SETTING STUDENTS UP FOR SUCCESS: THE NEED FOR 21ST CENTURY

SKILLS

A Record of Study

by

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ABSTRACT

Whether the decision is made to go directly into the work force or further their education, a well-rounded student needs to be equipped with the proper knowledge and skills necessary for success in our ever-changing world. Instructional methods that rely on the cycle of lecture, homework, and assessment are not student-centered and do not teach essential skills. 21st century skills are the foundation of this study, which is focused on the 4Cs: critical thinking, collaboration, communication, and creativity. The purpose of this research study was to examine the frequency of 21st century skills present in planning, projects, and assignments, as well as gain a better understanding of how they were included in middle school classroom instruction. In this mixed methods study, quantitative and qualitative data were gathered from each of the eight participants through a survey. The survey was then followed by individual interviews. Through data analysis, the quantitative data indicated critical thinking and creativity were the most frequently present skills among the participants. The qualitative data, which was coded and merged with the quantitative data, assisted in confirming those findings. The data gathered provided valuable information on the current presence of 21st century skills incorporated into classroom instruction. This information will be used to design future professional development plans to ensure 21st century skills are intentionally integrated into future curriculum planning and incorporated into assignments, projects, and activities.

DEDICATION

To my husband, Shawn, for your unconditional love and support throughout our life together. Whether it has been raising our family, a job change, working towards an advance degree, to losing my mom in 2012 and everything in between, you have always my rock, encouraging and supporting me to continue to pursue excellence and persevere during challenges. I could not have achieved any of this without you and everything you did to ensure I had the time I needed to complete my course work and devote time to this research study.

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Last, but definitely not least, thank you to my Lord and Savior, Jesus Christ. For the gifts and talents you have blessed me with and your unconditional love.

CONTRIBUTORS

Contributors

This work was supervised by a record of study committee consisting of the committee chair Dr. M. M. Capraro and co-chair Dr. Yalvac.

All other work conducted for this record of study was completed by the student independently.

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NOMENCLATURE

P21	Partnership for 21st Century Learning
PBL	Project-Based Learning
SLS	Salem Lutheran School
STEM	Science, Technology, Engineering, Mathematics

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CHAPTER I

INTRODUCTION

The Context

As we begin the third decade of the 21st century, the U.S. educational system is not consistently preparing our students for the global society in which we live. Mandatory high stakes testing has forced individual state education agencies to focus on basic knowledge and test-taking abilities instead of problem solving and 21st century skills necessary for future success. As pressure is applied to educational organizations to better prepare students for post-secondary education, the workplace, and future careers, many teachers have been inadequately prepared to strategically incorporate 21st century skills; skills foundational for preparing students for an unknown future and emergence of new career opportunities. 21st century skill development requires a shift in the American educational system; a shift focusing educator efforts on the development of knowledge and skills for critical thinking, creativity, collaboration and communication (the 4Cs), skills that foster learning and innovation. Refocusing educator efforts on the 4Cs has the potential to provide a more well-rounded education, one that prepares students to adapt, adjust, and problem solve when challenges arise.

National Context

Twenty-five years after the U. S. Department of Education released *A Nation at Risk* (1983), an evaluation of our country's progress in educating our future citizens was released in the follow-up report, *A Nation Accountable* (2008). Both documents recognized the importance of the curriculum piece of the education puzzle, one

containing significant numbers of moving parts. *A Nation at Risk* called for an overhaul in curriculum, requiring students be provided more significant experiences in the core subjects of mathematics, science, English and social studies. While some progress was made in this area when the minimum high school graduation requirements were recommended, these efforts did not guarantee that high school students would enroll in the rigorous program that was suggested for all students in the 1983 report (U.S. Department of Education, 2008). The hope was that the new rigorous program would produce better educated and more successful citizens after graduation.

While these two reports brought attention to the concern of complacency in classroom instruction and expectations of students, the result was a renewed focus on the curriculum and test scores; not necessarily how students were learning the skills needed to be successful in the global society. Today, however, there is more attention to the correlation between education and workforce needs. Schools, from elementary to high school to community and four-year colleges, need to be more deliberate and strategic in building these connections (ACCT, 2018).

The U.S. Department of Education recognizes the need for continued progress, increasing our efforts in making education relevant in the lives of students (U.S. Department of Education, 2008). To do this, 21st century skills must be the focus of the curriculum and instruction in all classrooms across the United States. For students to be prepared to go beyond just surviving, to confidently thriving in the workforce and their careers, the skills needed for success must be introduced, nurtured, and developed throughout their educational experience. The 21st century skills, as identified by the

Partnership for 21st Century Skills (P21, 2009), include a well-developed list of necessary proficiencies that set students up for future success in our ever-changing global society.

The Partnership for 21st Century Skills (P21) has been working with various educators, policymakers, and business leaders for over a decade. P21 efforts focus on defining what college and career readiness is, the learning needed to prepare students for the next level, and how this could affect the future workforce (Soule & Warrick, 2015). Efforts toward these ends are exemplified in partnerships among P21, the Association for Career and Technology Education (ACTE) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEC). The three organizations joined forces, producing, "Up to the Challenge: The Role of Career and Technical Education and 21st Century Skills in College and Career Readiness." In the report, P21, the ACTE and the NASDCTEC recognized that college and career readiness must be the new direction in education for grades K-12. The report called for a change in school learning environments and the implemented instructional programs, in order to better equip students with the knowledge and skills needed to succeed in our global society (2010, p.21). Prioritizing this focus on learning, at the elementary and high school level, better prepares students to enter the workforce or to pursue an associate or post-secondary degree. More intentional preparation is doubly beneficial. First, it allows students to begin careers that pay living wages, enabling them to support themselves. Second, it sets them up for success in college, supplying them with the knowledge and skills needed to thrive in our global economy.

If students in the United States are going to be prepared to successfully lead our country, preparation needs to begin early. Our nation must systematically change the way we educate students. The main measure of educational success cannot remain status quo, namely performance on high-stakes tests. Instead, it must be focused on the skills they have developed along with the knowledge needed to solve problems and create new, innovative ways, to effectively and efficiently accomplish contemporary needs. It is critical that today's students acquire the 21st century skills needed to be prepared for the workforce, college and beyond. Efforts toward these ends have the potential to keep our country economically competitive in the global landscape.

Situational Context

The private school where I currently serve as an administrator serves students from kindergarten through 8th grade. The student body includes 365 students, along with 170 children in our early childhood program. All families are required to pay tuition for their child(ren). The school does not receive any government funding, other than Title IV funds for the professional development of our teachers and other grants made available to private schools. We offer educational support services, mainly focused on dyslexia therapy, other reading issues, and executive functioning. Recently, we have added enrichment opportunities for students identified as high academic achievers. Both educational support services and enrichment opportunities are offered for an additional charge above the standard tuition.

During my eight-year tenure, teachers have received training on topics related to differentiated instruction, gifted and talented instruction, and the integration of

technology into classroom routines and instruction. This training was strategically planned and implemented to ensure our classroom teachers were equipped to meet varied student needs. The strategic planning of professional development is a priority for the current leadership. It continues as a top priority as students' academic needs are identified, and current instructional strategies are reviewed.

To determine students' needs, the Iowa Test of Basic Skills (ITBS) data, benchmark data, and overall academic performance exhibited by class grades are analyzed. ITBS data are disaggregated and examined by specific subjects at the different grade levels. The process allows for the review and evaluation of current instructional methods, determining the degree to which they meet the needs of our students.

The Problem

Relevant History of the Problem

The need to improve education in the United States was acknowledged in 1983, when the U.S. Department of Education released the *A Nation at Risk*. The motivation for this report was the stark reality of the United States' illiteracy rate, U.S. graduate achievement gaps compared to other countries (based on international test scores) and the declining achievement on standardized tests in U.S. public schools. The 2001, No Child Left Behind Act, further emphasized needed focus on reading and resulted in increased accountability for states, school districts, and individual schools. Finally, the 2008, *A Nation Accountable* report was released, rounding out nearly three decades of educational research. All three documents highlighted needed focus on educational improvement, identifying the complacencies in schools and recognizing five areas in

need of change: curriculum, standards and expectations, time, teacher quality, and educational leadership and financial support (U.S. Department of Education, 2008). While *A National Accountable* served to spur on the rebuilding process, it failed to acknowledge the need for the development of 21st century skills.

The notion that developing 21st century skills in school-aged children is important is not new. Due to the global nature of our society, Hoffman (2010) stated the need for a learning environment where students can learn how to be self-sufficient and self-directed as they engage in meaningful learning experiences. This must be taken into consideration by all school leaders as we move forward and as we try to develop learning environments most conducive toward developing skills necessary for success in the 21st century.

While *A Nation at Risk*, the No Child Left Behind Act, and *A Nation Accountable* aimed to address the lack of academic excellence in our nation's schools, Kar (2011) pointed out that academic excellence is not enough. Students need to develop other skills, namely, individual, reflective, and social skills that support a well-balanced personal and professional life. The U.S. Department of Education did help to bring about awareness of the need to improve classroom instruction across our country, however, these reports fell short in their recognition of the need to determine student success beyond that which is measured on tests. In fact, these tests, in many cases, given their high-stakes nature, have adversely affected approaches to classroom instruction (Diamond, 2007). Instead of allowing teachers the ability to exercise instructional

creativity, many have been relegated to teaching test taking strategies. "Teaching to the test" has dictated the activities in many school classrooms.

In contrast to public schools, private schools have averted the accountability of state mandated tests. Yet, despite the apparent, "freedom from the tests," there exists sluggish implementation of instruction that fosters the development of 21st century skills. Some headway has emerged, in some private schools, as a result of the Project-Based Learning (PBL) and STEM movements; resulting in differences in classroom instructional practices (Morrison et al., 2021). Now that there is awareness in our schools and the educational world in general, private schools not only have the opportunity, but also the privilege to lay the cornerstone in this necessary change. Without the pressure of state exams, private schools enjoy instructional freedoms allowing for the adoption of curriculum and instructional methods conducive to developing 21st century skills.

Helping students develop the skills necessary to be successful in our global society needs to be part of our educational focus. While the benefits of an excellent academic foundation in math, science, social studies and English cannot be understated, it is critical to be able to apply that knowledge in creative and collaborative ways. Research for the present Record of Study, required an investigation of teachers' knowledge of 21st century skills and an examination of their perceived level of implementation in one private school in Texas. This helped identify the professional development needed by the staff, to equip them with the knowledge and skills necessary

to fully implement the development of 21st century skills in their curriculum and classroom instruction.

Significance of the Problem

The teachers at Salem Lutheran School plan and instruct in accordance with the Texas Essential Knowledge and Skills (TEKS). Meeting these standards, set by the state of Texas, is of the utmost importance. Teachers at Salem Lutheran School strive to go above and beyond these standards to better prepare students for the future. To date, the main assessment tools used to determine mastery and understanding by many of the teachers on campus comprise daily work, quizzes, and tests. In our school environment, grades are emphasized, and many parents maintain high expectations of their children. The ability to clearly justify grades is critical. Therefore, teachers provide feedback for students along with proof of understanding.

The struggle for many teachers is the focus on 21st century skills. This kind of learning and innovation, composed of critical thinking, communication, collaboration, and creativity, requires a different way of thinking about how concepts are taught and the options related to the development of the end product. Further, our teachers suffer from the lack of 21st century skills preparation during their pre-service teacher training. Therefore, as we strive to prepare our students for the future, we must incorporate and fully integrate 21st century skills into our planning and instruction.

