EFFECTIVE ONLINE LEARNING: AN EXAMINATION OF ONLINE SUMMER SCHOOL CURRICULUM AT A SUBURBAN TEXAS HIGH SCHOOL

A Record of Study

by

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ABSTRACT

Online learning has become a vital part of post-secondary education. Over one quarter of college students will register for at least one online course each semester they attend school (Smith, 2016). This significant growth in post-secondary education has created a trickle-down effect, shown through the growth of enrollments in secondary online learning programs (Herring, 2016). This fast-paced growth has created a vacuum of research concerning which methods of online learning are the most effective, specifically at the secondary level. Through this mixed methods study, I examined administrators, parents, and students' perspectives on the effectiveness of online learning. I reviewed assignment scores to determine which online teaching methods successfully engaged high school students. Using pre-interviews, observations, and post-interviews, I determined which methods were the most successful in drawing high school students into the learning process. The results showed all stakeholders believe the online learning method can be effective, for many students but not all, when engaging students. Student engagement varied by lessons, but most were engaged in their coursework an average of eight minutes. No matter levels of engagement, all received credit for their work with scores between 90-100. Using post-interview data, most students found the work to be simple and easy. The lessons that engaged students were short, usually included videos and some level of questioning to make sure the student focused on the lesson. The main difficulty faced was forcing themselves to sit down and complete the work. The results of this study will help school districts understand what attracts high school students' focus and retains their attention in online learning environments, which will help curriculum designers create more focused and effective online curricula.

DEDICATION

For Braxton.

My son, you make me want to be better. Throughout this process you reminded me what is truly important in life. You reminded me it is important to take a break and have some fun. Thank you for not only being the best son but being a great teacher too. I love you.

For Amanda.

My love, we made it. This would not have been possible without your love and support. You helped me when I struggled, picked me up when I faltered and even kicked me when I needed it. I could not have asked for a better companion as I travel through life. I love you with all my heart.

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NOMENCLATURE

SSC1	Summer school campus 1
SSC2	Summer school campus 2
AD1	Summer school administrator 1
AD2	Summer school administrator 2
AD3	Summer school administrator 3
T1	Summer school teacher 1
T2	Summer School teacher 2
P1	Summer school parent 1
P2	Summer school parent 2
P3	Summer school parent 3
P4	Summer school parent 4
P5	Summer school parent 5
S1	Summer school student 1
S2	Summer school student 2
S3	Summer school student 3
S4	Summer school student 4
S5	Summer school student 5

The numbers assigned were done by the order interviewed for this study.

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CHAPTER I

LEADERSHIP CONTEXT AND PURPOSE OF THE ACTION

International Context

Online learning has grown significantly as the availability of technology and internet connections have increased. Across the world, post-secondary institutions are registering large numbers of students for online coursework. In China, there are over 146 million students participating in online learning (CNNIC, 2015). This method of education has provided an easily accessible platform for students to increase their knowledge, improve upon existing professional aspirations, and gain a degree in a specific field (Stacey & Visser, 2005). The educational potential of online courses is most visible through its use with rural populations. Secondary students who have not had access to higher level coursework due to their physical location, are now able to log on to an online platform and take the courses they desire without the need for travel. Universities, such as Kathmandu University School of Education (Subedi, Aryal, & Ogrim, 2017), have started pilot programs to reach these needy secondary students. Through programs such as this one, the needs of rural high school students are met, but the program can be adapted to meet the needs of all students, no matter their location. By implementing online learning methods, countries can educate any secondary student who has the ability to log on to an online course, not just those who can make the trip to a physical campus.

National Context

Distance education has existed in the United States since 1929 (Clark, 2013). However, the correspondence courses, for example, those used by the University of Nebraska in

1929, are now able to be delivered in real time. Since 2013, the number of students in the United States attempting at least one online course in higher education has jumped to 7.1 million, when examined proportionally, equates to 33.5% of all higher education students (Allen & Seaman, 2014). These courses are created and delivered by the respective universities, unlike their secondary counterparts. The growth of online programs at the secondary level and below has been dominated by the charter school sector (Molnar et al., 2015). One of the main online charter school companies, K12, Inc. has existed in some form since 2000 (Hasler Waters, Barbour, & Menchaca, 2014). There are currently 275,000 full time virtual charter school students and at least 2,254,000 students taking at least one online course in high schools across the country (Watson & Worthen, 2015). In 2010, the state of Michigan had 400 students enrolled in online high schools statewide; as of 2016, there were 1700. Across the nation all levels of K-12 online school's enrollment numbers are up 80% (Herring, 2016). With such significant growth in recent years, the need for quality online education is at an all-time high.

Barbour (2017, p. 38) stated it best, "regardless of the type of K-12 online learning, the growth we have seen has been exponential." The growth in demand for online learning curriculum has led to the creation or modification of companies to meet this need. Traditionally a textbook company, Pearson, now offers online coursework through their Connexus platform, while Edmentum, an online curriculum company, designs courses to "improve student achievement." School districts are joining the fray by designing their own lessons and making them available, at a price, through the Texas Virtual Schools Network (TxVSN). The variety of offerings continues to increase, yet little research has

been conducted determining which teaching methods these companies/schools should implement to reach their students effectively.

Situational Context

For the last ten years, I have worked in the Frisco Independent School District at Wakeland High School. Frisco ISD has been one of the fastest growing school districts in the nation over the last twenty years, going from one high school and a population of 2,100 students to its current number of 9 high schools and a district population of 56,449 (Ayala, 2014). Due to this rapid growth and the need to constantly build new facilities, the district has neglected certain up and coming teaching methods, specifically, online learning. Few school districts in my geographic area have fully implemented online learning, and those that are using this method are not using their own personnel. Instead, many are opting to purchase licenses for content or allowing students to select their own online providers such as K12, EdGenuity, Texas Tech University High School, the Texas Virtual Schools Network (TxVSN) and others. The licenses purchased by districts can be expensive and the content is not always aligned to the current state standards. Those online high schools that are properly aligned with state standards are not as rigorous as their brick and mortar counterparts. This lack of online learning implementation is what brought me to this study. For a district as large as Frisco, implementing effective online learning would allow students to tailor course schedules to accommodate a larger variety of class options, while keeping costs down for the district. By district teachers designing district online courses, the courses would be more rigorous, and the school district would not be obligated to pay for licensing.

Statement of the Problem

The rapid growth of online learning has led to confusion due to the number of learning options associated with the term online learning. For example, virtual schools and online schools can be used interchangeably, but e-learning (electronic) is not the same as being in an online school. M-learning (mobile) is not the same as e-learning and neither of these are virtual schools. During the conduction of this study, the focus was on e-learning and the methodologies associated with this type of education.

In addition to the confusion of terms, there have been issues associated with the courses themselves. Online courses were originally sold as a way for working professionals to improve their educations while maintaining a full-time job. The courses were put together by professionals within the various fields, some of them designed by individuals who have no educational experience. While this method may be effective for adult education, it is ineffective with secondary students. Secondary students need clear, concise explanations and well-organized coursework when attempting an online course (Subedi et al., 2017). Unfortunately, this has not been the norm amongst online curricula. In Tulsa, Oklahoma, Epic virtual elementary and middle schools were given a "D+" on the 2016 state report card. The high school was given a "C" with only a quarter of students graduating. This low graduation rate, coupled with low student performance in math and science has led state lawmakers to file legislation to correct the issue (Palmer, 2017). In Colorado, the lack of legislative oversight and low student engagement have led taxpayers to question the state's investment in the Summit Education Group, who manages GOAL Academy, one of the state's virtual school programs (Herold, 2016). During a typical week at GOAL Academy, 45.8% of students did not use the learning software at all. Those who

did log in used the software for 1 minute – 1 hour (19.9%), 1-5 hours (28.0%) and 5-20 hours (6.1%) (Herold, 2016). Unfortunately, these statistics are more the norm than the exception. Claims of students cheating the system yet achieving passing scores have been made prior to the above study (Young, 2013) with collected data showing this to be more common than previously believed.

When developing a plan for my research, I investigated what types of online courses Frisco ISD offered students. Originally, the district had no online courses designed by district employees and chose to purchase licenses for students to access coursework. The three most common online courses taken were: Chinese, American Sign Language 3 and American Sign Language 4. I discussed the courses, informally, with the sign language teacher at Wakeland and he described some of the issues with the offerings: student inattention, professors not attending virtual teaching sessions, coursework not being graded in a timely manner and more. These issues led the district to discontinue purchasing online course licenses and students were to use other virtual options such as the TxVSN or Texas Tech University Independent School District.

The lack of online course offerings had continued in Frisco for the last few years until the summer of 2017. In the fall of 2016, the district attempted a tax ratification election to supplement the district's income to build new facilities and update existing ones. The measure failed, and the district began looking for cost cutting ideas. One of the approved ideas was to move the summer school completely online. The main cost for the summer school was the teachers' salaries, so by moving the coursework online, a huge expense was eliminated. Students would now come to a designated "summer school" campus to use computers, but there would be no direct teaching as there had been in the

past. I talked with one of the administrators behind the move and they explained summer school in 2015 cost the district $350,000, confirming the bulk of the money was going towards the teachers' salaries. By moving the district to an online only summer school, the cost dropped to $150,000. This move, though driven by cost cutting, was a significant change by the district and was deemed a success by administrators.

Research Questions

Three questions drove this research process: 1. What are the perceptions of stakeholders (administrators, teachers, parents and students) of online learning?, 2. What method of online lesson engages high school students most effectively?, 3. On what types of online lessons are students finding the most scoring successes? I answered questions 1 and 2 using pre-interviews (Appendix B) and post-interviews (Appendix F) with students and through multiple observations (Appendix E). I answered question 3 by reviewing students' final grades on observed assignments. By answering these three questions, schools now have a general course plan they can follow that will meet the needs of their students.

Personal Context

As I journeyed through this process of higher education, I have reflected more on how I reached this point in my career. I started teaching in 2001, not the most technologically advanced time in education. In my first classroom, I had a paper gradebook, television hanging from the ceiling and a teacher computer that ran my email program and PowerPoint. The use of computers at the time was limited to the occasional

research paper or creation of student PowerPoints. I was always the teacher who wanted to try new things using technology but was limited by the lack of resources and understanding of why technology integration was a coming necessity. For those unfamiliar with the time, the idea of carrying around an Internet capable device was still science fiction. Cell phones were still used to call and, if you could afford it, send the occasional text. I would venture to say very few, myself included, did not envision the way technology would impact our profession.

As I moved through my career, I learned and implemented technology. My students created blogs, podcasts, used the Internet to make picture albums and more. I was fascinated with all the new and exciting things technology was allowing students and teachers to do. Then the game changer arrived: the iPhone. Since the iPhone hit the market, technology has never been the same. Now a single device existed that allowed students to do the work they previously needed books, laptops or a computer lab, cameras and more in the form of a phone that fit in their pockets. As the availability of technology increased and the cost decreased, more and more devices were introduced in classrooms. Educational leaders knew technology was going to be important, but many did understand how to go about incorporating it effectively and, more importantly, which technologies should be purchased.

