AN EXPLORATORY CASE STUDY OF 21ST CENTURY SKILLS DEVELOPMENT AMONG EDUCATORS AND STUDENTS ENGAGED IN AN ONLINE COLLABORATIVE EDUCATIONAL AND CULTURAL EXCHANGE PROGRAM

A Dissertation
by
ARSHAD BASHIR

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Abstract

AN EXPLORATORY CASE STUDY OF 21ST CENTURY SKILLS DEVELOPMENT AMONG EDUCATORS AND STUDENTS ENGAGED IN AN ONLINE COLLABORATIVE EDUCATIONAL AND CULTURAL EXCHANGE PROGRAM

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The purpose of this qualitative study was to explore 21st century skills among educators and students engaged in an online collaborative educational and cultural exchange program between middle and high school students and teachers in Heavy Industries Taxila Education City (HITEC), Pakistan and Watauga county schools in western North Carolina. The program was initiated by the Appalachian State University Public School Partnership and featured online collaboration between students and teachers in Pakistan and the United States. Science, social studies, and language arts were identified as core subjects. Educators identified common curriculum contents to develop semester long projects in which students were engaged in online collaborative learning experiences through cultural activities such as digital photo sharing and storytelling to improve their cultural competency and global awareness.

A survey of all participants engaged in the program was conducted to determine the baseline knowledge of the participants. Additionally, interviews of ten students, four

teachers, and two administrators were conducted to understand how such programs foster 21st century skills among students and teachers. Observation of participants during their engagement in collaborative activities and focus group conversations was organized to explore the learning experience of participants engaged in the program.

The research study found that the engagement of students and teachers in the US-Pakistan Educational and Cultural Exchange Program resulted in the development of key 21st century skills among participants of the program. These skills include global awareness, cross-cultural competency, creativity, collaboration, communication, and social networking. The research findings are helpful for school administrators to make progress in international collaboration and implementation of 21st century skills. The outcomes of this research provide an opportunity to improve relationships between the two countries and to open new avenues for future joint ventures in addition to improving perceptions about each other.

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I would like to offer my sincere appreciation to all those who contributed in the completion of my doctoral journey. Many thanks to my committee chair, Dr. Vachel Miller, for his consistent support and guidance throughout my doctoral program. He is the one who refined my thoughts into concrete ideas. His professional knowledge of international education and cultural exchange has been a catalyst for identifying and developing my research project. Without his genuine guidance and persistent supervision this dissertation would not have been completed. My committee members, Dr. Robert Sanders and Dr. John Tashner, played a pivotal role in developing the conceptual framework of my study. I am grateful for their invaluable input and professional expertise. Their intellectual and scholarly guidance kept me on track to finish my research work in a timely manner.

I am indeed grateful to Dr. Jim Killacky for his immense support and assistance throughout my doctoral journey. His recommendations helped me to present my doctoral research project at three international and several regional conferences in the last four years. My acknowledgments would remain incomplete without mentioning my cohort members. I would not have reached this far without their professional and personal assistance at each and every stage of my doctoral journey.

I also offer my sincere appreciation to Dr. Linda McCalister at the Public School Partnership for helping me to design my research project at partner schools in North Carolina. Additionally, Heavy Industries Taxila Education City (HITEC), a partner school in Pakistan, facilitated my research. This research project would never have been accomplished

without the active engagement of the students, teachers, and principals at Watauga High School, Hardin Park School, Green Valley School, HITEC Cambridge School, HITEC Girls School, and HITEC Boys School. I would like to extend my deepest appreciation to all participants for their valuable time, commitment, and engagement in my research project.

Additionally, I am grateful to the Fulbright Program and the United States Educational Foundation in Pakistan for their administrative and financial support of my doctoral studies at Appalachian State University. I am also indebted to the people of the United States for their valuable contribution, which makes the Fulbright programs possible for the people of other nations.

Most importantly, I appreciate the lifelong efforts of my family including my dedicated father, inspirational mother, zealous brother, and passionate sisters. I can't forget the invaluable and inspirational contribution of my wife who stays with me to provide a strong support for my doctoral journey. They all provided me with a strong foundation to grow in my life and achieve my professional and personal goals. I am so blessed to have them as integral parts of my life.

Dedication

This work is dedicated to young children in Pakistan and the United States who participated in the US-Pakistan Educational and Cultural Exchange Program with a hope that they will work for sustainable peace between Pakistan and the United States.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

How should we teach our children to live together and appreciate other cultures in this globalized world, and in what ways should we prepare them to become global citizens? In order to achieve the important goal of becoming a global citizen, it is important to develop cross-cultural competency, creativity, collaboration, and communication that support the educational and social lives of individuals. Technology plays a pivotal role in becoming a global citizen as it provides an interactive medium to collaborate, communicate, and learn from each other.

This study is an effort to investigate the development of 21st century skills through an educational and cultural exchange program at the middle and high school levels. This study will focus on an online collaborative educational and cultural exchange program between middle and high schools in the Heavy Industries Taxila Education City (HITEC), Taxila, Pakistan and schools in western North Carolina (NC), US with the major objective of providing an online forum to students and teachers in two different countries in order to develop 21st century skills.

In the introductory chapter, the conceptual framework of 21st century skills in the context of an educational and cultural exchange program is illustrated. In addition, the background of the study, along with a comprehensive account of 21st century skills and educational exchange programs, is presented. The chapter also includes a description of the United States (US)-Pakistan Educational and Cultural Exchange Program. The research

statement and research questions are documented along with the significance and implications of the study.

Overview of the Study

The study was intended to contribute toward better understanding of 21st century skills by conducting qualitative research on students engaged in an online international exchange program. The study provided a comparative account of participants' worldviews and perceptions about 21st century skills while engaged in such programs in geographically and culturally different places. How do students engaged in such programs in the US envision the skills that they develop similarly or differently from students who are engaged in similar programs in Pakistan?

A long list of skills is mentioned in all 21st century skills models. Keeping in view the age group of the participants, selected skills were considered for this study. These skills are appropriate and relevant to the participants of this study. Out of many 21st century skills, I considered three major skills as the focus of this study: (a) life and career skills, which include global awareness and cultural competency; (b) learning skills, which include creativity and collaboration, and (c) technology skills, which include communication and integration.

Participants were selected from collaborative groups engaged in the US-Pakistan Educational and Cultural Exchange Program between schools in HITEC, Taxila, Pakistan and in western NC, US. In Pakistan, there were three participating schools: HITEC Cambridge School, HITEC Girls School, and HITEC Boys School. Similarly, in the US, there were three participating schools: Watauga High School, Hardin Park School, and Green Valley School.

Background of the Study

In the summer of 2007, I came to Appalachian State University (ASU) to participate in the Fulbright Biology Teacher Exchange Program. The exchange program involved 15 Pakistani biology teachers and ASU faculty from diverse fields and made use of the university's partnership with the NC school districts. The training program contributed to the goal of developing science and educational technology skills while strengthening the relationship between Pakistani and American educators. The program was a great opportunity for capacity building of educators in Pakistan and the US and resulted in the development of positive attitudes for the use of innovative methodologies, integration of technology in the classroom, and improvement of English language usage. In addition to these professional accomplishments, the program helped the educators to broaden their worldviews and improve their cross-cultural competency.

This trip was my first visit to the US and my first opportunity to engage in any educational or cultural exchange programs. This program helped me to improve my professional and pedagogical skills. As a result of my engagement in the exchange program, I developed several new skills, which included improved global awareness, communication, collaboration, innovation, creativity, integration, and cross-cultural competency.

On my return to Pakistan, I practiced these newly learned skills and successfully applied the learning experience at my workplace. I realized that the skills I had developed in the program are essential for success in the 21st century. I was amazed by the application of technology in education that I had never before experienced. I used technology such as email, social networking, electronic documents, and spreadsheets for my personal connections and professional work. After the exchange program, I engaged my students and staff in using

computer and communicative technology to improve the efficiency and quality of their work. The students and staff found the experience interesting, innovative, and useful in their learning process.

After experiencing and understanding a different learning environment in the US, I noticed that my ability to envision issues and problems greatly improved. I started appreciating the value of multicultural diversity and multi-perspective thinking. The program provided me with an opportunity to learn from working collaboratively with individuals representing diverse cultures and improved my cultural competency. I realized that cultural competency is necessary in order to become competitive in today's world. This attitudinal change broadened my way of thinking and enabled me to see the world with a different frame of mind. My worldview had greatly changed to allow me to better understand the interconnectedness of everything in this world.

In 2009, I received another Fulbright Scholarship to return to the US in order to participate in the doctoral program in Educational Leadership at ASU. The doctoral program at ASU is based on the principles of diversity, effective communication, cooperation, and collaboration. The theoretical foundation of the program is supported by practical learning experiences. The doctoral program provided a strong theoretical basis; project-based courses focused on globalization and leadership while the organizational systems available at ASU helped to establish a practical framework for action. The unique structure of the cohort model provided me with another opportunity to understand and practice the important skills essential for success in the 21st century.

I believe success in the 21st century depends on better collaboration, effective communication, and broader understanding of this globalized world. Therefore, it is

important to develop these skills among students and teachers in order to prepare them for future challenges. Darling-Hammond (2007) recommended that students in the 21st century must use both content and digital tools to design, evaluate, and analyze information to solve real life problems.

US-Pakistan Educational and Cultural Exchange Program. The idea of an educational and cultural exchange program between Pakistan and the US was a unique adventure because of the fragile and sensitive relationship between the two countries. People living in the two countries are unable to develop deeper relationships due to cultural and geographical barriers. Historically, the relationship between the two countries has been seen as transactional deals to serve the vested interest of each other; a sincere cultural friendship has been missing from the relationship. In both Pakistan and the US, many people are disconnected from government policies. Since the government policies in both countries do not truly represent the perceptions of the people, most of the people in Pakistan and the US do not show warmth in their relationships and may carry misconceptions and stereotypes about each other. Under such circumstances, initiating an educational and cultural exchange is essential but also very challenging.

Most of the participants of the exchange program in Pakistan and the US were born after the September 11 incident, and they were raised in a different political and educational environment. After the September 11 incident, Pakistan became a front ally of the US in the war against terrorism. The relationship between the two countries was heavily influenced by military and intelligence cooperation due to an ongoing war in the neighborhood of Pakistan. The exchange program establishes a context where participants in both countries may think beyond a military relationship and progress toward an educational and cultural relationship.

This exchange program provides an opportunity for young people in both countries to contextualize their opinions based on personal, academic, and cultural relationships.

Most of the models of educational exchange are found at higher education institutions in the form of study abroad programs and international student exchange programs at the undergraduate and graduate levels. Because there are few examples of educational exchange programs at the middle and high school levels, there is a need to initiate a collaborative exchange program at these levels. During my doctoral coursework at ASU, I developed the idea of connecting middle and high school students in Pakistan and the US.

Brief description of the emergence of the exchange program. In September 2010, I joined the ASU Public School Partnership as a graduate research assistant. The goal of the Public School Partnership is the development of a strong collaboration among the members of the partnership, which includes more than 100 middle and high schools in eight counties in western NC. I found an opportunity to extend this program to a school in Pakistan. I later suggested initiating an online collaborative program between the schools in western NC and schools in Pakistan.

During the first year of my doctoral studies, I initiated the idea of an educational and cultural collaboration between schools in Taxila, Pakistan and Boone, NC, but these were not successful. Due to a trust deficit on both sides, most of my efforts were limited to class visits and occasional lectures. At the same time, I was in the process of improving cultural competency and global awareness, and I was experiencing the breaking of my own stereotypes and learning to appreciate the American culture. Once I had improved my cultural skills and developed a better idea of this new cultural and academic environment, my second year was marked with success.

The US-Pakistan Educational and Cultural Exchange Program is an online exchange program, but the conceptual idea is the same as found in most of the study abroad exchange programs. Participants have the opportunity to exchange ideas, subject-based contents, and cultural artifacts using online technology tools. The online technology tools enable participants to exchange ideas and work together electronically. Therefore, this online exchange program offers a unique educational and cultural interaction for students at the middle and high school levels.

I worked at HITEC as science teacher before coming to ASU for my higher education. After an initial period of deliberation, the Public School Partnership and HITEC both decided to initiate the US-Pakistan Educational and Cultural Exchange Program with the goal of providing an online forum for students and teachers in order to engage them in an educational and cultural collaboration. Initially, students in middle and high school were selected for this program. Three groups of students in the core subjects of science, social studies (geography, history), and language arts (English) were invited to collaborate with each other through an online forum called NING (a software program used for collaboration among participants of the project). The students and teachers created their own profiles, wrote blogs, uploaded pictures and videos, and collaborated with partner teachers and students in the other country. The exchange program was aimed at not only enhancing cultural ties but also developing and promoting 21st century skills for the participants of the program in both countries. In addition to their participation in collaborative projects, participants were engaged in online collaborative activities that encouraged cultural exchange by using communicative technology in the form of digital photos and video sharing.

Doctoral internship at HITEC. In the summer of 2011, I had the opportunity to spend six weeks at HITEC as an intern. The internship was comprised of exploring three components: the exchange program, the teachers' development program, and the organizational structure of HITEC. It was the first time for me to meet the participants in person since the beginning of this exchange program. I used this time to organize and strengthen the program by signing a formal partnership agreement between the ASU-Public School Partnership and HITEC. The most important aspect of the internship was to reinforce the conceptual framework of the educational exchange program between students and teachers at HITEC. This internship also provided me with an opportunity to address issues related to the program that in turn improved the functioning of the program. Since the program was a new experience for the students and teachers of HITEC, they shared diverse feelings including both optimism and challenge. The participants were enthusiastic and showed openness for the program. On the other hand, they found it challenging to interact with students who had such different cultural, religious, and social values.

During the teacher development program, I conducted workshops at HITEC on 21st century skills and the integration of technology in the classroom, which provided a logical framework for our exchange program. My engagement in the teacher development program was an opportunity to apply my theoretical learning experiences from the doctoral program in a real workplace situation. I realized that the differences in workplace environments in Pakistan and the US had a great impact on my understanding, application of new ideas, and willingness to undertake innovative experiments. I appreciate that the teachers at HITEC showed commitment to the program by listening to the concepts that I had learned during the previous two years of my studies. At the same time, they wanted to customize these ideas

according to their context and social-cultural values. I believe that most of participants agreed with the ideas but needed time and customization of 21st century skills before implementing these skills at their respective schools. The Director of Academics at HITEC agreed to work on the adoption of 21st century skills after deliberation with key stakeholders of HITEC including the principals and coordinators of all schools.

Engaging participants in this collaborative program is a new experience for both institutions in Pakistan and the US as they are learning about different cultures and developing new skills. Participants are engaged in the exchange of personal information about each other in addition to exchanging information about rituals, folk tales, festivals, sports, language, etc. In addition to the personal exchange of information, the participants are formulating joint projects in the core subjects of science, social studies, and language arts.

Activities of participants in the program. In the US-Pakistan Educational and Cultural Exchange Program, participants in both countries were engaged in multiple learning activities. The participants used the online forum NING to present their work. Initially, they created their profiles and customized web pages. Later, they joined one of the three groups in the subject areas of science, social studies, and language arts. Teachers in both countries, through mutual agreement, designed curriculum-based projects, which ran for the whole semester. The participants wrote blogs, shared videos and images, and participated in group discussion to complete collaborative assignments.

21st Century Skills Context

The fact that educators have recently indentified “21st century skills” as vital for success does not necessarily mean that these skills emerged in the 21st century. Most of these skills such as creativity and collaboration have existed for a long time but the

conceptualization and the implementation of these skills have changed during the course of time. Creativity, for instance, has been identified as a key feature of several cultures and civilizations, reflected prominently in architecture and art. In today's world, in addition to architecture and art, creativity is associated with technological skills, where one can use digital tools to demonstrate creativity. Secondly, people in different cultures conceive the idea of 21st century skills differently. Some skills like advanced technological skills that are important in the western world might not be equally valuable in the other parts of the world where people use less technology; instead, in those cultural contexts people focus more on social and cultural skills.

The term 21st century skills refers to certain core competencies that schools need to teach in order to prepare students to become global citizens and succeed in the 21st century. Berry (2011) defined 21st century skills in an academic and cultural context. He believed that 21st century skills enable students to learn subject matter by creating, analyzing and evaluating the relevant information from a wide range of sources along with developing a better understanding of diverse cultures. Zhao (2007) mentioned 21st century skills in the context of globalization, "since citizens must be able to competently negotiate cultural differences, manage multiple identities, comfortably interact with people from different cultures, and confidently move across cultures as well as the virtual and physical worlds" (p. 16). In order to develop better understanding of this globalized world, individuals must gain in-depth cultural knowledge and better understanding of interconnectedness, which result in developing mutual respect across cultures and nations, and improve the ability of individuals to see this world through multiple lenses.

The term 21st century skills is commonly refers to a set of skills students and educators need to successfully navigate a complex life in the 21st century. These skills are not only important but also essential for sustainable living and learning in the 21st century. The world has dramatically changed in the last two decades as the economy that was once driven by the industrial revolution in now driven by knowledge, information, and innovation. This major shift also brings the need for different skills for students to contribute productively in a rapidly changing world. Recent studies have indicated that current employers are looking for candidates with more than "book smarts." Employers want traits such as creativity, adaptability, resourcefulness, responsibility, and teamwork. These skills are important for both the market and the person (Casner & Barrington, 2006). The technological advancements in the last 20 years have converted this world into a global village with great interconnectedness.

The 21st century skills are critically important for success in this era. Trilling and Fadel (2009) suggested effective communication and fruitful collaboration as pre-requisites for success in the 21st century. Additionally, critical thinking and creativity is equally important for learners. Wegerif and Dawes (2004) suggested that creativity and innovation are the skills in highest demand in the global market. Lastly, the importance of using technological tools has been addressed by technology researchers like Lamb and Callison (2005) who emphasized the significance of e-learning. Other researchers such as Greenhow, Robelia, and Hughes (2009) mention advanced technologies like web 2.0 and social networking.

Globalization is a contextual element of this study because of its impact on the way students learn in the 21st century. Globalization has influenced several aspects of education

including the development of 21st century skills. Due to globalization in education, it is important to understand issues in a global context. My research focuses on the development of global skills such as global awareness, cross-cultural competency, collaboration, and technology skills. In the next section, the context of globalization is discussed in relation to the educational and cultural exchange program and the development of 21st century skills.

Globalization Context

Giddens (1990) defined globalization as "the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa" (p.64). Similarly, Holtman (2005) described globalization as "an intensified movement of goods, money, technology, information, people, ideas, and cultural practice across political and cultural boundaries" (p.14). In an era of globalization and constant change, an extended set of skills and competencies are essential for effective learning.

Steger (2009) explained that globalization has several dimensions such as political, cultural, environmental, economical, religious, and ideological that have an impact on all aspects of life. Globalization has changed how students learn, construct knowledge, and present information using a variety of digital tools. The rise of the Internet and communication technologies (e.g., mobile phones and digital social networking) brings education to a level where physical presence in classroom is no longer necessary. Students can access the required data from anywhere in the world. Due to the great advancement in technology and interconnectedness of this world, a new global culture has emerged in which the citizens of particular countries are transforming into global citizens with a wide range of

skills and expertise to apply in a competitive and technology-based society, where everyone needs to have required skills to survive in the 21st century.

Economic globalization and rapid technological changes result in the transformation of organizational structures. Remtulla (2007) identified changes in the workplace as the result of a paradigm shift to a knowledge-based economy. Due to increased choices in the marketplace people buy more creative products, which enhance the economic value of creativity. Newly developed technological skills are essential for effective communication and important for meaningful participation in the global society. Lundvall and Foray (1996) considered the technological revolution and the emergence of a knowledge-based economy as interrelated processes. The technology provides a strong foundation for economic activity across the globe and individuals must be equipped with technological skills in order to gain maximum economic benefits in this globalized world.

Partner Schools

In this section a description of the partner schools is provided. The geographical and historical context of each partner school is presented along with the demographic profiles of the students. The involvement of partner schools in international ventures is also described in this section.

Partner school in Pakistan (HITEC). As a prestigious and unique organization, HITEC offers education from the pre-school to the university levels. It is composed of seven schools starting with a day care center and going through graduate level programs. HITEC's spacious campus and custom built schools, with a wide range of facilities on its 101 acre site, is a revival of the ancient Julian University and is located in the foothills of Margalla near Taxila. It is surrounded by the ancient remains of the Ghandhara civilization and also houses

a museum that attracts tourists from all over the globe. The HITEC education system offers two streams. First, the Matric System is affiliated with the Federal Board of Intermediate and Secondary Education in Islamabad. Second, the International Cambridge Examination, where students work toward O and A levels. More than 5,000 students receive their education in the institutions of HITEC. Most of these students are day scholars. At the same time, the boarding house at HITEC accommodates more than 500 students from all over the country.

Partner schools in western North Carolina, US.