Rios et al. (2020) identified 21st century skills that are most important to the workplace. Certain skills must be developed in order to be better prepared for the workforce. In addition, better preparation positively impacts U.S. economic success.

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Their research revealed the skills most critical for employers, which include, written and verbal communication, problem solving skills, and collaboration. The pressure for teachers to teach these skills, in order to prepare students for jobs that do not currently exist, is real. However, many teachers do not understand how this is effectively accomplished.

Due to the critical need for students to develop 21st century skills, I have engaged in the present study, addressing the need for teachers to develop the knowledge necessary to create a learning environment where 21st century skills are intentionally and strategically integrated. Specifically, the present study aims at gaining a realistic understanding of Salem Lutheran Middle School teachers' comprehension of 21st century skills. Knowledge gleaned from the present study will be used to design a professional development plan. Designing and obtaining the proper training for 21st century teaching is a critical and necessary step in the preparation of our youth.

Research Questions

The purpose of the present study is to investigate the knowledge Salem Lutheran School teachers have regarding 21st century skills and their perception of integrating 21st century skills into their current planning and instruction. In order to evaluate their knowledge of and identify the extent to which teachers integrate 21st century skills, I seek to answer the following research questions:

The main research question was: What are the characteristics of 21st century skills taught by middle school teachers at Salem Lutheran School?

The sub-questions were:

1. With what frequency did the middle school teachers at Salem Lutheran School enact the selected 21st century skills in their classroom?

2. To what extent and depth do the middle school teachers at Salem Lutheran School perceive they are intentionally integrating 21st century skills into their instruction?

Personal Context

Researcher's Roles and Personal Histories

I have spent the entirety of my educational career in the private Lutheran schools. Throughout my 25-year career I have taught a variety of grade levels and subjects, from grades five through twelve. Though my focus and passion is mathematics, I have also had opportunities to teach physical education (PE), health, religion, and middle school science. The students at Salem Lutheran School range, socioeconomically, from middle to upper class and the families served by our school are expected to partner with us in the education of their child(ren).

 I began my career at the high school level, teaching geometry, health, and PE in addition to coaching volleyball, basketball, and softball. During the six years I spent at the high school level, I began my master's degree in Educational Administration. My choice to purse graduate studies stemmed from my desire to take on a school leadership role in the future. Subsequent to my service at the high school level was my experience at a kindergarten through 8th grade school in downtown Houston. During those twelve years, I served as the 5th and 6th grade math and science teacher, coach, and athletic

director. I was promoted and served as principal during the last four years at the school. It was in that environment where I noticed rapid personal growth, as both an educator and school leader. That setting facilitated an environment where I sharpened my awareness and understanding of the differences between teacher-focused and student-focused learning environments.

Following my experience at the downtown Houston school, I served as an administrator at another Lutheran high school before finally settling at my current school, initially as a teacher and now an administrator. Each school in which I served at had its own unique strengths and challenges. In addition, each provided me many valuable opportunities that formed the lens through which I see the future of education. It is through this lens that I have identified the need for educating students differently, to better prepare them for the workforce, college, and future career.

Journey to the Problem

In 2013, I began teaching at my current school. I came into an environment with very supportive parents, an extremely skilled and passionate team of educators, a successful administrative team, and an overall, well-run educational institution. The school's reputation in the community is admirable as the graduates go on to be very successful in high school and beyond. Academic recognition is extremely important to students and parents. This is exemplified in students' pursuance of the distinguished Meritorious Scholar award. What I have found in the last eight years, through observations, conversations, and conflicts is that the acquisition of the Meritorious Scholar award has become more important than learning. Students are under pressure

from parents to get the "A" and teachers are questioned and challenged when students do not get the "A."

When the grade received becomes overwhelmingly more important than the learning taking place, there is an obvious problem of priority. An "A" on the report card does not guarantee future achievement. Instead, it's the skills learned and mastered that will better prepare students for success. Grades should reflect the learning that has taken place as opposed to mastering the art of test taking. Creating an environment where the grade is not the ultimate focus encourages the pursuit for understanding and, in that pursuit, we find a more redeeming focus in our educational system.

As a private school, we are not held as hostages to the high-stakes testing that binds public schools. Therefore, we must take advantage of the opportunity to fully implement the 21st century skills in our curriculum and instruction. Making education more about the actual learning that takes place and less about grades or grade point averages equates to progress in preparing students for the 21st century and the global society in which we live. This desired change in the educational environment in which I currently serve has inspired the present study.

Significant Stakeholders

The administration team at Salem Lutheran School, who have laid the foundation for a 21st century learning environment and who's vision has encouraged this research, are the most significant stakeholders. In addition, the teachers, who are on the frontline of delivering instruction, are key stakeholders. The teachers have spent the past few years learning how to effectively integrate technology to improve their students'

educational experiences. Further inspiration for the present study comes from the teachers who strive to integrate 21st century skills in their instruction at Salem Lutheran School.

Other stakeholders include the Directional Leadership Team (DLT) of Salem Lutheran Church and School, Salem Lutheran School Commission, and students. The DLT is charged with achieving the mission of Salem Lutheran Church and School. As a non-profit organization, we function, financially, under a single budget. The success of the school ensures the funding of the school ministry, contributing to the overall ministry of Salem Lutheran; a mission focused on Christ-centered living and education. The School Commission helps create and enforce school policies while also fanning the flame of our school, as all members of the commission are either current parents of our students or active members of our congregation. It is the School Commission's desire to continue to see that Salem Lutheran provides an education that prepares our students with knowledge and skills for success, both now and in the future. Finally, the students at Salem Lutheran serve as stakeholders in this research. Our students are the direct beneficiaries of improved instruction, better preparing them with the 21st century skills they will need to be successful in their future careers in our global society.

Important Terms

Curriculum: The academic content, standards covered, and materials used to teach a specific subject, course, or program.

Global Society: The international influence of businesses and education that has changed how we work and communicate around the world and educate students.

Innovative: The use of new methods to introduce old concepts and new ideas in a new way.

Instruction: The process of teaching and guiding so that new knowledge can be discovered, and connections can be made.

Integration: The process of merging new components into a process that currently exists in an effort to make it more effective.

Professional Development: The training teachers need to develop more comprehensive 21st century teaching skills.

21st Century Skills: According to P21 (2009), these are the Learning and Innovation skills that help prepare students for the "more complex life and work environments in the 21st century." These skills focus on the 4Cs of critical thinking, collaboration, communication, and creativity (p. 3).

Closing Thoughts on Chapter 1

Changing the way we educate students is a challenge we continue to face. State mandates and high-stakes testing, which attempt to measure student progress, do not lend themselves to a focus on the development of 21st century skills. Our educational system has been impacted by political and social interests, while the economic impact of the end result, that being the high school graduates, has been ignored. The global society in which we live requires students who have developed skills that allow them to creatively solve problems along with the ability to adapt and adjust to our ever-changing world.

Through this action research study, I examined the knowledge of 21st century skills the middle school teachers at Salem Lutheran School were equipped with and the perception to which the skills were integrated into their instruction. This was accomplished using interviews and surveys. Chapter 2 includes the history of 21st century skills in education and the need for students to be equipped for our global society. Chapter 3 lays out the methods of collection and analysis used for the present study. Subsequently, Chapter 4 presents results of the study. Finally, the conclusions of the present study are presented in Chapter 5.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Setting students up for success in the 21st century should be the focus of every school. There is a need to reevaluate current instructional practices in our educational system in order to align desired outcomes with global expectations. This requires a shift from teacher-centered instruction to instruction that is student-centered; from reading and memorizing information to identifying, discovering, and creating information. The 21st century skills must be deeply integrated into everything educators do, in their mission to successfully prepare today's students for future occupations and careers.

Students must be taught how to learn, how to improve their skills, and be allowed to foster their curiosity to be prepared for success in the 21st century (Wan & Gut, 2011). Dillon (2006) declares, "Education becomes a lifelong endeavor that can only be sustained by a true passion for acquiring knowledge" (p. 26). To instill these attributes in our students and set them up to uncover their potential, educators must consider methods to integrate 21st century skills into the teaching and learning process (Rahman, 2019). This is a challenge upon which all educational institutions must embark, as they try to find balance between high-stakes testing and preparing students for their future.

Chapter 2 of the present study is a review of the literature. In it, I discuss the importance of integrating 21st century skills into classroom instruction. First, I address the literature related to the need for skills that set students up for future success, skills are identified as 21st century skills by the Partnership for 21st Learning (P21). Next, I

examine the literature related to the categories of skills, starting with the 4Cs. These include critical thinking, creativity, communication, and collaboration. The 4Cs lay the foundation for 21st century skills. Subsequently, I expand the literature review discussion to the Life and Career skills domain of 21st century skills, which are achievement and success, leadership, productivity, flexibility and adaptability, social skills, and initiative. Finally, I conclude Chapter 2 by examining the idea of developing independent, successful learners, along with the necessity of training students to persevere to achieve their goals, before laying out the conceptual framework for the study and the conclusion.

Relevant Historical Background

Times have changed, and so must the way we educate students. As the world transitioned from the Industrial Age of the 20th century to the technological information age of the 21st century, the skills needed for success have drastically changed (Kivunja, 2015). What has not undergone dramatic change is the way we educate students to prepare them for 21st century careers. Educators at all levels must seriously examine how they approach instruction and identify outcomes that align with the needs of the 21st century workplace. Studies from the past 30 years, both in the educational world and the political arena, show the consistent need for graduates who can think critically and who can interact and communicate with a diverse population (Carbone & Ware, 2017). Regardless of whether a high school graduate is going to immediately enter the workforce or attend higher education, success in the future requires the ability to creatively solve problems, think critically, and be skilled in collaborating and effective communication. To succeed, creativity and the ability to perform "nonroutine tasks" will

be required at many levels in the workplace (Soule & Warrick, 2015). Since these skills

are needed in the workplace, students' educational experiences must include

opportunities for intentional and strategic 21st century skills development.

Changing the classroom learning environment to one that provides a 21st century

education, with an atmosphere geared towards preparing students for a future fueled by

globalization, is a current educational challenge. The test-based accountability, to which

the public education system is held, has derailed many schools from being able to pursue

deeper learning. This is due, in large part, to the pressures students face to successfully

perform on state mandated tests. This has caused less focus on "the question of *how we*

know," which is critical to consider as the shift occurs from a test performance mandate

to an emphasis on 21st century skills (Nehring et al., 2019). However, before the learning

environment can be transformed, educators, themselves, must be able to apply 21st

century skills as they plan to implement activities (Tican & Deniz, 2019). "In schools of

the 21st century, a growth mindset is the primary quality of teachers and administrators

that facilitates innovation" (Titone, 2019, p. 32). True, lasting transformation requires

teachers own their own learning of 21st century skills. This facilitates change at and from

the classroom level; teachers, those closest to the point of implementation, become the

primary agents of change.

As schools strive to embrace and immerse their students in 21st century skill

development, private and Christian schools find themselves uniquely positioned to lead.