The idea of incorporating technology effectively was my stepping off point in this program. I did not know what I wanted to focus my research on, but I knew it would have something to do with technology. I had the good fortune of having a great professor my first semester and making a friend in my cohort who were both able to help me refine my ideas and lead me to my current push for online learning. As I have continued to read

research about online learning and how it is being implemented, I have come to the following conclusions: 1. Online learning at the K-12 levels is rarely incorporated effectively (Caplan, 2004; Garnham & Kaleta, 2002; Hasler Waters, Barbour & Menchaca, 2014; Herold, 2016, Palmer, 2017), 2. School districts are spending large amounts of money to access online curriculum that is not applying effective teaching methods (Anderson, Augenblick, DeCescre & Congrad, 2016; Battaglino, Haldeman & Laurans, 2011), and 3. Students in K-12, in many instances, are not prepared for online learning because the teaching methodology is incompatible with an online delivery system (Berenson, Boyles & Weaver, 2008; Lehman & Conceicao, 2014; Starichenko, Egorov, Davidovitch & Yavich, 2010).

Based on these ideas, paired with the experience I have gained over seventeen years of face-to-face teaching, I have developed a new philosophy. Students today are built differently than students just ten years ago. Today's students' lives are played out in an online format and if we, as educators, want to reach them, we must start incorporating technology more effectively. Part of this incorporation is changing how we teach students. Direct teaching will never go away, nor should it, however, we must offer students new choices for how they acquire their knowledge; to do that, we must develop quality, engaging and effective online learning. School districts cannot purchase unproven online learning programs because they will fail, and students, parents, educators and administrators will become frustrated with the method. In my research, I plan to observe and interview high school students going through the online learning process to determine which online teaching methods are the most effective. There is a significant gap in the research in this area, which partially explains why current methodologies are not as

effective as they should be. At the conclusion of my research, I will have a plan to recommend to my school district of how they can educate our students more effectively online.

Important Terms

The following definitions are being used for the purposes of this study:

Asynchronous – an online course method in which students are free to complete a course at their own pace. A time frame is usually set for when class interactions should occur and when assignments are due.

Blended Learning – a learning method that mixes face to face coursework with a specified amount of online learning.

Chromebook – a type of laptop that runs a Chrome OS operating system. They are designed to boot up quickly and most applications operate in the cloud, not on the machine itself.

Engagement – when a student exhibits high levels of focus on coursework, usually leading to high levels of motivation and accomplishment.

Homebound student – a student who is unable to attend school due to a condition, usually medical.

Learning Management System (LMS) - a type of computer software used to conduct online courses. The software may encompass different delivery methods, teacher-student connection methods and evaluation methods.

Module – a section of an online assignment. There are usually a specific number found within each course that must be completed successfully to pass the course.

Online/Virtual Learning – a learning method where students take a course on a computer, tablet or other device using some form of learning management system (LMS). Students can be on their physical campus while working through the course or off campus at another location, depending on the school's attendance requirements.

Online/Virtual School – an institution that does not have a physical campus; courses are conducted exclusively through the Internet.

Quick check – a brief assignment, usually no more than 3-5 questions found at the end of an online assignment. It is used to determine if the student gained the necessary knowledge from the module or if review was necessary.

Synchronous – an online course method where students are unable to advance through the course at their own pace and must follow the pacing set by the course instructor.

Tablet – a type of mobile computer with a touchscreen display and slim design.

Closing Thoughts on Chapter 1

As the evolution of online learning continues, it is my responsibility, as an educational researcher, to shape a method of education that benefits millions of students. However, with the start of anything new, there is difficulty, confusion and frustration. I have spent parts of my career excited about introducing new technologies only to find roadblocks thrown in my way. Those have come in the form of hardware or software issues, the school network or Wi-Fi going down or administrators who do not fully understand the point of implementing different types of technology as a teaching method. Through this process, I have found better ways to communicate the overall effectiveness of online learning to avoid roadblocks and pave the way for student success.

CHAPTER II

REVIEW OF SUPPORTING SCHOLARSHIP

Online learning is a worldwide phenomenon. Every day new articles come out about the establishment of a new online school or system. In South Africa, THINK Digital College has just established the first school in the country. The school covers Grade R (the U.S. equivalent to pre-K, though it is compulsory in some areas) through Grade 12 (Staff, 2016). This is just one of many examples of companies creating new areas of learning through technology. Yet when reviewing articles discussing online learning there are a number about how to set up a course, how students feel when working in an online course and the savings online learning can provide, yet there is little about what types of courses are the most successful and which methods show the greatest levels of success. When searching for online lesson effectiveness, I found mainly research dealing with higher education, yet most of online growth is occurring at the secondary level, not post-secondary. Across the nation secondary online enrollment numbers are up 80% (Herring, 2016). Even the corporate industry is getting into the act, realizing the importance of this educational method. The corporation Axomify, raised $27 million to 'gamify' employee training. They decided to invest the money because they learned 69% of their employees accessed more channels of information and learning than the two years' prior (Horn, 2016). Corporations are seeing the growth of for-profit educational institutions and have begun creating their own, internal, coursework.

Due to this continued growth, the online learning environment has become a unique, cultural context in itself. This has led to new trends in the educational industry connected to cultural context (Anderson, 2004). Schools are now examining if they should

offer online courses instead of or as a companion to, their existing offerings. Several factors come into play when superintendents are making these decisions and, for many, the first consideration is cost. When examining independent, national studies, researchers determined virtual schools should be funded at the same rate as a regular brick and mortar school. However, a virtual school could spend $7,200 - $8,300 per pupil (Anderson, Augenblick, DeCescre, & Conrad, 2016) which is a lower cost than the national per pupil average. These savings are based on a comparison between the $10,000 per pupil national average for K-12 education and the average funding for U.S. virtual charter schools at $6,500 per pupil (2010). Large school districts developing their own online schools could save significant money instead of opening another brick and mortar campus. Table 1 shows a few modified examples from Augenblick, Palaich & Associates (2016) of the funding of online schools by certain states and the varying levels of funding in comparison to their brick-and-mortar counterparts. When students complete online coursework, studies support the effectiveness of learning online. However, according to Lehman and Conceicao, as many as 50–70% drop out of their online courses or programs, which for an effective learning method, is an unacceptable dropout rate (2014). The lack of improved student outcomes leads to what economists refer to as Baumol's disease: labor-intensive organizations increase expenses without improving productivity (Battaglino, Haldeman & Laurans, 2011). Translated, this means any savings gained by opening on online school are negated by the necessity of greater district output to assist students dropping out. How can school districts improve their 'productivity' when it comes to providing their students a quality, in-depth learning experience? School districts must create effective, engaging lessons that translate well on the Internet.

Table 1
Funding of online schools compared to traditional schools in select states

State	2012-2013 full online school FTE funding	Average per pupil spending in traditional schools across the state (average revenue per pupil)	Online school funding as a percentage of average state funding
Arizona	$5, 759	$7,968	72%
California	$6,468	$9,300	70%
Colorado	$6,462	$8,926	72%
Florida	$5,182	$6,393	81%
Georgia	$4,334	$9,432	46%
Indiana	$5,245	$9,479	55%
Iowa	$6,001	$9,748	62%
Kansas	$4,030	$9,972	40%
Louisiana	$8,395	$10,701	90%
Minnesota	$8,807	$8,807	100%
Nevada	$6,700	$8,376	80%
Ohio	$5,745	$11,224	51%
Oregon	$6,304	$9,268	68%
Pennsylvania	$8,992	$12,729	71%
Wisconsin	$6,445	$11, 453	56%
Wyoming	$6,500	$15,232	43%

Reprinted from [Augenblick, Palaich & Associates, 2016]

When attempting to design online courses, the materials should be based on sound learning theories. Rovai (2002), determined the delivery medium does not determine quality of learning, the course design does. Due to a lack of training for many teachers on how to teach online courses, course design has not been engaging many online students. Due to poor course design, the depth of student interaction with peers and teachers is not as engaging as a traditional face-to-face class. This lack of interaction can lead to students reporting feelings of isolation and disappointment (Xu & Jaggars, 2013). In many

instances with online course development, teachers must “unlearn” their previous face-to-face teaching methods. Translating face-to-face classroom methodology to an online course is not always effective for online students (Caplan, 2004). Teachers implementing online courses must "acquire new teaching skills, such as learning to facilitate online interactions and assess student online learning..." in addition to being knowledgeable of their content (Garnham & Kaleta, 2002, p. 4). Designing an effective online course can also become a difficult task for educators because "there is no one-size-fits all approach to the design of eLearning, because each course is unique..." (Steen, 2008, p. 531). The University of Central Florida conducted a study amongst their faculty and determined 77% believed the preparation for an online course took significantly longer than a comparable face-to-face course ("Distributed Learning Impact Evaluation”, 2005, slide 6). When preparing for an online course, teachers can spend two to three times longer due to the need to develop or locate relevant online materials (*e.g.*, record/edit lecture videos), then move it to their district/campus LMS (Kushnir & Berry, 2014; Paloff & Pratt, 2007). Even with the additional time and effort required to teach online, over 30% of the faculty report a noticeable increase in the number of online course offerings (Simonson et al., 2006). Lipman (1991), Wenger (2001), and other influential educational theorists highlight the need for interactivity as, they believe, an interactive educational community is critical to effective student learning. Finally, a key component to constructivist learning theories (Jonassen, 1991) is another person’s perspective, which is gained through different types of educational interactions, and can also induce mindfulness in learners (Langer, 1989). This mindfulness is what must be engaged using effective course design.

Based on these ideas we can look to the five steps modified from Salmon's 2011 work, *E-Moderating: The key to teaching and learning online (Figure 1).* To create a fully engaging course Salman believes certain steps should be followed in a specific order. Partnered with those steps are teachers who help facilitate and moderate, or in this case e-moderate, to assist in student learning. Where teachers today fail is by placing their face to face course online and never interacting with their students as they would in a 'traditional' classroom. This leads to student disconnect and an increased dropout rate (Helms, 2014).

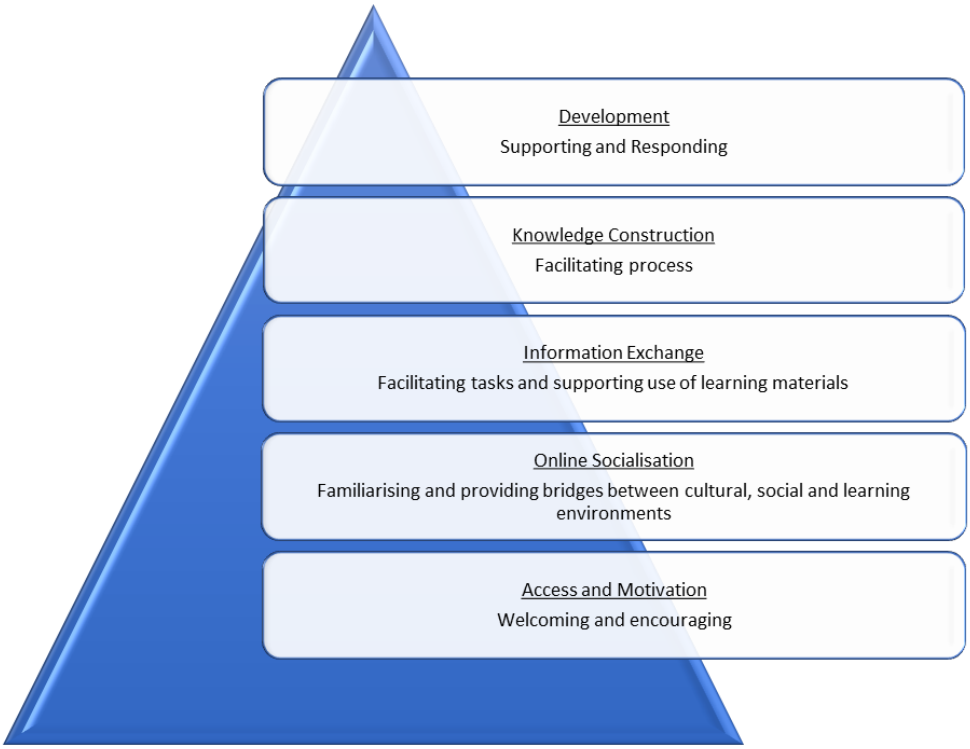

Figure 1. E-moderating: The key to teaching and learning online [Reprinted from Salmon, 2000].