Watauga High School. Watauga High School is located in the town of Boone, NC. According to the Watauga High School website:

> The school of about 1,500 students, Watauga High has taken a giant leap into the global information age with an innovative program involving laptop computers. Every student and teacher received a laptop computer for use at both school and home. Watauga High joins a small but growing list of forward-thinking schools in the state and nation by making this commitment to true 21st Century education, a learner-centered environment where flexibility, connectivity, collaboration, and innovation are key skills. Watauga High not only boasts a new, modern campus; it now actively promotes an innovative learning environment in which students and teachers have around-the-clock access to the computer resources of the modern global classroom through its new laptop program. The school has been involved in hosting teachers from other countries who have participated in various programs administered by ASU, including the Fulbright scholar from South Africa, biology teachers from Pakistan, and Teaching Excellence and Achievement Program. (Watauga High School, 2013)

Hardin Park School. Hardin Park School is also located in the town of Boone, NC. According to Hardin Park School website:

> Hardin Park Elementary School has 800 students in pre-kindergarten through eighth grade. The students come from the neighborhoods in and around the town of Boone. Hardin Park supports the mission of Watauga County Schools, which is to educate for productive citizenship and life-long learning. The school utilizes resources and partners with Appalachian, Caldwell Community College, the Watauga County Arts Council, Watauga County Parks and Recreation, and several local cultural and business organizations to initiate a holistic program for students. Hardin Park faculty and administration have a tradition of high expectations for all their students and are supported in this endeavor by the families and students. Hardin Park is one of the high performing schools in western NC. The school has been involved in hosting teachers from other countries who have participated in various programs sponsored by the Office of International Education and Development at ASU, including the Fulbright scholar from Jordan and biology teachers from Pakistan. (Hardin Park School, 2013)

Green Valley School. Green Valley School is also located in the neighborhood of the town of Boone, NC. According to Green Valley School website:

> The mission of Green Valley School is to develop 21st century learners who as readers, writers, and solvers of real-life problems can adapt and flourish in a rapidly advancing technological world. Within a caring, multicultural environment, the school is committed to developing young people with positive character traits, healthy habits, and a strong sense of ethics. The vision of Green Valley School is to develop

> creative, intellectually capable young people whose specific skills are enhanced so that they may expand their learning potential. Our students will contribute wisdom, compassion, and leadership to a global society. In our educational practice the focus is rigor, authenticity, and commitment. Student self-esteem will be fostered through positive relationships in a safe, orderly, and healthy learning environment. The school will emphasize collaboration and 21st century learning to promote the value of community and the joy of life-long learning. (Green Valley School, 2013)

Research Statement

In this qualitative study, I interviewed ten students, four teachers, and two administrators engaged in an online educational and cultural exchange program in order to better understand how such programs foster 21st century skills among students and teachers in HITEC, Pakistan and Boone, NC. Focus group conversations and participant observations were conducted to understand similarities and differences in how the participants envision the development of 21st century skills.

Research Questions

Three research questions were designed to explore the attainment of 21st century skills among students and teachers engaged in an educational and cultural exchange program. The first two research questions were designed for students and teachers in order to explore the development and attainment of 21st century skills; whereas, the third question was directed at school administrators in order to explore their vision and support for implementing the 21st century skills at their respective schools. The questions guiding this study were:

1. In what ways do online educational and cultural exchange programs develop and foster 21st century skills among students of partner schools engaged in such programs?
2. How do US participants envision the skills that they are developing in the online educational and cultural exchange program similarly or differently from Pakistani participants?
3. How do administrators in partner schools understand and value online educational and cultural exchange programs for the implementation of 21st century skills?

Brief Description of Data Collection

For data collection, there were two primary sites, one at HITEC, Pakistan and another in Boone, NC. There were six groups (three each) in both countries. There were approximately 30-35 student participants in each subject group. I invited 100 students to complete the baseline knowledge questionnaire in order to learn about their understanding of 21st century skills and exchange programs. For the interviews, partner teachers randomly selected five students from HITEC and five students from the schools in Watauga County. Moreover, I interviewed two Pakistani and two US teachers engaged in this program. Additionally, one Pakistani and one US principal were interviewed. I conducted multiple interviews with each interviewee. (Detail of data collection is presented in table 1 and 2 in chapter 3.)

Significance and Implications

The current study has great potential for students, teachers, administrators, and institutions engaged in educational exchange programs and in implementing 21st century

skills. The intent of this qualitative study is to understand how online educational and cultural exchange programs foster 21st century skills among students and teachers.

Ideas regarding 21st century skills have received considerable attention in the last decade. While several frameworks have appeared, there is still a huge gap between the theoretical model of 21st century skills and its implementation at different educational levels. Educators are very articulate about the concept of 21st century skills, but when it comes to implementation, there are only a few successful stories with little formal research on the issue. This study provides insight into an emerging model of international educational and cultural exchange, which can be used as a tool to implement some of the major 21st century skills. While exchange programs are common at the postsecondary level, there are few online programs at the middle and high school levels. It is difficult to imagine a middle school student travelling independently on a study abroad program due to the student's young age and other limitations, but online collaborative projects make it possible for middle school students to still be a part of an exchange program. Though such programs are not physical exchange programs, they still have great potential to become a model for involving younger students. There is a need to assess the attainment of 21st century skills during students' engagement in an online educational and cultural exchange program.

My idea of investigating 21st century skills in the context of an international exchange programs is to bridge these two diverse elements of the educational field. The study examines some of the needed 21st century skills such as creativity, innovation, communication, collaboration, technology, global awareness, and cross-cultural competency. The majority of these skills have an international focus, and international exchange programs can be helpful in strengthening 21st century skill attainment by students and teachers.

Information, communication and technological (ICT) skills, for instance, open the possibility of communication and collaboration at a global scale.

Similarly, global awareness and cross-cultural skills foster comprehension of integrative global worldview. Due to the globalization of the last few decades, skill attainment requires both a global outreach and a global worldview. Cross-cultural programs are critically important for the attainment of 21st century skills because the participants engaged in such collaborative ventures are expected to master these skills. Such programs offer opportunities for students and teachers to develop these skills due to the design of the program. For instance, the US-Pakistan Educational and Cultural Exchange Program is based on an online collaboration in which participants are expected to foster technology skills by working together in an online forum. Similarly, by connecting with students of different cultures, languages, religions, and social values, students may improve their cultural competency and social interaction skills. During the exchange of information between geographically and culturally different regions, they may improve their global awareness. Students and teachers who participate in such programs learn the arts of collaboration and communication. In short, 21st century skills are natural outcomes of the international exchange programs, and researching the link between these skills and programs is important.

Kay (2010) showed concerns about the lack of incorporation of 21st century skills in national curriculum and an absence of any effective assessment program of evaluation of 21st century skills attainment. There is a need for this study to fill the gap between the theoretical models of 21st century skills and their practical applications. There are several states in the US and hundreds of schools across the globe trying to implement these models by using different pedagogies. Educational exchange programs have been initiated in order to

help students acquire collaborative, communicative, creative, and critical thinking skills. This study will explore the students' perspectives about the role of such exchange programs in fostering these innovative skills. The study will also assist the participants in better understanding and implementing 21st century skills. The study was composed of a baseline knowledge questionnaire and a qualitative analysis of multiple groups engaged in collaborative exchange programs in order to provide a complex comparative analysis of participants from different countries.

This research is helpful for school administrators in order to advance international collaborative programs and the implementation of 21st century skills. Institutions engaged in such collaborative exchanges can benefit from this research because it can help to analyze the progress and dynamics of educational exchange programs and their impact on the attainment of 21st century skills. The outcomes of this research provide an opportunity to improve the relationship between these two countries, open new avenues for future joint ventures, and improve perceptions about each other.

Definition of Key Terms

Collaboration. "Collaboration is ability to demonstrate ability to work effectively and respectfully with diverse teams, exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal and assume shared responsibility for collaborative work, and value the individual contributions made by each team member" (P21 century framework, 2006).

Communication. "Communication is the ability to articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts; listen effectively to decipher meaning including knowledge, values, attitudes, and

intentions; use communication for a range of purposes (e.g., to inform, instruct, motivate, and persuade); utilize multiple media and technologies; and know how to judge their effectiveness a priori as well as assess their impact, communicate effectively in diverse environments" (P21 century framework, 2006).

Core subjects. A set of subjects selected for this study includes science, social studies and language arts.

Creativity. "Creativity is the ability to use a wide range of idea creation techniques (such as brainstorming), create new and worthwhile ideas (both incremental and radical concepts), elaborate, refine, analyze, and evaluate their own ideas in order to improve and maximize creative efforts" (P21 century framework, 2006).

Cross-cultural skills. "Cross-cultural skills are ability to respect cultural differences and work effectively with people from a range of social and cultural backgrounds with an open-mind to different ideas and values; leverage social and cultural differences to create new ideas and increase both innovation and quality of work" (P21 century framework, 2006).

Digital story. A short electronic film that allows individuals to share issues related to their life and work.

Fulbright programs. "An educational and cultural exchange programs administered by United States Department of State, Bureau of Educational and Cultural Affairs to facilitate students, scholars, teachers, and professionals for their engagements in international exchange programs and higher education" (US Department of State Bureau of Educational and Cultural Affairs, 2013).

Global awareness. "Global awareness is the ability to understand and address global issues, and learning from and working collaboratively with individuals representing diverse

cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts" (P21 century framework, 2006).

HITEC. An education city located in Taxila, Pakistan engaged in an educational exchange program with Watauga County Schools, western NC, US.

HITEC Teacher development program. A summer training program for capacity building of teachers working at HITEC.

Integration. "Integration is the ability to use technology as a tool to research, organize, evaluate, and communicate information; use digital technologies (computers, PDAs, media players, GPS, etc.), communication, networking tools, and social networks appropriately to access, manage, integrate, evaluate, and create information to successfully function in a knowledge economy" (P21 century framework, 2006).

NING. An on-line forum that Pakistani and the US students and teachers are using for an online collaboration and exchange activities in the US-Pakistan Educational and Cultural Exchange Program.

Partner schools. Schools engaged in the US-Pakistan Educational and Cultural Exchange Program; Watauga High School, Hardin Park School, Green Valley School, HITEC Cambridge School, HITEC Girls School, and HITEC Boys School.

Chapter 2: Literature Review

In this chapter, a comprehensive review of the literature related to 21st century skills in the context of an online educational and cultural exchange program is presented. The review is categorized into themes such as skills needed for the 21st century, the role of educational and cultural exchange programs in acquiring 21st century skills, and a brief context of globalization and learning theories used in my study.

Gathering the research literature on how students and educators acquire 21st century skills is challenging because it demands the examination of multiple issues. Two general areas of research will inform my study. The first is the identification of specific skills among the 21st century skills, and the second is exploration of international online educational and cultural exchange programs. The literature review is aimed at finding a link between 21st century skills and international exchange programs. The review also relates globalization and learning theories to the attainment of 21st century skills in the context of international educational and cultural exchange programs.

Skills Needed for the 21st Century

According to the US Department of Education, the international strategy for 2012–2016 reinforced the department's commitment to preparing young students for a globalized world and to improving education through engagement with the international community (US Department of Education, 2012). Additionally, Jackson (2012) identified that the challenges to individuals and society in the 21st century are the result of economic globalization, increasingly diverse and interconnected populations, and swift technological

changes. He further noted that schools are rethinking the skills that students need for success and also developing policies and systems required for students to achieve these skills. The literature indicated the need for different types of skills in order to succeed in the 21st century and that educators should devise strategies for students to attain these skills.

Nussbaum (2010) argued that globalization is a major rationale for teaching and learning 21st century skills. As the result of globalization, which includes immigration, technological advancements such as the Internet, and emergence of global market places, the world has become a global community. These events push students to learn new ways of communication and collaboration in this newly formed global setting. Similarly, Kay (2010) strongly advocated that students must acquire 21st century skills to think, learn, work, solve problems, communicate, collaborate, and contribute effectively throughout their lives.

Several models have identified the skills classified as 21st century skills. Among these skills, three main categories relate directly to the attainment of 21st century skills through international educational and cultural exchange programs: (a) life and career skills, which include global awareness and cultural competency; (b) learning skills, which include creativity and collaboration, and (c) technology skills, which include communication and integration.

In contrast to the major 21st century skills models, the skills for this study were organized differently for two main reasons. First, only those skills which are appropriate for the age group of the research participants were considered for this study. Second, those skills which are likely to be developed through educational and cultural exchange program were considered for this study. These three major skills (career, learning, and technology) are central to most of the 21st century skills models. The Assessment and Teaching of 21st

Century Skills Consortium (2011) also considered creativity, collaboration, technology, and global awareness as major 21st century skills. In the following section, I will review the literature related to the acquisition of learning skills in the context of educational and cultural exchange programs.

Learning skills.

Collaborative groups and the acquisition of learning skills. This section of the literature will focus on 21st century learning skills, which include collaboration, creativity, and innovation skills in the context of online educational exchange programs. Students and teachers are expected to develop these skills when they are engaged in collaborative exchange programs. Studies in recent years have revealed that online collaborative projects play a pivotal role in the attainment of learning skills among students.

There are many ways in which teachers can design instruction to promote learning with others. Students can discuss concepts in pairs or groups and share what they understand with the rest of the class (Schwartz & Fischer, 2006). During one group activity, students develop arguments and then debate with each other. In other group activities, students split the subject materials and share their insights with other students. There are many ways in which teachers can design instruction so that students learn from and with others, developing both their ability to work in teams and other 21st century skills (Perkins, 2010).

Some schools provide a practical example of implementation of 21st century skills. The Kamehameha Schools Distance Learning program strives to provide quality educational opportunities for Hawaiian learners through different programs (Ledward & Hirata, 2011). According to this case study, focusing on 21st century skill development in online programs resulted in increased readiness of learners for future educational and career success. Online

courses allowed students to access learning at any time in order to communicate and collaborate with others. The case study indicated the value of online programs and a virtual environment for the development of learning skills such as collaboration.

Students engaged in educational exchange programs perform better when they are provided with opportunities to collaborate with other students. Warschauer (1997) found that the students, who were engaged in collaboration with other students, had an academic advantage over the students who were not involved in such collaborative activity. During online activities, students collaborated with each other to address issues related to mutual concern, which resulted in the development of learning skills. Warschauer's study suggested that collaboration is a key 21st century skill and can be achieved by working in groups in organized programs and projects. Similarly, Goldenberg (1999) found that collaborative groups engaged in an activity were motivated and supportive of their partners. This motivation and support resulted in the formation of a learning community.

Lauran (2008) identified collaboration as the key for quality in online programs. In the recent past, the emergence of a variety of digital and teaching tools has enhanced collaboration in online programs. Collaborative learning makes it possible for students to promote group activities and for group mates to share their unique perspectives with all group members, which results in enhancing interactive work among students (Schrage, 1990). Vance (2010) connected academic teamwork, curriculum, and the development of skills by arguing that teamwork results in the development of specific skills. Her research presented examples of such collaborative efforts among teachers of English, social studies, math, science, and technology. The study focused on the importance of subject areas in development of 21st century skills.

Similarly, learning skills increased when students communicate with each other in teams during the execution of projects. Diblasi (2011) believed that collaboration plays an important part in the learning process and students learn by working together during the collaborative activities. The students must learn the value of teamwork in order to develop and foster learning skills. In addition to face-to-face interactions, students used electronic resources such as e-mail, video conferencing, and social media in order to work in teams. The engagement of the students in exchange programs developed collaborative skills among the participants of the program. Additionally, Trilling and Fadel (2009) considered collaboration to be a key ingredient for career success in the 21st century, which includes the articulation of ideas, effective listening, and teamwork.

The above section of literature provided evidence of the effectiveness of collaboration in online group activities. Students who are engaged in joint experiences not only performed better but also acquire additional 21st century skills such as communication. The following section will focus on project-based teaching and its role in attainment of 21st century skills.

***Project-based teaching*.** The design of the curriculum projects used in the US-Pakistan Educational and Cultural Exchange Program reflected project-based teaching in order to improve students' learning and attainment of 21st century skills. Thomas (2000) compared project based learning with other teaching methods and found that that the project-based teaching enhanced the learning process when compared to other methods. He further revealed that project-based learning is an effective tool to develop other skills such as problem solving and decision making. Regan (2009), in his research on success, found that collaborative skills are the most significant factors in success. During the engagement in

project-based learning, the students learn to share responsibility, rationality, coherence, and constructive criticism.

Creativity through digital story-making. In addition to collaborative skills, students may develop other learning skills during their engagement in educational exchange programs. Trilling and Fadel (2009) found that advanced technologies are used to access, analyze, and generate new information in addition to developing learning skills such as critical thinking and problem solving. In the following section of literature review, digital story-making is explored as a unique way of developing multiple learning and technology skills.

Creativity may take several forms of representation. One way of expressing creativity is to create a product by using relevant information and a variety of digital tools. The exercise of digital story making leads to the development of several skills. Czarnecki (2009) believed that several learning skills are developed among students when they are engaged in a digital story-making experience. Participants build organizational skills when they work in groups and build stories using resources like photos, videos, text, and digital tools. Digital story-making, like traditional storytelling, is an exercise in communication and a creative process. At the same time, by requiring the creation of a video as the end result of their work, the participants had to use critical thinking and problem solving in order to convey a coherent message. While making the video, the students had to make decisions about which information to include and about how to most effectively format that information to convey their message.

Technology skills. This section of the literature review will address the role of technology in the acquisition of 21st century skills. The attainment of 21st century skills

depends on the acquisition of technology skills. Technology skills include communication, integration, social networking, and the use of digital tools for educational purposes.

Dependence on technology for learning skills. The success of online programs depends on the digital tools and the participants' ability to use these tools. Due to this dependence on technology, one must acquire the technology skills in order to attain learning skills. The attainment of technology skills goes hand-in-hand with the development of learning skills because learning in this digital age is considered incomplete without the inclusion of technology. In a 1998 report, researchers noticed that the introduction of laptops in their classrooms resulted in the use of project based teaching among three fourths of the teachers who participated in a survey (Rockman Report, 1998). The report also indicated that the use of technology enhanced student engagement, improved analytical abilities, and developed accomplishment of high-order thinking skills.

The North American Council for Online Learning elaborated on the role of technology by saying that:

> The rate at which new information becomes available today is astounding when compared to previous decades. In order to succeed in the 21st century, students must master the ability to use appropriate technologies to process, analyze and present information efficiently and effectively in school, life, and work settings. (North American Council for Online Learning and the Partnership for 21st Century Skills, 2006)

Studies on the role of ICT in education indicated that instruction using new technology and media enhanced students' learning (Andretta, 2005; McFarlane, 2003). The use of 21st century digital tools along within project based learning is a useful teaching

methodology for enhancing critical thinking skills among students (Trilling & Fadel, 2009). Moreover, Wenglinsky (2004) found that the use of technology along with enhanced critical thinking skills produced higher academic achievement among students.

Integration of technology in the classroom. Educators are interested in integrating 21st century skills in classrooms throughout the world (Lambert, Gong, & Cuper, 2008). This integration requires a paradigm shift in teaching so that technology is used to develop learning skills among students. Lambert and Gong (2010) conducted research on pre-service teachers in order to observe the impact of integrating technology in the classroom and found that pre-service teachers learned teaching of advanced curriculum when technological was introduced in the classroom. Additionally, Cooper (2001) found that learning methods that involved the integration of technology were useful for students in their learning process.

Similarly, Penuel et al. (2001) reported on research at the Stanford Research Institute International that the students who used technology in Challenge 2000 Multimedia Project classrooms performed exceptionally better than those who were not using technology in the project in the development of skills such as communication, teamwork, and problem solving. Similarly, Penuel, Means, and Simkins (2000) studied the impact on low achieving students when they experienced online learning. The researchers found that students demonstrated greater engagement in work, responsible behavior, effective collaboration, and improved scores. Penuel and colleagues concluded that the emerging integration of technology in the classroom is transforming the learning skills of students and teachers.

The research findings of the above mentioned studies reflect the role of technology in the development of 21st century skills such as learning, collaboration, and communication. Moreover, these studies clearly indicated that the use of technology in class activities resulted

in an improvement of achievement. Learning experiences that result in sharing and collaboration provide students with the opportunity to make sense of academic ideas.

Life and career skills. In addition to learning and technology skills, life and career skills are also categorized as integral components of 21st century skills. Skills such as global awareness, social, and cross-cultural competency can be attained through educational and cultural exchange programs. This section of the literature review will explore life and career skills in the context of exchange programs.

Global awareness. Educational exchanges are aimed at broadening students' worldview and understanding of the global nature of the world. Student exchange programs have been found to be crucial for developing global awareness in students. Lovett (2008) emphasized the need for a global mindset for graduates of higher education institutions. She further argued that students must be prepared in a way that they could develop an expanded worldview and could be capable of exploring alternative interpretations of global events. The term global mindset refers to a trend of comprehending this globalized world and the development of a multi-perspective mind which is capable of understanding events and issues in a broader context.

Bales (2005) believed that the role of global education was to improve the values of mutual understanding and collaboration among different cultures and to motivate students to learn beyond their own geographical and political borders. Other researchers like Crawford and Kirby (2008) also advocated for developing global awareness skills in the classroom among students. They emphasized that teachers needed pedagogical training to learn how to integrate the element of global education into curriculum. Thornburg (2002) cited global awareness as a foundation skill essential for the future workforce. Friedman (2005), in his

book *The World is Flat*, mentioned that global awareness is vital to prepare students to live in the 21st century geo-political environment and global economy. As educators, it is critical to foster global awareness in students in order to contribute to world peace.

Cultural competency. While global awareness is being raised during exchange programs, cultural competency is also improved due to exposure to different cultures. Similarly, Juwah (2013) explored collaboration among diverse participants. During such collaborative activities, the students' primary role is to teach their partners about a specific aspect of their own culture. This activity provides students with the opportunity to not only understand others' cultures but also rethink their own. The students put a great deal of thought and effort into presenting their own culture and in understanding others' cultures.

Gragert (2011) emphasized that the students need cross-cultural skills, regardless of their future occupational fields. He suggested that structured educational programs must be organized by institutions to help persons of different cultures to interact in consequential ways in order to promote cultural competency. In another study, Black and Duhon (2006) reported that students gain in cross-cultural competence as a result of their engagement in educational exchange programs in comparison to their peers who did not. The students also demonstrated skills such as adaptability and tolerance for other cultures. Carlson, Burn, Useem, and Yachimowicz (1990) concluded that the students engaged in collaborations possessed better knowledge about global perspectives.

Models of 21st Century Skills

Several conceptual frameworks have been developed to define and elaborate on 21st century skills. Dede, Ketelhut, Brian, and Nelson (2010) identified the current conceptual frameworks for 21st century skills which include the Partnership for 21st Century Skills, the

North Central Regional Education Laboratory, the Metiri Group, the Organization for Economic Co-operation and Development, and the National Leadership Council for Liberal Education and America's Promise. In addition to the above mentioned frameworks, several other models are based on a technological orientation including the revised International Society for Technology in Education Student Standards for Technology in the Curriculum as well as digital literacy standards from the Educational Testing Service. Dede (2005) and Jenkins (2009) constructed a digital literacy model that includes reading, writing, and mathematics as foundational skills needed for the 21st century.