The main difference between the aforementioned schools and those in the public system

is the fact that private schools, unlike public schools, are not held to the high-stakes

testing mandate.   Unfortunately, many Christian schools, according to Bull and Pingel (2018) are content with providing an average education while also including a religious foundation in the curriculum. The dramatic and continual change in our world requires educators take advantage of every opportunity to adapt our educational system. It is critical given the demands of the future (Fadel et al., 2015). Embracing modern technology, while seizing every opportunity to develop and use innovative teaching practices, allows private schools the freedom to chart the course of changing education (Bull & Pingel, 2018). It is time private and Christian schools step out of their comfort zones. Taking advantage of this freedom has the potential to drastically change the way they educate, better preparing students for the future.

The 21st century skills, identified by the Partnership for 21st Learning (P21), are believed necessary for success in our global society. One domain of these skills includes the Learning and Innovation skills, otherwise known as the 4Cs: critical thinking, creativity, collaboration, and communication. The second domain includes information, media, and technology skills while the third domain encompasses life and career skills. Life and career skills include flexibility and adaptability, initiative and self-direction, social skills, productivity, and leadership (P21, 2016). Given the rate at which our world is changing, 21st century skills need to be a nonnegotiable requirement, incorporated into school curriculum and instruction.

Alignment with Action Research Traditions

Anderson et al. (2007) elaborated on a variety of the traditions used in action research. The tradition to which the present study most closely aligns is practitioner

action research. Alignment to practitioner action research stems from the study of instructional practices in order to bring about critical reflection on how 21st century skills can be more intentionally integrated in planning and classroom instruction. The anticipated results of this study involve understanding the skills currently taught and developed, along with an understanding of the training teachers need to effectively integrate 21st century skill development into their daily instruction.

Further alignment to practitioner action research is seen as the purpose of my research is not to create, as Anderson et al. (2007) states, a "cookbook style of technical thinking" (p. 33). Instead, the purpose of the present study is to uncover both group and individual teacher needs, facilitating improvement in the quality and frequency of 21st century skills education in our classrooms. This was accomplished through an analysis of the frequency and the extent to which the middle school teachers at Salem Lutheran School perceived they were engaging their students in instruction requiring the development and use of 21st century skills. Data collected provided insight into which skills were most frequently used. In addition, the data allowed for the development of a future professional develop plan to improve the degree to which 21st century skills are integrated into teaching and learning.

Research for this record of study included a survey of the middle school faculty. The survey gathered information related to the perceived frequency of 21st century skills included in instruction. In addition, interviews were used to gain more insight into how the middle school teachers have integrated 21st century skills in their past instruction. This process also served as a "form of professional development and generation of

knowledge" (Anderson et al., 2007, p. 30) as teachers had the opportunity to learn more about 21st century skills through the survey and interview discussions. It is through this process that both group and individual professional development needs were identified. The teachers had the opportunity to use reflective practice to identify strengths and weaknesses related to the integration of 21st century skills in their planning and instruction.

Conceptual Framework

The conceptual framework of the present study identified 21st century skills that were being integrated into classroom instruction, in grades 6 through 8, at Salem Lutheran School. Once identified, the extent to which they were incorporated into the curriculum and instruction was revealed. Specifically, the present study utilizes the P21 Learning and Innovation domain as its focus of inquiry. For the past few years, Salem Lutheran School has placed heavy emphasis on technology, media literacy, and digital citizenship. There has not been intentional training or integration of the other 21st century skills. Therefore, the necessity to assess the use of the other 21st century skills is appropriate. This analysis provided the insight needed to determine if and how these skills were actively developed and nurtured in the students.

Once the skills are identified and the extent of skills integrated is determined a professional development plan will be created, one that focuses on training teachers toward 21st century skills integration. The plan will be customizable for individual teacher needs while also addressing the needs of the entire faculty in grades 6 through 8. In addition, regular evaluations will take place to ensure the professional development is

maximized to bring about the greatest return in student learning, achievement, and improvement in the integration of 21st century skills.

Most Significant Research

The 21st first century was not a surprise. In fact, the need to prepare students for the twenty-first century has been a topic of discussion for over a decade (Ahonen & Kinnunen, 2015). "Today's children are expected to be multiple skilled to face the day to day 'cutthroat competitive challenges' and make use of all opportunities available in the contemporary world" (Nithyanantham et al., 2019, p. 325). To best prepare today's students, Williams (2017), asserts educators and the school environment must be representative of the social environment in which the students will be working, in order to maximize their learning in a natural social setting. Creating an environment where students can develop and refine 21st century skills, starting with the "4Cs," has the potential to better prepare them for their future education and career.

The evolution of our world, from the 20th century Industrial Age into the information age of the 21st century, highlights the fact that 20st century skills are insufficient for success in the 21st century (Kivunja, 2015). Today's 21st century skills encompass a broad set of traits and skills essential for success in our global society. These include knowledge and skills along with specific character traits and work habits (Rahman, 2019). Students must be trained and properly prepared to look beyond the obstacles facing them and seek options to overcome them (Vainikainen et al., 2015). It is through the development of 21st century skills that students have an opportunity to be better prepared for the future.

Wan and Gut (2011) recognized the skills required for teaching today's students have drastically changed. The requisite knowledge and skills required of teachers now encompass a wider range of concepts than in the previous decades. This causes conflict between covering a wide range of content verses the opportunity to dig deeper into the curriculum. In addition, teachers increasingly encounter the need to balance the core content with the integration of 21st century skills. Amid the constant pressure of the accountability of high-stakes assessments, it's no wonder instruction defaults to surface-level coverage. As we move forward, the most effective educational reforms will be those that develop and implement systems to equip students, in innovative ways, with skills that will lead to success in the 21st century (Vainikainen et al., 2015).

Kivunja (2015) noted the complexity and competitiveness of the 21st century work environment and advocates that our educational system expand beyond "simple thinking skills and an understanding of content knowledge" (p. 6). The 21st century demands our educational system must continue to change. This is vividly seen given the effects of the current global pandemic on education. According to Vainikainen et al. (2015), given the unpredictability of the future, traditional ways of teaching children will no longer be successful. Students will not develop the much-needed skills they require for 21st century success.

The framework developed by the Partnership for 21st Century Skills (2009) lays out the vision for 21st century learning. The framework recognizes the need for all students to develop knowledge in core subjects to ensure a solid foundation for their education. Beyond this, students need to learn the essential skills of critical thinking,

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collaboration, communication, and creativity, also known as the 4Cs, to be successful in the world today. The National Education Association (NEA, 2012) advocates the need for students to be prepared for the global workforce and to be good citizens by supplementing the core content with the 4Cs.

In order to equip students for their future careers in the global workforce, the NEA (2012) calls for all educators to incorporate the 4Cs into each of the core subjects. These include the arts, social studies, science, foreign languages, and geography (NEA, 2012). The 4Cs include critical thinking and problem solving, communication, collaboration, and creativity and innovation (P21, 2016). With the advancement of technology, life today is much more complex. These advancements have resulted in dramatically different demands placed on workers in every industry, requiring new and relevant skills set for success (NEA, 2012). Training students in the 4Cs, gives them opportunities to develop skills for success in their future careers.

The first of the 4Cs is critical thinking and problem solving. This is categorized by P21 (2009) into four proficiencies: being able to reason effectively, the ability to use systems of thinking, aptitude for making judgements and decisions, and the capability of solving problems. According to the NEA (2012), when students learn how to think critically, this leads to further development of processing skills, increased levels of concentration, and more profound analytical abilities. In addition, Wilcox et al. (2017) asserts critical thinking skills help facilitate analysis and evaluation of complicated problems, especially those with the possibility for multiple solutions. Critical thinking is

an essential skill for future success, increasing one's ability to effectively function in today's global society and workforce.

Creativity and innovation skills break down into three classifications. These include the ability to think creatively, the capability to creatively work with others, and the ability to implement innovative ideas (P21, 2009). These are important skills that many businesses and industries are looking for in their workers (Wilcox et al., 2017). These desired work characteristics, which were once only expected of inventors and artists, are now necessary in many areas of the workforce. For creativity to be developed and taught in schools, it must begin with teacher approaches to instruction as well as their ability to adapt their pedagogical method to today's learning environment (Nithyanantham et al., 2019). At one time, creativity and innovation were not considered teachable proficiencies. However, they are now considered critical for success in the 21st century and must be addressed in school.

With the infiltration of technology in our society, the ability to effectively communicate, face-to-face, has been severely hindered. The ability to utilize different technological platforms as well as media allow for the opportunity to inform and influence others. Having the ability to using verbal, non-verbal, and written skills to articulate one's ideas and thoughts is also a critical piece of effective communication (P21, 2009). In fact, as Wilcox et al. (2017) state, successful communication is one of the keys to lifelong learning. While technology has had a positive impact on the distance and speed of communication, it has, in many instances, hindered the effectiveness of

face-to-face interaction. This has had the unfortunate effect of hampering the development of communication skills in many people.

Collaboration fosters teamwork and the ability to set common goals, collegially problem solve, and work towards collaborative processes and products. The ability to listen, be flexible, and compromise are all key factors in effective collaboration (Wilcox et al., 2017). Collaboration also includes the capacity to effectively and respectfully work with people from diverse backgrounds, while also acknowledging, valuing, and respecting the individual contributions of each team member (P21, 2009). Future success, given the complexity of our global society, and the rate at which technology and information is continually changing, will center around one's ability to work with others. Often, multiple solutions to any given problem or situation exist, exemplifying the value of collaborative efforts.

Developing 21st century skills begins with the 4Cs. They are foundational, laying the groundwork to expand 21st century skills to skills related to information, media, and technology as well as to life and career skills. While there are organizations who have developed and communicated 21st century skills frameworks, Ahonen and Kinnunen (2015) stated that there is no agreed upon rank, order, or prioritization of the skills designated. What is believed to be a common understanding, though, is that in order to implement these skills, students must have developed knowledge and understanding of core academic subjects. One key factor is striving to find the balance of this core of knowledge and 21st century skills in education.

The goal of education is student achievement and success. The demands of the 21st century have created a global environment of change and unpredictability, which requires educators to leave their traditional ways of teaching in order to help students develop the necessary skills for success (Vainikainen et al., 2015). In addition to students gaining a solid foundation in academic knowledge and developing 21st century skills, one's actions have an impact on successful outcomes (Usher et al., 2019). Students who accept change and adapt quickly are more likely to succeed in life (Dillon, 2006). These skills must be modeled, taught, developed, and refined while students are in the school learning environment.

Some people are said to be "born leaders," and it is a part of their personality, while others learn leadership skills throughout their life. The skill of leadership allows one to influence others' decisions and actions through the use of well-developed interpersonal skills (Kivunja, 2015). Leadership is tied to motivation and self-direction which are vital proficiencies for our students' futures (Dillion, 2006). According to Heinrichs (2016), leadership and accountability, paired with self-directed learning, can be accomplished through developing 21st century skills. Kay (2009) contends that, at the international level, it was these skills which set leaders apart. The concept of leadership and developing leadership skills is critical for our student's future. Leadership can lead to productivity; therefore, leadership needs to be intentionally integrated into the curriculum and instruction in today's classrooms.