Teachers must also consider what type of course they are designing, synchronous or asynchronous. When teachers design a synchronous course, they must create a classroom setting where students are constantly engaged through discussion boards, online

chats or even virtual face to face meetings (Moser & Smith, 2015). If teachers design an asynchronous course, they have a little more freedom when it comes to interacting or not with their students (Glenn, 2018). However, with either type of course, interaction is required and keeps students engaged, no matter how limited it may be.

The research literature I have reviewed talks a great deal about what is necessary when setting up an online course. It talks about how students feel and how they should be interacted with, yet there is little information as to what lessons are the most successful and why. I have attempted to fill the gap with this study and make a recommendation that can improve future student success.

Alignment with Action Research Methods

This Record of Study (ROS) most closely aligns with the Freirian participatory research (Spener, 1992). When examining online learning methods, many social/historical issues contribute to its constant evolution. Students today have different social/emotional needs than those of 10 years ago and students in the next 10 years will have different needs than those being educated today. There is nothing straightforward about how students learn, yet how they prefer to be taught can be determined by asking them; therefore, examining student preferences will not generate the full picture necessary to develop quality online lessons. Students may believe they understand how they learn most effectively, yet, basing online course design on their choices alone will not create the most effective method of content delivery. During my research, I investigated students' preferences and experiences with learning online because those preferences and previous experiences will influence the work they produce. I also investigated the beliefs of the

teachers, administrators and parents involved in the learning process of online students. Each stakeholder plays a significant role in the success or failure of online students, so their opinions carry significant weight in how they work and interact with students. The difficulties stakeholders face is online learning is a significant departure from the instructional methods many learned from during their educational years, and they may find it difficult to marry the previous instructional methods with newer, online instruction. Yet, by developing a successful online learning program, my district and others, can reach students who would be underserved by the conventional, face to face school system.

Conceptual Framework

Designing a conceptual framework (Marshall & Rossman, 2016) for online learning is difficult because each district is at a different level of technological implementation. Depending on where the school district is in the developmental process affects where it should start within the framework. Figure 2 shows the interconnection of the designed framework. School districts can evaluate their level of technology and start in the appropriate section of the wheel.

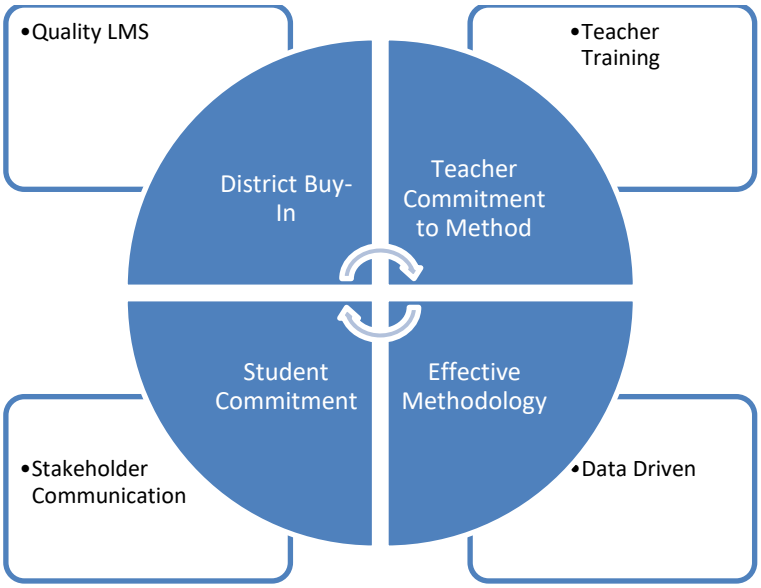

Figure 2. A conceptual framework of the secondary online learning implementation process.

To meet the educational needs of online students, four components should be followed. If we assume a school district with low levels of technological implementation, the starting point will be district buy in. Doing this requires the school district to purchase a quality learning management system (LMS) that meets the district's/students' educational needs. This also includes training the teachers to properly use the new LMS, otherwise frustration could set in leading to the abandonment of the system. The second component will be teacher commitment to online instruction. Teaching online is very different from teaching in a classroom, so teachers must commit to learning how to teach online students effectively. Teachers should evaluate their deficiencies in using the online LMS and locate appropriate trainings that help them address those deficiencies. The third component is the delivery of instruction. Through training, teachers can learn the most effective methods to teach online. Finding the best way to train online teachers is done

through analyzing data generated by districts with successful online programs. The training method can be copied and adapted for district use by the teachers and administration. The final, and most important component is student commitment. If a student is unprepared for working through an online course, the student will fail that course quickly. Students must learn how to be successful in an online course and an important part of that is through stakeholder communication. The teacher, student, and parents must all be involved in communicating how the course will be administered, what needs to be done, areas of teaching deficiency and areas of student success. With all these components working together, students will find success in their online learning. Student success will help inform and improve online teaching methods through the generated data and the cycle of improvement will continue throughout the life of the course.

Significant research and practice studies

Studies conducted over the success or failure of online students have returned conflicting information. Hughes, Zhou and Petscher (2015) observed that students using online coursework for credit recovery were more successful than their face to face counterparts. They did note, the achievement gap was the greatest for students in 9th grade and it disappeared and, at times, reversed for those students in 12th grade. Stallings, Weiss, Maser, Stanhope, Starcke, and Li (2016) found the opposite. They determined students working through credit recovery online were less likely to score as well as traditional students on end-of-course exams and were less likely to graduate. Even with conflicting results the growth of online education has continued at a rapid rate. In Ohio, Wang and Decker (2014) showed a growth in virtual school enrollment of 57.1% from 2007-2011.

These numbers are staggering because, during that time, most of the online schools were classified as either “academic watch” or “academic emergency” with few showing improvement over the measured time frame (p. 7-8). The difficulty of virtual schools finding success was also addressed when Miron and Urschel (2012) focused their research on the online course provider K12, Inc. During 2010-2011, only 27.7% of K12 schools met adequate yearly progress (AYP) goals, while 52% of public schools met their AYP targets. Barbour summed up the research with his statement of, “academic results for students in the full-time K-12 online learning environment are utterly abysmal” (p. 41).

Each study listed discusses the variety of issues faced when measuring effectiveness of online learning. The number of variables was large, so each study could not paint the full picture of an online learning environment. Miron and Urschel highlighted possible causes such as: “commonly used school performance measures do not adequately apply to full-time virtual schools, inadequate or misaligned curriculum, inadequate funding, inadequate or insufficient instruction or that the students completing the coursework were a “poor fit” for the online learning model” (p. 38-40). Hughes, Zhou and Petscher also addressed the issues highlighting the lack of measurement of intangible qualities such as technological comfort level and student motivation. The research and other studies being conducted show the magnitude of data that needs to be collected concerning the success/failure of online learning programs.

Closing thoughts on Chapter 2

What makes online learning at the secondary level so fascinating is the amount of opportunities it provides. Little has been examined due to the lack of online

implementation at the secondary public-school level, researchers can examine any number of topics and find themselves in uncharted territory. School districts will find themselves falling behind if they do not begin to research and implement some level of online coursework. By applying this conceptual framework, school districts can continue to review and revise their course offerings and continuously improve course effectiveness.

CHAPTER III

METHODS AND ANALYSIS

Helping students find success in the classroom can be a difficult task if they are not engaged in the lesson. Even with a teacher present, some students will not participate, or complete work assigned for their course. This issue is amplified when the course is online because of several factors: the physical presence of a teacher, the presence of fellow students, and the pressures of being in the classroom setting, are all removed. To help online students improve their performance, teachers must design effective, engaging lessons. With this idea in mind, I implemented a three-phase approach following a Freirean participatory model (Spener, 1992) which would help me develop a fuller picture of student engagement using both qualitative and quantitative data. The Freirean model focuses on real-life experiences and how themes can be developed from those experiences. These experiences were key to understanding students' motivations as they completed their online courses.

Participants

An email invitation was sent to all summer school students' parents inviting them and their students to participate in the study. Six parents responded that they and their student would like to volunteer participating, with five going through the entire process. The sixth parent stopped responding to emails as interviews were being set up, so they and their student were excluded. Of the participating students (Table 2), all were considered underclassmen with four heading into their freshman year of high school and one going

into their sophomore year. All were taking coursework for advancement and only S2 had taken an online course before.

Table 2

Student participant demographic information

Student	Classification	Gender	Advancement/ Remediation	Online Experience
S1	Freshman	Female	Advancement	No
S2	Freshman	Female	Advancement	Yes
S3	Sophmore	Female	Advancement	No
S4	Freshman	Female	Advancement	No
S5	Freshman	Female	Advancement	No

Phase One – Pre-Interviews

The first phase was designed to gather information from the different stakeholders: administrators, teachers, parents, and students, involved in applying the online summer school model Frisco ISD was using. I believed for a model such as this to succeed, there needed to be support from all stakeholders, not just those participating in the day to day operations. To understand perceptions of each stakeholder, pre-interviews were conducted using approved interview protocols with three summer school administrators, two summer school teachers, five parents of summer school students and five summer school students.

The administrator interviews, using questions from Appendix A, were conducted in their offices at the schools they work in during the school year at their convenience. The study was explained in depth and the interviews were audio recorded for later transcription. The lead administrator was initially wary of having a study going on during summer

school, but once the study's processes were explained and they understood students would not be disturbed during their work, they were supportive. The teacher interviews, using Appendix D, were conducted on their summer school campus in their classroom outside of working hours. Parents and students were interviewed together, using Appendix C and B respectively, at a location and time of their convenience. All parents decided it would be easiest to meet at one of the summer school campuses, so I reserved a conference room at the corresponding times and interviews were conducted without interruption.

Once all interviews were completed, they were transcribed and compared to develop themes for each group. To develop themes, transcribed interviews were reviewed to determine consistency of wording/phrasing. If certain words/phrases continued to come up, a theme was developed based on those words/phrases. After themes were developed, they were broken into categories for more efficient organization.

Phase Two - Observations

While students were working, I observed each student individually using an observation protocol (Appendix E) to determine when they were participating in a lesson and when they were not. The protocol was designed to allow the researcher to note the type of lesson the student was working through, measure levels of engagement, time spent engaged on coursework, and to note any unexpected issues in the classroom. I monitored grades of observed coursework using the district online gradebook and noted which assignments they scored high on and which ones they struggled with for post-interview discussion.

When conducting observations, I stood in the back of the room so I would not distract the student. I wanted the student to experience the online learning environment without any interference from me. The average time of engagement was determined by how the student was able to complete their work during the 45-minute observation. If students were working without interruption, they were considered engaged. When the student was working, a timer was running to measure their time of engagement. If the student stopped working, took a break, left the room, picked up their phone or disengaged at all, the timer was stopped, the time was noted and the timer was reset. When the student re-engaged, the timer began again. Based on the data collected, I took each students' times and averaged them to determine their average time of engagement. Student levels of engagement were determined by how well the student was able to work with distractions going on around them.

Phase Three – Post-Interviews

Once students completed their online course, I conducted an individual post-interview using Appendix F. The interviews were conducted on the student's summer school campus and their parent, who participated in the study, was present. The interviews were designed to examine if the student's opinions of online learning had changed during the study and how the student felt about the teaching method.