These models of 21st century skills are similar in basic conceptual ideas, but they are different in how these models are presented. The major skill categories in one model are mentioned as subcategories in other models. Similarly, some skills are more emphasized than others. Across models, common themes include learning (critical thinking, problem solving, communication, creativity, innovation, collaboration, and contextual learning), ICT literacy, global awareness, and cross-cultural competency.

The partnership for 21st century skills model. The Partnership for 21st Century Skills, which appeared in 2006, has articulated a comprehensive model that forms the conceptual framework for my study. The partnership model reflects all of the elements that previous models presented in addition to reemphasizing some of the subcategories of other models. The Partnership for 21st Century Skills model is more widely adopted than any of the alternative frameworks.

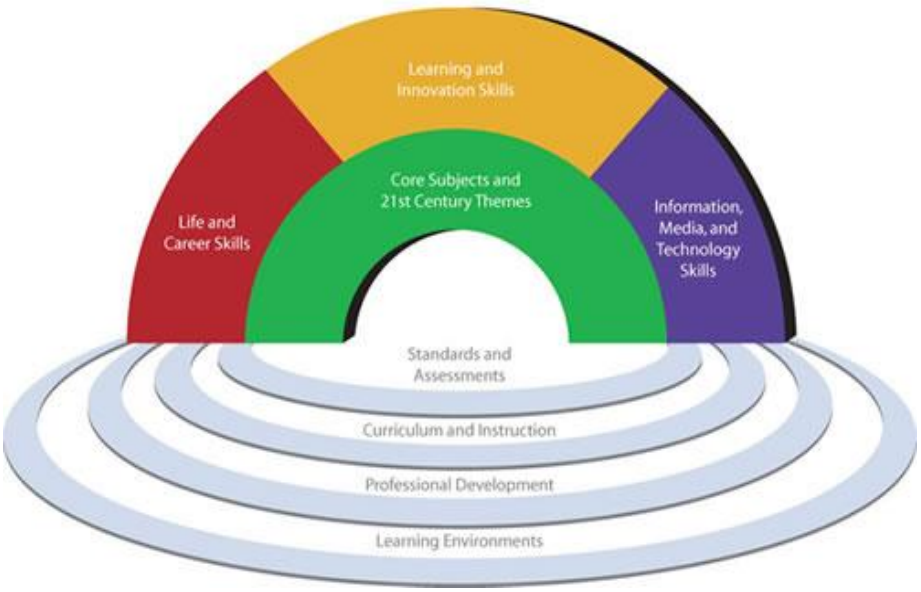

Figure 1. Model of 21st Century Skills (Partnership for 21st century skills, 2006)

Fig. 1 explains the Partnership for 21st Century Skills model. The model identifies core subjects that include English, language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics. Skills are broadly divided into three major categories. The first category is learning and innovation skills that include creativity and innovation, critical thinking and problem solving, communication and collaboration. The second category is information, media and technology skills that include information literacy, media literacy, ICT. The third category is life and career skills that include flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility. In addition to these skills, the model provides a guideline for support system for implementation of 21st century skills that includes 21st century standards, assessments, curriculum and Instruction, professional development, and learning environments. Keeping in view the age group of my research participants and the structure of exchange program, I focused the following

skills: (a) life and career skills, which include global awareness and cultural competency; (b) learning skills, which include creativity and collaboration, and (c) technology skills, which include communication and integration.

21st Century Skills and Online Exchange Programs

After a thorough review of the current literature about 21st century skills, this section of the literature review will provide examples of online programs that serve as tools to acquire 21st century skills among students and teachers at different educational levels.

Lindsey (2010) described how universities across the globe are seeking provide an international experience to their students in order to prepare them for their future lives that will involve global issues and international partnerships. Since face-to-face exchange programs are expensive, Lindsey, Cousland, and Welch (2010) suggested an exchange program on an affordable and sustainable basis; this 10-week online program featured discussions among students of western and Muslim countries through an organization called Soliya.

Similarly, ePals is another forum that connects students and teachers through an online technology across the world and promotes collaborative activities for 21st century learning. According to the ePals website, “ePals reach includes 200 countries and provides a powerful network” (ePals, 2013, para. 1). iEARN is another online forum for international collaborative activities. According to iEARN website, “The organization connects 30,000 schools in more than 130 countries and empowers teachers and students to work together online using the Internet and other new communications technologies in collaborative project work worldwide.” (iEARN, 2013, para. 1).

Soliya, ePals, and iEARN are examples of online educational and cultural exchange programs that facilitate collaborative activities among students and teachers across the globe. These programs focus the development of 21st century skills such as global awareness, cross-cultural competency, collaboration, and technology skills. The following section will describe the theoretical context of my study. Globalization and learning theories are used as theoretical context of the study.

Theoretical Context of the Study

This section elaborates on the issues related to globalization and learning theories already discussed in the first chapter. The following theoretical perspectives are relevant to my studies: globalization theory (focused on education in particular), and learning theories (specifically, constructive learning theory and multiple intelligence theory). Globalization is a background context for understanding the importance of 21st century skills development, while learning theory enables a richer appreciation for the learning processes taking place in the online exchange program. In the section below, I offer a brief introduction to these ideas.

Globalization: A theoretical context of the study. Globalization has changed our lives in many ways, and its impact is noticed in all fields of life including education. The digital revolution has redefined our ways of teaching and learning. It brings new meanings of communication and collaboration. According to Epstein (2009), globalization over the last few decades has resulted in grand alliances of nations primarily based on common economic interests. As Giddens (1990) has observed, local events are influenced by global events far away. The digital revolution and our interconnectedness make this world local where reaction to one incident is noticed thousands of miles away from the place where it is

originated. For example, the Occupy Wall Street movement was inspired by the Arab Spring in 2011.

Educators are advocating new skills in order to cope with this changing environment. Trilling and Fadel (2009) pointed out that knowledge work, thinking tools, a digital lifestyle, and learning research are the four powerful forces that are converging and leading us towards new ways of learning for life in the 21st century. In today's world, students and teachers across the globe feel pressure to use the available information by integrating technical and digital tools. Living in the information age, students and teachers need to develop better thinking skills in order to cope with an unstoppable flow of information. Millions of people have adopted the digital lifestyle in which life activities are driven by technological applications. On the other hand, the education system has not matched advanced technology, and educators keep applying the traditional means of educating students.

Kay (2010) believed that the global market offers great opportunities for those who possess 21st century skills. The service economy, which is driven by information, creativity, and innovation, has superseded the industrial economy and reshaped education and society in the last two decades. Technology has replaced workers with higher-level skills and has empowered them to be more productive, innovative, collaborative, and creative. To sustain themselves in this environment, students and teachers need to have 21st century skills, and it is expected that students will be prepared to think, learn, work, solve problems, communicate, collaborate, and contribute effectively throughout their lives. Even entry-level employees are now expected to use 21st century skills to accomplish their work (Lichtenberg, Woock, & Wright, 2008).

The events happening in any part of the world are no longer local or international; they have become global. In order to comprehend the issues of this globalized world, students need to develop skills that enable them to increase their global awareness and their creative capability to use digital tools and construct knowledge with creativity. The process of globalization gives rise to the emergence of 21st century skills. The extraordinary extension of digital technology has transformed the ways we communicate and collaborate with each other. The digital revolution has changed our lifestyle because if we are not connected then we do not exist. As a result of such connectedness, the world has become more interdependent. Zhao (2009) explained the concept of the global village as welfare for all human beings. The global village is interconnected and interdependent; if some members of the global community are suffering from any problem, then the rest of the people cannot live in peace.

In response to these changes, students of this era must attain specialized skills. Zhao (2009) noticed the need for schools and teachers to move from a local to a global curriculum in order to help students develop the knowledge they will need to understand the changes happening across the globe. The middle and high schools in the US and across the globe are identifying ways to help students and teachers attain 21st century skills. Educational and cultural exchange programs are a useful tool to acquire some of the 21st century skills. Smith (2006) stressed the value of developing a better understanding of world and fostering 21st century skills such as critical thinking, collaboration and creativity. In this globalized world, students must be taught in a way that helps them to understand the complex issues of this world.

Learning theories: A theoretical context of the study. In addition to globalization theory, learning theories also undergirds my study. This section of the chapter will review different learning theories and implications for my study. Constructivist theory and multiple intelligence learning theory are briefly discussed in relation to the learning of the participants in my study.

The first important aspect of learning theory related to the online exchange project is constructivism. Woolfolk (2004) defined constructivism as "learning in which the learner actively constructs or builds new ideas or concepts based on his experience and observations" (p. 71). With social interaction and influence from the outside world, the learner constructs the meaning of his or her own observations in relation to existing knowledge of the world. Constructivism contends that individuals integrate previous knowledge and skills with newly learned knowledge to construct new meanings of different concepts (Richardson, 2003). In the exchange program, students constructed new meanings as they integrated their existing knowledge with the information learned through interaction with their partners.

Similarly, the theory of multiple intelligence emphasizes that individuals learn in multiple ways. Gardner (1983), the key figure in multiple intelligence theory, believed that human beings could demonstrate many different forms of competence, including kinesthetic, artistic, musical, and interpersonal intelligences. Later in 1999, he expanded his theory of multiple intelligences to include intelligences of the existential and naturalist types and multiple forms of creativity (Gardner, 1999). In educational settings, educators practice different pedagogies to help students learn in multiple ways. Each individual learns in a

different way and educators must have knowledge of multiple ways of learning for effective teaching.

This review of the literature has informed me about the skills that students and teachers develop when they are engaged in exchange programs, projects, and collaborative activities. Technology remains influential and is a key factor in most of the studies. The majority of the studies that I found are quantitative and based on statistical data. Therefore, there is a need for a qualitative study that addresses the issues related to the attainment of 21st century skills among students and teachers when they are engaged in exchange programs, projects, and collaborative activities. Moreover, this qualitative study provides rich data from students and teachers, which helps to understand the value of educational and cultural exchange programs in the attainment of 21st century skills. The current study will explore the perspective of students and teachers acquiring 21st century skills especially when they are collaborating with their partners from a different geographical region and culture.

In the next chapter, research methodology and data collection tools are addressed. Moreover, I will give a comprehensive account of the research sites in Pakistan and the US and introduce the research participants. Since I am also administering the research project, I will discuss subjectivity and personal biases.

Chapter 3: Research Methodology

In this chapter, I present a rationale for qualitative research methods and describe the strengths of qualitative methods for this study. Additionally, a comprehensive account of the research sites in Pakistan and the US and an introduction of research participants are presented. Data collection is addressed along with issues of trustworthiness and subjectivity.

Context of the Study

The purpose of this qualitative study was to explore the development of 21st century skills among students and teachers engaged in an online collaborative educational and cultural exchange program among middle and high schools in Taxila, Pakistan and in western NC. The program featured online collaboration between middle and high school students and teachers in the subject areas of science, social studies, and language arts. Teachers identified common curriculum contents in order to develop semester-long academic projects in which students were engaged in online collaborative learning experiences through activities such as digital photo sharing and storytelling. These academic projects were executed from August to December 2012. The students selected for participation in these projects were new to the program, whereas the teachers have been working with the exchange program for the last two years. In this exchange program, participants had the opportunity to exchange ideas, subject-based contents, and cultural artifacts using online technology tools.

The following research questions were designed to explore the development of 21st century skills in the context of an educational and cultural exchange program:

Research Questions

1. In what ways do online educational and cultural exchange programs develop and foster 21st century skills among students of partner schools engaged in such programs?
2. How do US participants envision the skills that they are developing in the online educational exchange program similarly or differently from Pakistani participants?
3. How do administrators in partner schools understand and value online educational and cultural exchange programs for the implementation of 21st century skills?

Research Methodology

A qualitative research design was chosen to examine how students and teachers understand and develop 21st century skills when they are engaged in an educational exchange program involving international collaborative projects. Qualitative methods provided description, analysis, and interpretation of the experience. Greene and Harris (2011) argued that many different types of qualitative research methods are used for human participants, but understanding the human experience remains the common interest. Creswell (2003) emphasized that the knowledge of the researcher in every research study has an influence on each component of the research. The researcher is a central element throughout the research process, and the trustworthiness of the study depends on the role of the researcher. Additionally, the boundaries of qualitative studies are not clearly defined, and the research designs may look mixed (Creswell, Klassen, Plano Clark, & Smith, 2011). In my qualitative case study, I used a baseline knowledge survey as an instrument to assess readiness and understanding of 21st century skills. This was the only quantitative element in

my study. The overall study was qualitative as I used multiple qualitative methods such as interviews, focus group conversations, participant observations, and document review.

Rationale for a qualitative case study. For this study, the qualitative case study method is appropriate to explore the insights of students, teachers, and administrators about the attainment of 21st century skills in the context of an educational and cultural exchange program. The data obtained from participants highlighted their reflections based on their experience in the exchange program. As Glesne (2011) described, qualitative inquiry is research about people, their perspectives, and contextual issues in relevant social, cultural, and political settings. This study describes diverse people such as Pakistani and American participants in multiple roles such as student, teacher, and school administrator. Finally, I considered the social and cultural contexts within the educational settings for my study. Given my purpose and the context of the study, a qualitative approach was best suited to explore my research questions.

Secondly, qualitative researchers suggest designing the research questions to reflect the researcher's preference of viewing and understanding the world (Denzin & Lincoln, 2005). My research questions were framed not only to address the research problem, but also to provide me with an opportunity to choose the methodology which was well-matched with my personal aspirations. Since my research project was designed, initiated, and implemented under my administration, my relationship with the research project made qualitative research a natural match for this study. This research study enabled me to take advantage of my insights and experience in order to understand the data. Additionally, my cross-cultural experience helped me to make sense of issues related to the study.

Qualitative methodologists emphasize the role of the researcher in the research process. Glesne (2011) mentioned that qualitative researchers interact with participants and engage in the environment to better understand the research issue. Creswell (2009) further added that the researcher collects data using multiple methods during the research process. I used multiple methods to collect the data such as interviews, focus group conversations, and participant observations. By doing so, I was able to provide in-depth description of participants (students, teachers, and administrators), their environments (school settings in Pakistan and the US), and their learning process (attainment of 21st century skills).

Rationale for the case study method. Under the larger umbrella of the qualitative research paradigm, I opted for a case study method in order to conduct this study. Hays (2004) explained that case study research can involve the close examination of people, topics, issues, or programs. My study involved people (students, educators, and school administrators), a program (educational and cultural exchange program), and an issue (exploration of 21st century skills). Yin (2004) elaborated that the strength of the case study method is its ability to examine a case within its real-life context. I believe that an online exchange program is a real-life context in which students and teachers are developing new skills to thrive in the 21st century.

Pedagogical practice is also an important context in which teachers are learning to equip students with 21st century skills. My methodological approach helped me to examine the issue in depth. Hays (2004) noted that the case study provides answers to the research questions through descriptive data and interpretation in a limited timeframe. Similarly, Creswell (1998) defined case study as "an in-depth exploration of a bounded system (e.g., an activity, event, process, or individuals) based on extensive data collection" (p. 476).

Yin (1998) pointed out that case study designs, at minimum, involve defining the case, justifying the method, and adopting a theoretical perspective. I believe that I have met these criteria. In defining the case, I have argued that there is a reason to explore 21st century skills attainment because many educators define and conceive the concept of 21st century skills in different ways. The qualitative approach is justified as it provides in-depth data for analysis of the issue. I adopted globalization and learning theories as the theoretical foundation for my study.

In summary, data collected in a qualitative manner provide a depth of knowledge not typically achieved through another methodological approach. The in-depth richness and contextual information gave the opportunity for a clear understanding of the issues in context. The case study method provided a deeper view of the environment of the case. My interpretations could be validated through the triangulated collection of data from the participants and the environment.

Data Collection

Glesne (2011) believed that in-depth description, persistence, and triangulation added to the depth and validity of the researcher's observations. This section explains the data collection sites, participant selection, and multiple methods of data collection. Before beginning the research, I applied for permission to conduct the study. The ASU Institutional Review Board (IRB) provided approval for the study in February 2012. The lay summary (Appendix A), interview questions (Appendix E, F, G, H, I), an informed consent form (Appendix J), and information release form (Appendix K) were approved by the IRB.

Data collection sites. Since this research was conducted in both Pakistan and the US, the participants in this study were located on two different sites. The Pakistani site was

located in HITEC and included three schools: the HITEC Cambridge School, the HITEC Boys School, and the HITEC Girls School: The American site was located in Boone, NC and also included three schools: Watauga High School, Hardin Park School, and Green Valley School. Since these were the only sites involved in this exchange program, all partner schools were selected for data collection.

Data collection description. There were more than 100 students engaged in the three core subject groups (science, social studies, and language arts) in this online collaborative educational and cultural exchange program between the six partner schools in both countries. In addition, twelve teachers (2 from each partner school) and six principals (1 from each partner school) participated in this collaboration. I collected data for the duration of one term (semester) from August to December 2012 (please see Table 2 on p.52 for data collection details).

Participant selection method. The baseline knowledge survey (Appendix B) was intended to assess the readiness of participants for the exchange program. All students (100) were asked to participate in the baseline knowledge survey. The survey was conducted online, and I received 88 responses (Appendix C & D) from students (50 American and 38 Pakistani).

Maxwell (2004) suggested purposeful selection in order to have representativeness. Therefore, I selected one administrator from each country to participate in the interviews in order to represent their home country. A purposeful sampling strategy was used to select students, teachers, and administrators for interviews and focus group conversations. In order to make an unbiased selection of participants for interviews and focus group conversations, I

requested school administrators to recommend teachers for interviews. Similarly, I requested partner teachers to select students to participate in interviews and focus group conversations.

Data collection methods. My strategy included the collection of data through the following tools: (a) a baseline knowledge questionnaire; (b) multiple interviews with students, teachers, and administrators; (c) focus group conversations in Pakistan and the US; (d) online data (NING); (e) participant observations, and (f) document review. I will briefly describe each method below.

Baseline knowledge questionnaire. A baseline knowledge questionnaire was used before the start of project to assess the readiness of participants for the exchange program. The readiness of participants refers to their willingness and preparedness for the collaborative exchange program. All students were asked to complete the baseline knowledge questionnaire. The questionnaire provided useful data and informed me about how the participants valued 21st century skills and about their level of understanding regarding these skills and exchange programs.

Interviews of students, teachers, and administrators. Five American and five Pakistani students were randomly selected by the partner teachers for multiple interviews. Two interviews were conducted for each student. The pre-project interviews were conducted before the start of the project in August 2012, and the post-project interviews were conducted in November 2012 after the completion of the projects. All of the selected participants were new in the project when they were selected for their engagement in my study.

Additionally, two Pakistani and two American teachers were interviewed. Lastly, one administrator from Pakistan and one from the US were interviewed. The initial interviews were conducted in summer 2012 and were followed by additional interviews in October and

November 2012. Maxwell (1996) mentioned that “the research questions formulate what you want to understand and the interview questions are what you ask people in order to gain that understanding” (p.67). Interview questions (Appendix E, F, G, H, & I) focused on how students and teachers acquire 21st century skills when they were engaged in an educational and cultural exchange program. No names were used for data presentation and analyses in order to protect the anonymity of the participants.

Table 1

Overview of Interviews with Participants

Country	*n*	Number	Duration	Location	Date
			Students		
Pakistan	5	1 pre-project	30 minutes	Skype	August 2012
		1 post-project	1 hour	HITEC, Pakistan	November 2012
US	5	1 pre-project	30 minutes	Boone, NC	August 2012
		1 post-project	1 hour	Boone, NC	November 2012
			Teachers		
Pakistan	2	2	1 hour	HITEC, Pakistan	November 2012
US	2	2	1 hour	Boone, NC	October 2012
			Administrators		
Pakistan	1	2	1 hour	HITEC, Pakistan	November 2012
US	1	2	1 hour	Boone, NC	October 2012

Note. Teacher and administrator interviews were conducted mid-project. HITEC = Heavy Industries Taxila Education City.

The pre and post-project interviews (Table 1) were used to see the change and impact that the exchange program made among participants. The interviews also identified how participants progressed in their understanding of 21st century skills while also exploring how individuals constructed the meaning of their experience of participating in the educational and cultural exchange program. Additionally, I interviewed administrators in order to explore issues related to administrative support for students and teachers. Interview questions (Appendix I) were framed to gain insight from administrators about their vision of implementing 21st century skills at their respective schools.

Focus group conversations. Bloor and Wood (2006) highlighted the importance of the focus group conversation to gather a collective response from a group. The students collectively shared their learning experiences during their engagement in the online educational and cultural exchange program. Two focus group sessions were organized in each country. Based on partner teachers' recommendations, I selected two groups comprised of 10 students each for the conversations. The partner teachers facilitated the sessions by organizing and debriefing the students after the sessions. Since all schools are on the same premises at HITEC, participants from all partner schools participated in the focus group conversations. In the US, only one partner school participated due to managerial and logistical issues.

Participant observation. As Weber (2008) said, "seeing being surrounded by the visual doesn't always or necessarily mean that we noticed what we see. It is the paying attention, the looking and the taking notes of what we see that makes images especially important to art, scholarship and research" (p.41). In addition to the interviews and focus

group conversations, I also used participant observations by visiting the groups when they were involved in a collaborative activity.

Document review. In addition to these interviews and school visits, I reviewed several documents related to this study including the partnership agreements (Appendix L), 21st century framework document (Appendix M), and North Carolina 21st Century Skills document (Appendix N). These documents guided me towards a better understanding of 21st century skills and its implementation. The data were used as evidence of significance of the program and the value of 21st century skills in the learning process of the participants.

Online data. (NING). As most of the activities were completed online, it was suitable for me to access all of the activities that the students, teachers, and administrators were doing for the exchange program. Being an administrator of this program, I could access all the information on the web pages designed for this educational and cultural exchange program. I examined the online data in order to make observations related to participants' work in the collaborative project during their engagement in the exchange program and to monitor their progress in developing 21st century skills.