Productivity is a skill that is needed by all who have the desire to be successful both personally and professionally. Hoffman (2010) believed that our digital world has

had a negative effect on our overall productivity, affecting our ability to make important choices. For some, this is the result of executive functioning skills having been "depleted from the bombardment of inconsequential choice making and high frequency responding that characterizes life in the digital world," (p. 49) exemplified in video games, social media, and other digital uses that cause extended screen time. In order to overcome this, students need to learn how to be productive. To achieve this, Kivunja (2015) encouraged teaching students how to set SMART goals, prioritize tasks, and plan their time so they can manage. This groundwork, according to Owen (2015), needs to be laid in order to develop, "future-oriented teacher student learning cultures and practices which are essential for productive and creative teachers and also for students towards enhancing their twenty-first century work and life" (p. 55). This has brought about the need for our educational culture to change to include the intentional integration of 21st century life skills such as productivity. Our youth have the potential to benefit globally from understanding the importance of productivity today.

The global nature of our world needs individuals who are flexible and able to quickly adapt. These qualities benefit employers. The ability to adapt to changing circumstances with simultaneous resourcefulness and flexibility is necessary in both today's workforce as well as in the workforce of the future. (Kivunja, 2015). More than just surviving unexpected situations, the ability to thrive amid change is a sign of perseverance. Acquiring the life skills necessary to navigate today's world helps positively position students, increasing the likelihood of their professional success. (Savickas, 1997). Those who lack these skills are likely set up for failure and/or

stagnation in their careers (Kivunja, 2015). For school-aged children to learn what it means to be flexible and develop the ability to adapt in changing circumstances, they need scenarios and situations that require active engagement. Scenarios and situations force them to experience real-world circumstances in the classroom, a lower stakes environment where teachers can help guide student's thoughts and actions.

Forms of technology like email, text, video games and social media have hindered social interaction. To combat this, students need opportunities to learn social skills that help them develop individual and reflective abilities, enabling them to find balance in their professional and personal lives (Kar, 2011). The ability to communicate effectively and manage emotions helps build strong relationships, relationships that allow one to work well, and with empathy, in a group setting (Proehl et al., 2017). The ability to work with people from diverse backgrounds helps prepare the next generation for future success. This hinges on the development of a strong academic foundation and the ability to accept social responsibility (Fitzgerald & Laurian, 2013). Given the degree that technology is used in everyday life, the understanding of social responsibility and social skills is critical.

Initiative and ownership are 21st century skills that are at the initial stages of problem solving. When one has the desire to step up and take a risk in order to communicate an idea, solve a problem, or collaborate with a team, these developed skills make positive contributions (Kansaart et al., 2017). For students to learn these skills, an environment where student autonomy is nurtured and developed is beneficial. This encourages initiative while learning from failures (Hoffman, 2010). As students graduate

from the safety of the classroom environment and enter the work force, they need to be ready to use these learned initiatives. Initiative invites students to assume ownership in their workmanship and decisions. In addition, creates an open-mindedness. Students are more likely to listen to new ideas, learn new processes, and apply new concepts in order to improve their effectiveness and efficiency (Kivunja, 2015). These skills will not be learned if teaching and learning are hindered by focusing on "a grade" rather than on learning for future success. Our educational system needs to move away from simply giving information to helping students discover new knowledge and information.

Teaching students how to take initiative as well as holding them accountable for follow-through on assignments is critical in today's classrooms. For students to feel comfortable taking the initiative for their own learning, it is important for them to be, "prepared to see new options instead of obstacles" (Vainikainen et al., 2015, p. 62). As our society has become more complex and complicated, many resort to giving up on goals in the face of obstacles. If students are to persevere, the drive and passion to continually seek new knowledge, in order to achieve long-term goals, must emphasize a focus on the process rather than the outcomes (McGlynn & Kelly, 2017). Those who are more likely to persevere through challenges are those who believe they are capable of overcoming obstacles. While perseverance is not named as a 21st century skill, it is one that is necessary when employing creativity and innovation (Usher et al., 2019).

Schools should be striving to develop successful, independent learners. Hoffman (2010) concluded, "this generation of young adults is routinely deferring their independence much longer than generations of past" (p. 48). The deference to which

Hoffman speaks equates to a lack of purpose in life, causing young adults to struggle to focus on goals. Further, the lack of purpose and focus leads to unproductivity. To try and counteract this lack of productivity, Westberg and Leppien (2018) showed that students who were involved in independent inquiries, by their own choosing, were more likely to initiate and engage in their own creative processes and products, both inside and outside of the school setting. Providing students choice allows them the ability to engage in meaningful experiences which sparks their interest and, in turn, motivates them in the learning process.

Closing Thoughts on Chapter 2

Preparing students for the future is a critical aim in education. Teachers and school administrators alike have concerns for students who graduate high school, particularly when they are not equipped with the proper communication skills, when they cannot think clearly or respond thoughtfully, and they cannot problem solve (Carbone & Ware, 2017). In a world where the creation of knowledge is just as important, if not more, to the creation of products, it is critical for future generations to be able to analyze complicated problems, expand on and create new ideas, and have the ability to communicate thoughts clearly (Dillon, 2006). When equipped with 21st century skills, students have the potential to set themselves apart in the area of leadership (Kay, 2009). Further, these skills are vital for a Science, Technology, Engineering and Mathematics (STEM) focused culture and its wide range of occupations (Sondergeld & Johnson, 2019).

It is time for educators and school administrators to plan and train for the future of education. To accomplish the instructional shift that needs to occur in our educational system, Wan and Gut (2011) encourage educational stakeholders to engage in collaboration. Their research shows teachers cannot accomplish this feat on their own. Wan and Gut voice their concern regarding the expansion of knowledge that has occurred over the last few decades, knowledge that is expected to become part of a teacher's foundational knowledge. Educators have not been prepared for the future, a humbling realization during the current global pandemic. Many teachers struggle to stay on the cutting edge of education, having difficulty contemplating what they are expected to know to be effective in the classroom. What once worked and provided a solid educational experience for students no longer equips students with the necessary skills for the 21st century workforce.

A comprehensive presence of 21st century skills in today's curriculum and instruction continues to elude Salem Lutheran School. Kay (2009) pushed for these skills to be intentionally and systematically integrated as they will be the differentiator between those who rise as leaders and those who linger behind in today's competitive global arena. Kim et al. (2019) believed the educational system has the most substantial impact on how and to what extent 21st century skills are developed in school-aged students. Key factors in the development process are curriculum, school climate, pedagogy, and assessment methods. In order to better equip our students for the future, Vainikainen et al. (2015) found our educational system needs positive educational reform that incorporates an innovated system. Rahman (2019) urges school leaders to

provide students an opportunity to obtain more knowledge about different subject areas, rather than continuing to prepare them for current jobs in our workforce. More awareness of the need for 21st century skills within educational institutions is required. A limited number of educators have begun to implement some of the 21st century skills into teaching and learning. Overall, however, these skills continue to be absent as graduates move, underprepared, into college or directly into the workforce.

The factors in developing a 21st century learning environment at Salem Lutheran School are curriculum, the overall academic climate, and, for some, the approach taken towards a new instructional mindset and pedagogy. Understanding what 21st century skills are and how to effectively integrate them into instruction is the goal for the teachers at Salem Lutheran. Effective training and ongoing evaluation will be critical in maximizing the development of 21st century skills in the students at Salem Lutheran School. Prior to any training, however, teachers must understand 21st century skills and agree with the urgency to incorporate them into their regular instruction. As with any type of professional development, faculty buy-in will increase the impact of the training on future classroom instruction. Therefore, in this record of study, I investigated the current knowledge of the Salem Lutheran Middle School faculty related to 21st century skills, assessed the perceived level of integration of these skills, and used the data to assist in developing a professional development plan to continue to cultivate a 21st century learning environment at Salem Lutheran School.

CHAPTER III

SOLUTION AND METHOD

Outline of Proposed Solution

1. Administer a survey seeking to collect data on the perception of how frequently 21st century skills are perceived to be taught, in current middle school classroom instruction at Salem Lutheran School (SLS).

2. Conduct interviews, as a follow-up to the survey, to gain a better understanding of how the skills are integrated into teacher planning and instructional strategies.

3. Identify the perception of 21st century skill integration by SLS middle school faculty.

4. Identify future professional development needs of the middle school faculty.

Justification of Proposed Solution

The overarching goal of my record of study (ROS) is to cultivate a culture of instruction that emphasizes 21st century skills, established by the Partnership for 21st Century Learning (P21), at SLS. In order to increase the inclusion of 21st century skills in SLS curriculum, it is critical to understand the teachers' level of awareness and knowledge of 21st century skills. Once that is determined, future professional development can be specifically designed to meet the needs of the teachers, aimed at improving and advancing instruction that better prepares SLS students with the skills necessary for success. The purpose of this study was to identify the participants' understandings concerning 21st century skills at the middle school level and their perception of the integration of those skills in classroom instructional strategies. This

will assist in maximizing the integration of the 21ˢᵗ century skills into instruction by increasing the faculty's knowledge and understanding of the importance of 21ˢᵗ century skills. Additionally, future professional development activities will continuously be reevaluated against the P21 recommendations, as the teachers and students develop new 21ˢᵗ century skills and as our global society continues to transform.

Study Context and Participants

In 2013, I began teaching at SLS. I came into an environment with very supportive parents, an extremely skilled and passionate team of educators, a successful administrative team, and a well-run educational institution. The school's reputation in the community is admirable as the graduates go on to be very successful in high school and beyond. Academic recognition is extremely important to students and parents, as students strive to earn the distinguished Meritorious Scholar award. What I have found in the last eight years, through observations, conversations, and conflicts is that this prestigious award has become more important than learning. Students are under pressure from parents to get the "A" and teachers are questioned and challenged when students do not get the "A."

When the grade received becomes overwhelmingly more important than the learning taking place, it is obvious there is a problem. The "A" on the report card does not guarantee future achievement. But, important 21ˢᵗ century skills, learned and mastered, will better prepare students for success. Grades should reflect the learning that has taken place as opposed to mastering the art of test taking. SLS should seek to create an environment where the grade is not the ultimate focus. The SLS environment must be

one that encourages the pursuit for understanding framed within the acquisition, development and mastery of 21st century skills. Success, framed by timely and relevant curriculum and instruction, should be the focus of every educational system.

As private school, SLS is not held hostage to the high-stakes testing compulsory for public schools. Therefore, I believe SLS must take advantage of this opportunity to fully implement 21st century skills into its curriculum and instruction. Making education more about the actual learning taking place and less about grades or grade point average will be a progressive move toward preparing students for the 21st century and our global society. This desired change in the educational environment in which I currently serve, in addition to the literature review contained in Chapter 2, inspired the development of this topic for my ROS.

The participants in this study comprised eight teachers in grades 6 thought 8 at SLS. This specific group of teachers were selected to a gain a better understanding of their knowledge and perception of the frequency in which 21st century skills were integrated into instructional plans and class activities.

In order to collect data for this study, I administered surveys and conducted interviews with the middle school faculty in grades 6 through 8 at SLS. The survey and interview protocol were designed to explore the SLS teachers' level of awareness and knowledge of 21st century skills and the extent to which each teacher perceives they incorporate 21st century skills in their classroom instruction. The analysis of the data allowed me to determine where deficiencies of 21st century skills instruction exist in the teacher's current approach to classroom instruction.