Methods

I followed a sequential exploratory mixed methods research design (Creswell & Plano Clark, 2007). This method was the most effective due to the combination of

qualitative interpretation combined with quantitative data collected from student assignment scores. To parents who have not worked through any online courses, the concept will still be new to them so gathering their beliefs is important. Likewise, administrators and teachers, many of whom have worked through online coursework, have developed their own beliefs about the effectiveness of the method. Due to their expertise and stake in the success of the method, their beliefs must be examined. Finally, gauging student knowledge of the method using the pre-interview questions, as they will be the ones completing the coursework, was important to interpret their beliefs about online learning.

The current focus in education for quantitative data analysis encourages the use of quantitative methodologies in this design. No matter how effective a method may seem, certain stakeholders are more motivated to examine course scores as the method for determining success. By reviewing student grades on assignments they completed during the observation time, I was able to determine which assignments students were achieving at a higher rate at a higher frequency. The grade reviews took place over the course of summer school, approximately three weeks. This review of data informed the post interview discussions with students, as they were asked which assignments they felt they were more successful and engage with and why. Once post-interviews were completed, I transcribed the interviews coded them to develop themes. After all coding was completed; I compared pre-interview themes with post-interview themes to determine similarities and differences between the two. Once interview analysis was completed, I compared the developed themes to the scores on assignments to determine if the belief of lesson effectiveness is supported by the grades achieved by the students. By combining the

developed themes from the qualitative interviews and observations with the data provided by student coursework, a more in-depth picture was revealed concerning which online assignments are more effective.

Timeline

Phase 1 – March – June	
QUAL Interview stakeholders: 1-2 Summer school administrators 2-3 Summer school teachers 5-6 Parents of summer school students 5-6 Summer school students	Procedures: Code interviews to develop themes
Phase 2 – July – early August	
QUAL Observe students in class as they work through online coursework Quan Review student grades to determine performance	Procedures: Record and code observations to develop themes
Phase 3 – August	
QUAL Post-interview students and parents	Procedures: Code interview to develop themes Finalize themes

Validity Approaches

Establishing validity in this study was important as there are a few areas where issues could have arisen. Through all three phases of the study, steps were taken to ensure large amounts of data was collected to provide as solid a sample as possible. One of the first possible issues was the small sample size. Frisco ISD uses the company EdGenuity to provide its online content, and the number of courses currently offered to Frisco students is small in comparison to other school districts. This small offering is due to this being the

second-year summer school has been completely online, so the district is still evaluating interest and effectiveness. A second possible issue was the students themselves. Frisco is an affluent district and many of the students are well versed in technology and have a drive for college. Many of the students at my school end up in Ivy league universities or schools of similar caliber. This drive could cause the data to skew because students have an inherent motivation to succeed. Finally, the level of course could be an issue. There are courses offered for advancement and for remediation. Any student can work on campus or at home, but there is a higher likelihood those students working for advancement will not attend campus. This could have caused the number of participants to misrepresent the number of students taking summer school coursework for advancement, due to their lack of presence on a summer school campus. However, to address these issues, any found are outlined in the final assessment so there is a clear understanding of the original state of the course, prior to the research.

Closing Thoughts on Chapter 3

The timeline for this research was short but created a unique window of opportunity. The semester was condensed, and the work accelerated, which forced students to either increase their focus and effort or abandon them completely and suffer the consequences; in this case, course failure. A large amount of data was able to be collected in a short period of time, yet the data will still be applicable to all types of online coursework. Whether an online course lasts six weeks, a semester or a school year, the results of this research will still be relevant.

The gap in the research of this topic created the need for a study which provided a fuller picture for the researcher. A mixed methods approach provided the qualitative opinions with quantitative data necessary to develop a more informed opinion (Bailey, 1994; Walliman, 2011, Wilkinson & Birmingham, 2002). Using only one method would have shown a partial view of pure quantitative success or failure or qualitative impressions without statistical support (Dawson, 2002). For school districts to alter their course and implement more online learning options, both types of results, qualitative and quantitative, should indicate a successful teaching method supporting philosophical change. To deliver the necessary results, I incorporated the opinions and influences of decision makers and participants in a way for evaluators of online learning to determine what types of lessons and support their students need to find success in an online environment.

CHAPTER IV

FINDINGS

The purpose behind using a mixed methods approach was to determine stakeholder opinions about the online learning method and confirm/disprove those opinions with quantitative data. The pre-interviews showed all stakeholders thought the online learning method had merit and potential, but the adult stakeholders, were free in expressing their reservations about the drawbacks of the method. The observations allowed me to explore how students handled the school environment when attempting to work online and how the environment, possibly, altered their ability to complete assignments. Finally, the post-interviews were employed to complete the full picture of how engaged students felt during their class work time and how they felt their grades represented their own efforts on the assignments observed.

Study Context

While the students were on campus, I would stand in the room and observe their work habits for approximately 45 minutes. This phase of the study was conducted over a two-week period with each student being observed twice. Additionally, each summer school campus had a different classroom design as illustrated in Figures 1 and 2. Realizing this could influence students' levels of engagement and focus, I felt it was important to note the differences.

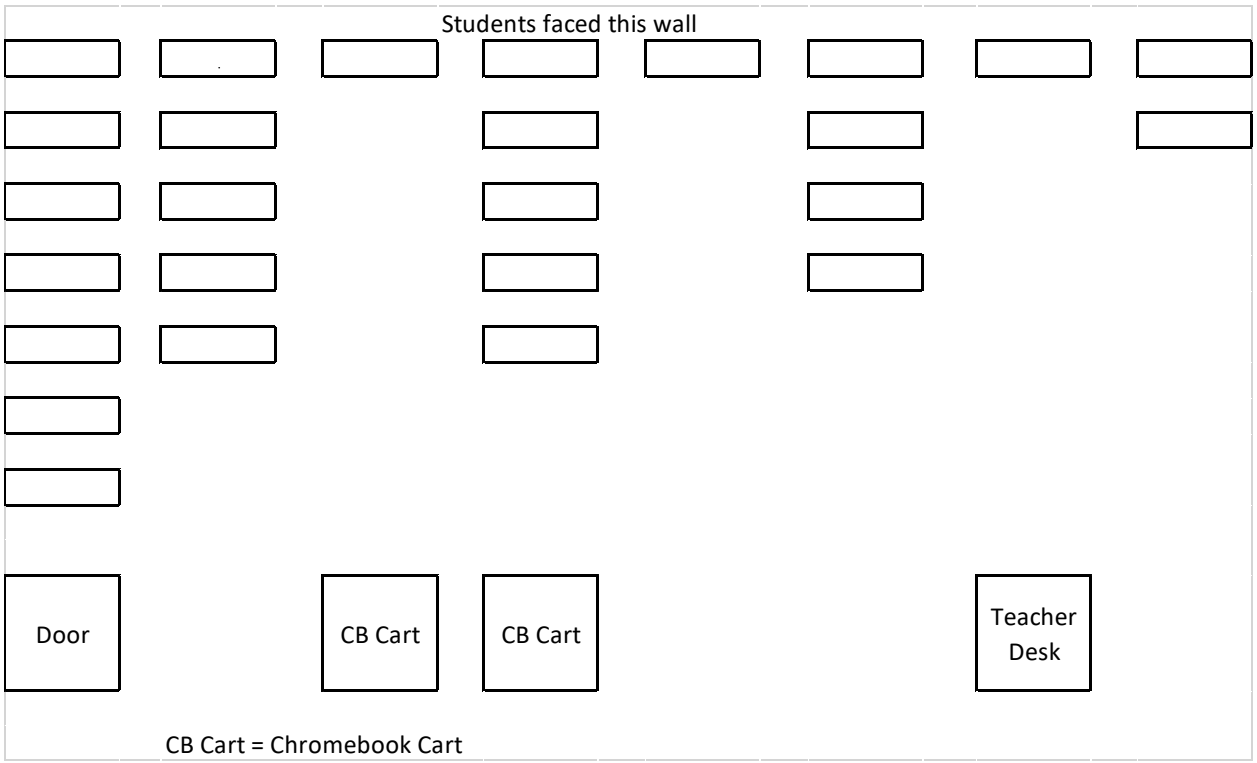

Figure 3. Seating chart for summer school campus one (SSC1).

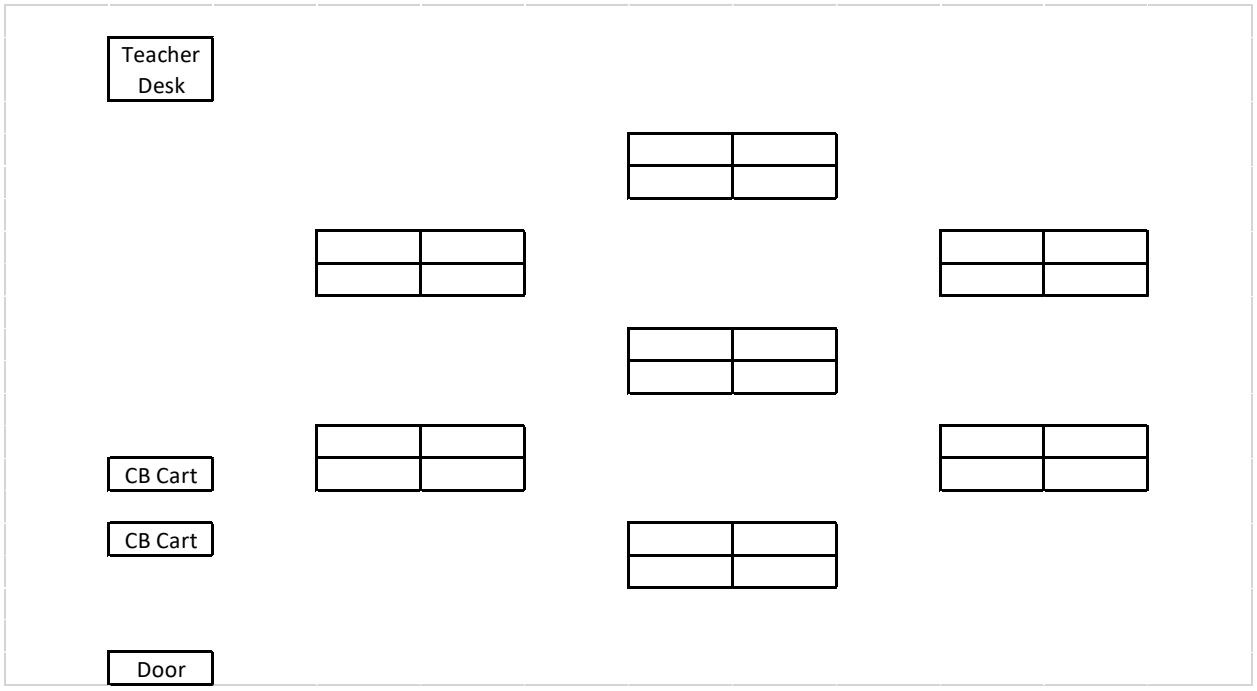

Figure 4. Seating chart for summer school campus two (SSC2).

The two rooms were almost identical in size, but the arrangement of the desks was very different and it showed in the performance of the students. At SSC1, the desks were in the more traditional rows, with more desks along the walls. This created a crowded feel in the room. There were more students in this room than in SSC2 and, because of the arrangement of the room, when any student moved, went to the restroom, approached the teacher for assistance, it had a ripple effect and disturbed multiple students. At SSC2, the desks were grouped together in small clusters. This gave the room a much more open feel. When students moved around the room, there was little disturbance of other students due to the space between tables. This impact was noted in how students S2 and S3 who were working at SSC1 performed on their assignments.

