses with the individuals.

TIME INVOLVEMENT: Your participation will take approximately not more than 1 hour for interviews and not more than 10-15 minutes for questionnaire.

RISKS AND BENEFITS: There are no physical or psychological risks by being in this study. The benefits which may reasonably be expected to result from this study are that it is an experience to participate in empirical educational research, which possibly will be interesting for you as an undergraduate student. Your decision whether or not to participate in this study will not affect you negatively in any ways and there are no negative implications.

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

CONTACT INFORMATION:

Questions: If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Principal Investigator: Azamat Ashamayev, Nazarbayev University Graduate School of Education. Tel.: [+7 7172 709350](tel:+77172709350)

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

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

Signature: _____ Date: _____

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

According to the law of the Republic of Kazakhstan an individual under the age of 18 is considered a child. Any participant falling into that category should be given the Parental Consent Form and have it signed by at least one of his/her parent(s) or guardian(s).