Research Paradigm

A sequential mixed methods approach (Plano Clark & Ivankova, 2016) was used for this study, as there was a need to collect both quantitative and qualitative data to gain a full understanding of the teacher's knowledge of 21st century skills. In addition, the sequential mixed methods approach facilitated understanding of teacher perceptions regarding the frequency the skills were incorporated into their classroom instruction. Using a mixed method approach allowed me to gather more in-depth information about the knowledge of 21st century skills held by the middle school faculty at SLS. The quantitative strand was used first. It inventoried each teachers' perception related to the frequency 21st century skills were integrated in their instruction. This was followed by the qualitative strand, which allowed for a deeper understanding concerning SLS teachers' knowledge of the skills. Teachers provided examples of efforts used to intentionally integrate 21st century skills into their instruction. After the data were collected from both strands, the qualitative data was quantitatively coded. This allowed for the merging of data for analysis (Creswell & Clark, 2017). A merging of data, which are two parts of the whole, allowed for a better understanding of the SLS teacher's frequency in integrating 21st century skills into their instruction.

Data Collection Methods

In Part One of the survey, I collected quantitative data from the teachers in grade 6 through 8 through the administration of a 21st century skills inventory. The findings allowed me to identify which 21st century skills teachers perceived they were integrating into their instruction. The independent variable in this data set was 21st century skills.

The dependent variable was the frequency of skills used. The second part of the survey collected quantitative data on the educational culture at SLS. The findings from this data allowed for a better understanding of the administration's effort in fostering a culture that promotes the development of 21st century skills. To administer the survey, I sent individual emails to eight teachers, inviting them to participate in the study. Teacher participants who agreed to participate were asked to complete the online 21st century skills inventory. The data collected are stored in a Microsoft Excel sheet that remains confidential. I alone know the identity of the teachers. In the reporting phases, the teachers' identities remained confidential. Pseudonymous names were used to ensure anonymity. Only I accessed the stored data sheets.

The qualitative data were collected using semi-structured interviews (Creswell, 2014), facilitating greater understanding of how teachers integrated 21st century skills into their instruction. The interview questions were open-ended, teachers were able to describe their understanding of 21st century skills and the methods they used to integrate them into their instruction. I personally invited teachers to participate in the interview sessions and conducted individual interviews with eight teachers. The interviews were conducted via Zoom Video Conferencing, at times convenient for the teachers. Each interview was approximately 45 minutes in duration. The conversations were recorded and transcribed using Zoom automated transcription. To edit the conversational text, I listened the recordings and amended the text accordingly.

The two quantitative and qualitative data collection methods helped more accurately assess what skills the teachers perceived they integrated in their classrooms

with their students. In addition, the data allowed for understanding of teacher enactment of 21st century skills instruction. Analysis of qualitative data led to the identification of emerging themes. Subsequently, themes were assigned quantitative codes. I then merged these with the quantitative data during the analysis phase (Creswell & Clark, 2017).

Justification of Use of Instruments in Context

The purpose of the quantitative strand of the study was to inventory the perception of 21st century skills integration in SLS middle school classroom instruction. Part One of the survey consisted of 19 questions focused on critical thinking, collaboration, communication, and creativity. Part Two of the survey, with an additional nine multiple-choice questions, collected school organization data related to the SLS educational and administrative culture.

The purpose of the qualitative strand of the study was to describe 21st century skills and the perceived frequency of use by eight teachers in grades 6 through 8. The open-ended questions in the interview facilitated dialogue between the teachers and me. This provided everyone the opportunity to describe different ways they perceived they incorporated 21st century skills in their teaching. Further, it allowed me to ask probing questions to gain further insight into their understanding of 21st century skills.

The use of two different strands for data collection, facilitated more comprehensive coverage of the teacher's knowledge of what 21st century skills were, combined with an understanding of what and how these were integrated. The two strands also supplemented each other by inventorying the basic knowledge of 21st century skills and then elaborating the teachers' understanding of how they integrated them in their

instructional practices. The integration of both quantitative and qualitative methods will inform curriculum planning, including pedagogical strategies that support instruction of the less developed and used 21st century skills.

Data Analysis Strategy

I analyzed the data using a merged mixed methods data analysis approach (Creswell, 2013). First, the quantitative data, from Part One of the survey, were analyzed for frequency of skill use in order to identify trends. I generated a frequency table for each skill being used by the teacher participants. During the qualitative analyses, I read the interview transcriptions three times (Creswell, 2007; Denzin & Lincoln, 2011). During the analyses, I employed the constant comparative method (Glaser, 1965). In my first reading of the interview verbatim, I performed the open coding strategy where I assigned specific codes to the incidents participants described (Creswell, 2007). During my second reading of the interview verbatim, I categorized and grouped the codes I generated in my first reading. This strategy is called axial coding (Creswell, 2007). In my third reading of the interview transcriptions, I performed a selective coding strategy, deleting the codes that were not meaningful or important and keeping the codes and categories that were meaningful and interesting. In the final review of the interview verbatim, I created the main themes that portrayed and described the codes and categories generated in the earlier readings. I performed the three readings and strategies for each interview conversation I had with the teachers. After crafting the main themes for each teacher participant, I continued with the transformation phase (Creswell & Clark, 2017).

In the transformation phase, theme categories were identified based on the classified trends (Creswell & Clark, 2017). The theme categories were merged with the quantitative data collected from the survey. I conducted a joint quantitative data analysis. The joint data analysis connected the knowledge of skills and the extent to which they were perceived as integrated.

Timeline

Fall 2020 - Developed the instruments to use for data collection

Spring 2021 – Conducted interviews and administered surveys to collect data for analysis.

Late Spring through Summer 2021 - Evaluated results of the interviews and survey to gain knowledge and understanding of how teachers were integrating 21st century skills into curriculum and instruction.

Validity Concerns

As I considered the importance of conducting a valid study for my ROS, I wanted to ensure the evidence collected through my surveys and interviews supported the conclusions drawn through my data analysis. Ivankova (2015) described *catalytic validity* as "the extent to which the research process empowers participants to transform the reality" (p. 271). It was through the action research process I was able to collect data in order to have a better understanding of the teachers' knowledge of 21st century skills and their perception on how they integrated the skills into their instruction.

The teachers in this research study included eight middle school teachers who were informed of the action research I was conducting on the topic of 21st century skills.

The specific terms I focused on in the survey and interviews were also shared and explained to the teachers. During the research process, the teachers completed the survey, which was then followed by the interview. During the interview I asked questions to better understand the degree to which the survey and teacher claims, regarding the integration of 21st century skills, agreed.

The goal of this ROS was to identify if and how 21st century skills were developed in our students, through intentional integration in planning and instructional strategies. SLS strives to prepare students for 21st century and beyond. The results of this study will be a catalyst for positive change in the teaching and learning environment in SLS middle school classrooms. The participants in this study will be empowered with a deeper understanding of 21st century skills and the creation and implementation of a professional learning plan will help them develop more intentional instructional strategies that allow for regular 21st century skills integration in their classroom teaching.

Closing Thoughts on Chapter 3

In this Record of Study, I collected data to gain a better understanding of the presence of 21st century skills integration in the instruction of the 6th through 8th grade teachers at SLS. The study included eight participants who completed a survey and interviews consisting of questions pertaining to 21st century skills. The survey and interviews were designed to gain better understanding of how the teachers integrated 21st century skills into their instruction. Both quantitative and qualitative data were collected in this mixed methods study to gain deeper understanding of the perceived integration of these skills. Once the quantitative data were collected, the qualitative data from the

interviews were coded and merged with the data collected from the quantitative strand. Through analysis of the merged data, trends were identified to determine the current level of integration of 21st century skills. The results from the study are communicated in a narrative format, as well as a presentation of the findings in Chapter 4. The collected data from this study was used to determine the professional development needs for the SLS middle school staff, ensuring 21st century skills are intentionally and strategically integrated into daily instruction.

CHAPTER IV

ANALYSIS AND RESULTS/FINDINGS

Introducing the Analysis

The purpose of this sequential mixed methods (Clark & Ivankova, 2016) study was to explore and document the use of 21st century skills of the middle school teachers at Salem Lutheran School (SLS). I specifically explored the frequency of 21st century skills incorporated in the SLS middle school classroom instruction and how they were integrated by the teacher. The study included a two-part, multiple-choice, survey which collected data on the frequency of skills and school academic culture. The survey was followed by individual interviews with each teacher participant to gather qualitative data on how they integrated 21st century skills in their teaching. I was able to gain a better understanding of the participants' knowledge of 21st century skills through interviews. The research questions were answered through the survey and interview results. After, the qualitative data were coded and then merged with Part One of the quantitative data from the survey. In Part Two, I sought to understand the 21st century culture developed by the administration. The conclusions drawn from this portion of the data will assist the new administrative team in understanding the past academic culture and the presence of 21st century skills in the former initiatives taken by the current school administration.

Presentation of Data

The research results are grouped by the research questions.

The main research question was: What are the characteristics of 21st century skills taught by middle school teachers at Salem Lutheran School?

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The sub-questions were:

1. With what frequency did the middle school teachers at Salem Lutheran School enact the selected 21st century skills in their classroom?

2. To what extent and depth do the middle school teachers at Salem Lutheran School perceive they are intentionally integrating 21st century skills into their instruction?

Results of Research

To address the first research sub-question, the participants were asked to complete a multiple-choice survey. The survey was administered using Google Forms. The first part of the survey comprised nineteen questions, categorized by the 4Cs, which included critical thinking (CT), collaboration (COL), communication (COM), and creativity (CRE). These questions required the respondent to convey how frequently they perceived themselves using 21st century skills in their classroom instruction, activities, projects, and assignments. The participants selected answers from the following list: "daily" (5), "one to three times per week" (4), "one to three times per month" (3), "a few times during the year" (2), and "never" (1). Table 1 displays the frequency average for the survey questions by category.

Table 1 Participants Frequency Average for Survey Questions - Part 1

Teacher	CT	COL	COM	CRE
1	2.33	1.8	1.5	1.5
2	3.5	2.6	2	3
3	3.667	2.2	2	1.75
4	2	3.6	2.75	5
5	4.33	2.8	2.75	4
6	4	2.8	2.25	3.25
7	3.5	3.8	2.75	3.5
8	3.5	3	3.25	3.75
Average:	3.353	2.825	2.406	3.219

The survey revealed critical thinking was perceived as the most frequently taught skill by the participants. This was not surprising, as problem solving, and critical thinking have been a focus on improving classroom instruction for this faculty for the past few years. There were three exceptions to this conclusion. Teachers 4 and 8 believed the skill most frequently taught in their classes was creativity and teacher 7 thought collaboration was most prevalent in her teaching. Teachers 4, 8 and 7 include a foreign language teacher, a science teacher with STEM training, and a history and language arts teacher with extensive training in Project Based Learning (PBL).

In addition to collecting data on the presence and frequency of 21st century skills at the middle school level, there was a second part to the survey that collected data related to the school's organization and 21st century educational culture. These questions focused on the school's past priority and approach in promoting 21st century skills. The purpose of Part Two of the survey was to collect data to gain a better understanding of participants' perspectives regarding the instructional culture developed by the administration and among teachers.

Through the recorded Zoom interviews, the participants described how the skills in Part One of the survey were integrated into their instruction. The transcripts from these interviews were reviewed three times and coded. In addition to the development of themes, the categories of critical thinking (CT), collaboration (COL), communication (COM), and creativity (CRE) were used. Table 2 displays the frequency of skills identified by category. This phase of the data collection process allowed participants to share how they incorporated the skills, whether through assignments, projects, and/or activities they facilitated in their classrooms.