I informally asked each administrator, both had been formally interviewed previously, about the seating methods. Each explained the rooms were left the way they were set up during the school year. The only additions to each room were the Chromebook carts. Each room was decorated for the course it was used for during the school year: SSC1 was a classroom used to teach mathematics while SSC2 was an English classroom. The dynamic in each room was significant and influenced student engagement. Students two and three both attended SSC1, while students one, four and five worked in SSC2. There were a larger number of students in the room at SSC1 (N=15) and this led to a higher noise level. There were two teachers circling the room answering questions as necessary. The teachers had to remind students to sit down and get to work on more than one occasion. Some students worked with headphones in, while others did not. A few students were constantly up moving around the room causing distractions.

The environment at SSC2 was much quieter and subdued. There were fewer students in the classroom (N=7) and all had headphones in while working. This was attributed to students being required to watch several videos during their coursework. The only times students got out of their seats were to leave for the restroom or go home for the day. There was one teacher in the room and they would sit in the desk next to the student they were helping. They spoke quietly so as not to disturb any other students at the table.

During my observations I was able to note student levels of engagement and their average time of engagement. I was also able to examine student grades on assignments they attempted during the observed time frame. Table 3 shows the date each student was observed, the course the student was taking, the location they were observed, their level of engagement, their engagement time, what type of assignment they were working on during observation and the grade earned on the assignment.

Table 3

Student participant observation data

Date	Student	Course	Location	Engagment Level (1-5)	Engagement Time	Assignment Type	Grade
6/18/2018	S1	Speech	SSC2	3	6-15 min	Watch videos, answer follow-up multiple choice questions	100
6/19/2018	S2	Algebra	SSC1	4	6-15 min	Practice problems - read problem, determine answer	93
6/19/2018	S3	Math for Business	SSC1	2	0-5 min	Watch videos, solve practice problems	85 (multiple attempts)
6/27/2018	S4	Speech	SSC2	2	0-5 min	Watch videos, answer follow-up multiple choice questions	100
7/9/2018	S2	Algebra	SSC1	4	16-25 min	Final - read problems, determine answer	95
7/9/2018	S5	Speech	SSC2	3	6-15 min	Watch videos, answer follow-up multiple choice questions	100
7/11/2018	S4	Speech	SSC2	3	6-15 min	Final - multiple choice questions	99
7/12/2018	S1	Speech	SSC2	3	16-25 min	Final - multiple choice questions	98
7/12/2018	S3	Math for Business	SSC1	3	6-15 min	Final - read problems, determine answer	90
7/12/2018	S5	Speech	SSC2	3	6-15 min	Final - multiple choice questions	100

Student Observations

After observing the students for 90 minutes each, I was able to determine all, except S3 were engaged in their lessons. S3 showed difficulty staying engaged with their coursework. S3 was constantly looking for a teacher for assistance and, due to the climate of SSC1, it was difficult for a teacher to assist S3 as much as they required help. This explained S3's low level of engagement and average time of engagement. S1, S2, S4, and S5 were engaged with their lessons for brief periods of time without interruption. When there was an interruption, it was the student doing something on their phone: texting, snapchatting or responding to an email. Both S1 and S2 were engaged for the longest periods of time, 16-25 minutes, when they were taking their final. This focus was surprising because S2 attended SSC1 and the noise level was high. S2 noticed the noise level and distractions and proceeded to put in headphones and work. Students S1, S4 and S5 were engaged while working, though for only brief periods of time. S4 was distracted by their phone to the point they had to put it away. S1 and S5 were not as distracted as other students by their phones, each having their phone on their desk while they worked, but their phones did interrupt them on more than a few occasions. Amongst all students, their phones were the biggest distracter from their work.

Student Assignment Data

After an observation was completed, the student's grades were reviewed for only the assignments attempted during their time of observation. Most of the assignments consisted of watching videos and answering questions. The videos varied in length and quality. The students would watch a video then answer multiple choice questions at the

end, testing for comprehension. S2 and S3 were both working through mathematics courses, so their assignments were different. They would read a problem, then be expected to determine the answer on their own and type in the results. If they answered correctly, the program moved on; if incorrect, they could try again with assistance offered on screen.

On all assignments, except one, every student scored 93 or better; these scores included course finals. The lone score below 93, was an 85 by S3. This score was achieved after multiple attempts at the same repeated assignment. The student was visibly frustrated and expressed their frustration in their post-interview. They complained they had difficulty understanding the concept and the assignment and did not receive any help from either the online teacher or the teacher in the room. They believed with proper assistance, they would have understood the concept better and performed more successfully on the assignment.

Student Interview Findings

The final phase of data collection was conducted once the students completed their online course. I met with each student and their parent again at SSC1 or SSC2 and discussed with the student what lessons they felt most successful or unsuccessful with, which lessons they liked the most/least and if they would take another online course. Each interview lasted 10-15 minutes. Upon completion of all the interviews, they were transcribed and compared to develop themes (Table 4). After the post-interview themes were developed, I compared them to the pre-interview themes to develop categories to better organize the represented themes (Table 4). Based on these comparisons, I was able to answer my three research questions.

Results of Research

To fully answer my research questions, I gathered all transcripts and developed themes. These themes were then broken into different categories based on topics discussed in pre-interviews and post-interviews (Table 4). I also compared the frequency each theme appeared in each of the 15 interviews conducted. Table 4 displays a breakdown of categories, themes within categories and the times each theme was stated by stakeholders. Each of these themes provides a crucial piece of information because they help illustrate the larger picture of online learning, not solely the academics.

Table 4

Interview categories, themes and frequency developed from stakeholder interviews (N=15)

Category	Themes	Stated
Benefits	Flexibility	5
	Own pacing	5
	Convenient	3
	Advancement	2
	Themes	
Drawbacks	Time management/Procrastination	5
	Difficult to get immediate assistance	3
	Distractions	3
	No one pushing/reminding	2
	Student stress levels	1
	Communication	1
	Themes	
Student Qualities	Time management	5
	Organized	4
	Must be self-motivated	4
	Accountability	1
	Responsibility	1
	Themes	
Students Liked	Videos for visualization	3
	Quickchecks	2
	Themes	
Suggestions	Real world connections	2
	Connect with other students	1
	More courses offered	1
	Short videos	1

My first research question was designed to create context by determining stakeholder perceptions of online learning. The opinion was unanimous across all groups that online learning was a positive option for students. However, administrators, parents and teachers agreed this option only works for "some" students. Many stated online learning is not designed for all students because some need daily interactions with both teachers and other students. The parent of S2 pointed out their other child also completed online learning, but was not as positive about it and only completed the courses so they could participate in extra-curricular activities during the school year.

Benefits

The first category developed was on the benefits of the online learning method. The four themes in the category addressed online learning flexibility, student ability to move at their own pace, convenience and the ability for students to advance. Administrators, teachers, parents and students made the following statements about the benefits of online learning starting with flexibility:

> AD1: I think that the huge benefit is the flexibility, so it allows you to work on it within whatever your current schedule it is.
>
> AD2: So, the benefits of online learning are that, obviously you can do it at your house. Especially for the summer, you can still go on vacation and work on lessons during your vacation. You are not tied to coming to a building.
>
> P1: And kids or students if you would say, in this case kids, really appreciate the flexibility because life is just very, very busy right now.
>
> P5: I was able to work full time and complete my bachelors.

About course pacing:

AD2: You can work at your own pace. You can, if there is something you need to hear again, unlike when it was at school because I actually taught it when it was at summer school you can pause, listen to it again, unlike with the teacher, sometimes, you know, might have five or six kids in the room that she has to get to so your question might not be answered or it might be stalled, so you get to work at your own pace when it's online. You can listen over and over again, if you choose to do so, which I know a lot of kids won't, if you choose to do so you can go back and look at the lesson to make sure you fully grasp what is going on.

AD3: The experience was good. I think I can appreciate the fact that it's kind of, you know at my own pace so I'm able to do it in the comfort of my own home and then also just when I am able to do it.

S2: Going at your own pace and you can also go faster even though there's a certain amount of lessons per day and per week, you can go faster and going to like the next lesson and the next week so you can finish the school year early even though it ended on June 8th I finished in May.

S3: Being able to knock it out and not having to wait on the teacher. Being able to go at my own pace.

About convenience:

P4: Super convenient and easy.

About advancement:

> T1: I think it is very beneficial for certain students. Usually you have to be an independent learner, intrinsically motivated student. I have one student who is in this course this summer, so within three weeks, he has completed a biology class, comm apps and he is completing geometry right now and still has health to go. I think he's going to finish it, he's at 90% done with two weeks to go. He might get all 4 done.
>
> T2: I think it would be beneficial for students that want to get ahead like those students who want to double block sports and art.

Stakeholders agreed online learning is a great way for students to get ahead in their coursework. All students in this study were taking courses for advancement and they reinforced this idea during their interviews. The students stated they did not want to take the course during the year because of interests in other extra-curricular activities including: gymnastics, color guard, band, athletics and debate. The parents pointed out how convenient the option was for them and their families. Two of the students, S1 and S5 completed some work while on vacation with their families on their own time frames without penalty. When they returned from their vacation, they went to their campus to complete their coursework. This flexibility and convenience was a big draw for parents and students. One parent pointed out their student would not have taken summer school if it had not been online.

Drawbacks

As willing as parents, teachers and administrators were to point out the benefits of online learning; they were also quick to point out the potential drawbacks to the method.

The biggest concern amongst this group was the student's ability to manage their own time and not procrastinate. This concern was shown in the comments below:

> AD2: The lack of motivation or self-motivation to get the work completed. You don't have somebody sitting next to you saying, "ok, I need you to answer this one, I need you to do this lesson and I need you to do this."
>
> T1: I have another student who hasn't even logged in. We've had parent communication, we've called, we've had actual conversations, not just leaving messages. We've sent emails and he still hasn't logged in.
>
> P2: …procrastinating is the biggest downfall of this.
>
> S2: Not procrastinating. I didn't like Spanish at all so, I would like to wait till the very end of the week to do Spanish because I just didn't want to do it. So that was hard.

Another issue faced by the students was the inability to receive assistance from their online teachers. Students had the option to attend a summer school campus where teachers were present to assist, but even they had difficulty meeting the needs of the students. This difficulty was highlighted by the plight of S3. The student was taking a mathematics course yet could not acquire assistance when they did not understand a problem. The student did, ultimately, figure out what to do and pass their course, but this had more to do with the student's work ethic than the assistance they received from a teacher, either face to face in the physical setting or virtually online. The following comment came from S3's parent:

> P3: I did like the idea of S3 being able to do an extra class and help her to get ahead at her own pace. But the only problem is the lack of accountability, in terms of, if

she has a question, for example, we signed up for a geometry class and right now she is doing a math class, math for business. No one has qualified for us why the class is different, we've tried to reach out and get information, is she going to get credit towards this, how does this help her? Because different from what we wanted, so far we have not gotten any response.

Two stakeholders, one administrator, and one teacher, both stated they did not prefer online learning for themselves. They both cited they were easily distracted and would not be able to complete online work without difficulty. Each person had completed online professional development but stated they only did so because it was "easier than sitting in a room for eight hours." This led to the development of the third theme because distractions can be a difficult issue for students to overcome. The following comments were made about distractions when participating in online learning:

AD3: Sometimes I find myself getting distracted when I am working at home with my family and also with the TV and other distractions that can present themselves at home.