Table 2

Description of Data Collection

Measure	Purpose	*N*	Type	Number	Duration	Appendix
Preproject Baseline Knowledge Survey[a]	To get basic information	88	Student	1 each	30 minutes	B, C, D
Preproject Student Interview	To assess skills before project	5 (Pak) 5 (US)	Student	1 each	30 minutes each	E
Postproject Student Interview	To assess skills after project	5 (Pak) 5 (US)	Student	1 each	30 minutes each	F
Focus Group	To assess learning and skills	1 (Pak) 1 (US)	8-10 Students each	2	60 minutes each	G
Teacher Interview	To assess attainment of skills	2 (Pak) 2 (US)	Teacher	2 each	60 minutes each	H
Administrator Interview	To assess role	1 (Pak) 1 (US)	Director / Principal	2 each	60 minutes each	I
Participant Observation	To assess interests and skills	1 (Pak) 1 (US)	Student	2	60 minutes each	-
Document Review	To enhance knowledge	[b]	Document	Varied	Varied	-
Online Data	To assess participants' work	[c]	Online NING	Varied	Varied	-

Note. Pak = Pakistan; US = United States; NING = an online educational forum.

[a]Students completed the Baseline Knowledge Assessment online. [b]Document review included Skills Model Agreement and MOU. [c]Online data included field notes, reflections, and observations.

Data Analysis

Qualitative analysis started with reading the interview transcripts and observational notes. After collection of data through multiple interviews, focused group conversations, participant observations, document review, and online data from NING, the data were organized for presentation and analysis.

Glesne (2011) said that "data analysis involves organizing what you have seen, heard, and read so that you can make sense of what you have learned" (p. 130). All interviews were transcribed manually. Data collected from the focus group conversations, participant observations, document review, and online NING data were in form of notes. These notes were organized thematically for analysis.

Codes and subcodes. After organizing the data, I coded the data for major categories and subcategories, which described various components of my study. During the first phase of coding, I looked for consistent words in the transcribed interviews to identify major codes (Table 3, p.54). In the second phase, I looked for related words, which resulted in the emergence of subcodes (Table 3, p.54). Additionally, I also found complete sentences that described the similar themes. After applying the coded terms to the data, the codes were highlighted using different colored highlighters to facilitate identification. After coding, I related the codes to the major categories of skills in order to generate themes. I used the major 21st century skills categories that I selected for this study as a foundation for this analysis. There are three major categories of skills (career, learning, and technology), which were used to generate three major themes. However, some additional subthemes emerged from the data, which are presented in the data analysis.

Table 3

Summary of Codes and Subcodes

Major Codes	Subcodes
Global Awareness	Knowledge about Partner Country
	Stereotypes
	Perceptions about Each Other
	Worldview
	Globalization
Cultural Competency	New Culture
	Native Culture
	Tolerance
	Acceptability
	Adaptability
	Appreciation for Other Culture
Creativity	Alternate Ways of Learning
	Alternate Ways of Teaching
	Use of Resources
	Critical Thinking
Collaboration	Teamwork
	Mutual Understanding
	Friendship
	Understanding Others' Work
Technology	Communication
	Integration of Technology
	Social Networking
	Connectivity
	Blogging

Trustworthiness

Brinberg and McGrath (1985) mentioned that, “validity is not a commodity that can be purchased with techniques" (p. 13). Maxwell (1995) identified two specific validity threats: the researcher’s bias and reactivity. The trustworthiness of a study can be improved by maintaining high credibility. Creswell (2009) elaborated on the idea of trustworthiness as checking for accuracy of the findings by employing multiple strategies like triangulation, rich description, reflexivity, peer debriefing, and prolonged time in the field.

For this study, most of these strategies were implemented in order to improve trustworthiness. Triangulation, for instance, was effectively implemented by using multiple sources of data such as interviews, focus group conversations, participant observations, document review, and online data. Similarly, rich descriptions of the research sites, participants, and issues were provided. Finally, I spent time in the field in order to complete the participant observations, focus group conversations, and interviews. For this study, my research field included the online space that participants used for collaboration with their partners. Being a coordinator of this program, I spent considerable time in assessing participant activities on the NING site. Moreover, I traveled to Pakistan for data collection in November 2012 which included interviews, focus group conversations, and participant observations. Finally, I have been involved in designing and implementing this exchange program for the last three years, which provided me with a good understanding of this program. By implementing these strategies, trustworthiness has improved.

Researcher’s Subjectivity

Subjectivity was an important consideration in my research. Because I initiated the educational and cultural exchange program, I wanted to explore its connection with 21st

century skills. I am the author of the partnership agreements and the documents that describe the vision and objectives of this program. In addition, I have been administering this exchange program for approximately three years. I also served as a teacher in one of the partnership schools before coming to the US for my higher education. On one hand, it is useful to have an established connection and understanding of the program, but on the other hand, my dual roles as administrator and researcher of this program may have influenced the participants engaged in this study. One way to address this issue was to enrich my data by using multiple sources and intensive interviews. Secondly, I have taken steps to improve the study validity. I have devolved some of my responsibilities including the selection of academic projects and the recruitment of the students for participation in the study. The partner teachers did these two important duties in order to minimize my involvement in the execution of the curriculum-based projects. Moreover, I had no formal position with the Public School Partnership when I collected data in the fall of 2012.

Strengths of the Study

A key strength of the study lies in my affiliation with the Public School Partnership and partner schools. I served HITEC as a biology teacher for three years before coming to the US. I am familiar with the teachers and most of the students participating in this program. Similarly, I developed a good relationship with the participants attending schools in western NC through the ASU. I have been a frequent speaker at the schools and have also worked closely with partner teachers. My affiliation helped me to obtain in-depth data from the participants as the barriers between the researcher and the participants were weakened as a result of my relationship with the students, which were developed over the period of time.

Another strength of this study lies in my cross-cultural knowledge. I spent most of my life in Islamabad, Pakistan and have been living in Boone, NC for the last four years. The experience of living in two different places provided me with an opportunity to learn about two diverse cultures. I have used this knowledge to better understand and interpret the data.

In the next chapter, the results and key findings are presented. The chapter also presents the major themes that emerged from the data. The data obtained from students, educators, and administrators are presented thematically.

Chapter 4: Research Findings

This study was conducted to explore 21st century skill development among students and teachers engaged in an online collaborative educational and cultural exchange program among middle and high schools in Taxila, Pakistan and western NC, US. The study also differentiated between the perceptions of participants in Pakistan and the US about their understanding of 21st century skills in their teaching and learning processes. Administrators, teachers, and students in Pakistan and the US participated in this study. Finally, the study explored the role of administrators in providing a support system to implement 21st century skill development at their educational institutions. The following research questions guided this study:

1. In what ways do online educational and cultural exchange programs develop and foster 21st century skills among students of partner schools engaged in such programs?
2. How do US participants envision the skills that they are developing in the online educational and cultural exchange program similarly or differently from Pakistani participants?
3. How do administrators in partner schools understand and value online educational and cultural exchange programs for the implementation of 21st century skills?

This chapter briefly describes the participants and sites of this research. Qualitative data were collected through multiple tools from students, teachers, and administrators who were engaged in the US-Pakistan Educational and Cultural Exchange Program.

In this section, I present the educational and cultural exchange process in action in both countries based on my observations. The rich description of sites, participants, and activities establishes the context of the study. Additionally, the participants' reflections on program and project activities are presented thematically.

Observation in Pakistan

My observation of participants in Pakistan included visits to the partner schools in HITEC. One hour was spent with each group during their engagement in the curriculum-based projects in the three partner schools. The observation was a combination of the researcher's informal conversation with participants and visual observation. Each partner teacher and principal of the respective schools facilitated the visits.

The excitement of the participants was the most evident feature of the class sessions during my visit to different groups. In conversation, students mentioned the online activities with their partners in the US. Some of the participants showed me their blogs on the computer screens, which were part of their assignment for the exchange project. The participants were found busy commenting on the work of the American participants. The curriculum-based project was designed in a way that students first presented their project activities on NING by using photos, videos, narratives, and digital stories, and then connected with each other through their comments. During that process, they raised questions for each other and responded to the questions which were posed to them. The participants were delighted in both sharing their work and responding to their partners in the US. By the time I visited the groups at HITEC, they were quite familiar with their partners' names and some of their hobbies, indicating that they had already formed personal relationships. The participants mentioned that they were also connected to their partners on other social

networking media like Facebook and Twitter in addition to NING. This level of networking suggests that relationships among students in both countries were deepening.

It is important to note that participants at HITEC possessed a wide range of skills in technology. I observed that participants with advanced technology skills were found helping those who were struggling with technology and online collaborative assignments. During conversations with the participants I noticed that they found it very productive to use computers and online technology in their learning processes. One of the participants mentioned that she bought a laptop exclusively for this project, which is a major educational investment for a 7th grader and reflective of her interest in the project.

Another important observation was the integration of technology in student learning. It was the first time that participants had used computers for a curriculum-based project. Before this experience, they used computers for learning "computers" as a subject but had never used them for any classroom or other subject-based activity. In this respect, the exchange program encouraged students and teachers to think of alternate ways of teaching and learning. The partner teachers who were facilitating these sessions mentioned that they found it challenging to integrate technology because it was not common to use computers for teaching other subjects. They further elaborated that they used computers sometimes for the information that they needed to convey in classroom teaching, but it was hard for them to engage the whole class in using technology. The US-Pakistan Educational and Cultural Exchange Program, according to partner teachers, encouraged them to engage the whole class in collaboration and the use of computers for a more productive purpose. They also mentioned that they needed more support from the school administration to try new and alternate methods of teaching in the classroom.

Observation in the US

My participant observation in Boone, NC included visits to the partner schools. Fifty minutes were spent with each group during their engagement in curriculum-based projects. The observations included the researcher's conversations with participants and visual observation.

Participants of the exchange program in the US were also found to be excited about their engagement in the program. The partner teacher and students mentioned that they had learned about the culture, geography, and history of Pakistan. They appreciated gaining first-hand knowledge about the partner country. In all partner schools, the participants indicated that their perceptions about Pakistan had greatly improved as the result of direct communication with Pakistani partners.

The observation sessions in the American partner schools were more interactive than those in the Pakistani schools because the students asked several questions. They even inquired about the researcher's dress because he wore traditional Pakistani attire. They asked several questions about the Pakistani flag and festivals, which reflected their interest in the project. The participants mentioned that they learned new things about the Pakistani people and their way of life.

I noted that the American students were skilled at using technology. The classrooms that were visited in the three partner schools in the US were equipped with computers and smart boards connected to the Internet. The participants mentioned that the exchange program helped them to use another social network NING for collaboration with Pakistani students. I noticed that the participants were doing their assignments faster than their partners in Pakistan because they were more familiar with the applications of NING.

In Boone, NC I also observed a decorated bulletin board with images from HITEC. The students made good use of the bulletin board by playing games and taking quizzes that were based on information about Pakistan and related to the curriculum-based project. Such activities encouraged the students to get more deeply involved in the international exchange program.

The participants showed great interest in the program as indicated in the baseline knowledge questionnaire, which was conducted at the beginning of the project to assess the readiness of participants. The survey results indicated that students felt confident about engaging in collaborative activities with partner students in another country and also appreciated diversity. In response to a relevant question (Question 4, Appendix B), 85% of the participants felt confident working with people from another country, which reflects their readiness for their engagement in the exchange program. The comparison of responses collected from American and Pakistani students indicated that the American participants were slightly more confident than the Pakistani students about their engagement in the program. The American students' interactions with the researcher were more animated when compared to the Pakistani students, which indicates their confidence. This observation was further strengthened by the response to Question 6 (Appendix B), where 84% of the participants valued the importance of diversity and understanding people from another country. Both American and Pakistani participants recorded similar responses about the value of diversity. The findings from the baseline knowledge questionnaire reflected the similarities and differences between Pakistani and the American participants based on their different educational and cultural environments. In spite of these differences, the participants were found ready and confident to participate in the collaboration.

Qualitative Data Presentation

The following data were collected from students, teachers, and administrators by using multiple interviews, focus group conversations, document review, and online data from NING. The data collected from the interviews with students, teachers, and administrators were transcribed and major themes (Table 4) were identified. Once the major themes were found, I integrated data that I obtained from other methods.

Table 4

Summary of Themes and Subthemes

Themes	Subthemes
Attainment of global Awareness and cultural competency	Improvement of knowledge about partner country Breaking of stereotypes Understanding of other cultures
Development of creativity and collaboration	Sharing work in teams Alternate ways of teaching and learning
Students' growth in technology skills	NING as medium of communication Integration of technology in classroom activities Project encouraged switching on the computers

The participants' responses indicated that they have developed global awareness, cross-cultural, creative, collaborative, and communication skills. The data are presented in a comparative manner by grouping the student and teacher data within each thematic category. The quotes from Pakistani and American participants are used to create a comparative account based on the views of participants from the two different countries. Finally, the data

obtained from the administrators are thematically presented by comparing views of Pakistani and American administrators.

Attainment of Global Awareness and Cultural Competency (Students)

As far as global awareness and cross-cultural skills are concerned, similar responses were found among Pakistani and the US students. Pre and post-project interview responses clearly indicated the acquisition of key 21st century skills among students who were engaged in the educational and cultural exchange program. Improvement in students' knowledge about the partner country was a significant step towards the achievement of global awareness which helped the participants to use their attained knowledge for understanding issues in context.

Improvement of knowledge about partner country. As a result of students' engagement in the educational and cultural exchange program, their knowledge about the partner country increased. During the pre-project interview, one of the students from HITEC said:

> Global awareness means how people live in other countries, what is their culture, customs, festivals and different beliefs. Global awareness is the understanding of the world, what you know about the world.

After his engagement in the exchange program, he responded:

> The exchange program has definitely improved my knowledge about the US. It was a great opportunity for me to interact with the US students online. They provided me lot of information about their town and school. I did not know about so many things like their holidays and festivals. My partner in the US school educates me about the Thanksgiving holiday. I had no idea of this holiday, in fact I never heard about it. I

> came to know how they celebrate Thanksgiving in the US. They cook turkeys and eat together with the whole family. She shared photos which she took during the dinner and cooking of turkey. Other students in our group shared the origin of Thanksgiving through a story, which is so interesting and I can relate it with our festivals on harvesting crops in most of our villages. We did a collaborative project on holidays in the US and Pakistan. The only American holidays I knew before this project are Christmas and Easter. Within few months, I learned about Halloween, Veteran's Day, Memorial Day, Saint Patrick's Day, and Independence Day. The experience was very informative.

The above response is a clear reflection of the improvement in the participant's existing knowledge about the partner country. Celebration of holidays in any culture is the key to help others who are not familiar with that culture to better understand it. More importantly, the knowledge obtained about the partner country was rich. Participants shared their personal experiences, which enhanced their understanding about each other in addition to improving their knowledge about the other country. Another student from one of the partner schools in Boone, NC mentioned during the pre-project interview:

> Global awareness means any information known to maximum number of people in the world, for example, many people know the name of the president of the USA (Barak Obama). Global awareness is conceptual understanding based upon knowledge of global and cultural perspectives.

After his engagement in the exchange program, he discussed his current knowledge about the partner country like this:

> My knowledge about Pakistan increased as the result of my participation in this exchange program. I came to know about their holidays in our social studies project. These guys shared their own images on Eid Holidays and told stories how they celebrate Eid. They scarified the animals on Eid, which is shocking for me but when they shared the background of this ritual, my whole class understood the idea. They do the charity by giving away the meat to the poor, who are unable to buy meat. The photos about family gatherings on Eid were so colorful and the stories related to them were interesting.

The above reflection indicated that the participants not only improved their knowledge but also were beginning to understand issues in cultural and religious contexts. As noted earlier, festivals and rituals seem to be an effective vehicle to understand the culture of another country. In this case, the US participants learned about the Eid festival and gained a deeper understanding about the philosophical basis of Eid. In addition to improvement in their knowledge about the partner country, the program provided an opportunity to appreciate each other, as individual, which in turn developed a more inclusive worldview.

In the document review, the vision statement mentioned in the partnership agreement (Appendix L) noted that the purpose of this program is to develop a partnership that leads to cross-cultural exchange, educational collaboration, and relationships based on knowledge, empathy, values, equality, and trust between students, teachers, and administrators of Pakistan and the US. The vision of the project is reflective of key 21st century skills like cross-cultural and educational collaboration. The data suggest that the participants of the exchange program developed these critical skills during their engagement in the project.

Breaking of stereotypes. The data gathered from students also indicated that their engagement in the educational and cultural exchange program helped them to change their stereotypes. The online collaboration brought clarity about several issues in the minds of participants. During the pre-project interview, one of the students from HITEC expressed that:

> My perception about the US is that people are quiet rich, there are huge buildings and malls, people are kind and wear stylish clothes and use branded stuff and are really happy and they are free of tension.

Another student added to her experience based on media and news stating that:

> Our media says that America do not like Pakistan and the Americans hate Pakistanis. For example, our media says that the Sawat and Dir operations were operated by Americans because they do not like the Pakistanis. I think most of Americans are rude and do not like the people of other countries.

After their engagement in the exchange program, students from both countries expressed a different perception about the partner country, one of the Pakistani participants stating:

> I always believed that Americans are rude and difficult to communicate but my perception about them changed in very first week of my participation in this exchange program. They are so nice and ready to answer all my questions, even those questions which are not related to the project. In fact, I made several American friends during this project.

The above response of the same student in pre- and post-project interviews provide a clear indication of change in the participants' perceptions about people from the other

country. This change was facilitated by conversation with her counterparts in which she gained first-hand knowledge about the partner country, its people, and its culture. The participants' insights also indicated that the acquisition of personalized knowledge, which is obtained by direct communication, has replaced the media-based knowledge, which created a false perception in the minds of participants. This finding is further confirmed through the baseline knowledge questionnaire. Question 3 (Appendix B) in the baseline knowledge questionnaire was designed to ask participants about their sources of information. An overwhelming majority (94%) students in both countries responded that media is a main source of information for them. Participating in this exchange program provided them with an opportunity to compare the media-based information with the first-hand knowledge gained from their partner students.

American students also found this exchange program to be an opportunity to improve their perceptions of Pakistan. The responses made it clear that the experience of participants in this program yielded fruitful results. A Pakistani student's response indicated that she realized that first-hand information was more powerful than media reports. Similarly, a student from Boone elaborated on her experiences that brought a change in the way she thought about Pakistanis:

> About stereotypes, there are several before I got this experience. The one I would like to mention is their interest in music. Being an Islamic country, I thought the music might be banned in Pakistan and there are some religious restrictions but I was surprised to know that they listen to music and also dance. More interestingly some of their favorite singers are Americans. They all are bilingual and their proficiency in the English language is awesome.

As the response above indicated, one of the major misconceptions among western people is that Islamic society does not appreciate art forms. The perception changed as the result of the participants' transformation in this program. Not only that, but they also found that their partners appreciated western music in addition to Asian music, which provided the students with an opportunity to rethink the way that they conceived ideas about the rest of the world.

Understanding of other cultures. The data collected from students indicated that their engagement in the educational and cultural exchange program helped them to improve their understanding about the other culture. One of the students from HITEC expressed his views like this:

> Educational exchange program was very helpful to aware me about the cultures of another country. This program also helped me to know more about the languages, living, habits, and social activities. I realized that we are more similar than different from our American partners. We have similar problems that we face in class, like homework, lectures. I think we have some differences but most of the things are same like interest in music, arts, science, and English language. However, we have different sports, dressing and food.

Similarly, the American students also found their engagement very useful in learning about the culture of their partner country. An American student from Boone expressed that:

> Learning about the other culture is a great experience for me. I never found it difficult to work with partner students in Pakistan. Yes, I always respect other cultures and we must learn from other people. I learned some good things from Pakistani students and

teachers like how they spend their day in school, which is different from my school day.

In summary, the students engaged in the exchange program recognized the role of the program in the development of global awareness and cross-cultural skills. The data clearly reflected that the participants have shown progress in developing key 21st century skills. Their knowledge about the partner country increased, and they have improved their perceptions about each other. Their stereotypes were replaced with fresh and first-hand knowledge. Finally, the students were able to better understand the culture of the partner country, and they also recognized the key elements of their own culture.

Attainment of Global Awareness and Cultural Competency (Teachers)

In order to understand how teachers in the partner schools in Pakistan and the US envisioned the attainment of 21st century skills during their engagement in the educational and cultural exchange program, four teachers (two from each country) were interviewed. Similar themes emerged from the data collected from partner teachers in Pakistan and the US. The participating teachers were found to be very articulate about the role of the educational and cultural exchange program in the attainment of 21st century skills for their students.

Knowledge about the partner country. Most of the interviewees indicated that global awareness and cross-cultural skills are among the most important 21st century skills that have been fostered during their engagement in the exchange program. The knowledge about the partner country increased through direct sources instead of through the media and news. According to the teachers, the curriculum-based project was a great tool to engage participants in a meaningful learning experience; for instance, when they were doing the

holiday project, the participants shared information about all of the holidays that their families observed, and how holidays are celebrated in various parts of each country. The information was helpful for students to enhance their knowledge about the partner country. More importantly, after sharing information, the conversation continued through comments on blog posts, which helped participants to understand several issues in context. One of the interviewees from the US expressed this in the following way:

> During the curriculum project I learned a lot, especially the Eid festival in which they kill animals. One of the teachers in Pakistan elaborated on philosophy of this traditional and religious holiday by telling the core of the festival, which is charity and sacrifice for poor. It would never be understood without this explanation. Such collaboration and personal engagement with some folks who are living in different country, always helped to know and understand things in context.

Breaking of stereotypes. Another important finding is the change in perception of participants about each other as a result of their engagement in this exchange program. One of the Pakistani interviewees crystallized the experience in these terms saying that "stereotypes were broken, perceptions were changed, gaps were bridged, visions were broadened, friendships were developed, and bonds of love were strengthened."

This powerful statement from one of the Pakistani teacher is reflective of how her beliefs changed during her engagement in the exchange program. At the beginning of the project, many participants possessed stereotypes due to their lack of information and lack of contact with people abroad. The exchange program helped the participants to connect with their partners through online collaboration in order to enhance their knowledge about other

people, which resulted in breaking the stereotypes that existed between the people of the two countries.