Table 2 Participants Frequency of Skills Communicated in Interviews

Teacher	CT	COL	COM	CRE
1	5	2	3	1
2	7	1	3	2
3	4	1	3	2
4	4	1	6	2
5	7	2	6	3
6	5	3	4	4
7	5	5	4	5
8	9	6	4	12
Averages:	5.75	2.625	4.125	3.875

Emergent Themes

From the qualitative data collected during interviews, four themes emerged. The themes align with 21st century skills, as they present opportunities for students to develop proficiencies that support the 4Cs. The themes are presented with specific examples shared by the teacher participants.

The first emergent theme identified was Authentic Audiences.

Teacher 1 described a lesson focused on sending appropriate emails. She asked the students to consider, "how do you email a teacher, an adult, or someone you don't

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know if you had a question from a company? You don't just type your message in one line. You need to properly address the email to the appropriate person, ask your question nicely and say thank you at the end before signing it."

Teacher 5 held a class presidential election in conjunction with the novel the class was reading entitled, *Fire Girl*. Teacher 5 stated, "They had to write their speech as to why they wanted to be class president, as a persuasive piece to get their classmates to vote for them. Not only did they write their speeches, but they also had to showcase their strengths and dress the part."

The examples highlight the ways teachers trained students to consider their audience. Teaching students to know their audience, builds effective communication skills. Whether interaction is verbal or written, an understanding of the audience assists with clear and concise communication.

The second emergent theme identified was Role Play.

Using the vocabulary they were learning, Teacher 4 had her students write skits to perform in a foreign language. Teacher 4 commented, "The students were brainstorming the storyline and script, identifying characters, and picking their parts. After practicing in their groups, they performed their skits for the class."

Teacher 2 discussed the methods he used to teach different concepts, trying to transform them into something the students could experience. When teaching about Third World Countries or different types of governments he asked, "How do you get them into that mindset or expose them to what it's really like, as much as possible? It's

not like they can walk in and experience it, but you try to bring about a better understanding of the reality of people who live in these conditions through role play."

These examples show role play helped students gain a better understanding of a concept or time period. The activities taught valuable communication skills as they reinforced vocabulary. In addition, they aimed at helping students learn through a role play experience.

The third emergent theme was Essential Questions.

Teacher 3 uses a game called "Empire" to engage his students in problem solving. "We divide the class into groups of students and each group represents a port of entry on the Atlantic Ocean. The students work together to come up with a plan to determine which products they will sell, which products they will buy, and to which countries they will buy from and sell to in order to maximize their profits."

Teacher 7 engaged students in a STEM project that required they, "build a boat that would sustain them through the Atlantic Ocean. We specifically discussed buoyancy and how different terrain or wind can affect the outcome of travel. The students had to take all of this in consideration as they built the boats. So, there's a number of different components taken into consideration when we had our final race across the Atlantic Ocean, aka swimming pool, to see if our boats would survive."

Teacher 6 had his students research earthquake proof structures, as they discussed the Richter scale and the different layers of the earth. He stated, "I give them time to do some independent research, collaborate with their group, and then provide them an opportunity to build a structure based on their research to test. Depending on

how the structure holds up, the group has a chance to modify the structure with adjustments to address any weaknesses in an effort to improve it and make it stronger." The fourth emergent theme was Fact Versus Opinion.

Teacher 8 conducted what she referred to as "fishbowl seminars." She asked a question that related to a topic they were discussing. She commented, "It's usually something that gets a seventh grader fired up, and one that really catches them is 'does humanity's future lie among the stars.' The students have to have an opinion on whether they are for space exploration, or not. They research that question and they come with their evidence for it can't just be."

Teacher 2 uses an activity in his class called "four corners." He poses a question or presents a quote to the class and then gives them four choices. "Wherever they fall on the answer, then they go to those corners. They'll discuss with their peers as to why they agree or disagree and whether they have facts to back their view or if it is more based on opinions. The skill I am trying to teach them is respectful discussion."

Most of the teachers communicated incorporating critical thinking skills more frequently than collaboration, communication, creativity. The exceptions to this statement were teachers 4, 7, and 8. Due to the nature of teaching a foreign language, Teacher 4, more frequently, used communication as the predominant skill. The curriculum for middle school foreign language focuses on writing and speaking the language, which supports the frequency of communication skills. Teacher 7 displayed a good balance of the skills in her teaching methods. As a science teacher with formal training in STEM, she has embraced this way of teaching and is the faculty member who

initiated a cross-curricular STEM project for our eighth-grade students. However, teacher 8, displayed using a high frequency of creativity in her teaching. In addition, teacher 8 had higher overall frequency of the four skills than any other teacher. The high overall frequency of teacher 8 is due to her formal PBL training, leading her to embrace PBL teaching methodologies.

The interview codes were merged with the quantitative data from Part One of the survey to determine the alignment of frequency between the survey and the interviews. Table 3 contains the merged data displaying the aligned frequencies of Part One of the survey (Sury.) and interviews (Intr.) confirming the most frequently integrated skill by each individual participant. High scores represent more frequent integration on the survey, while high scores represent more frequent integration in the interviews. Most participants, most frequently, included critical thinking in their instruction, which was verified when the frequency scores were merged. However, there were three exceptions. Though Teacher 4 communicated a high level of integrating creativity in her Spanish instruction in the survey questions, during the interview, her descriptions of assignments, activities, and projects more closely centered on communication. This occurred due to a lack of understanding of the terms, discovered during the interview phase with Teacher 4. Teacher 7 indicated three skills integrated frequently in her science instruction in the interview phase, which seems logical since she does include numerous STEM focused assignments. Teacher 8 has had formal PBL training and incorporates this into her daily instruction. While creativity was high in frequency, she also included the other skills regularly. Often, these were combined in each project or assignment.

Table 3 Participants Survey and Interview Skill Frequencies Merged

Teacher	CT		COL		COM		CRE	
	Sury.	Intr.	Sury.	Intr.	Sury.	Intr.	Sury.	Intr.
1	2.33	5	1.8	2	1.5	3	1.5	1
2	3.5	7	2.6	1	2.0	3	3.0	2
3	3.67	4	2.2	1	2.0	3	1.75	2
4	2.0	4	3.6	1	2.75	6	5.0	2
5	4.33	7	2.8	2	2.75	6	4.0	3
6	4.0	5	2.8	3	2.25	4	3.25	4
7	3.5	5	3.8	5	2.75	4	3.5	5
8	3.5	9	3.0	6	3.25	4	3.75	12
Averages	3.4	5.8	2.8	2.6	2.4	4.1	3.2	3.9

The second part of the survey collected data on the school academic culture in relation to 21st century skills. Data collected from the survey indicated most of the teachers felt the 4Cs had been a priority in staff development. This same number also believed they had been prepared to effectively incorporate the skills in their teaching. The disconnect in the data came when only two of the teachers believed their classroom instructional methods strongly incorporated 21st century skills. In fact, half of the teachers perceived less than 25% of the middle school curricula included the integration

of the skills. The perception by most of the participants was that the instruction was more often teacher-centered instead of student-centered. This could have resulted from the lack of promotion of 21st century skills by the administration. This was further exemplified by the lack of substantive professional development to support the integration of 21st century skills.

Through both survey and interview data, critical thinking was the most dominant skill incorporated by the teachers. The interviews also confirmed that collaboration, communication, and creativity were represented. Additionally, the interviews revealed teachers incorporated the skills one at a time, as opposed to combining them in one assignment.

Even though critical thinking emerged as the most prevalent skill, this does not tell the whole story. To get a better understanding of the big picture, more details need to be shared about the individual teachers who participated in this study. Each teacher's unique data is just as valuable as the group data.

The second most frequently incorporated skill by Teacher 1 was communication. Teaching students how to send appropriate emails and training them how to organize a verbal presentation, geared toward a specific audience, were a few ways that Teacher 1 incorporated important communication skills. In the interview she shared how she frequently models clear and concise communication for her students when new projects are assigned. She does this by providing written instructions, sharing expectations verbally, and creating a video that describes the assignment and her expectations for the final product.

While critical thinking was the most used skill by Teacher 2, he also incorporated creativity in his pedagogy. When assigning a project, he supplied his students with a rubric and gave them the freedom to make choices on how their final product would look. In one project, students chose to create either a commercial or radio advertisement for the 1836 presidential election in Texas. He encouraged each student to come up with a quote or tagline for their campaign, giving the audience something by which to remember them.

The data for Teacher 3 revealed communication as his second most frequently incorporated skill. Communication is emphasized as a critical skill in his classroom. He trains his students to think about who their "target audience" is before beginning a project.

While the survey revealed Teacher 4 perceived her most frequently incorporated skill was creativity, the interview revealed otherwise. This participant was one of three whose data did not indicate critical thinking as the primary skill. Instead, the survey showed creativity and the interview revealed communication. It was through the interview process that it became apparent that communication was the most prevalent skill used by Teacher 4. This seems logical given she teaches a foreign language. Teacher 4 has her students create conversations with which they communicate their likes and dislikes in Spanish. She also takes them to an authentic Spanish restaurant where the staff only speak to them in Spanish. To further emphasize authentic communication, the students are required to order in Spanish.

After critical thinking, communication was the next most frequently incorporated skill for Teacher 5. While her survey responses indicated she perceived creativity as the most frequently incorporated skill, the interview revealed communication as dominant. Teaching proper enunciation and control of speed, when speaking to a group, and having assignments where they need to "dress the part," teaches them how to communicate effectively, both verbally and visually. In addition, she has students find and summarize quotes in their reading. The process of summarizing, and then sharing with the class, emphasizes the importance of communication.

Teacher 6 used creativity and critical thinking with near equal frequency. An example of this was a student-created, scale model of the solar system. Students were required to make a scale model of the solar system using materials of their choosing. Models, after completion, were presented to the class. The students were given a rubric, and then had freedom as to how they would like to accomplish the task.

Teacher 7, incorporated collaboration most frequently, followed by critical thinking and creativity. The interview with Teacher 7 revealed extensive STEM training and that many of her assignments incorporated more than one of the skills. She assigned projects where students were provided materials and they had to create a product that functioned. Projects included a STEM boat and a circuit. Teacher 7 tapped into the students' creativity, while serving as a facilitator during their project work time.

Teacher 8, of all participants, incorporated a balance of 21st century skills, most likely a product of her PBL training. For teacher 8, creativity was the most frequently incorporated skill, followed by critical thinking. This was exemplified in the way she

provided student choice and required them to "show what they know." Further, she had her students role play while reading and required students to illustrate using images and words as they discussed symbolism.

As you can see, through the narrative on individual teacher details, Teacher 7 and Teacher 8 embraced a more comprehensive inclusion of the skills. The exposure to STEM and PBL training, respectively, made a significant impact on their approach to incorporating the skills in their lessons and activities. When the data were compared, the overall singular incorporation of skills by most of the teachers was evident.

Interaction Between the Research and the Context

How Did the Context Impact the Results

The present study of 21st century skills was a small research study focused on eight middle school teachers at SLS. Though the study was designed and implemented for a specific small setting, the findings are relevant to private schools. Similar private schools focused on improving instruction by implementing 21st century skills are a target audience. Like many private schools, SLS continues to evaluate the effectiveness of curriculum and instructional methods to maximize learning opportunities for students. This study sought to evaluate the frequency of 21st century skills integration at the middle school level, at SLS, with the goal of identifying teacher professional development needs. A determination of teacher professional development needs will help design future professional learning opportunities. During the study, teachers were informed of the purpose of the study and the focus on critical thinking, collaboration, communication, and creativity. These terms were not foreign to the participants,

however, only one teacher vocalized a passion for 21ˢᵗ century skills combined with

extensive PBL experience. Another teacher regularly included STEM activities in her

planning and lessons.