T1: There are just too many other things I could be doing. There is a book I could be reading, there's a hike I could take, you know, background noise.

The other developed themes were not mentioned as frequently as the previous three, yet they derailed online learners. Due to the lack of a physical presence of a teacher, there is no one pushing students to continue their work. No one is reminding them when assignments are due and what they should be completing at the time. There is also a delay/lack of communication between students and their online teachers. If a student needs assistance, their teacher might not be available at that moment to help them. While the

teacher may return an email or text, the timing might have caused a delay for the student allowing them to fall prey to distractions. Likewise, the media of e-mail could make instructions difficult to understand. If the teacher does not adequately explain how to resolve an issue, it could lead to student frustration. The following comment was made concerning teacher/student communication:

> AD1: The drawback is the communication. It's usually done via email or some type of written language and I think for many of us that verbal communication is a skill that lots of people lack and making that be part of the class is difficult online and so that's the piece for me that is the biggest missing link.

The last theme was only stated by T1, but merits discussion. They commented the following:

> T1: The drawback to that is the more we schedule our students, the more stressed out they are getting. Even if they can handle the academic load, when are they sleeping and that is the number one thing they need at this age.

While online learning provides a great number of opportunities, it also allows for students to overload themselves without realizing it. All stakeholders must be aware of the possible stress related issues that could manifest if a student takes too many courses.

As stated above, many stakeholders believe online learning is a great opportunity for "certain" students. During the interviews, one of the questions asked of all groups was what qualities students should possess to be successful in an online learning environment. The theme discussed the most was the student's ability to manage their own time. Stakeholders also brought up the need to be organized, self-motivated, accountable and responsible. They commented:

P1: They have to be self-motivated but that can go with a regular class too, in some respects, you still have to go to class every day, so something is going to get thrown at you as a reminder where feasibly with online, you could go a week or 10 days without doing anything if you really wanted to.

P3: Time management. Accountability. And you have to be dedicated, you have to want to succeed, because you do not have to go to an actual class and you can just blow it off and say I'll do it later. But it all adds up and, in the end, you stress yourself more than just sitting down for class and saying ok, it is time for class, I need to do it. Become regimented about doing it.

For any student to be successful these themes are important whether in a traditional face to face course or an online course. However, due to the lack of teacher presence, these qualities or the lack of, can be amplified in an online environment.

Preferred Lessons

At the core of any lesson is one word: engagement. Through my ROS study, I wanted to better understand what types of lessons were drawing students in and holding their attention. As this new medium of education grows, schools and educational curriculum companies will constantly be seeking ways to draw in students and help them find not only success in the coursework, but the ability to retain the new knowledge and relate it to previous learnings. To develop a better idea of what students are looking for in their education, I asked the students what types of lessons they enjoyed. Due to the lack of experience with online learning, students only listed two items: videos for visualization and quick checks to follow up on their learning. They commented:

S2: Quick checks and there's quizzes and tests and projects so I liked the quick checks the most because that's kind of those are more like the test questions. Like they give you examples of what you would see on the test.

S3: Videos because I able to visualize what is happening.

As online curriculum developers move forward they are going to discover additional venues and platforms to incorporate student needs and wants. If a student is not engaged, they will withdraw and lose any opportunity to obtain new knowledge.

Improvements

The final themes coming from the interviews, dealt with suggestions for improvements to the online curriculum. All stakeholders were asked, in some form, how online learning could be improved in the future. Parents wanted online courses to facilitate more connections with other students:

P1: …connect with other students in the class. And I think that is a huge part, if they could have some level of engagement with other students taking the online course.

Administrators wanted to see more courses offered. With so many students taking online coursework for advancement or to free up their physical course schedule, a greater variety of online courses should be offered to meet the needs of all students. One administrator commented:

AD3: I do think that they should be offered, more should be offered at the secondary level just simply because of the flexibility. We have a lot of students that have a lot of things going on outside of school. Some are working, extracurricular activities, and all of that.

Student comments were geared towards how the courses could be improved for engagement. They suggested two things: more real-world connections and shorter videos. Two students commented about the need for real-world connections. They also talked about the need to make sure those connections were up to date.

> S1: Maybe lessons that are more relatable. Having examples that are relatable. One of the first lesson I took it was like, using social media is good, using MySpace or Facebook and I was like, this is old. I was like this is definitely old.
>
> S4: Yes, when she makes analogies that kind of relates to, oh, when you get invited to a party or where you are communicating with your sister, just analogies where you can picture the situations and interactions, especially with the speech and communications we learned about, interpersonal connections and speaking and cultures. So, when she relates to everyday situations that you can picture and relate to how everything is working out. I like when she makes those analogies because it makes it easier to understand what she is trying to get through.

S4 also commented on the need for shorter videos:

> S4: I think the shorter the video, the easier it is to get through them, so it is easier to concentrate on them. With a 20-minute video, around 12 minutes you get bored and start to move around. So, with a short video, under 10 minutes or around 12, it is way easier to get one more video done or finish a couple that equals to an hour and half. So, the short videos help me get through them.

When you assemble all these themes, a fuller picture starts to come into focus. Stakeholders beliefs about online learning from benefits to drawbacks, important student

qualities, what students liked and what suggestions they all have, fully illustrated the current perception of the online learning method.

Effective Engagement

Using the information displayed in Table 4, I sought to answer my second research question concerning what types of online lessons engage high school students most effectively. During the post-interviews, students stated they wanted a course that was relatable to their world. They desired lessons that contained and were rooted in real world examples and were current and up to date. S1 referenced a previous course module that discussed the social media platform Myspace as if it were something new. They found this to be funny and dismissed the class as not beneficial because it was not up to date. They completed the course with an A average, but stated they did not gain any useful new knowledge or information that they could use from the course.

Another teaching method students addressed were the use of videos. Each student believed videos were important and necessary to assist with visualization. Because students do not have a teacher or classroom visuals they would see in a traditional face to face classroom, they needed something they could grasp visually. These visual connections were related to the next component students brought up. They believed "quick checks" would be useful in keeping them engaged. S1 addressed how they would lose focus if anything lasted longer than 10 minutes. By completing quick checks over the content to be learned in the videos they were watching or readings they were completing, engagement increased with students because they knew their absorption of information would be tested so they need to focus on what they are supposed to be learning. This idea was emphasized as an effective component to compliment the student's ability to review videos and move

at their own pace by S3. They pointed out if they did not do well on a quick check, they would have the ability to review the materials in their own way. They could rewatch an entire video or just the relevant section or they could search a reading quicker, knowing exactly what information they needed to review.

The variety of student ideas, as substantiated by their post-interview answers, honed into the idea of "chunking" the learning. To fully engage students for extended periods of time, online lessons must be broken up into smaller sections. Attempting to maintain a teenage student's focus for longer than 12-15 minutes at a time is difficult whether in an online setting or a face to face classroom. Therefore, by breaking modules into smaller sections, there is a higher likelihood of students will stay engaged and, ideally, reach the level of comprehension expected.

The final question was designed to confirm or refute the second research question. Students were asked what types of lessons engaged them the most. At the same time, I was interested in ascertaining if these lessons were the highest scoring ones? Through analyzing the results from my ROS study, I can say students were very aware of what types of lessons they enjoyed as evidenced by their post-interview answers, and their assessment scores reinforced their statements by illustrating high levels of performance. Most of the lessons students attempted during the observation periods consisted of watching videos or reading passages, followed by answering questions. In almost every instance, except for S3, full credit was awarded at the end of each lesson. S3 proved to have greater difficulties than the other students observed. These problems might have been a result of the environment in the SSC1 classroom and the lack of assistance provided to the student. In S3's course, questions were asked at the end of each lesson, but because it

was a mathematics course, they were expected to complete calculations and S3 had difficulty completing these computations because they were unclear on how to do the mathematical procedures and could have used teacher assistance. They were able to gain a passing grade on each lesson, but it was not the grade they were striving for, according to S3.

The lessons observed were very simple and did not require deep knowledge or critical thinking skills. Students watched videos, S4 and S5, even fast forwarded through some of them to speed up the process and answered questions about the content of what they had viewed. The questions were simple and, even though S4 and S5 did not watch the entire video, they were able to achieve full credit on the quiz at the end of the module. When I asked them about skipping videos in their post-interviews, they expressed indifference pointing out if they could complete the assignment without watching the video, why would they waste their time watching the video? I thought this was an interesting and telling point and a symptom of many current secondary online course offerings. All the courses observed: speech, algebra and mathematics for business had simple, short modules with quizzes at the end. None of the courses required the students to apply the concepts of the course into a broader perspective. Even the final summative evaluations were simple, merely checking for knowledge. The questions did not test the student's deeper content knowledge. The simplicity of the evaluations allowed for all participants to score better than 90 on their final and receive an 'A' for their respective courses.

Interaction between the Research and the Context

This study which examined the online learning in a secondary summer school was brief but has broad implications for secondary online course curricula in general. The growth of online learning has been exponential, as stated above, and the growth will continue. The ease and flexibility of enrolling in an online course is attractive to busy parents and eager students looking to achieve and get ahead in their school work or for others who are trying to recover credits. The benefits of online summer school can be shown in the data generated by Frisco ISD. The data in Table 5 show participation and completion of summer school coursework during the summer of 2017. Data for 2018 were unavailable at the time of the writing of the ROS but based on the information provided by the summer school administrators, the summer school enrollment numbers were higher than they were in 2017.

Table 5

Overall summer school completion rates for Frisco ISD – 2017

	# of credits attempted	# of credits earned	% of credits earned/attempted
Middle School Students – Credit Recovery	247	227	92%
High School Students – Credit Recovery and Advancement	1794	1718	96%
- High School Students – Credit Recovery	472	405	85%
- High School Students - Advancement	1322	1313	99%

Upon completion of the 2017 summer school session, the district sought to determine the satisfaction level of parents, credit recovery students and advancement students using a 5 point Likert-style scale. The satisfaction level of parents are presented in Figure 5.

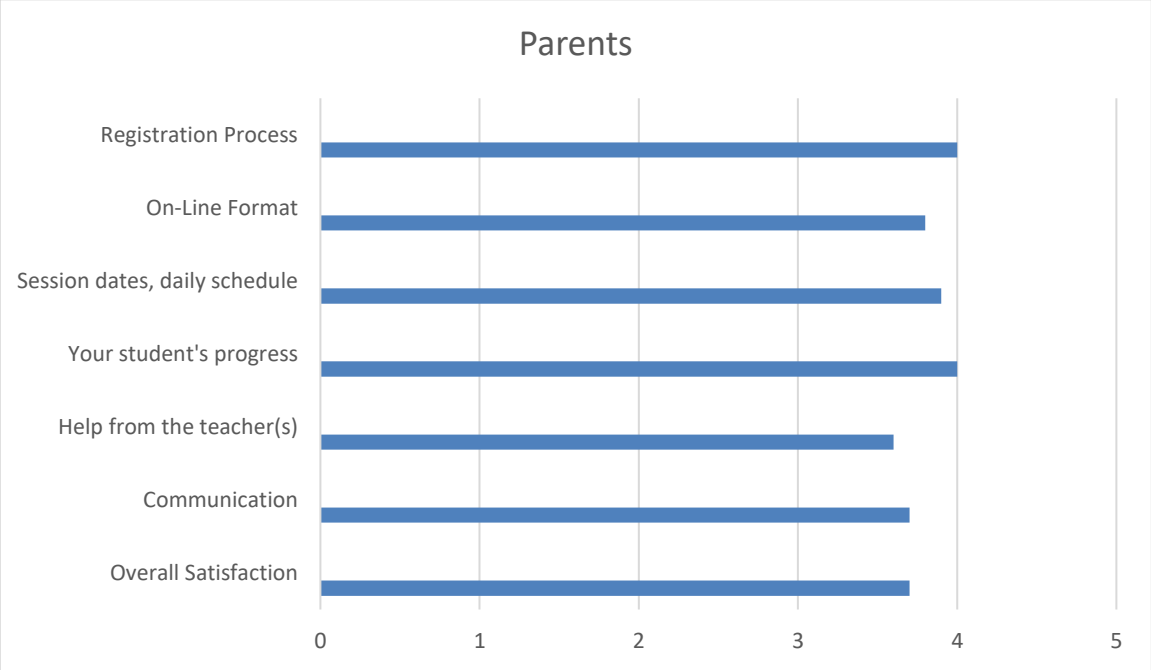

Figure 5. Parents of summer school students' overall satisfaction levels for summer school 2017.