Similarly, an American teacher found the US-Pakistan Educational and Cultural Exchange Program a way of developing and fostering 21st century skills among students and teachers.

> Having a collaborative partnership with the Pakistani school HITEC has given our students and teachers an international experience that continues to grow. Our school teachers and students formed relationships that continue online today. The online experience gave our students a chance to see the positive side of a country that is typically only represented in a negative manner on the news. Two very different cultures came together to understand the similarities they have with each other. Each group was able to learn about each other so that stereotypes could be confirmed or rejected. I hope that we can continue this program so that the young people can learn from each other and begin the process of building relationships. I think only through building relationships can people begin to start to care about each other and really understand the importance of peace.

The response from the US educator is an indication of how school teacher values the exchange program in the acquisition of 21st century skills among students and teachers. It was also reflected in the interview data that there was a strong sense of peace building through knowing and understanding each other. The exchange program played an important role in developing this sense among students and teachers in both countries and helping them to rethink their perceptions about each other.

Understanding of other cultures. The online engagement in the program resulted in knowing and appreciating other cultures and values as one of the interviewees from Pakistan said:

> It helps me to understand the US culture as well as my own culture. Initially, I was trying to see the difference between my culture and that of the US and tried to decide if the difference is good or bad, but I finally realized that differences are not good or bad, they are just differences and maybe we are doing the same thing in a different way and there is a right way of doing thing in a specific culture.

This is an interesting point which reflects the level of cultural competency achieved by some of the participants engaged in this exchange program. The response from the program participants also indicated the change of perception between the beginning and the ending of the project. In the beginning of the project, the participants distinguished the cultures based on their surface knowledge, but the engagement in the exchange program helped them to understand the partner culture in a much deeper way. At the end of the project, the participants realized that there are different ways of doing the same thing, which not only reflected an improved cultural competency but also indicated an element of creativity in their learning process.

It is evident from the interview data that global awareness and cross-cultural skills were developed and fostered as a result of this exchange program.

Development of Creative and Collaborative Skills (Students)

Like global awareness and cross-cultural competency, the development of creativity and collaboration emerged as an additional theme of this study. Both involve learning skills

that participants developed during their engagement in the educational and cultural exchange program.

Sharing work in teams. Some of the interviewees appreciated the teamwork during the completion of academic projects. An American student shared "I agree that working in this project makes me think differently. It provided me an opportunity to complete some assignments by sharing my work with some students in Pakistan. This was a different experience and in many ways an interesting one."

Similarly, Pakistani participants also indicated that they have practiced collaborative skills during their engagement in academic projects:

> One of the best things in this exchange project was to do some kind of creative work. We missed that component in our regular classes. In this project, for example, we did an assignment on cultural diversity. Our teachers directed us to find elements in our culture and then write about them by giving some personal examples. This was an amazing experience for me because there were so many things in our culture that we never feel important but when we did this assignment, we did lot of research to find more about our culture. When we uploaded our assignment on NING, the US students asked many questions and we enjoyed responding to them. Similarly, when US students posted their work, we asked them about their culture to learn more about them. So it was a great experience for me to participate in this project.

The above response provides an example of using culture as a vehicle to introduce creativity into school work. The activity also helped the participants to learn more about their own culture in addition to gaining an appreciation of the other culture. Another Pakistani

student recognized the creative work she did while creating her profile on the NING site. She mentioned her experience like this:

> Yes, in some ways, I feel that this online program provided me an opportunity to express myself when we created our NING profiles and wrote I first introductory blog about my life. In a language project, I prepared a small photo stream to share, how I spend one day in my life. One day in life is our project in language arts. With the help of photos and a paragraph, we uploaded our work on NING site to share with others in the program. This project helped me to express myself. The project was simple but I learned how to ask questions and how to reply them. In Pakistan, we are not encouraged to ask questions and it takes lot of courage to ask our teacher about anything. In this project, we did everything online and have more liberty to ask questions from our partners in the US. I also made lot of clarifications on my posts to help US students about my blogs.

The response above is a reflection of the learning skills that participants developed during their engagement in the educational and cultural exchange program. Expressing yourself in a unique way is also a form of creativity. Additionally, the comment about the liberty to ask questions identified the different educational environment in Pakistan and the US. Fox (2011) considered "asking questions a 21st century skills that one has to cultivate and refine, because the questions we ask will frame the solutions we find" (p.28). Therefore, one outcome of this project encouraged students to ask questions. The baseline survey indicated that only 37% of Pakistani students reported that their institution provided a good environment to acquire 21st century skills. Since creativity is an important 21st century skill,

the Pakistani participants believed that the program helped them to develop an environment where they could develop new focus of creative work and critical thinking.

Alternate ways of teaching and learning. The participants in the program created their profiles on the NING site with general information, which was useful for the partners in each country to become acquainted with each other. The profile making on the NING site illustrates the work of students during their projects. Participants created diverse profiles and customized their pages with different colors, designs, animations and characters, which is a reflection of their creativity. A student from Pakistan found it interesting to do creative work in a different way. She interpreted the work like this:

> Yes, I think we do lots of creative work but not for our class and studies. Most of our creative work is out of class. I participated in making handicrafts made up of paper like colorful vases, display articles and different sentimental cards etc.

The participants' reflections on their learning skills (creativity and collaboration) indicated that they made had advanced in the acquisition of these important 21st century skills. The data also highlighted the fact that students at HITEC did not get opportunities to do creative work in classroom. In Pakistan, most of the skills that exist in society are not integrated in the education system. The interview data indicated that they created their profiles and blogs to introduce themselves to their partner students in the two respective countries. Creating these two items online was a good reflection of their creative work.

Development of Creative and Collaborative Skills (Teachers)

Like the students, the teachers also reflected on the acquisition of creative and collaborative skills during their engagement in the exchange program. The data from the teachers' interviews indicated that there was a positive impact of the US-Pakistan

Educational and Cultural Exchange Program on their capacity for creativity and collaboration. They found it to be a great tool to bring creativity and collaboration into the routine class activities, as one of the US partner teacher mentioned in her interview:

> Although it's hard to define and describe creativity but providing different means of learning tools bring creativity through collaboration during the project. In curriculum-based projects, students get the opportunity to create some document, digital story or narrative of their experiences, which are different ways to demonstrate creativity.

The above response from a US teacher indicated that the engagement in the project helped her students to bring creativity into their work especially during the construction of digital stories. This collaboration made both students and teachers think of doing things in a different way and provided them with an opportunity to do creative work.

Sharing work in teams. Several activities in the program nurtured the participants' creativity. The curriculum-based projects were designed in a way that participants were required to demonstrate creativity and collaboration in order to complete each assignment. One of the Pakistani interviewees mentioned creativity and collaboration in the following way:

> First of all, it's learning in a different way, which brings lot of creativity in the work that the students did in this exchange program. For the assignments, my students have collected information using different sources, then posted on the NING site and finally created a short photo stream to share with the partner students. After the display, they kept responding the questions from other group, which gives a great sense of collaboration. I noticed that my students improved the collaboration at two

levels; one at school among their classmates and second with the students in group at partner school in the US.

The above response indicated that engagement in the exchange program resulted in integrating creativity and collaboration into the students' work.

Alternate ways of teaching and learning. One of the Pakistani teacher indicated that the exchange program was a great opportunity to try different methods of teaching in order to achieve wider objectives. A teacher from Pakistan said:

> It makes me think to do something different. In my fifteen years of teaching, I never used computer for teaching before my engagement in this exchange program. I learned that we can improve our teaching methods because it develops lot of interest among students to learn. We should make it a regular part of our teaching.

This response indicated that the exchange program had an impact on the teachers' pedagogical skills. For most of the Pakistani teachers, this was their first experience using an alternate way of teaching students, and it was especially novel to use technology. In Pakistan, most teachers practice the lecture method and students are not actively engaged. The introduction of the exchange program motivated educators to think of alternate ways of teaching, enabling them to work more creatively.

Student Growth in Technology Skills

In addition to learning other skills, the participants also developed technology skills during their engagement in the exchange program. Working on NING was a new experience for many of the participants. They learned both basic and advanced level technology skills. In the basic skills, students learned how to share photos and videos, how to post blogs, how to create their own profiles, and how to customize their web pages. In the advanced skills, they

learned how to create a digital story. The meaningful selection of images, videos, and information is a form of creative work that almost every participant accomplished in an effective way. One of the teachers said:

> One major difference that I feel worth mentioning is students' growth in technology skills. They have shown a marked improvement in the usage and understanding of technology in their learning process. I found my students very active during their engagement in curriculum-based projects and the major reason was the use of computers in their work.

The data indicated that the use of computers resulted in active participation of students in the assigned project activities. The baseline survey indicated that only 19% of the Pakistani students reported that they experienced an integration of technology in their classrooms and learning. Through this exchange program, they were able to make better use of technology by integrating it into their academic projects.

NING as a social medium of communication. Data obtained from participants reflected that they have improved their communication skills during their engagement in the exchange program. Pakistani students also mentioned some logistical problems for example, one of the Pakistani students indicated that:

> I see technology a great help in this area. We get lot information while sitting at home. It is a great social medium of communication as we can exchange views with our friends in the US, but sometimes we don't have electricity to switch on our computers to use technology.

Similarly, the partner students in the US also valued communication technology as an important tool to develop technology skills. One student mentioned his experience like this:

> Technology helps us in every field of our life today: technology has modified a lot. In old generations, we have only one thing, telephone, but now we have many communication technologies like Skype and NING from which we could talk even if the people are very far from us and we can even see the image.

The above responses indicated that technology acted as a backbone for this program and that the participants accomplished several technological objectives. At the same time, they mentioned problems related to the use of technology in Pakistan such as power shortages and a lack of connectivity was a barrier to the acquisition of technology skills.

Integration of technology in classroom activities. The data from the interviews indicated that participants appreciated the integration of technology in their institutions because it helped them to make a progress in developing technology skills.

Pakistani participants mentioned the change at their institution for the use and integration of technology. A student from HITEC shared her experience:

> Overall, it was a great experience and I learned that we can do so many things using technology. Here at HITEC, the computers are present in the labs but we only use for playing games and typing. With the start of this project, we are able to use these computers for some good work.

The baseline survey data revealed that less than half (46%) of the Pakistani students participants possessed basic computer skills (Question 9) or advanced technology skills (Question 10). The low level of acquisition of these skills is due to limited use of technological resources as the participant mentioned in her reflection. Another student from HITEC added to the conversation about academic projects:

> Yes, the technology is very much integrated in our projects. First of all, we are working on NING, which is an online forum, so no work is possible without the use of technology. We used technology to complete the assignments and post our work on NING. We uploaded videos, pictures and wrote blogs on NING. I am happy that we can use technology because it is interesting and I never get bored.

Her response is a clear indication of an integration of technology in her work. Additionally, it is also reflective of what learning looks like in the 21st century. As she mentioned, she can work anytime and from anywhere and reinforced the value of learning outside the classroom.

Similarly, American partner students explained the use of technology in their learning. According to one student:

> My involvement in this exchange programs helped me to learn several skills related to technology. I did not know about NING before getting into this program. We can do multiple things on NING like photo and video sharing, blogging, chatting, discussion, collaboration etc. During the academic project, we learned to use NING for collaboration with the Pakistani students.

The baseline survey reflected that all (100%) of the American participants believed that they possessed either basic or advanced technology skills (Questions 9 and 10, Appendix D). In spite of that response, students learned and developed some new technology skills. For example, a US student shared her experience of working in the academic projects in these terms:

> It was a great experience to be a part of this online exchange program. I learned how to use technology to create a digital story by using our images, video clips and

> information. It was an awesome way of presenting my work. We did a project related to holidays and I made a video about Halloween to share with Pakistani students, which was very much appreciated by them. Similarly, the Pakistani students made a video about Eid, which is so colorful and interesting. I think this program helped me to consider more ways of representing my work.

The above refection is indicative of the value of learning new technology skills such as developing a digital story by using multiple computer applications and tools. Additionally, the data indicated that participants appreciated the value of technology skills in other learning areas such as finding alternate and creative ways of representing their work. Above all, the use of technology also helped the participants to learn more about the culture of the partner country, thus supporting the development of cross-cultural competence.

The teachers also reflected on their technology experience during their engagement in the educational and cultural exchange program. The data from participating teachers indicated that the program served as a vehicle to integrate technology into classroom teaching and learning. The data reflected that there is a major change in the mindset about the use of technology for teaching in Pakistani partner schools, which is seen as a trend setter for HITEC and also a step forward in the implementation of 21st century skills.

The integration of technology into classroom teaching emerged as an additional theme in this study. At HITEC, a major shift was noticed in the use of technology for teaching. One of the Pakistani teachers shared his reflection about the integration of technology:

> I believe there are several ways in which we are using technology at our school, but the US-Pakistan Exchange Program is an excellent way of integrating technology in

> our classrooms. Since all activities are online, it is easy to get that sense of integration. We have lot of technology around but it is challenging to figure out how to use it, or integrate it in classroom teaching. Some of the equipment is underutilized and sometimes, we demand more but unable to use it. The US-Pakistan exchange program gives me a reason to make a good use of technology which is around me. My students have been effectively using these equipment and tools to complete assignments on NING.

The above reflection appreciated the role of the exchange program in encouraging the integration of technology in the classroom. Another advantage of having personal and academic connections among students and teachers in Pakistan and the US is that such connections provide motivation for the use of existing technology at their respective schools. The data indicated that teachers and students in both countries appreciated the role of their personal connections in making better use of technology in their work and learning processes.

Project encouraged "switching on the computers." A Pakistani teacher expressed his views about the integration of technology in the following way:

> After our engagement in US-Pakistan exchange program, there is a huge change in the mindset, the way we think about the use of technology. It is unprecedented, and in some ways unbelievable. This program finally helped us to switch on computers, which normally were just used for typing and printing. Initially it looked like a fun but slowly and gradually, we learned so many things, like blogging, digital stories and photo streams. These are important skills to live and survive in 21st century. With this program, I must say HITEC is really going high-tech.

The above response from teacher working at a Pakistani partner school is a strong indication of the change that took place at his school. The exchange program encouraged the teachers to use technology to make their classroom teaching more effective and interesting. The data also highlighted the difference in the setup of the technology structure in Pakistan and in the US partner schools. In Pakistan, the computers are centrally placed in form of IT and computer labs; whereas, in the US, the computers are available inside the classroom for easy use by teacher and students.

Administrators' Vision of Implementing 21st Century Skills

The third research question was framed to assess how administrators in partner schools understand and value online educational and cultural exchange programs for the implementation of 21st century skills as well as the role of school administration in providing a support system for the implementation of these skills.

The data obtained from the administrators revealed that they strongly believed in implementing 21st century skills at their respective schools. Moreover, they also showed strong support for an educational and cultural exchange program as a vehicle for implementing 21st century skills at their respective schools. Three major themes emerged from the interviews with administrators: (a) conceptual understanding of 21st century skills, (b) educational exchange program as a tool for implementing 21st century skills, and (c) commitment of school administration to implementation of 21st century skills.

Conceptual understanding of 21st century skills by school administrators. The two participating administrators in the partner schools in Pakistan and the US held different views about the concept of 21st century skills. The variation in views may have been the result of the different cultural and academic environments in the two different countries. The

idea of 21st century skills was new for the Pakistani administrator who had no concrete strategy for how to implement any model of 21st century skills, whereas the American administrator possessed more information about 21st century skills and had a better strategy in place to implement the 21st century skills model.

The idea of 21st century skills is not new in the US. Even before the start of this century, educators initiated conversation on what learning would like in the 21st century. It was very clear at the beginning of the 21st century that the service economy, which is driven by information, creativity, and innovation, had superseded the industrial economy and reshaped education and society. The American administrator expressed that "the world is changing as the result of globalization and if we don't change accordingly, we would be left behind. It's important to develop certain skills among students and teachers to compete in this changing world."

The administrator further referred to current initiatives to reinforce 21st Century Skills in public schools of NC: "North Carolina is a member state of Partnership for 21st century skills. Policy makers and educators have created new curriculum, new assessments, and new ways to align classroom teaching and learning outcomes with a 21st century workforce."

It was evident from the above statement that public schools in NC follow the state standards in order to achieve 21st century goals. Policy makers and educators have taken practical steps toward this goal such as revising the curriculum and redesigning assessments to make sure that students are prepared well for the future. I further noted that partner schools in the US made serious efforts to address the concept of 21st century skills. I observed the rainbow shaped charts (Figure 1), explaining the core concepts of 21st century skills,

everywhere in the schools as a symbolic gesture of commitment to implement these important skills.

An administrator at the partner school in Pakistan had a different point of view about 21st century skills. He believed that it is a western idea and there is little understanding of these skills in Pakistan, even at HITEC. Due to cultural and geographical barriers, people in Pakistan have a very clear distinction between the east and the west. There are multiple reasons that the Pakistani administrator may consider 21st century skills as a western idea. Primarily, since most of the discussion on 21st century skills was initiated in the western world, most of the non-western educators consider these skills to be western ideas. Secondly, the standard of education in Pakistan is low; therefore, school administrators prioritize basic skills rather than 21st century skills in order to address educational problems. Additionally, education system in Pakistan follows western models of education like the Cambridge School system and English medium school system. Lastly, anything related to technology is considered to be a western innovation. Since technology is a pivotal element of 21st century skills, it is natural for the administrator in Pakistan to think that the concept of 21st century skills is a western idea.

While some of the skills are practiced, the Pakistani school had no formal policy or standards to follow for 21st century skill attainment. The Pakistani administrator envisioned 21st century skills like this:

> I don't have any absolute idea about 21st century skills. In countries like Pakistan where education is not a big priority, such ideas do not exist in our educational system. Even at HITEC, which is a model of excellence, we don't have any policy to incorporate these skills in a formal way. We hired best teachers from all over Pakistan

and they practice latest methods of teaching but at institutional level, we don't have any policy to address this.

Even though there was no formal policy related to the implementation of 21st century skills at HITEC, I noticed that there were several activities teachers used at HITEC which are actually supporting 21st century skills. Due to the lack of awareness about the models of 21st century skills the interviewee was not sure about these skills. The lack of awareness about the 21st century skills model at the top-level of the administration resulted in the lack of organized efforts to achieve 21st century goals at HITEC.

Other important findings involved the barrier in the cultural and academic environment, for establishing an idea for 21st century skills at HITEC. The most common teaching methodology is the lecture method where students are passive listeners and teachers are active performers. This method leaves almost no room for any creativity, innovation, or collaboration. Secondly, technology has become an important factor in the acquisition of 21st century skills, and it is important to integrate technology into classroom teaching in order to attain 21st century skills. In HITEC, the technology is centralized and not available within the classrooms. Logistical and administrative issues are involved if someone wants to use computer labs for teaching. Due to these problems, the teachers are unable to easily integrate technology in order to achieve 21st century goals.

Educational exchange program as tool for implementing 21st century skills. The views of administrators in partner schools in Pakistan and the US were similar with regard to the role of the educational and cultural exchange program in the attainment of 21st century skills. They strongly recommended the use of such programs in order to achieve 21st century

goals. The data indicated that the US-Pakistan Educational and Cultural Program fostered 21st century skills among students and teachers. According to a Pakistani administrator:

> The US-Pakistan Educational and Cultural program is a great addition in our educational setup at HITEC. First of all, it takes HITEC to an international collaboration with teachers and students in the US. Secondly, it provides an opportunity to young students to improve their perceptions about the US culture. At the same time, they can also help them to see the soft image of Pakistan. Moreover, this program has encouraged several teachers and students make good use of HITEC technological resources for their teaching and learning process. At personal level, I have started using emails and the NING site, which is very interesting and rewarding experience for me. Now I am no more dependent on my assistant to check my emails, print and present me every morning.

The above response is reflective of a major change in the way people at HITEC think about learning in the 21st century. According to the interview data, Pakistani students and teachers improved their perceptions about the partner participants in the US and also learned more about the American culture and people, which is an indicator of an improvement in global awareness and cross-cultural skills. Similarly, the use of technology was mentioned as a major change in the way students and teachers see their learning process.

An administrator at a partner school in the US found the US-Pakistan Educational and Cultural Exchange Program to be a powerful way of fostering 21st century skills among students and teachers:

> The collaborative partnership with the Pakistani school has given our students and teachers an international experience. At the same time, they develop 21st century

> skills like collaboration, global awareness and technology. During their engagement with the partners in Pakistan, they learned about another culture, which was not known to them.

The above response from the administrator clarifies how the American school administration valued the US-Pakistan Educational and Cultural Exchange Program in the development of 21st century skills among students and teachers.

Commitment for support system for implementing 21st century skills. In order to implement 21st century skills in middle and high schools, it is very important for school administration to provide a strong support system for students and teachers. The term "learning environment" covers not only the place and space (e.g., a school, a classroom, a library, an online learning community), but also the relationships that create a supportive environment for every child's development. In the 21st century, "learning environments should be seen as the support systems that organize the condition in which humans learn best systems that accommodate the unique needs of every learner and support the positive human relationships needed for effective learning" (Partnership for 21st Century Skills, 2006). A support system is comprised of the environment and the infrastructure to make it possible for students and teachers to attain 21st century skills. Environment means the training, organizational culture, and professional support whereas infrastructure refers to technological and educational tools.

Both the interviewees were committed to providing a strong school support system in order to implement 21st century skills. For example, the Pakistani administrator stated:

> I am fully committed to initiate a process of making 21st century skills as a policy for HITEC. As far as infrastructure is concerned, I think, we have it at HITEC and will

> take some administrative steps to help students and teachers to make maximum use of technology resources. Changing organizational culture will take some time. We have a strong professional development program, which provides training to in-service teachers in summers. I will make 21st century skills as focus for next year training program and prioritize it as a policy for HITEC.

The data indicated the commitment of the school administration to provide a support system to implement 21st century skills. The steps mentioned in the interview data made it clear that the engagement of the partner schools in the exchange program resulted in a change in the policy agenda. The understanding of 21st century skills improved and it became easier to implement these skills in school. Utilizing the existing infrastructure and staff development are positive steps towards the implementation of 21st century skills.