The teachers were willing to participate in the study and were eager to view the

results. The culture at SLS is one of lifelong learning. Understandably, some teachers

were apprehensive, most likely due to a fear of change. As the teachers were prepped for

the survey and interviews, they were assured there were no wrong answers. Teachers

were informed that the study focused on gaining an understanding of the present-day

approach to instruction in SLS middle school classrooms.

The limitations of this study included the small sample size. Given the present

study was not in-depth study of content specific teaching assignments related to 21ˢᵗ

century skills integration, some generalizing was required. Another limitation of the

study involved the data collected from Teacher 4. This individual's survey data did not

align with the interview data. During the interview, a lack of understanding of a few

terms was revealed. A challenge faced during the study, which became evident in the

interview phase, was the participants' perceptions of "talking" about skills as opposed to

"doing" the skills. In other words, simply talking about the skills, thinking they were

being used, was a common misconception.

How Did the Research Impact the Context

The results of the study were shared with the middle school faculty during a

special meeting specifically for that purpose. The data from both the survey and

interviews, along with the merged data of Part One of the survey and interviews, were

shared and discussed. During the discussion, questions were raised about 21st century skills. The participants made a connection with the skills and how they organically integrate into PBL and STEM. As a result, the middle school faculty realized the importance of incorporating PBL and STEM in their instructional methods. Most of this group have had little exposure to PBL and STEM professional development. As a result, there was recognition of a need for formal training in order to intentionally and strategically incorporate the skills as well as engage students in developing them.

The research included in the present study was perceived as very useful and needed by the staff. The results have identified the needed direction for professional development, for this group of middle school educators, specifically. There were two suggestions for further study that surfaced during our group discussion. As the 21st century skills were discussed, a question was posed by one of the participants who wondered why the study was focused on the individual categories of the skills instead of a combination of the skills. The thought was students could develop and naturally engage in the skills if they are combined in a project or an assignment as opposed to designing lessons focused on any single category. The second suggestion for further study was a deeper dive into the impact formal PBL and STEM training has on presence of 21st century skills in curriculum and instruction.

Summary

The presence of 21st century skills in curriculum and instruction are essential for students' future success. The present study sought to identify the presence and frequency of 21st century skills in the middle school instructional methods at SLS. The data from

Part One of the survey and data collected from the interviews showed some presence of 21st century skills, mainly critical thinking. Part Two of the survey revealed the need for the administration to ensure 21st century skills remain an integral part of the academic culture as well as the need for intentional and strategic training of the faculty.

CHAPTER V

DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

Summary of Findings

The analysis of this mixed methods study allowed me to investigate whether the 21st century skills of critical thinking, collaboration, communication, and creativity were incorporated into the Salem Lutheran School (SLS) middle school teachers' instructional methods. The present study facilitated a better understanding of the teachers' knowledge of these specific skills as well as how they integrated them into their classroom instruction. In addition, I inquired about the inclusion of 21st century skills in the school's academic culture and whether the administration fostered a 21st century learning environment.

A mixed methods approach was chosen for this study, as it involved collecting quantitative and qualitative data. The explanatory sequential mixed method model (Creswell, 2014) was deemed most suitable, as the research was conducted in two phases. The two phases included gathering the quantitative data with a two-part survey, followed by the collection of qualitative data with individual teacher interviews. The quantitative data consisted of a two-part survey administered to the teachers at the beginning of the study. The first part of the survey focused on the perceived frequency the 4Cs were integrated in the teacher's current instruction. The second part of the survey was used to gain a better understanding of the 21st century academic culture at SLS. After the quantitative data were collected, interviews were scheduled with each teacher. The qualitative data were gathered using individual semi-structured interviews

with open-ended questions. These interviews were recorded using Zoom Video Conferencing and were transcribed prior to data analysis.

After the data were collected, for both the quantitative and qualitative strands, the analysis process commenced. The quantitative data from Part One of the survey were calculated using averages for each category of skills for each individual participant. The qualitative data from the interviews involved the analysis of the transcripts recorded using Zoom. The transcripts were read three times before they were analyzed and coded. The codes were translated into four categories: critical thinking, collaboration, communication, and creativity. The data were merged with the quantitative results from Part One of the survey. The process of merging the data with the qualitative piece assisted in explaining the frequencies from the survey. Creswell (2014) states that "the overall intent of this design is to have the qualitative data help explain in more detail the initial quantitative results" (p. 224). In the present study, the qualitative data helped to confirm the quantitative data. The data from Part One of the survey displayed the average frequency for each skill by teacher. The data from the interviews helped to confirm the most frequently incorporated skill for six of the eight participants. The process of analyzing data and discussing the data with the participants, through a presentation of the results, helped identify a need for professional development centered around 21st century skills.

The present study was guided by a main research question and two sub-questions. All questions aimed to determine the presence and frequency of 21st century

skills in the middle school classroom instruction. The research questions were answered

using survey and interview data.

The main research question was: What are the characteristics of 21st century skills taught

by middle school teachers at Salem Lutheran School?

 The sub-questions were:

1. With what frequency did the middle school teachers at Salem Lutheran

   School enact the selected 21st century skills in their classroom?

2. To what extent and depth do the middle school teachers at Salem Lutheran

   School perceive they are intentionally integrating 21st century skills into their

   instruction?

The research questions guiding the present study elicited valuable data. Overall,

the results of this process revealed some presence of 21st century skills, while also

presenting the skill integrated most frequently by each individual teacher. Further, the

qualitative portion of the study helped clarify the characteristics of the skills included in

the classroom educational experience.

Discussion of Results in Relation to the Review of the Literature

There is an urgency for education to go above and beyond rote memorization and

surface-level understanding. The cognitive domain of Bloom's Taxonomy fosters 21st

century skills. When students have opportunities to apply what they have learned,

analyze results, evaluate outcomes, and create new knowledge, they are developing the

necessary skills for success (Anugerahwati, 2019). These 21st century skills promote

student exposure, engagement and mastery of skills, allowing individuals to adapt when required.

Engaging students in developing 21st century skills can change the educational culture of a school. Integrating 21st century skills into curriculum planning and instruction creates a shift from a teacher-centered classroom to a student-centered learning environment. Student-centered learning environments, that embrace 21st century skills, empower students to identify their own interests and realize the skills they have; all in an environment that allows them the opportunity to "figure it out" (Morrison et al., 2021). For educators to fully embrace the inclusion of 21st century skills in their instruction, they need proper training as well as measures for accountability. While state standards are important, it is imperative for teachers to be equipped with the knowledge and skills to be innovative in their teaching. 21st century skills should be embedded in lesson planning and classroom instruction.

This study provided the teachers with an opportunity to identify the frequency with which they perceived they integrated 21st century skills. It also revealed an understanding of the 21st century culture of the school. This was followed by an opportunity to explain, in detail, how the skills were included in their classroom instruction. It was through this process that teachers realized a need to increase the variety and frequency of 21st century skills in their planning. PBL and STEM were two areas of interest for professional development. Both approaches are learner-centered and use a design or discovery-based approach. In addition, authentic scenarios and inquiry are utilized, requiring students to apply their skills (Noble et al., 2020). By giving

students responsibility and choice, paired with an opportunity to be engaged in "authentic project-based experiences," educators can see the value of implementing PBL (Morrison et al., 2021, p. 1120).

Discussion of Personal Lessons Learned

Engaging in this research study taught me a few lessons. First, while the participants understood the definition of the terms used in the study (i.e., critical thinking, collaboration, communication, and creativity), they may not have understood them in terms of 21st century skills and how they incorporate into teaching. There's a difference in "talking" about 21st century skills and requiring students to utilize them to produce an end product. This was uncovered during qualitative data collection. Secondly, PBL and STEM training increased teacher understanding of 21st century skills and how to apply them, indicated by the data gathered from two teachers; each of whom had training in one of these areas. Both the PBL and STEM trained teachers regularly integrated these skills in their instruction. This is the future goal for teachers.

Implications for Practice

Through the process of collecting and examining the data gathered from the present study, it was evident that 21st century skills were present in classroom lessons, but not consistently. Critical thinking was the most frequently incorporated skill. Professional development will be needed to ensure a wide variety of 21st century skill integration into lesson planning and future instruction. Not only is there a need for overarching 21st century skills training, but teachers' individual needs must also be

addressed, dependent on their background knowledge and level of experience with 21st century skills.

The school administration will need to secure funds for this training and ensure it is intentionally planned to meet group and individual needs. In addition, administration needs to provide continued support to safeguard time for department meetings where training and collegial collaboration can occur. The administrators and teachers must continue to build a 21st century culture that encourages 21st century skills to be used on are regular bases as teachers engage students in activities aimed at 21st century skill development.

Connect to Context

The present study was the first formal action research project in which the teachers at SLS participated. The teachers were offered an opportunity to reflect on their instructional methods as well as their perceptions regarding how frequently they incorporated 21st century skills. They also gained exposure to elements of action research, including data collection, reflection and conversation.

The present study provided teachers the opportunity to reflect on their instructional methods and the degree to which the 21st century skills were integrated in their lessons, activities, and assignments. Prior to the beginning of the present study, few teachers included multiple 21st century skills at high levels. As a result of the action research methodology, participants recognized a need for professional development centered around 21st century skills, with a particular focus in PBL and STEM. Therefore, there exists a need for ongoing training, thereby guaranteeing the continued presence of

a 21st century culture at SLS. The combination of administrative support and teacher buy-in helps ensure the continuation of 21st century skills focus in the academic environment and overall school culture. The main goal of this process was to improve classroom instruction by preparing students for the 21st century.

Connect to Field of Study

Research for the present study provided me the opportunity to introduce action research to the middle school teachers at SLS. These participants had not been formally involved in a study aimed at solving a problem of practice on their campus. The present study provided teachers an opportunity to learn about action research and the benefits action and intervention have for campus improvement (Anderson et al., 2007).

Action research not only benefits the teachers in the study, but the process also facilitates problem solving in real-life, outside-of-school, settings. This method of research can be a springboard for positive change. While the results of this study were not intended for generalization, they provide a framework applicable in other settings where a desire to develop 21st century skills and a 21st century learning culture exists.

The quantitative results from this study gave the participants an opportunity to consider the perceived frequency with which they integrated the 4Cs in their teaching. The qualitative portion of this mixed methods study provided each participant the opportunity to share details to the integration of 21st century skills. Merging the two data sets was beneficial in verifying whether their initial perceptions, collected from survey responses, truly represented teachers' classroom actions.

Lessons Learned

This record of study focused on the importance of 21st century skill development. During the process, teachers were able to identify the perceived frequency in which they incorporated 21st century skills in their teaching. The interviews that followed the survey, gave participants the opportunity to describe how they engaged students with 21st century skills. This process impacts the educational program at SLS, helping SLS administration identify the professional development needs of the middle school staff. While most of the participants effectively implemented critical thinking skills, analysis of the survey and interview data, revealed discrepancies. What emerged was a realization for balance in the integration of 21st century skills. The data showed evidence of collaboration, communication, and creativity by the teachers as a group. However, the use of collaboration, communication and creativity varied by teacher. Interviews gave teachers the opportunity to share details related to their classroom instruction. Interview data revealed communication as the second most frequently included skill. Creativity ranked third with collaboration as the least frequently incorporated skill.