Parents were the most satisfied with the registration process for online summer school and with their student's progress. They were least satisfied with the assistance their student received from the teacher. This is an interesting result because one of the positives stated by students, parents, administrators and teachers in this study was the student could move at their own pace. The student no longer had to wait on the teacher to assist others or pace the content with online learning, yet these data showed parents wanted the teachers to help their students more.

The credit recovery students' overall satisfaction levels are presented in Figure 6.

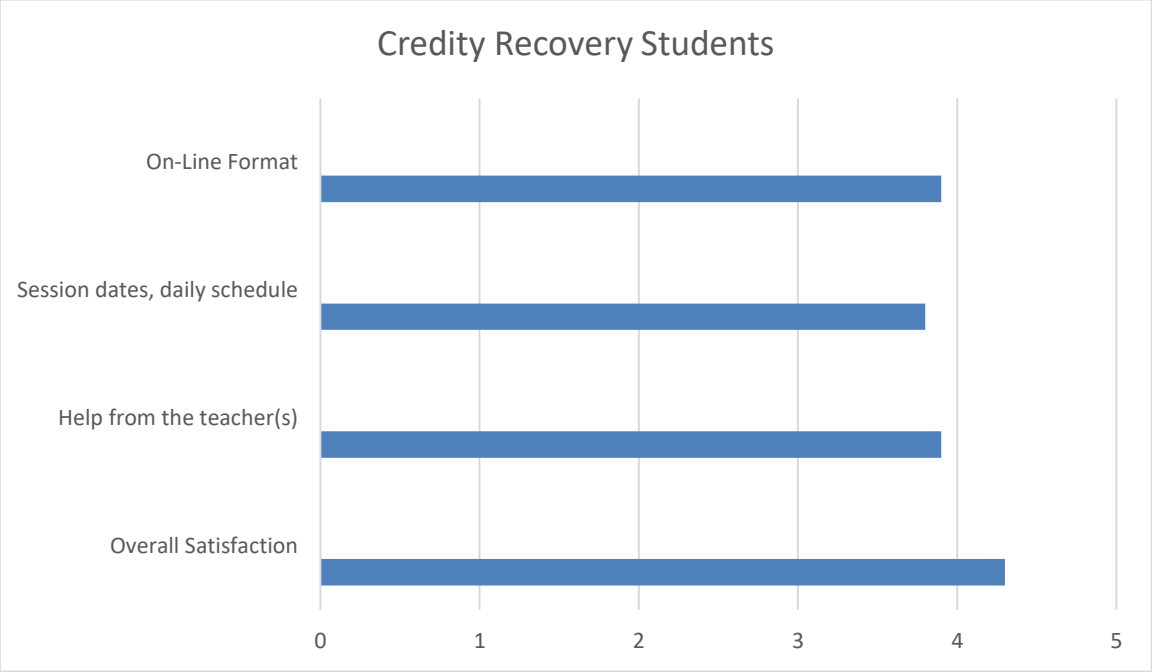

Figure 6. Credit recovery students' overall satisfaction levels for summer school 2017.

The advancement students' satisfaction levels are presented in Figure 7.

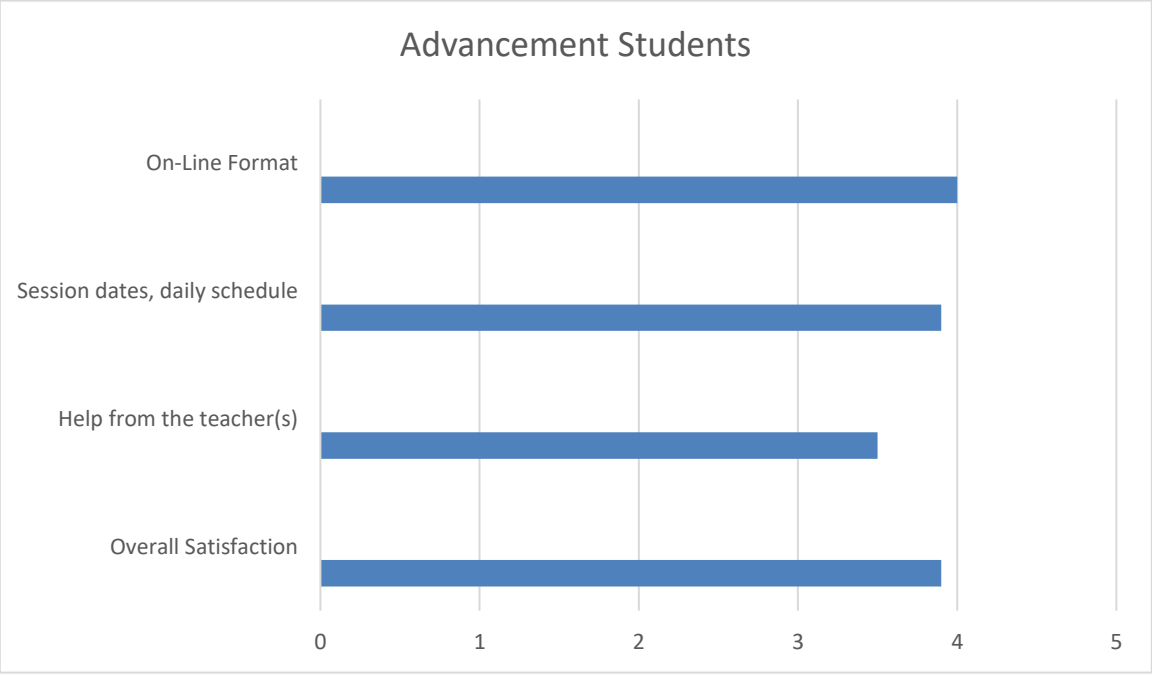

Figure 7. Advancement students' overall satisfaction levels for summer school 2017.

Figures 6 and 7 illustrate a disagreement between the satisfaction of students taking online summer school for advancement and those taking summer school for credit recovery. Students taking coursework for advancement ranked the online format the highest and teacher assistance the lowest with overall satisfaction falling in the middle, yet, those taking coursework for recovery rated their overall satisfaction the highest and the daily schedule the lowest with the format falling in the middle. These numbers were a strong indicator of how summer school should be designed to align more closely for the type of student taking the course. This study, supported by the data, can be applied to other districts and private online education curriculum companies across the world.

Operational Issues

Throughout the conduction of this study, there was initially mild resistance by the summer school administrators. There was concern my presence would disrupt the learning environment and prevent summer school students from focusing on their work. However, through discussion and detailed explanation of the study and how I planned to conduct observations, they were satisfied my presence was not going to be a distraction. There were no operational issues during the study. This was the second-year summer school had been conducted in a completely online format, and it was, per the administrators, much smoother than the previous year. I was able to conduct interviews in conference rooms at both campuses without interruption. Stakeholders, those who responded to the recruitment email, were very positive, even excited about participating in the study. The parents were very passionate about providing opportunities for their children and thought their participation would be a good way for the district to continue moving forward in providing

opportunities provided input willingly and openly. The students were interested but seemed unsure about why a study was being conducted.

The results of this study were shared with district stakeholders as discussed when gaining permission to conduct the study. The results confirmed what many stakeholders already believed about online learning: it is useful but requires revisions to increase depth of knowledge. Stakeholder reaction was positive about the study and they perceived it as useful in the future as an additional component in justifying the district increasing online courses and, possibly, introducing coursework during the school year. When discussing results with stakeholders, I recommended a similar study be conducted working with students completing online courses during the school year. While I think the results will be similar, due to the increased length of time of the course, some of the results, specifically levels of engagement, could show a significant difference. There could also be a lowering of perceptions of online learning because of greater experiences with online coursework that were negative. However, I think the types of lessons engaging students will be similar to those addressed in this study. Additionally, studies should be conducted on how students perform in higher level coursework done completely away from campus versus those who work in classrooms on campus.

Closing Thoughts on Chapter 4

The excitement around online learning courses was demonstrated throughout this ROS. All 15 stakeholders: administrators, teachers, parents, and students believed the method was beneficial and would lead to students gaining an advantage in their academic aspirations. Students were aware of what engaged them and showed success, reinforcing

their beliefs. The courses observed, according to students, were simple and did not require a lot of thought, just "getting through." It was an interesting dynamic to observe the different environments students worked in and how it affected their success/failure on their coursework. I think that themes developed from the interviews were consistent with the current research (Hasler Waters et al., 2014; Herold, 2016; Kushnir & Berry, 2014; Molnar et al., 2015; Smith, 2016; Subedi et al., 2017; Yavich & Starichenko, 2017). However, there is a great deal of research that can be conducted in this area and this study only scratched the surface of that potential.

CHAPTER V

CONCLUSION

The results of this study provided an interesting contrast to what I expected going into the research. While I believed most stakeholders would be positive about the online learning option, I was surprised there was very little pushback. The one administrator and one teacher who were not in complete support of the learning method, still believed it was a great option for the "right" student. I assumed, falsely, there would have been some negative experiences highlighted from a parent or administrator, but all parents and most administrators were incredibly positive when questioned about the learning method. I was also surprised by how well-informed students were about what types of lessons they believed they would find to be the most successful. Over my 17 years of teaching, I have known many students who claim certain types of lessons are their favorite and they are successful with, yet when asked to perform, they are unsuccessful. The summer school students interviewed claimed to know which types of lessons they would be successful on and they proved their claims through consistent success in their coursework. The result I was not surprised by were the types of lessons students believed would engage them the most. They wanted to know how the lesson relates to their world and they wanted it in short amounts. This mindset is consistent with a busy generation of students who like to post their thoughts using images or 240 characters, then move on with their day.

One item that struck me in the interviews and should be discussed is the difficulty of keeping coursework up to date. S1 talked about a statement made in one of the videos which illustrated how outdated the coursework actually was. The world is changing quickly and technology, specifically social media, is changing even faster. At one point,

MySpace was the most popular social media platform, then it was quickly replaced by Facebook. Following Facebook came Twitter, Instagram, SnapChat and more. With each new platform, teens, who are consistently early adopters, devour the platform and quickly make it their own. Behind them, adults are just discovering the discarded platform. In my class, I asked a student why teenagers did not like Facebook anymore and preferred SnapChat instead. Their response? "We aren't on Facebook anymore because our parents are." These are the students that online courses must reach. However, the benefit of online learning over traditional learning, is online learning can be updated at a more frequent rate. If there is a major change in the world, in technology, online curricula can be updated quickly. If schools want to fully engage their online students, they must keep the courses up to date.