In the partner school in the US, the administrator had strong convictions and motivations to achieve 21st century goals. The support system for 21st century skills was elaborated during the interview in this manner:

> I believe we have good infrastructure and the environment to support the implementation of 21st century skills. We provide equitable access to quality learning tools and technologies to teachers to balance direct instruction with project-oriented teaching methods. Deeper understanding of subject matter can enhance collaborative, critical thinking and creative skills among teachers and students. We have already introduced formative and summative assessments to assess the learning outcome of 21st century learning.

The partner schools in the US have a better infrastructure and environment when compared to partner schools in Pakistan for the support of 21st century skills implementation.

The availability and access to technological resources made a major difference in implementing these skills. The provision of smart boards, computers, and Internet connectivity made it possible for the teachers to make effective use of online resources. At the same time, the use of technology made it possible for students to learn in a different way. It was also important to note that teachers were using project-based methods of teaching, which resulted in the development of some key 21st century skills among students and teachers. Moreover, different forms of assessments were practiced in the school to assess the outcomes of 21st century learning. These assessments are critically important to measure students' progress in attainment of 21st century skills.

Summary of the Chapter

The chapter clearly indicates that the US-Pakistan Educational and Cultural Exchange Program is a useful tool to develop and foster 21st century skills among students and teachers. Data mentioned in this chapter highlight the development of key 21st century skills such as global awareness, cross-cultural, creative, collaborative, communication, and social networking ability among students and teachers. The data obtained from school administrators indicated that they valued the exchange program for the acquisition of 21st century skills, and they were found fully committed to implement 21st century skills at their respective institutions, despite their differences in conceptualizing the notion of 21st century skills.

The following chapter will connect the findings to the literature through further analysis. The conceptual framework of the study will be revisited along with the limitations of this study. In the end, the implications of the study will be reviewed and suggestions for future research will be made.

Chapter 5: Analysis and Implications

The findings documented in the previous chapter are analyzed in this chapter by relating them to the contemporary research literature. This section of the study will also discuss how the findings address gaps that exist in the literature and shed light on the contribution of this research to the literature. In addition, the conceptual framework of the study is revisited and followed by addressing the limitations of this study and its implications. Finally, recommendations for further research will be offered.

Introduction and Overview of the Study

This qualitative study was designed to explore the attainment of 21st century skills among students and teachers of middle and high schools in the context of an educational and cultural exchange program. The study was also intended to discover how students and teachers in Pakistan and the US envision 21st century skills. Finally, the research was conducted to look at the role of the school administration in implementing 21st century skills through educational and cultural exchange programs at their respective schools in Pakistan and the US.

Three research questions were designed to explore the attainment of 21st century skills, how study participants develop these skills, and how participants understand these skills in their learning process during their engagement in the educational and cultural exchange program.

Analysis

Based upon the gathered data, it was evident that the online educational and cultural exchange program played a pivotal role in developing and fostering some of the key 21st century skills among students and teachers. The acquisition of 21st century skills during the engagement of participants in the exchange program is analyzed in this section by using thematic analysis. Three major themes emerged from the data: (a) attainment of global awareness and cross-cultural competency, (b) development of creative and collaborative skills, and (c) students' growth in technology skills.

Attainment of global awareness and cross-cultural competency. The attainment of global awareness and improved cultural competency are two major 21st century skills that participants developed during their engagement in the educational and cultural exchange program. According to the Global Awareness and Education Committee at the University of Wisconsin (2010), global awareness refers to "the ability to have the knowledge, competencies, values, and dispositions to act in an informed manner, demonstrate empathy, engage in effective intergroup communication, and build community across social, cultural, political, environmental and geographic boundaries" (Global Awareness and Education Committee, 2010). I believe that students need to acquire this awareness in order to be sensitive to the general beliefs and values of other cultures. Global awareness is also a critical lens that a researcher may use in order to assess and re-contextualize the pre-existing information that he has obtained from multiple indirect sources. Thus, participation in global learning projects can enrich students' understanding and knowledge both in terms of breadth and depth through exposure to the perspectives of their counterparts.

The pre- and post-project interview data indicated that participants made progress in acquiring global awareness skills. It is clear from the data that participants improved their knowledge about the partner country and developed competencies to understand issues in context. The participants of the exchange program effectively demonstrated a better understanding about the other country and its cultural values. Also mentioned in the definition was emphasis on effective communication among participants within their own group and with the other group in the partner country. The last part of the definition is about building community across social, cultural, political, environmental, and geographic boundaries. The participants of the exchange program built a strong online community based on shared socio-cultural values and shared academic inquiry, which is prominently represented in their online projects and assignments.

Chickering and Braskamp (2009) said that students need to learn to talk and work with individuals who represent a wide and varied range of social, ethnic, and religious identities. This engagement helps students to become culturally and globally competent. With the help of US-Pakistan Educational and Cultural Exchange Program, participants were able to understand the conceptual idea of global awareness.

In addition to obtaining firsthand knowledge about the partner country, the participants had the opportunity to refine their perceptions about each other through an exchange of academic and cultural material using the online forum NING. Several stereotypes were broken down and replaced with fresh and accurate knowledge about the other culture. A student from Pakistan said that he “finally realized that differences are not good or bad, they are just differences and maybe we are doing the same thing in a different way.” To elaborate on this breakdown of stereotypes, participants shared several examples

related to the behavior of people living in the two countries. The US participants who believed that all Pakistanis are radical, realized that Pakistanis are moderate. Similarly, Pakistani participants who conceived that all Americans were rude, found Americans decent and kind. It is also evident from the data that the media-based knowledge was checked and reinterpreted in relation to the personally collected information from the respective partners in Pakistan and the US.

Additionally, my personal experience of coming to the US also confirmed the findings of my study. Before coming to the US, my major source of information about Americans was from the media, and all of my perceptions were based on media reports and Hollywood movies. After coming to the US and spending time in academic and community settings, I have realized that most of the information about the US culture was totally wrong. With the passage of time, most of my misconceptions were replaced with firsthand knowledge, which I obtained after my engagement with the community.

Matsumoto (1999) found that tolerance of ambiguity, openness, flexibility, and self-efficacy are four basic elements of cross-cultural competence. Data gathered from teachers indicated that the students developed cultural competency as they have shown great flexibility as well as openness and self-efficacy during their engagement in the exchange program. For flexibility, in spite of differences in curriculum contents, teachers in both countries were willing to agree on common curriculum projects. The openness of the participants was noticed during their discussions on issues such as religion and educational practices. Both religious and educational practices are different in Pakistan and the US. The project allowed participants to engage in healthy discussions to help each other understand about religious and educational values. Bridging the differences in cultures, social values,

religions, and educational systems were some of the major challenges for participants in both countries. In spite of all these differences, the participants were able to accomplish the project goals by accommodating others' ideas. This openness was also noted when participants changed their perceptions about each other after interacting online during their projects. Self-efficacy was also observed between participants in their communication with their partners.

As far as cultural competency is concerned, it is quite evident to me that participants made good progress in the acquisition of this important 21st century skill. In his book *Understanding Culture's Influence on Behavior*, Brislin (2000) discussed that the goals of cross-cultural training are to meet these four criteria for success: (a) the growth of positive feelings about other cultures, (b) getting benefits from the similar feelings from other members of culture groups, (c) completing specific cultural tasks, and (d) reducing stress stemming from cross-cultural misunderstandings. The participants of the exchange program met the threshold for each of these four criteria. The first and second criteria refer to the growth of positive feelings about other cultures. The participants effectively demonstrated during their engagement in culturally-themed projects that they not only improved their knowledge about the other culture, but they also became more respectful of the other culture. During one of the cultural projects, for example, participants in both countries identified themes in their native culture and then shared similarities and differences between the countries by making a Venn diagram. The participants also successfully accomplished the cultural task in order to meet the third criterion. The last and the most important criterion referred to reducing cross-cultural misunderstandings. The data suggested that participants improved their perceptions about each other as a Pakistani student reflected on her

experiences by saying that she had always believed that Americans were rude and difficult to communicate with, but her perception about them changed in her very first week of participation in this program.

The data analysis also suggests that participants of the exchange program noticed similarities and differences between the two cultures, which is reflective of their cultural competency. For instance, participants from both countries appreciated music. The appreciation of music remained a common theme; whereas, the choice of music was found to be different. In some cases, the American celebrities like Miley Cyrus and Selena Gomez were favorites of Pakistani students, which was an indicator of cultural globalization. According to Steger (2009), cultural globalization refers to "the expansion and intensification of social relations and consciousness across world-time and world-space" (p. 15). That Pakistani participants enjoy the music from American singers in a geographically and culturally different part of the world is an illustration of a cultural flow.

The participants learned many new things about the other culture and valued this information in their learning process. The best examples of this learning were during the curriculum-based projects. One of the projects related to festivals in a social studies group created a deep impact because participants learned about the festivals and rituals of the other culture. The learning continued in the form of reflective comments, which helped the participants to place issues in context. Their understanding about the elements of culture improved when they learned about a particular context through their partners. The data reflected that the participants also learned about their native culture while they were explaining their traditions to their partners. An American student mentioned that she learned about Pakistani culture as well as about her own culture. It was also noted by a few

participants that some elements in the culture, which were initially misunderstood, became clear through this exchange program.

The data indicated a change in perception about the other culture between the time when the project was started and when it was about to be completed. Yang and Tasi (2008) used an iceberg metaphor to explain this change in cultural understanding. In fig. 2, the iceberg is divided into three parts: the first part is surface level followed by an intermediate level, the third part is deep level. During a cross-cultural experience, people tend to judge others based on what we see first before looking deeper. Yang and Tasi (2008) called this top half the surface level, which is also known as the stereotype culture. Based on surface knowledge, people develop perceptions about each other that might be wrong. The last part of the iceberg is known as the deep level culture, which holds some of the deepest beliefs such as traditions and values.

Figure 2. Kohls Model of Iceberg Culture (Kohls, 2005).

In the beginning of this project, participants distinguished between the cultures based on their surface knowledge and on trivial information. Their engagement in the exchange program helped them to understand cultural competency in a much deeper way. At the end of

the project, the participants realized that there are different ways of doing the same task, which was not only a reflection of improved cultural competency but also an indication of creativity in their learning process. The focus group participants found this opportunity to work with students from another culture to be a great learning tool. Reflecting on their learning experience, they mentioned that they gained firsthand knowledge about American culture, geography, people, and the educational system. Normally, participants learn geography and culture by using textbooks, documentaries, and atlases. Engagement in this exchange program provided them with an opportunity to learn geography and culture in a contemporary way through a relationship with other students. Many stereotypes were broken and the participants improved their perceptions about each other. Before their engagement in this program, most of the participants believed that there might be more differences than similarities between the people of Pakistan and the US, but this perception was changed when they worked together for common assignments and projects. Participants concluded that they are more alike: their choice of music is similar; they enjoy common celebrities; they share similar problems in the classroom, and they exhibit similar behaviors.

These data are reflective of cultural globalization. Castells (2009) refered to cultural globalization as "the emergence of a specific set of values and beliefs that are largely shared around the planet" (p. 117). In this research, the data obtained from the participants demonstrated that the core values and points of interest of the individuals engaged in this collaborative program were similar.

Development of creative and collaborative skills. Like global awareness and cultural competency, creativity and collaboration are key 21st century skills. The interview data and participant observations clearly indicated that the participants demonstrated

competencies which reflected creativity and collaboration during their engagement in the exchange program. During their engagement in the exchange program, students were involved in projects, in which they produced an end-product in the form of a digital story, presentation, art work or other creative means of representing their work. The students from Pakistan and the US worked together on cultural and educational themed projects and created digital stories in the form of short movies and photo streams. An American student believed that "providing different means of learning tools bring creativity through collaboration during this exchange project." In addition to digital stories, participants in the exchange program also created customized web pages by applying different ideas and color schemes, which are examples of creative work. Lastly, the participants wrote blogs on the NING site and demonstrated creativity in presenting information by using different online digital tools like photo and video sharing.

As noted, participants created digital stories and photo streams as an end product of the project. Developing a digital story involves a combination of technology and creative skills. According to Jakes (2009), digital storytelling offers an engaging experience which combines writing, technology, and emotion to construct a useful and informative product. Zhao (2007) believed that creativity has led to many innovations in science, technology, literature, music, and art. Moreover, Florida (2002) believed that the creative class is at the top of the economic value chain and is the driving force of economic and social development in today's economy. By developing creative skills students will be more capable of thriving in the emerging innovative economy.

Some of the participants mentioned that they learned how to ask questions and respond to the questions from partner students. A Pakistani student mentioned that she

"learned how to ask questions and how [to] reply to them." This exchange opportunity, especially for the Pakistani participants, was useful in developing critical questioning skills among the participants. At the same time, students communicated with their US partners in order to respond to their questions.

The Partnership for 21st Century Skills has identified collaboration as one of several learning and innovation skills necessary for post secondary education and workforce success. (Partnership for 21st Century Skills Framework, 2006). Similarly, Van Boxtel, Van der Linden, and Kanselaar (2000) found that students become more logical and articulate after their engagement in collaborative activities. Diblasi (2011) also believed that collaboration results in improvement in learning. The research data indicated that participants in the exchange program developed a positive sense of collaboration both among the participants of their own local group and also with the members of the partner school group in the other country. It was also noted that their performance improved as a result of this collaboration during their engagement in the exchange program. A Pakistani teacher concluded that "my students accomplished a lot while collaborating with the US partner students." To foster lifelong learning skills, students need to communicate with others and learn how to work as part of a team. During the engagement with participants in the US-Pakistan Educational and Cultural Exchange Program, students worked in teams to accomplish common assignments and projects. The teamwork resulted in the enhancement of their abilities to collaborate with partner students.

Student growth in technology skills. Students grew in technology skills through the integration of technology in the classroom. Technology is a backbone of the exchange program, and all participants of the program possessed basic computer literacy at the

beginning of the project. During their engagement in the project, participants developed and improved their communication and social networking skills.

Different responses were collected through the baseline knowledge questionnaire from Pakistani and American students about their technology skills, both basic computing skills and internet skills. All of the American students reported that they were good at basic computing skills like typing, word processing, and advanced level technology skills including the use of social networking and the Internet. In contrast, only 52% of the Pakistani participants possessed technology skills.

In the US, participant classrooms are equipped with technology, and the school environment and teaching methodology are making it possible for students to use technology applications for their learning. At one of the partner schools in the US, each student is provided with a laptop and the use of technology has become an important part of students' lives. At HITEC, the technology labs are centralized and technology is not integrated into classroom teaching. Most of the Pakistani participants are not connected to technology after school hours. As a result of a centralized technology structure and interrupted connectivity, students and teachers are unable to easily utilize the technology services. For instance, if a teacher wants to use the computer lab, she has to take the whole class to the centrally located computer lab resulting in wasted class time while moving her students from the lecture room to the lab. In addition, there are other administrative barriers such as needing permission to use the lab and limited availability of the lab during class time.

According to Hinger (2007), use of technology changes the way people learn in ways that improve skills such as communication and collaboration. During their engagement in the exchange program, participants used information and communication technologies in order

to connect with their partners in the other country, to accomplish tasks, and to complete assignments. Participants used multiple digital tools in order to develop digital stories, which is an indicator of the acquisition of more advanced technology skills. Lastly, the experience of working in NING contributed towards the development of social networking skills for participants of the exchange program.

The participants' reflections indicated that they improved several aspects of their technology skills. Some of the interviewees believed that the online interaction with their partner students was equal to face-to-face interactions in terms of the objectives that they wanted to achieve through this collaboration. An American student mentioned that "Skype and NING would allow [me] to talk even if the people are very far from us and we can even see the image." Participants have learned about the other culture while completing common curriculum assignments and projects. At the same time, some interviewees mentioned that the experience of working online was different from face-to-face interaction due to differences in the time zones and a lack of real-time interactions. The data also indicated that this online experience made it possible for the students to think about utilizing available technology that was underutilized in the past. A Pakistani student realized that "I am able to use computers for some good work where they were underutilized for [a] long time in my school."

More importantly, the data reflected that participants in Pakistan and the US developed new technology skills such as making digital stories, which is a combination of learning and technology skills. Creating a digital story requires the careful selection of images and videos along with relevant information. Next, participants need to use multiple digital tools to construct a digital story and convey the meaning in a very different and

powerful way, requiring creativity in their work. Most of the participants mentioned that the creation of a digital story was one of their best experiences during this exchange project. In addition, the participants indicated that they learned about NING not only as a social networking site but also as a forum to use for academic purposes. The participants learned how to write blogs, upload videos and photos, create profiles, and manage their online work during their engagement in the US-Pakistan Educational and Cultural Exchange Program. According to an American student, "I learned to do multiple things on NING like photo and video sharing, blogging, chatting, discussion, collaboration during the exchange program."

Data gathered from administrators indicated their support for the implementation of 21st century skills at the partner schools. In Pakistan, the administrator was committed for making 21st century skills a policy in the respective schools; whereas, the American administrator was determined to continue with the state standards and implementing 21st century skills. Washor (2003) suggested for school developers to "translate pedagogical designs into facilities" (p. 22). The partner schools in Pakistan focused on 21st century skills as they make it a part of teachers' training during in-service teachers' development programs. At the same time, administrators were taking concrete steps to maximize the use of existing technology available at their respective schools.

Summary of the Analysis

The related literature and the data gathered from the participants indicated that the educational and cultural exchange program helped participants in developing and fostering some of the key 21st century skills. The positive reflection of participants in interviews and observations clearly demonstrated that the engagement in the educational and cultural exchange program made a useful contribution in the attainment of global awareness, cultural

competency, creativity, collaboration, communication, and integration skills. The data made clear that the participants in Pakistan and the US noted similarities in envisioning 21st century skills about global awareness, cultural competency, creativity, and collaboration; however, they viewed technology skills differently. In HITEC, the use of technology services was limited due to a centrally configured infrastructure; whereas, in the US, the technologies such as computer and internet services were easily available in the classroom. The administrators in both partner schools were determined to support the educational and cultural exchange program in order to implement 21st century skills. Overall, the participants in the US-Pakistan Educational and Cultural Exchange Program believed that the exchange program contributed positively to their lives and helped them to attain some of the key 21st century skills.

Revisiting the Conceptual Framework

The conceptual framework for this study was based on selected skills advanced by the Partnership for 21st Century Skills. These skills were used to frame the interview questions. Additionally, globalization and learning theories were used to establish a theoretical context for the study.

The use of the conceptual framework described above helped focus participants on the attainment of 21st century skills as well as their vision about these skills. Pre and post-project interview questions were designed to explore the attainment of 21st century skills among participants and revealed the progress that they made during their engagement in the project. The framework was also effective in exploring the vision of participants for 21st century skill development and the school support system in place for 21st century skill implementation. For future studies, this framework could be expanded to include other 21st

century skills that were not considered in this study. Additionally, the element of face-to-face interaction could be included along with online interaction to compare the impact of these two forms for interaction on the attainment of 21st century skills. This cultural dimension should be carefully considered in the local adaptation of 21st century skills.

From an indigenous cultural perspective, skills such as collaboration, social values, and multicultural knowledge are embedded in the Pakistani culture. People live together in a joint family system which incorporates social and cultural values in the learning process of children. Unfortunately, these skills are not integrated in the educational system due to an ineffective administrative structure and lack of formal policy guidelines. While revisiting the framework for this study, it is important to appreciate native cultural and educational elements in the design structure.

Are 21st century skills truly global? The idea of 21st century skills is conceived as a global design. Students and teachers across the globe implement these skills in order to meet global challenges. Although 21st century skills address global concerns, the influence of culture is still a reality. Questions about how people use technology, learn, and develop a worldview affect how people understand the idea of 21st century skills. The use of technology, for instance, is very different in Pakistan when compared to the US. In schools, the configuration of technology varied, resulting in different approaches towards the conceptualization of technology skills. Similarly, the pedagogical practices are different in Pakistan and the US and resulted in different ways of learning, which had an impact on understanding learning skills. Finally, people living in different parts of the world conceive the world in different ways. In short, although 21st century skills are global, when it comes to implementation, there is an effect of the local culture on the attainment of these skills. This

cultural dimension should be carefully considered in the local adaptation of 21st century skills.

Bridging the Knowledge Gaps

The current study was useful in bridging a gap between the theoretical models and practical applications of 21st century skills. Adequate literature was available about theoretical models and approaches; however, practical models were rarely found. This study also investigated an emerging model for educational and cultural exchanges which can be used as a tool to implement some of the key 21st century skills. The project did not follow any existing working model. Instead, the conceptual framework of this online model was developed by the partner teachers in the HITEC and NC schools. Additionally, the study can help the participants to develop a better understanding of 21st century skills, use a project-based model for implementation, and transform thinking on the support systems needed for 21st century skills.

Limitations of the Study

According to Creswell (1998), potential limitations exist in every study. My study has some limitations. First, the total number of participants was small; from a population of 500 students in one school, for instance, only 50 students participated in the exchange program. Moreover, only two teachers and one administrators from each country participated in this research.

A second limitation of this study was my position in this project. I was supervising this project and all activities were conducted with my directions and supervision. Although I delegated several responsibilities to the partner teachers in both countries, the administrative and technical aspects of the project were still coordinated by me. Due to my key position in

the project, some of the participants, especially in HITEC, maintained a very formal relationship with me, which may have minimized their ability to articulate their thoughts during the interviews and focus groups.

The data were collected from only one semester instead of from an entire school year, which might influence the results of this study. The online data presented in the study represented the activities related to one project at each school. Most of the participants were new and had spent a short time in this program. This may have resulted in weak expression in response to some of the research questions.

Implications of the Study

Several implications emerged from this study for multiple institutions and individuals. The first implication is for policy makers, especially in Pakistan where the concept of 21st century skills is fairly new, and policy makers must bring this matter into the policy dialogue at different levels. At the state level, the ministry of education may initiate the process that leads to the articulation of 21st century skills in educational institutions. It is critically important for the institutions to make a formal policy to introduce and implement 21st century skills in order to help students to compete in the contemporary world. The idea of developing 21st century skills through an educational and cultural exchange program was very well received by the top administration of the partner schools for this project in Pakistan, and the institutions are determined to implement the core concept of 21st century skills.