Assessing the SLS middle school faculty's integration of 21st century skill has allowed for more effective and in-depth planning of future group and individual professional development. This process also has initiated great discussion among the staff regarding the cultural change needed to embrace the 21st century skills. The cultural change starts among administrators and teachers, combined with clear communication to our stakeholders. This will be a significant shift in the status quo at SLS. In addition, it is a process that will take time as we seek buy-in from all stakeholder groups.

Recommendations

Upon completion of the present study, the teachers were provided with data displaying the characteristics of the 21st century skills they incorporated into their teaching. The process and results of the present study reveal areas for improvement and continued research.

To expand and improve on this research study, I recommend providing clear definitions of essential terms, including critical thinking, collaboration, communication, and creativity. This would have benefited the teachers of the present study as the survey phase required they answer multiple-choice questions related to the frequency in which they perceived incorporating 21st century skills. The result of clearly communicating these terms will ensure better alignment of the survey and interview data.

To gain a better understanding of how the administration has fostered a 21st century learning environment, a larger sample size would be beneficial. While this study focused on middle school teachers, the academic culture affects all grade levels. When seeking to transform the culture of any organization, it would be valuable to gain input from everyone in the school.

Future studies regarding 21st century skills could include a longitudinal study on the effects of ongoing PBL and STEM professional development and the presence of 21st century skills incorporated in teaching. This type of study would help identify the efficacy the professional development has in increasing student exposure to 21st century skills. It could also assist in identifying sustainable and reliable professional development that produces the best product.

Additionally, future research could focus on studying the effects of combining multiple 21st century skills in an assignment as well as the effects the skills have on the development of the students. Are the skills more likely to be fully developed in a comprehensive 21st century skills assignment or project? This was one question that was asked during discussions with the teachers.

Closing Thoughts

The present record of study focused on the importance of 21st century skills in education. The need for these skills has been the topic of discussion for decades. Despite the popularity of the topic, we continue to regularly see 20th century educational techniques. Without debate, 21st century skills are necessary in higher education and the workplace. Therefore, exposure to them along with the ability to develop them can help guide students to future success. By completing this record of study, I recognized the need for guided and focused professional development for the SLS middle school faculty. Many acknowledged teaching the way they were taught, while recognizing the need to better prepare students. This realization means the middle school faculty at SLS welcomes training that better prepares them to more sufficiently equip students.

The outcome of the present study provided data that assisted the faculty in fostering discussions about 21st century skills and the need to incorporate them into their daily lessons. The information gathered revealed critical thinking was the most frequently included skill by the teachers. It also showed a need to incorporate a balance of the other three skills. This research provided insight to the frequency and

characteristics of 21st century skills incorporated by the teachers. As a result, the needed professional development was identified to address this problem of practice.

This was a growing experience for me as well as the teachers involved in this study. The desire to develop a 21st century learning culture at Salem Lutheran School is a priority for the administration and staff. The results of this study, paired with follow-up discussion, assisted in identifying a path forward, one that begins with intentional professional development. The desire to learn how to teach 21st century skills was expressed by the teachers, as they recognized a need for improvement in this area.

Artifact:

Below is an outline of the content of the professional development that I propose to initiate for SLS in the future.

1. Aggie STEM Camp – June 2022

    a. At least one teacher from each grade level in attendance

2. Implementation of STEM/STEAM – June 2022

    a. Secure training through FACTS Education Solutions

    b. All faculty training will take place prior to Thanksgiving Break in place of TX District Conference

3. Project-Based Learning (Part 1) – October 2022

    a. Secure training through FACTS Education Solutions

    b. All faculty attend during end-of-year meetings

4. Project-Based Learning (Part 2) – November 2022

    a. Secure training through FACTS Education Solutions

      b. All faculty training will take place mid-October, prior to Fall Break

5. Other FACTS Education Solutions training for SLS faculty, 2021-2023

      a. Sit & get won't grow dendrites

      b. From Art to Science: Best practices from the old school and new school

      c. Assessment: How do we know they are learning?

      d. Engaging 21st century minds with the formative assessment process

6. Administrative team training from FACTS Education Solutions

      a. eWalk: Classroom observations

      b. But is it good? Supporting and evaluating technology in teaching

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APPENDIX A

21ST Century Skills Survey

1. ***Demographic Information***
Gender

      Male
      Female

Age

      22-29
      30-39
      40-49
      50-59
      60-69

Ethnicity

      White
      African American
      Native American/Alaskan Native
      Pacific Islander

What subjects do you teacher?

      Language Arts
      Mathematics
      Science
      History
      Foreign Language
      Other (please specify)

How long have you been teaching?

      Less than one year
      1-5 years
      6-10 years
      11-15 years
      More than 16 years

Integrating The Four C's Data

2. (Critical Thinking) How often did you have your students compare information from different sources before completing a task or an assignment?
   Almost daily
   1-3 times per week
   1-3 times per month
   A few times during the year
   Never
3. (Critical Thinking) How often did you have your students draw conclusions based on analyzing relevant information?
   Almost daily
   1-3 times per week
   1-3 times per month
   A few times during the year
   Never
4. (Critical Thinking) How often did you have your students summarize or create a unique interpretation of what has been read or taught?
   Almost daily
   1-3 times per week
   1-3 times per month
   A few times during the year
   Never
5. (Critical Thinking) How often did you have your students analyze opposing perspectives, solutions, or arguments to a problem?
   Almost daily
   1-3 times per week
   1-3 times per month
   A few times during the year
   Never
6. (Critical Thinking) How often did you have your students develop a convincing argument based on supportive evidence or logic?
   Almost daily
   1-3 times per week
   1-3 times per month
   A few times during the year
   Never

7. (Critical Thinking) How often did you have your students attempt to solve complex problems where there is not one single solution?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

8. (Collaboration) How often did you have your students work in small groups or pairs to complete a task?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

9. (Collaboration) How often did you have your students work in small groups to set goals and create a team plan?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

10. (Collaboration) How often did you have your students create a joint product with contributions from a team of students?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

11. (Collaboration) How often did you have your students present group work to the teacher, entire class, or each other?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

12. (Collaboration) How often did you have your students give feedback to peers or assess a classmate's work?

      Almost daily
      1-3 times per week
      1-3 times per month
      A few times during the year
      Never

13. (Communication) How often did you have your students create a written product or oral presentation using created charts, tables, and/or graphs?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

14. (Communication) How often did you have your students communicate their ideas using media other than a written paper (i.e. video, poster, etc)?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

15. (Communication) How often did you have your students prepare and deliver an oral presentation to others?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

16. (Communication) How often did you have your students decide how they wanted to demonstrate their learning or present their work?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

17. (Creativity) How often did you have your students use brainstorming, concept mapping, or some other idea creation technique?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

18. (Creativity) How often did you encourage your students to develop their own thoughts on how to tackle a problem or question?

      Almost daily

      1-3 times per week

      1-3 times per month

      A few times during the year

      Never

19. (Creativity) How often did you encourage your students to try different approaches and work to improve them?
>   Almost daily
>   1-3 times per week
>   1-3 times per month
>   A few times during the year
>   Never
20. (Creativity) How often did you require students to create an innovative product or performance to express their thoughts?
>   Almost daily
>   1-3 times per week
>   1-3 times per month
>   A few times during the year
>   Never

School/Organization Data

21. Has your school effectively identified the 21st century skills (also known as the Four C's: critical thinking, communication, collaboration, creativity) as a priority for staff development and curriculum planning?
>   Yes, to all Four C's
>   3 out of 4 C's
>   At least 2 out of 4 C's
>   None of the 4 C's
22. Do you feel you are prepared to effectively incorporate the 21st century skills into your curriculum planning and instructional methods?
>   Yes
>   No
23. Think about your instructional style and the way individuals learn. Which response in the following questions would best describe your teaching and learning experience?
>   a) Which selection below best describes your school's approach to student knowledge and skills?
>   >   Student work primarily demonstrates rote factual knowledge.
>   >   Some student work demonstrates skills like problem solving and critical thinking, however, most work exhibits the mastery of core subjects.
>   >   All student work exhibits critical thinking, problems solving, communication, and collaboration along with mastery of core subject matter.
>   b) Which statement best describes your school's curricula?

Less than 25% of curricula clearly integrates the 21st century skills

25-75% of curricula clearly integrates the 21st century skills with a focus on global awareness.

Over 75% of curricula clearly integrates the 21st century skills with a focus on global awareness.

c) Which statement best describes the most common instructional practices at your school?

Majority of instruction is teacher led and is centered around the presentation of facts.

Student-centered approaches are occasionally used in the teaching and learning process.

Most teachers at our school encourage student-led, inquiry-based learning with a focus on critical thinking skills.

d) Which statement best describes your school's approach to assessing the student's 21st century skills?

Less than 25% of student work is assessed for critical thinking and problem-solving skills.

25-75% of student work is assessed for critical thinking and problem-solving skills.

Over 75% of student work is assessed for mastery of the 21st century skills (e.g. critical thinking, creativity, collaboration, & communication).

e) Which statement best describes your school's approach to professional development/learning?

Ongoing education is focused on the core subject content.

25-75% of the professional learning is focused on the core subject content in addition to skills like communication, collaboration, creativity, and critical thinking.

Over 75% of all professional learning emphasizes the use of professional learning communities and teaching core subjects with an emphasis on critical thinking skills.

f) Which statement best describes how active the administrators are in promoting 21st century skills?

The administration promotes core subject content mastery as the primary indication of student achievement.

The administration occasionally supports small projects that focus on the development of the 21st century skills.

The administration has developed a academic vision for the school that incorporates core content mastery and 21st century skills.

g) Which statement best describes the teachers at your school?

The teachers provide instruction for core academic content.

25-75% of the teachers utilize direct instruction, project-based learning, and incorporate technology to improve content mastery.

Over 75% of the teachers utilize direct instruction paired with project-based learning to intentionally develop 21st century skills and achieve core content mastery.

APPENDIX B

Semi-Structured Interview Protocol

1. What skills of creating new and unique products have you integrated into your teaching?

2. What skills of critical thinking where students use reasoning and evidence have you integrated into your teaching?

3. Describe an assignment where you asked your students to combine different elements into a complete project.

4. Describe a situation where you engaged your students in a situation where they had to follow rules for team meetings.

5. Describe an assigned class activity where all team members' ideas are needed and equally valued.

6. In what ways have you given your students the opportunity to go about making plans as to how they will work together as a team in your classroom?

7. Describe how you require your students to organize their information well in order to present the information clearly, concisely, and logically.

8. Explain how you have taught your students to track their teams progress toward their goals and deadlines during group projects.

9. Explain how you communicate expectations and deadlines so that students are able to complete tasks without being reminded.

10. Describe a project you assigned that brought about an understanding in the students of how knowledge or insights can transfer to other situations or contexts.

11. Describe a project or tasks you have assigned where students have the opportunity to elaborate and improve on their ideas using creativity and imagination.

12. Describe an assigned project or task where students were required to adapt their communication style, so their response is appropriate for a specific purpose, task, or audience.