The results of this study also confirm many of the writings discussed previously (Anderson et al., 2016; Battaglino et al., 2011). The use of online summer school saves the school district a significant amount of money due to the reduction in staff: from $350,000 in 2016 to $150,000 in 2017. The students in the study confirmed the need for relevant videos, due to a disengagement between the student and the course when the materials are dated. Unfortunately, the study also confirms how poor course design can lead to disconnection (Caplan, 2004; Carnevale, 2005; Glenn, 2018; Pallof & Pratt, 2007). If the mathematics for business course had been designed better, S3 would have found greater success in their work. Additionally, the theory of students feeling of isolation was confirmed by students. While their statements did not confirm deep feelings of isolation, more than one student made a comment about working on their own and having no connection to anyone else in the course, including the teacher.

Ultimately, the study confirms there is no “one size fits all” course. Online learning must be as flexible as people believe it to be, because every student is different and has different needs. While S1, S2, S4 and S5 all found success in their online courses, any number of other students might have found difficulty. S3 struggled with their course, but other students might have found the course simple to complete. Flexibility was one of the strengths highlighted by all stakeholders and when the courses are truly flexible for each student, success should be found by most.

Throughout this process I was pleasantly surprised by how stakeholders were interested in the research. All parties seemed to be well informed about the possible issues their student could face while completing an online course and took steps to avoid them. Stakeholders made themselves available to me whenever necessary and were always happy to help. I was also surprised to see how well informed the students were. Due to the age of the participants, I was expecting less understanding of what they might encounter, but each student had a good understanding of their strengths and how they could use those strengths to find success in their coursework. I was also happy to learn how students understood how they could get ahead using online coursework and how that could lead to a benefit for the students being able to experience other aspects of high school such as extra-curricular activities.

The experience working with participants reaffirmed my belief of how important it is to determine the best methods of education for our children because of how it can help them achieve. I have argued, online learning is a wonderful tool for allowing students to advance their own agendas, to follow the dreams they have with assistance from stakeholders. In brick and mortar schools, some students are unable to chase their dreams

of becoming a world class chef because the course does not fit into their schedule. Instead they are forced into taking English or history; courses that are important, but because of the scheduling, the student may underperform due to a lack of interest. By incorporating online courses, students can move required courses, such as English or history, to an online platform, opening their school schedules for those courses that will advance their career aspirations.

This experience also reminded me, nothing can replace a great teacher. Online learning is a tool, but it requires quality, well-trained teachers to assist students in need. S3 struggled because they needed clarification only a teacher could provide. Had there been a teacher working with them more frequently, they might have had less stress during their coursework, possibly, leading to greater retention of the coursework. Ideally, by combining the two, quality teachers and quality online content, students will receive a high quality, deep learning educational experience.

Although the results of this study are not generalizable, aspects of this study can be applied to curriculum development across the world. As online learning continues to grow, at all levels, student needs must be considered. Students should be part of the planning process, especially at the secondary level. The students in this study knew what engaged them, showing a level of understanding that was unexpected. Their statements concerning engagement should be considered when designing an online lesson. This understanding combined with teacher knowledge of content could be used to construct a course that goes beyond surface learning and achieves deeper learning for students with different learning styles. Courses can be adapted in real time for those students with different learning needs and modified for those with learning disabilities. As schools determine whether they will

create their own courses or purchase licenses from private companies, they can reflect on what their students want/need and make informed decisions that will benefit all stakeholders.

Personal Lessons Learned

This study has shown me how crucial educational research is when developing new teaching methodologies. Watching the growth of online learning and reading about the different research studies done has been fascinating, but it also demonstrated to me why caution can be prudent when introducing new ideas. Online learning will fundamentally change how we educate our children and there must be solid research guiding this change. Based on what I have read and discovered, there is still a great deal of research that needs to be done on how this type of teaching effects students, not just academically, but socially/emotionally as well.

I believe when I started this study, I was naïve about where my district was heading concerning online learning. I was incredibly impressed with the summer school administration. The lead administrator pushed back initially, but once they understood what I was trying to achieve, they were receptive to consider online learning. It was fascinating to hear about how their job entailed using online learning to help struggling students and the success they were having with the method. They also told me about where the district was planning to go in the next few years with online learning and how there was a true focus on helping all students using this method, both for those in need of remediation and those looking to advance.

The parents in this study informed me how to better work with parents in the future. These participants were excited about the research and its implications down the road. Many of them had younger, elementary age, children and understood online learning will be an option for those children as they enter middle and high school. Through my teaching experiences, I have learned parents want to be heard, but this study showed me how, with the right questions, parents can be more than just heard and become a great resource. Multiple parents discussed their own readings about online learning in preparation for summer school. They wanted to make sure their child was successful, so they prepared themselves to better prepare their child. They were happy to discuss what they had done and the effect it had on their child's work. It is easy to give lip service to bringing parents into the educational setting, but these parents showed how important they are in the education of their child. As more children work from home on coursework, their parents will be their support system and if most parents are like those in this study, online students working from home will have a great support system in place.

Finally, this study reminded me of the importance of teachers. There seems to be a fear as online learning grows, the teacher will take a backseat to the method. I can attest that this is not the case. Students I observed, not just those participating in the study, but those sitting the rooms at SSC1 and SSC2, sought the teacher out and asked questions about their work. All students, not just those in a face to face course, will need teachers for clarification. Each student has different needs and online learning is a great way to adjust lessons to meet those needs, however, the teacher is the key to making that student a complete success. As districts continue to grow their online offerings, they must make sure they have quality teachers in place to support their students or those students will struggle.

Recommendations for Future Studies

The data collected creates a broad picture of the summer school online learning program. We have a better understanding of stakeholder opinions and, more importantly, what types of lessons students want to work on to find success. However, this study should be expanded to focus on a larger group that includes a larger cross-section of the district. Additionally, the study should be replicated but focus solely on those students taking courses for remediation. This study had two major limitations in addition to the overall number of participants, all participants were working on coursework for advancement and all were female. The results could be significantly different if you added male students and those working for credit recovery.

To Frisco ISD, I would recommend several items. The first would be to select one platform for their online course offerings. During the study, all participants used the same platform, *Edgenuity*, but other courses were offered on other platforms because Frisco still owned licenses for students to access them. Most of these licenses were for credit recovery software, which the district had purchased in previous years and planned to do away with when the contract expired. There should be consistency amongst the course offerings which will alleviate student frustration and the need for teachers to be trained on multiple platforms.

The second item would be to investigate the cost effectiveness of having teachers design the districts online courses. Curricula are in place for all courses across the district, so would it be more cost effective to train a group of teachers to adapt that curriculum for online use instead of paying for licensing from private companies? The district already owns a major LMS platform, Moodle, but it is not widely used according to the summer

school administrators because it is not user friendly. Additionally, the teachers I interviewed were very excited about the method and wanted to help beyond what their summer school duties included. In a district the size of Frisco, there should be many teachers willing to work in a solely online environment. This would also create an opportunity for the district to work with the students in determining what types of courses should be offered first and receive student input on course design. This brings the various stakeholders together for one common goal. The up-front cost would be the largest, but once paid, the maintenance would be significantly less. However, this should be compared to the cost of purchasing licenses and if they cost for licenses is less, they should stick with that method.

Finally, one parent stated they were unaware of Frisco offering online summer school and found out through a friend instead of the district. I think Frisco should market online learning more as they grow their course offerings. As the district expands its online offerings to the regular school year, they should hold meetings with parents and students to discuss the benefits of online learning. The parents in this study showed they were well informed, but the district could use these meetings to demonstrate the benefits of online learning and how they, the parents, were necessary participants in their child's success. It would be a great way to increase the partnership between the district and the public while helping students.

Closing Thoughts on Chapter 5

Online learning has great potential when used properly and Frisco ISD is on a path to realize that potential. The results of this study create a context for how the district is

doing with its current online offerings but creates an incomplete picture of where the district could be going. The data shows students are finding success, but the assignments offered were not of the highest caliber when it came to creating in-depth knowledge of a subject. This can be easily remedied and, based on the interviews with administrators, will be as the district moves forward. Online learning at the secondary level in Frisco is still in its infancy, but there is definite interest in the method and how it can help students find academic success in both remediation and advancement. I was amazed at the growth and potential growth of online programs in the district and believe the data collected during this study will aide the district as it continues looking into the online teaching method. The plans Frisco has for the future of online learning are exciting and by including all stakeholders in their planning, the future is bright for the online students of Frisco ISD.

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APPENDIX A

Administrator Semi-Structured Interview Protocol

The purpose of the interview is to explore the administrators' beliefs about the most engaging assignments in online course management systems. For this purpose, the following questions will be posed.

1. Have you ever taken an online learning course?
    a. If yes, what was the experience?
2. What qualities of an online assignment do you believe are necessary for student engagement in an online learning course?
3. What are some of the benefits/drawbacks to online learning?
4. Do you think more online courses should be offered at the secondary level? Why or why not?
5. What does the future look like in online K-12 education?

APPENDIX B

Student Pre-Interview Protocol

The purpose of the interview is to explore the students' beliefs about the most engaging assignments in online course management systems. For this purpose, the following questions will be posed.

1. Are you excited about your online course? Why is why not?
2. Have you ever taken an online learning course?
    a. If yes, how was the experience?
3. What qualities of an online assignment do you believe are necessary to hold your attention in an online learning course?
4. What do you think will be the easiest part of the course? The hardest?
5. What types of lessons do you prefer in a face to face classroom? Why?

APPENDIX C

Parent Interview Protocol

The purpose of the interview is to explore the parents' beliefs about the most engaging assignments in online course management systems. For this purpose, the following questions will be posed.

1. Have you ever taken an online learning course?
    a. If yes, what was the experience?
2. What qualities of an online assignment do you believe are necessary for student engagement in an online learning course?
3. What are some of the benefits/drawbacks to online learning?
4. Do you think more online courses should be offered at the secondary level? Why or why not?
5. What do you think of the school district offering online courses to students?
6. What does the future look like in online K-12 education?

APPENDIX D

Teacher Interview Protocol

The purpose of the interview is to explore the teachers' beliefs about the most engaging assignments in online course management systems. For this purpose, the following questions will be posed.

1. What do you think of online learning courses?
2. Have you ever taken an online learning course?
    a. If yes, how was the experience?
3. What qualities do you think are necessary for success in an online learning course?
4. What are some of the benefits/drawbacks to online learning?
5. Do you think more online courses should be offered at the secondary level? Why or why not?

APPENDIX E

Student Observation Protocol

The purpose of the observations is to determine which lessons are most engaging students successfully. For this purpose, the following protocol will be used.

1. Student gender:
    a. Male
    b. Female
2. Student classification (starting the semester following summer school):
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
3. What subject area is the student working in?
4. Is the student taking the course for remediation or advancement?
    a. Remediation
    b. Advancement
5. What type of assignment is the student working on?

6. How engaged is the student while working on the assignment?

   1 (Not at all)

   2 (Somewhat)

   3 (Engaged)

   4 (Very)

   5 (Highly)

   Notes:

7. How long was the student engaged in their work?

   0-5 minutes

   6-15 minutes

   16-25 minutes

   26-35 minutes

   36-45 minutes

   Notes:

8. If the student is not engaged, what are they doing instead?

9. Did anything disturb the learning environment? If so, what?

APPENDIX F

Student Post-Interview Protocol

The purpose of the post-interview is to explore the students' beliefs about the most engaging assignments they completed in the online course management systems. For this purpose, the following questions will be posed.

1. Which online assignments do you feel you were the most success/unsuccessful? Why?
2. Describe what online lesson you enjoyed the most? Why?
3. Describe what online lesson you enjoyed the least? Why?
4. Based on your experience, would you take another online course? Why or why not?