The second implication that emerged from this study is for school teachers to update their pedagogy for inculcating 21st century skills among students in order to prepare them for future challenges. Teachers must practice several 21st century skills in their pedagogy

through project-based teaching. In the US-Pakistan Educational and Cultural Exchange Program, teachers used educationally and culturally themed projects to help students attain 21st century skills. It is very important for teachers to revisit their teaching practices while keeping in mind the needs of this global era. This study has implications for the improvement of teaching practices by engaging students in interactive and interesting activities such as curriculum-based online collaborative projects.

The third implication of this study had to do with students. Students were a key element of this study and their self-reflection was the central focus of this research. Students must prepare themselves in a way that they will become useful and productive global citizens. According to Zhao (2009), "It is impossible to be competent in all world cultures, but it is essential to be open to new and different cultures in this globalized world" (p. 5). It is important for students and teachers to make a quick transition from local to global approaches in order to develop global citizenship. For this goal, they must acquire key 21st century skills like global awareness, cultural competency, creativity, collaboration, communication, and social networking skills to survive in global economy and address common global challenges.

The fourth implication of this qualitative research is for curriculum developers. Curriculum is a backbone of any educational system and provides an opportunity to keep students and teachers prepared for productive careers. In the US-Pakistan Educational and Cultural Exchange Program, partner teachers in both countries worked together to prepare curriculum-based academic and cultural projects. It is very important for curriculum developers to include content that addresses the elements of 21st century skills attainment.

The fifth implication that emerged from this work is for technology specialists. Technology was a foundation of the US-Pakistan Educational and Cultural Exchange Program and served as a medium for communication and interaction among students and teachers in Pakistan and the US. It is vital to integrate technology into classroom teaching to improve the acquisition of 21st century skills among students and teachers. Since the data indicated that technology was centralized in Pakistani partner schools, it is very important for technology specialists to rethink the configuration of technology at their schools and reconfigure the technology resources in a way that ensures technology integration into classroom teaching and learning.

The sixth and last implication of this study is for international programs. In order to make students globally competent, we need to link them with students from other countries and cultures. The US-Pakistan Educational and Cultural Exchange Program is an emerging model for international collaboration and communication. The model must be practiced and extended to more schools in order to evaluate its effectiveness. The students must be engaged with a wider range of cultures in order to develop and foster even greater 21st century skills.

Recommendations for Further Research

There are several recommendations for further research that emerge from the current study. During this qualitative research project, ASU received a grant from the cultural affairs wing of the US Embassy in Islamabad to facilitate a face-to-face interaction between my research participants. To implement that grant, the Office of International Education and Development at ASU organized a three-week visit by the Pakistani group to Boone, NC and Washington, DC. The visit was completed in December 2012. On a reciprocal basis, a NC group of educators and administrators visited partner school in Taxila and toured Islamabad

in February 2013. There is a huge potential to conduct future research about the face-to-face educational exchange program and to compare the outcomes with online results.

This study provides the foundation for more detailed research. I considered six major 21st century skills for this study including global awareness, cultural competency, creativity, collaboration, communication, and integration. Future researchers should examine the remaining 21st century skills in order to evaluate the attainment of these skills in the context of educational and cultural exchange programs. Similarly, I considered three subject areas, which are science, social studies, and language arts. There are several other core areas that could be used to study the attainment of 21st century skills through educational and cultural exchange programs. A further suggestion for future research is to see how different subjects influence the acquisition of 21st century skills among students when they are engaged in such collaborative projects. For instance, the impact of these skills on social studies projects might be different than on science projects.

Another possibility for further research is to extend the scope of the study to more countries, like some of the iEARN projects that are executed on a global scale. Since I considered only Pakistan and the US, an extension of this research would generate more diverse and complex data. It would be interesting to compare that data with the outcome of this study.

Conclusions

The study was intended to explore the attainment of 21st century skills among students and teachers during their engagement in an educational and cultural exchange program. Additionally, the study was conducted to understand how participants in the

exchange program envisioned 21st century skills and to explore the role of school administration in implementing 21st century skills.

The findings of the study were positive regarding the development of 21st century skills among students and teachers. The participants developed and fostered global awareness, cultural competency, creativity, collaboration, communication, and integration. They have changed their worldview and enhanced their ability to work with people from different cultures. During the academic and culturally-themed projects, they demonstrated skills like creativity and collaboration. Finally, they made positive and effective use of technology in accomplishing their tasks, assignments, and projects.

The influence of the culture and academic environment were important factors which made a difference in a way the participants conceived 21st century skills in their teaching and learning process. In the US, where the idea of 21st century skills originated, all of the participants valued the US-Pakistan Educational and Cultural Exchange Program in developing and fostering 21st century skills.

Administrators in both countries were determined to support educational and cultural exchange program for implementing 21st century skills in their schools. In Pakistan, the school administration at HITEC is now making 21st century skills a policy issue and has prioritized an in-service teachers' development program for the implementation of 21st century skills and improvement of technology infrastructure in schools. In the US partner schools, the administrators were found to be serious in their desire to continue implementing the NC state standards for 21st century learning.

The study has implications for policy makers, educational institutions, teachers, students, curriculum developers, technology specialists, and international programs. All of

these important stakeholders must revisit the way students learn and improve the pedagogy used at their schools. It is important in today's world to understand and implement 21st century skills in order to compete and collaborate in this new environment. Knowledge and information are readily available online, and anyone who is connected to the Internet can access a wealth of information. In order to compete and survive in this globalized world, both students and teachers need to develop different sets of skills. Global awareness, for instance, is critically important because knowledge of other nations and cultural literacy are the key elements needed to understand issues in their cultural contexts. Similarly, it is extremely important for students to have the capacity to work creatively in a collaborative environment. Finally, technology skills are necessary because technology is a medium for communication and for accessing information in this dynamic information age.

My research also addresses ways in which educators prepare students for global citizenship. Israel, Miller, and Reed (2011) argued that students must learn to become engaged members of a world community, that is, to become global citizens. They considered global citizenship to be an identity that embraces both the local and global. While elaborating on the traits of global citizenship, they identified that global citizens seek to build a world community that honors and respect multiple allegiances, while also striving to create collaboration among countries and peoples of the world (Israel, Miller, & Reed, 2011). My research project was initiated with the goal of facilitating an educational collaboration among students and teachers of Pakistan and the US in order to improve the perception about each other. The participants, during their engagement in the project, learned to coexist with people who have different cultural, religious, and social values. In addition, participants develop a

certain set of skills required to succeed in the 21st century. Although small, participating in such a program was a significant step towards becoming a global citizen.

Global citizenship involves cooperation around common interests regardless of geographical and cultural barriers. Global citizenship implies a breadth of knowledge through which one can fully participate in world affairs. One needs strong communication skills, knowledge of cultural differences, and the ability to function as, what Orozco (2004) calls, a "cultural ambassador." Schattle (2007) also considered cultural competence to be a common goal of global education. Cross-cultural competence occupies a central position in education for global citizenship and is seen as an important skill in the workplace. Cultural competence helps people to see questions from multiple perspectives and move deftly among cultures.

Another aspect of my study is to see implications of globalization from local to global and from global to local perspectives. All stakeholders such as students, teachers, school administrators, and the researcher went through a process in which they moved from a local to a global perspective through this educational and cultural exchange program. The experience of transformation resulted in the understanding and development of 21st century skills such as global awareness, cross-cultural competency, learning, and technology skills. After this experience, all of the stakeholders of this program need to take one step back and see how their transformative learning experience is applicable in their local educational and cultural settings. As my study informed me, the idea of 21st century skills was understood differently in Pakistan and the US; therefore, the implementation mechanism would also be different in order to appreciate local cultural and educational differences contexts. As the result, diverse values and conceptual ideas about 21st century skills strongly influenced the

implementation process in enabling participants to construct make their own versions of these skills that are most suitable for the local environment and cultural needs.

This study provides a strong affirmation of the development of 21st century skills among students and teachers engaged in an online educational and cultural exchange program. Students and teachers may continue to use this foundational experience to develop and foster key 21st century skills that help them to become successful global citizens.

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Appendix A

Lay Summary

I would like to invite you to participate in a research project investigating the attainment of 21st century skills through an online educational and cultural exchange program in Western North Carolina and Pakistan. I am conducting this study as part of my doctoral dissertation on this US-Pakistan educational and cultural exchange program. As an international student, I am very much interested in exploring cross cultural issues in academics and understanding more about 21st century skills. Therefore this project will be of great help to me both in my professional work and for my dissertation. I have selected this contemporary issue because it is very familiar to me and I am coordinating this program. In selecting individuals to observe or interview, I will identify people like you who are most likely to help me gain insights into this topic.

As a part of this project, I will observe and interview students, teachers and administrators engaged in this program. If you are willing to participate, I would observe you in collaborative activities and I might ask to tape record the session. I would also interview you for 30-50 minutes. I will tape record the interview. I will be typing and writing notes during observations and interviews. In my data, all names will be replaced with pseudonyms. If you are interested, I would be glad to let you see the transcript of your own interview. Indeed, in some cases I may ask you for feedback to see that I have accurately captured your comments.

Participating in this study may offer you some benefits in terms of gaining increased insight into your learning process. It will also help you to better understand the concept of 21st century skills and their attainment through an online educational and cultural exchange

program. Your participation will be helpful for school administrators to make progress in international collaborative programs. Partner institutions in Pakistan and USA will benefit from this proposed study because this research will help them to analyze the progress of an educational and cultural exchange program and its impact on the attainment of 21st century skills.

I would be committed to prevent or minimize any risks to you due to this study, and I hope we would be able to discuss any concerns or brainstorm ways to make sure everyone is comfortable. One risk I might predict is that you could feel self-conscious if you notice me observing the projects or collaborative activities, so this is something you would need to consider. Also, you may find yourself worrying that you have done or said something wrong during your work or during our interviews. While I appreciate your conscientiousness, I encourage you to relax and act as you normally would. I will learn far more if you can answer questions as reflectively as possible without worrying about finding a right answer. You are, after all, the expert on what is happening when you are in a project or collaborative activity.

Please be aware that you can decide not to participate in this study or stop doing it at any time after you have started. If you decide to stop, your decision will have no impact on your ability to be involved in participating in any activity at Appalachian and at HITEC, Pakistan.

Appendix B

Baseline Knowledge Survey Questionnaire

Question	SA (%)	A (%)	DN	D (%)	SD (%)
I have been involved in the projects with other countries before?					
I understand what culture means? I understand my own culture.					
Main source of information is media and newspaper					
I am confident that I can work with people of other countries.					
I recognize that people in other countries may not think the way I do.					
I understand that diversity and understanding people from other countries are important.					
My schools is providing good environment for collaboration, creativity and innovation.					
There is lot of integration of technology in my classroom teaching and learning.					
I have knowledge and skills of basic technology like word processing					
I have knowledge and skills related to Social Networking & Internet browsing					

Note. SA = Strongly Agree; A = Agree Strongly; SD = Strongly Diagree; D = Disagree; DN = Do Not Know

Appendix C

Baseline Knowledge Survey Questionnaire (Pakistani participants)

Question	SA (%)	A (%)	DN	D (%)	SD (%)
I have been involved in the projects with other countries before?	8	3	0	13	76
I understand what culture means? I understand my own culture.	25	4	21	5	45
Main source of information is media and newspaper	93	2	0	3	2
I am confident that I can work with people of other countries.	89	6	5	0	0
I recognize that people in other countries may not think the way I do.	55	11	26	4	4
I understand that diversity and understanding people from other countries are important.	79	5	11	4	1
My schools is providing good environment for collaboration, creativity and innovation.	30	7	13	5	45
There is lot of integration of technology in my classroom teaching and learning.	18	1	26	6	49
I have knowledge and skills of basic technology like word processing	46	7	5	9	33
I have knowledge and skills related to Social Networking & Internet browsing	40	2	3	42	13

Note. SA = Strongly Agree; A = Agree Strongly; SD = Strongly Diagree; D = Disagree; DN = Do Not Know

Appendix D

Baseline Knowledge Survey Questionnaire (American participants)

Question	SA (%)	A (%)	DN	D (%)	SD (%)
I have been involved in the projects with other countries before?	16	2	4	8	70
I understand what culture means? I understand my own culture.	43	7	10	6	34
Main source of information is media and newspaper	90	2	4	3	1
I am confident that I can work with people of other countries.	68	10	20	2	0
I recognize that people in other countries may not think the way I do.	49	5	38	6	2
I understand that diversity and understanding people from other countries are important.	70	14	4	4	8
My schools is providing good environment for collaboration, creativity and innovation.	85	3	0	6	6
There is lot of integration of technology in my classroom teaching and learning.	95	3	0	2	0
I have knowledge and skills of basic technology like word processing	95	5	0	0	0
I have knowledge and skills related to Social Networking & Internet browsing	93	7	0	0	0

Note. SA = Strongly Agree; A = Agree Strongly; SD = Strongly Diagree; D = Disagree; DN = Do Not Know

Appendix E

Pre-Project Interview Questions for Students

1. How do you understand the term “Global awareness”? What is your worldview about educational exchange programs and 21st century skills?
2. Have you ever been involved in any educational exchange program before? How you conceive the idea of collaboration with students of another country? What are your expectations?
3. What is your current knowledge about the partner country? How do you get information? What are the sources of information?
4. What is your perception about the partner country? Do you have any stereotypes about the partner country and people? Give some examples
5. How do you understand the term Cross-cultural competency? Do you understand your culture very well? Are you interested in knowing more about the culture of other places? Why is it important for you?
6. Do you work effectively and respectfully with the diverse group? How?
7. How much flexible are you in the program in accommodating others during the academic work? Do you value opinions of others? In what ways the collaboration and communication is challenging?
8. Do you feel that you are doing some creative work in your regular classes? Do you believe in doing same work differently? Why is it important for you?
9. How you feel working online different from face to face engagement?
10. How you see technology as a social medium of communication? What are the challenges that you face while working online? How you address them?

Appendix F

Post-Project Interview Questions for Students

1. Does this exchange program help you to improve your awareness about the world? Does your knowledge about the partner country improved as the result of this program? How? Give some examples
2. In what ways does your perception about the partner country changed? Do you feel, at any point during the program, that your stereotypes about the partner country debunked? Give some examples
3. Media, either electronic or print, is used as a primary source of information. How you feel different or similar when you get information from someone in person from other country? Share one short story where you feel a big shift in the way you conceive this world? Does this engagement changed the way you think about your own country? How?
4. Share some similarities and differences that you find in partner country's culture? What do you learn new about the culture of partner country? What surprises you most in the partner country's culture? Why?
5. Does the exchange program help you to improve your cultural competency? How? Is there anything unacceptable for you in the partner country culture? Why? Does your partner raise any questions on your native culture? How you respond?
6. If you were asked to live in the partner county culture for some time, how it will be challenging for you? What steps do you take to easily adjust in different culture? During your engagement with another culture, do you feel at any point that you

become more respectful for other cultures? In what ways, your engagement helps you to learn more about your own culture?

7. In what ways do you get an opportunity of self expression? In what ways do you feel any change in your abilities to approach/address an issue?
8. Does the project make you think differently about the issue? Share something about the end product of the project. Have you created something new?
9. Working with partner students, how you evaluate and analyze the alternate points of view? How you deal with critics on your points of view and how you criticize work of others?
10. How you find solutions to the problems in the groups while working on projects? Give an example to elaborate. Are your solutions conventional or innovative? How you reach to a conclusion?
11. How you grade your collaborative experience with students of different country?
12. How was the experience of communicating in the program in diverse community? In what ways the communication in the projects is different or similar from your regular communication? Offer examples
13. How is your experience with online technology? How you describe this online experience different from face to face engagement?
14. Are these projects well integrated with technology? How you see technology as a social medium of communication? What are the challenges that you face while working online? How you address them?
15. What new technology skills you develop during the program? How you use them in your learning? How you handle, evaluate and analyze information online?

Appendix G

Focus Group Conversation Questions for Students

1. How was the experience of online collaboration with the students of another country? Does this project help you to rethink the way you learn?
2. What do you learn about the culture, geography and education of another country while engaged in educational and cultural exchange program? How is this learning different or similar from the way you learned it before with such projects?
3. Have you developed any new skill and foster some of your pervious skills? Share some examples.
4. Was the working with diverse people exciting or challenging? What do you learn from diversity? Did you ever feel a difference in the way your partner students think andwork?
5. How you see the role of technology in this educational exchange program? Do you feel that you integrated the technology in your work? How?
6. How you feel working online different or similar to working face to face? How is it challenging? How you address the challenge?
7. Does this project help you to better understand the 21st century skills? If you feel you have developed or foster some of 21st century skills, how they are important for you in learning?
8. Share the most exciting moment, incident, and story during your engagement in the program.

Appendix H

Interview Questions for Teachers

1. How was the online collaboration experience for you and your students? How do you and your students learn from this program?
2. Do you think this program changed the way your students learn? What was the impact of this program on their learning?
3. What do you learn from working with diverse people? How does it impact your pedagogy?
4. As an educator how you value such collaborations? How this program contributes in developing and fostering 21st century skills?
5. Do you better understand the concept of 21st century skills after your engagement in this online educational exchange program? How you see the role of exchange programs in developing 21st century skills?
6. How you feel about the integration of technology in your classroom? How it changes the way you teach? How is it important for you?
7. Do you want to continue these collaborations in future in your teaching? What do you want to achieve for this?
8. How can we improve these programs to get maximum benefits? Do you have any suggestions for improvement? What was missing in this program?
9. How you see the role of school administration in facilitating this program? What do you expect form them? Was it acceptable for administration to experiment new ways of teaching?
10. Share the most interesting moment while you are engaged in this program?

Appendix I

Interview Questions for Administrators (Principal and Director)

1. What is your vision of 21st century skills? How they are important for your school, teachers and students?
2. How you see the role of educational and cultural exchange programs in attainment of 21st century skills among students and teachers?
3. What kind of support system your school is providing to teachers and students to facilitate such programs?
4. Is it acceptable for you that your teachers are experimenting new ways of teaching? Do you think it is time to change the way our teachers teach and the way our students learn? How would you facilitate them?
5. In what ways do you feel that your school is implementing the 21st century skills model? How this exchange program helps in doing that?
6. Does this educational exchange program help you to better understand the idea of 21st century skills? How?
7. How you see the role of school administration in facilitating this program? What does teachers and students expect form you?
8. Do you want to continue such programs in future? How is it important for you?

Appendix J

Informed Consent Form

Title of the research:	An exploratory case study of 21st century skills development among students and teachers engaged in an online collaborative educational and cultural exchange program
Principal Investigator:	Arshad Bashir
Department:	Reich College Of Education, Appalachian State University

1. Purpose of this research

You are being invited to take part in a research study about the attainment of 21st century skills through educational and cultural exchange program. If you take part in this study, you will be one of ten people to do so. The proposed research is intended to contribute towards better understanding of 21st century skills and ways by which one can acquire these skills. The study will also provide a comparative account of participant worldview and perceptions in Pakistan and the United States about the 21st century skills implementation in two geographically and culturally different places.

2. Procedures

The research procedures will be conducted at middle and high schools in HITEC, Taxila, Pakistan and Watauga County schools in NC, US. You will need to come two to three times during the study. Each of those visits will take about 40 min to one hour. The total amount of time you will be asked to volunteer for this study is two to three hours over the period of one semester. You will be asked to share your experiences of participation in US-Pakistan Educational and cultural and exchange program. I would like to share how you are acquiring or not acquiring the 21st century skills through the exchange program. Initially you will be doing the online survey about your knowledge about the 21st century skills and exchange programs. The Survey will be followed by two to three interviews of 30 min each.

3. Risk

No risk is anticipated from the interview and participant observations. Participants will be informed of their rights to not answer any question and to withdraw from the study at any time.

4. Benefits

No financial benefit is promised for your participation in this study. However you may derive intellectual and academic benefits from the study. Your participation in this study will contribute for the better implementation of 21st century skills at your institution.

5. Confidentiality of Information

Your interviews will be audio or video tapped and I will be bind to maintain confidentiality of information. The audio and videotapes will be stored under lock and key at my residence. After the research the tapes will be disposed off. Your names and indentifying information will not be identified in published results. Only dissertation committee will be informed of your identity. Your information will be combined with information from other people taking part in the study. When I write up the study to share it with other researchers, I will write about the combined information. You will not be identified in any published or presented materials unless you have specifically given me permission to identify you. Your audio and videotapes may be used for instructional and research purposes at the partner institutions in Pakistan and United States after your permission.

Please read the following and if you agree, you should indicate your agreement:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.

- I understand that I can stop taking part in this study at any time.
- I understand I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

Participant's Name Signature Date

Appendix K

Information Release and Waiver Form

I hereby give Appalachian State University, the right and permission to use and publish and/or copyright still pictures, video and audio recordings and textual description of me for use in the documentary and Digital Story titled

_____,

without further consideration and I acknowledge the University's right to edit, crop, or treat such audio, video, or textual material at its discretion. I also understand that the documentary containing my image may be streamed online, and may be distributed at large, including, but not limited to, news media. I waive and release any and all claims related to the University's display, publication or other use of such material that I might now or hereafter have against the State of North Carolina, the University of North Carolina and its Board of Governors, Appalachian State University and its Board of Trustees, and all Employees, agents, and administrators of any of the foregoing entities.

I have been given sufficient time to review and seek explanation of the provisions of this Release and Waiver, I have carefully read and understand them, and I agree to be bound by them. I voluntarily and irrevocably give my consent and agree to this Release and Waiver.

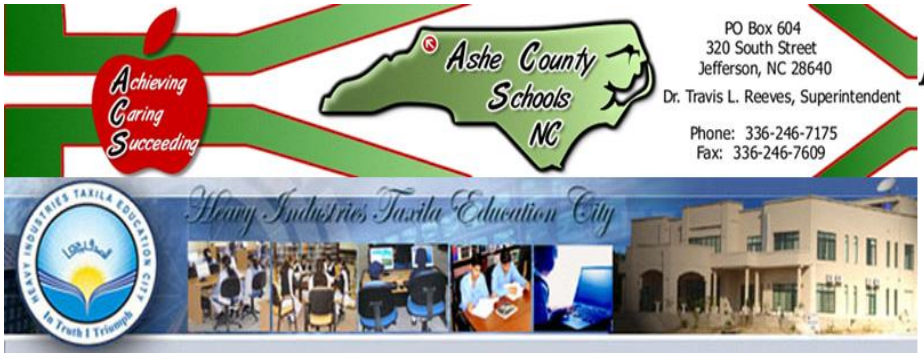
_____ _____

Signature (For those of legal age 18 years or older) Date

_____ _____

Guardian Signature (For those under 18 years of age) Date

Appendix L



PARTNERSHIP AGREEMENT

PUBLIC SCHOOL PARTNERSHIP, APPALACHIAN STATE UNIVERSITY, BOONE NORTH CAROLINA, USA

&

HEAVY INDUSTRIES TAXILA EDUCATION CITY (HITEC) TAXILA CANTT, PAKISTAN

VISION

A partnership leading to cross-cultural exchange, educational collaboration, and relationships based on knowledge, empathy, values, equality and trust between teachers and students of Pakistan and the United States.

BACKGROUND

The Reich College of Education (RCOE) and the Public School Partnership (PSP) at Appalachian State University has as one of its objectives to create opportunities for international connections with schools in different areas of the world to promote understanding of different cultures and to address 21st century learning goals. The impetus for this project came from conversations among the individuals below and the opportunities that presented themselves through the connection establish with HITEC School and Watauga County Schools. Correspondence on initial objectives of this program led to online Skype conference between the Administrator HITEC Brig (R) Mahmud Bashir Bajwa, Director Academics; Mrs. Shaista Shahid and the team supporting this program and Arshad Bashir, a doctoral student and Director Public School Partnership, Dr. Linda McCalister RCOE at RCOE, on ways and means of starting this program. The conference focused on what do we envision for an international partnership for our classrooms and schools and what will it look like? Issues related to evaluation, monitoring systems, challenges, expectations, areas of collaboration, professional development for teachers, website, software, online activity, partnership agreement, code of conduct, religion and terrorism, family relationships, development of relationships and trust were discussed in the meeting.

Following objectives with proposed activities were discussed in the meeting.

OBJECTIVES	ACTIVITIES
Bridge the gap between two cultures through education and cultural exchanges supporting mutual respect among learners, encouraging appreciation of other cultures and developing participatory and cooperative skills	Develop one-to-one interaction of teachers and students for exchange of daily life and personal culture through the use of a NING forum and sharing of videos, photos and personal stories
Create a learning forum for HITEC & Watauga County teachers and students to initiate curricular projects, correspondence, and personal connections	Create NING social-networking site Create a Skype connections among participants Offer mutual curriculum support. Content curriculum connection projects (Language, Art, Social Studies and Science) Diversity in curriculums of partner institutions
Foster exchange of teacher expertise in the form of online training, discussion, and idea sharing of students the communication and technology skills of online communication by improving Enable students to explore new avenues	Create opportunities to share videos of professional development occurring at HITEC, ASU and Watauga County. Create opportunities to share curriculum interests and conversations between teachers through the use of Skype and NING between the two schools to promote common curricular activities Create NING accounts for all students

QUALITY

- There is a commitment to improve the quality of the relationship over time through sharing multi-media cultural information (photos, videos, music, chat, and message correspondence).
- The quality of teaching and learning will be tied closely with the common core curriculum and interest of students and teachers.

EXPECTATIONS

- Establishment of a long-term connection for exchange of information and learning among teachers and students.
- Development of a model for international connections between schools
- Development of modules for teacher learning
- Opportunities for teacher exchanges

CHALLENGES

- Use of technology and learning about software, online conferencing, using blog etc.
- Engaging both teachers and learners in utilizing a new medium of learning
- Establishing areas of interest amongst students of both sides
- Difference in time zones to be accommodated for conferencing
- Collaboration of activities by an open yet accountable communication
- To be an effective partner of global exchange on individual and group levels
- Accommodation surrounding diversity in language, culture and gender
- Selection of potential students and teachers with interest and passion for a global project

RESOURCES

- Faculty and students
- Technology & Skills
    - Web-accessible media labs equipped with distance learning telecommunication peripheries
    - Training on NING platforms
    - Training in teleconferencing
- Curriculum Development

FUNDING

- Funding agencies to be identified for future activities and resources.

MONITORING AND EVALUATION

Indicators of success of school partnership

- **Sustainability**
- **Enthusiastic participation**
- **Plan for progression and continuity in children learning**
- **Curricular impact and staff development**
- **Helping change mindsets and perspectives**
- **Long term impacts**

VALUES AND PRINCIPLES

REICH COLLEGE OF EDUCATION

In the Reich College of Education as the professional education unit, we see faculty and students coming together as a community of inquirers to examine the aims of education and the nature of teaching and learning for achieving worthwhile educational goals. We view teaching and professional service as dynamic, goal-oriented, social activities, which reflect our commitment to both the value of cultural diversity, and to the identification and solution of social problems. Learning is seen as an active process of acquiring, assessing, and producing knowledge in an environment of care and respect for others. We embrace the exploration of new forms of teaching and learning through experimentation with emerging technologies, and we are committed to the promotion of areas of excellence in the study of teaching, learning, and professional service (RCOE Vision Statement, 1990).

HEAVY INDUSTRIES TAXILA EDUCATION CITY

HITEC shall be a premier institution and bastion of academic excellence. It must become a citadel of our ideological moorings, national integration and socio-religious values. HITEC ought to trigger the human mind to think clearly perceiving the environment and issues confronting human beings, seeking intelligent, viable and practical solutions, leading to societal development and the overall betterment of human race. The campus shall provide our progeny the environment for intellectual grooming, nurturing fertility of thought and creativity. HITEC faculty will focus on preparing our youth to face the challenges of life with honor, confidence and fortitude through character building and grooming. In HITEC merit, justice, honesty and adherence to moral & social values must prevail. HITEC shall provide a pedestal for fulfillment of our youth's aspirations and hopes to live an honorable life as citizens of Pakistan (HITEC Vision, 2006).

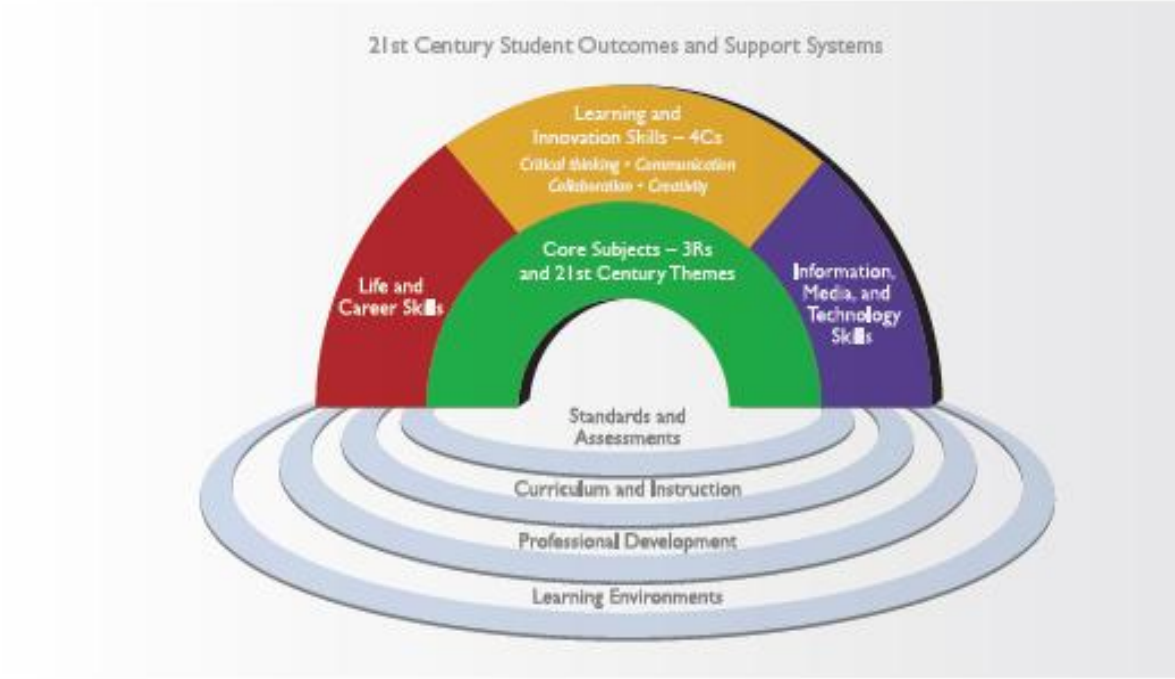
MUTUAL TRUST AND RESPECT

Participants are expected to maintain a level of decorum when interacting on-line. Student and teachers must utilize the NING platform as the main carrier of communication. Conversations will be monitored by teachers and administration and participants will be removed from the project if not following this agreement. Sensitive subjects such as politics and religion will be out of the typical range of conversation among students unless these subjects are within the current content being studied and the exchange is monitored by the teacher. Students should be aware of this before that participate on-line or in a Skype session. Any infraction of this agreement will result in the removal of the participant from the program.

Appendix M

Framework for 21st Century Learning

The Partnership for 21st Century Skills has developed a vision for student success in the new global economy.



21ST CENTURY STUDENT OUTCOMES

To help practitioners integrate skills into the teaching of core academic subjects, the Partnership has developed a unified, collective vision for learning known as the Framework for 21st Century Learning. This Framework describes the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies.

Every 21st century skills implementation requires the development of core academic subject knowledge and understanding among all students. Those who can think critically and communicate effectively must build on a base of core academic subject knowledge.

Within the context of core knowledge instruction, students must also learn the essential skills for success in today's world, such as critical thinking, problem solving, communication and collaboration.

When a school or district builds on this foundation, combining the entire Framework with the necessary support systems—standards, assessments, curriculum and instruction, professional development and learning environments—students are more engaged in the learning process and graduate better prepared to thrive in today's global economy.

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Core Subjects and 21st Century Themes

Mastery of core subjects and 21st century themes is essential to student success. Core subjects include English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics.

In addition, schools must promote an understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into core subjects:

- **Global Awareness**
- **Financial, Economic, Business and Entrepreneurial Literacy**
- **Civic Literacy**
- **Health Literacy**
- **Environmental Literacy**

Learning and Innovation Skills

Learning and innovation skills are what separate students who are prepared for increasingly complex life and work environments in today's world and those who are not. They include:

- **Creativity and Innovation**
- **Critical Thinking and Problem Solving**
- **Communication and Collaboration**

Information, Media and Technology Skills

Today, we live in a technology and media-driven environment, marked by access to an abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale. Effective citizens and workers must be able to exhibit a range of functional and critical thinking skills, such as:

- **Information Literacy**
- **Media Literacy**
- **ICT (Information, Communications and Technology) Literacy**

Life and Career Skills

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills, such as:

- **Flexibility and Adaptability**
- **Initiative and Self-Direction**
- **Social and Cross-Cultural Skills**
- **Productivity and Accountability**
- **Leadership and Responsibility**

21ST CENTURY SUPPORT SYSTEMS

Developing a comprehensive framework for 21st century learning requires more than identifying specific skills, content knowledge, expertise and literacies. An innovative support system must be created to help students master the multi-dimensional abilities that will be required of them. The Partnership has identified five critical support systems to ensure student mastery of 21st century skills:

- **21st Century Standards**
- **Assessments of 21st Century Skills**
- **21st Century Curriculum and Instruction**
- **21st Century Professional Development**
- **21st Century Learning Environments**

For more information, visit the Partnership's website at www.P21.org.

PARTNERSHIP FOR 21ST CENTURY SKILLS

Member Organizations

- American Association of School Librarians
- Adobe Systems Incorporated
- Apple Inc.
- Blackboard
- Cable in the Classroom
- Cengage Learning
- Cisco Systems
- Crayola
- Dell
- Education Networks of America
- ETS
- EF Education
- GlobalScholar
- Houghton Mifflin Harcourt
- Hewlett Packard
- Intel® Corporation
- JA Worldwide
- KnowledgeWorks Foundation
- Learning Point Associates
- LEGO Group
- McGraw-Hill
- Measured Progress
- MHz Networks
- Microsoft Corporation
- National Academy Foundation
- National Education Association
- netTrekker
- Oracle Education Foundation
- Pearson
- PMI Educational Foundation
- Verizon
- Walt Disney Company

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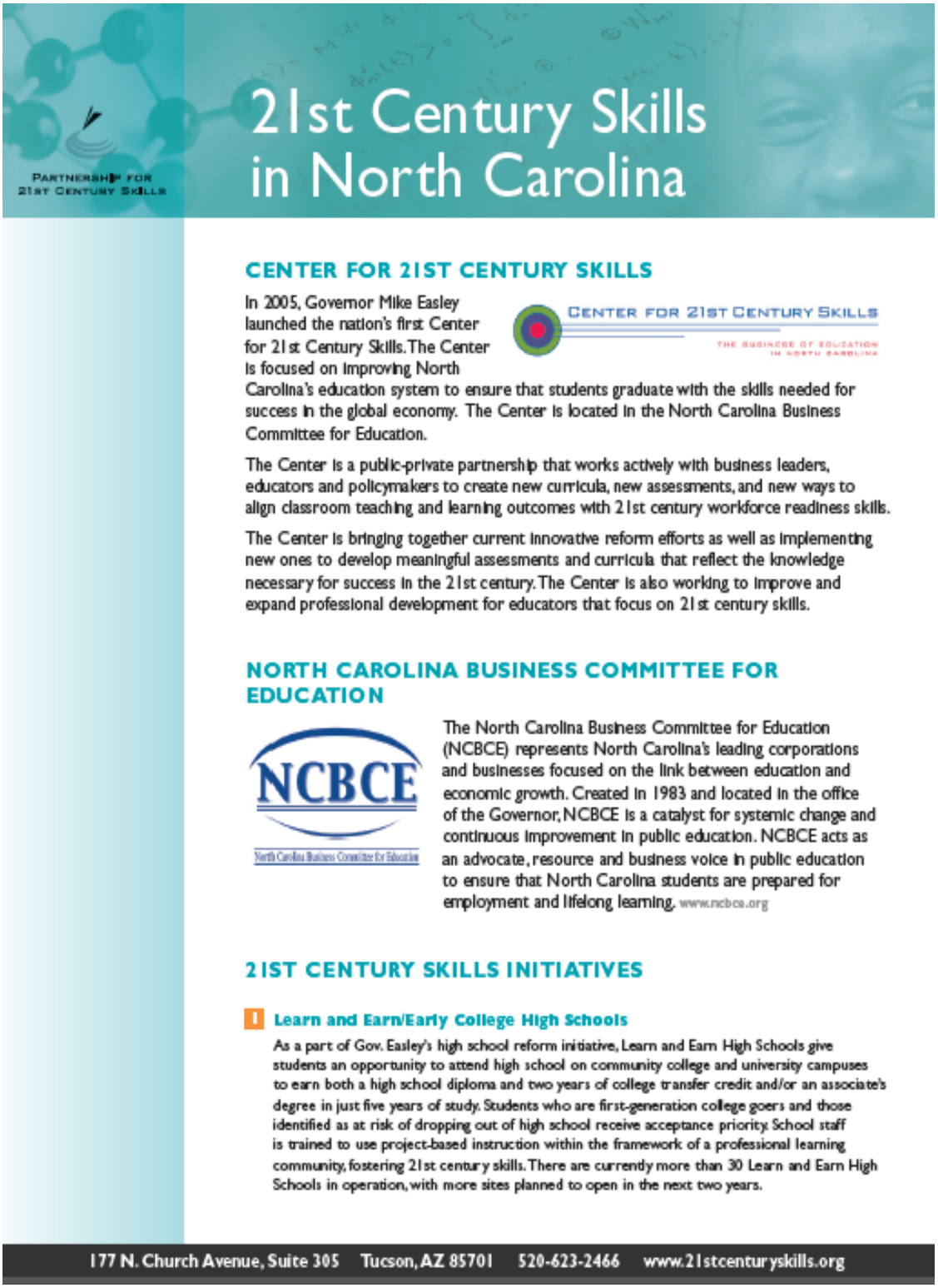
Appendix N



Partnership for 21st Century Skills

21st Century Skills in North Carolina

CENTER FOR 21ST CENTURY SKILLS

In 2005, Governor Mike Easley launched the nation's first Center for 21st Century Skills. The Center is focused on improving North Carolina's education system to ensure that students graduate with the skills needed for success in the global economy. The Center is located in the North Carolina Business Committee for Education.

Center for 21st Century Skills
The Business of Education in North Carolina

The Center is a public-private partnership that works actively with business leaders, educators and policymakers to create new curricula, new assessments, and new ways to align classroom teaching and learning outcomes with 21st century workforce readiness skills.

The Center is bringing together current innovative reform efforts as well as implementing new ones to develop meaningful assessments and curricula that reflect the knowledge necessary for success in the 21st century. The Center is also working to improve and expand professional development for educators that focus on 21st century skills.

NORTH CAROLINA BUSINESS COMMITTEE FOR EDUCATION

NCBCE
North Carolina Business Committee for Education

The North Carolina Business Committee for Education (NCBCE) represents North Carolina's leading corporations and businesses focused on the link between education and economic growth. Created in 1983 and located in the office of the Governor, NCBCE is a catalyst for systemic change and continuous improvement in public education. NCBCE acts as an advocate, resource and business voice in public education to ensure that North Carolina students are prepared for employment and lifelong learning. www.ncbce.org

21ST CENTURY SKILLS INITIATIVES

1 Learn and Earn/Early College High Schools

As a part of Gov. Easley's high school reform initiative, Learn and Earn High Schools give students an opportunity to attend high school on community college and university campuses to earn both a high school diploma and two years of college transfer credit and/or an associate's degree in just five years of study. Students who are first-generation college goers and those identified as at risk of dropping out of high school receive acceptance priority. School staff is trained to use project-based instruction within the framework of a professional learning community, fostering 21st century skills. There are currently more than 30 Learn and Earn High Schools in operation, with more sites planned to open in the next two years.

177 N. Church Avenue, Suite 305 Tucson, AZ 85701 520-623-2466 www.21stcenturyskills.org

2 The NC Graduation Project - A 21st Century Assessment

The North Carolina Graduation Project provides students the opportunity to demonstrate their ability to apply what they learn in a 21st century context. All North Carolina public school students currently in ninth grade will be required to produce a four-part assessment that showcases their 21st century content knowledge and skills. The project, to be completed in the final year of high school, will include a paper, a reflective portfolio, a product, and a presentation.

3 Innovative School Redesign Improved Teaching and Learning Conditions Study

The "Innovative School Redesign Improved Teaching and Learning Conditions" study uses data to demonstrate the effect of innovation on teaching and learning conditions.

In 2002, Gov. Easley implemented that nation's first "Teacher Working Conditions Survey." The TWC Survey was administered every two years to ask North Carolina teachers what they need to succeed. During the third administration of the survey, 75,000 responses were collected and used to contrast innovative 21st century high schools with the data from conventional comprehensive high schools as an outcome measure for innovation. A full report as well as a 2-page executive summary has been distributed as evidence in support of school redesign to incorporate 21st century curricula and context into our high schools. www.northcarolinatwc.org

4 21st Century Skills Policy

The North Carolina State Board of Education adopted policy to bring the infusion of 21st century skills to scale across the state. The P21 framework was used to rewrite state mission and goals. Regional community meetings were held around the state to broaden public understanding of the skills and to gain traction for the effort.

The guiding mission of the North Carolina State Board of Education is that every public school student will graduate from high school globally competitive for work and postsecondary education and prepared for life in the 21st century. http://www.ncpublicschools.org/state_board/annualrpt/02-04

5 Middle School Literacy Coaches

The purpose of the middle school literacy coaches is to embed on-site professional development as a best practice into the middle school culture. On-site school improvement team members (of teachers, parents, students, etc.) select a teacher-coach to assist lead teachers in the school in delivering the instruction today's students need to be 21st century learners. The literacy coach positions are allocated to the middle schools with the lowest average scores on the eighth grade state reading assessment. The North Carolina Teacher Academy has provided year-long training for the middle school coaches to help them embed 21st century skills in their schools thereby improving student achievement.

THE PARTNERSHIP FOR 21ST CENTURY SKILLS

The Partnership for 21st Century Skills is the leading advocacy organization focused on infusing 21st century skills into education. The organization brings together the business community, education leaders and policymakers to define a powerful vision for 21st century education to ensure every child's success as citizens and workers in the 21st century. The Partnership encourages schools, districts and states to advocate for the infusion of 21st century skills into education and provides tools and resources to help facilitate and drive change.

Vita

Arshad Bashir is the first Fulbright student from Pakistan to join the doctoral program at Reich College of Education at Appalachian State University (ASU) in Boone, North Carolina. Before coming to ASU for his doctoral studies, Dr. Bashir served in multiple roles at several well known educational institutions in Pakistan. Dr. Bashir taught biology at the high school, college, O, and A (University of Cambridge programs) levels; he served as housemaster, controller examination, and sports coordinator at Mari Grammar School and Education City; and he also served as the biology curriculum specialist for Aga Khan University Examination Board. He is also the recipient of a Fulbright Scholarship to attend the Biology Teachers Exchange Program at ASU in 2007.

Dr. Bashir earned his B. Sc. in Biology from Gordon College, Rawalpindi; his B. Ed. in Science Education from the Federal College of Education, Islamabad; and his M. Sc. in Plant Sciences from the University of Arid Agriculture, Pakistan. Dr. Bashir has been a frequent speaker at several educational and professional forums at the national and international levels. During his stay at ASU, Dr. Bashir initiated an educational and cultural exchange program between schools in Pakistan and North Carolina to bridge gap between two cultures and improves perceptions of young students in both countries. ASU acknowledged his work by recognizing Dr. Bashir with the Outstanding Graduate Student Award for 2013.

Dr. Bashir resides in Islamabad, Pakistan with his wife.