

Teachers' experience of changes to their teaching methods because of the COVID19 pandemic:
A case study of teacher experiences during remote learning in a rural school district.

by

Jamie Hibbs

B.A., Wichita State University, 2001
M.E., Southwestern College, 2010

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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A qualitative case study is conducted to collect the actual experiences and perceptions of teachers during the 20-21 school year in one rural school district as they implemented changes and constructed new ways to teach during the pandemic. A survey and interviews were conducted to identify the correlation between years of experience and ability to adapt to teaching in a new mode. Implications include how change is accepted and implemented by teachers and how the pandemic could be a pivotal movement in the educational field.

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Approved by:

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Chapter 1 - Introduction

Background

In March 2020, the World Health Organization (WHO) declared a global health pandemic from the spread of COVID-19, a novel coronavirus that originated in China in late 2019 and spread worldwide. At that time, there were “118,000 cases in 114 countries, and 4,291 people have lost their lives” (Adhanom Ghebreyesus, WHO, 2020, para. 2). As a result, many countries shut down all non-essential businesses, travel, and schools in an effort to stop the spread of COVID-19. Shutdowns were met with a mix of support and protests. On March 18, 2020, Kansas Gov. Laura Kelly, through Executive Order 20-07 closed all Kansas schools for the remainder of the 2019-2020 school year (for about 9-10 weeks of school). Kansas was the first state to shut down all K-12 schools in an effort to stop the spread of the coronavirus and many states followed Kansas’ example in the days/weeks to come. Despite in-person learning ending, Kansas continued to offer remote learning opportunities via online platforms or packets mailed home or picked up by parents/families. The United States had never experienced a widespread shutdown of this scope, certainly not in modern history, and certainly not the closing of all schools for so long.

The remote learning experience after the shutdown in Spring 2020 was not ideal for teachers, students, or parents (Averrett, 2021). Teachers were given about one week to make the necessary preparations to move to online, paper packets, or distance learning. The inequities for students and teachers in internet access, device access, and working space/support were made alarmingly clear (Haderline, et. al., 2021). Not all students had a comfortable, quiet learning space with a device for themselves with unlimited wi-fi access. Many parents/guardians still had to work essential jobs, so they weren’t at home to assist in remote learning activities. Other

parents/guardians were working at home and had trouble managing their own work along with helping their children learn from home (Heggeness & Fields, 2020; Daniela, et al., 2021). Some teachers were managing online classrooms from home while trying to help their own children learn. Students struggled with being away from the physical routines of school, their friends, and support of their teachers, especially students who received Special-Education services or English Language Learners (U.S. Dept. of Education, 2021). Certainly, there were some benefits of being able to spend quality time at home with the cancelation of so many sports, extracurricular activities, and the expectation to stay home. However, for most teachers, students, and families it was a stressful time.

For many teachers, remote learning in Spring 2020 was their first experience teaching online using various platforms: SeeSaw, Google Classroom, Zoom, or Google Meet, etc. (Adams, 2020). Many teachers had to learn as they went and adapt as needed. Some teachers who might have been resistant to try some of these online tools previously were forced to use them in an online learning environment with very little or no training (Adams, 2020). Everything that research indicates about developing sustainable school reform and change was turned upside down as schools and teachers had to very quickly adapt and continue instruction. The word “pivot” was often used to describe the quick turn needed to switch from in-person to distance learning. Parents/guardians were also forced to be more actively involved in their children’s learning as they supported students at home with the online tools and the curriculum (Heggeness & Fields, 2020). Regulations on seat time, grades, state assessment/testing were all relaxed or eliminated in Spring 2020. In Kansas, students did not take state assessments in the Spring of 2020, so there is a gap in data. Some schools paused student grades in March and any work after that time was only for improvement. Administrators and the public spoke about giving grace to

students and teachers. Parents and families were mostly appreciative of the work of schools/teachers to continue to provide meals, learning opportunities, and a small bit of normalcy during Spring 2020 (Daniela et al., 2021). It wasn't all perfect though, many students without internet access weren't able to connect remotely with their classmates or teachers to get help. Some students on IEPs weren't able to get the hands-on learning, paraeducator support, or tools that they needed to be successful (Government Accountability Office, GAO, 2020). The 2019-2020 school year ended anti-climatically with the turning off of a screen instead of the graduation ceremonies or class parties that were all canceled due to the pandemic. Everyone was hopeful that they would never experience a shutdown again.

During the summer break (as the global health pandemic continued), schools were directed to make some significant operational changes to be allowed to open to in-person learning during the 2020-2021 school year. Those requirements weren't released in Kansas until the middle of July from the Kansas Department of Education (KSDE) in the *Navigating Change: Kansas Guide to Learning and School Safety Operations*. Curriculum changes were made by narrowing down the standards and a move to competency-based standards and learning. Additionally, schools had to deal with the procedural changes recommended by the CDC: face-masks, 6-feet social distancing, temperature checks for all people entering a school building, extensive contact tracing of exposure, etc. Much of the focus at the beginning of the year was how to adapt to the operational changes. How can a classroom of 25 students fit in a space and still have 6-feet social distance per person? Will students be able to wear a mask for 6+ hours a day? What happens when students and/or teachers get sick and have to stay home to quarantine for 10-14 days? The operational changes seemed to be the focus at the beginning, and schools were just trying to figure out how to make school function based on the mandates. For the 2020-

21 school year, districts in Kansas were given the directive to offer in-person, remote, and/or hybrid learning options based on the local spread of the virus and the ability to meet the operational mandates (explained in the *Navigating Change* document described above). While the state provided some guidance and mandates, it really was up to the local district and school board to make the final decisions. In some communities these mandates and recommendations were hotly debated issues (Lenthang, 2021). Not all communities in Kansas believed the coronavirus to be that harmful that such extreme measures needed to be taken. Not all communities passed mask mandates, even some argued vehemently against masks. Unfortunately, these divisions were often political in nature and caused a great deal of divides in communities as schools were forced to put into place safe practices (McShane, 2020). Districts were in the spotlight more than ever before as the school board determined if school would be in remote learning or if sports/activities were allowed to play. Despite gatekeeping measures being drafted to determine when schools should be in remote learning or not, the gatekeeping guidance wasn't always followed; many decisions were dependent on the beliefs of board members (Groves, 2021).

Despite having several weeks to plan during the summer, not all schools were fully prepared to start the school year, nor were communities in agreement about what mode(s) (online, hybrid, in-person) school should be offered (Menasce Horowitz, 2020). Additionally, Kansas saw a spike in the spread of Covid-19 and had a higher number of cases than when the shutdown was issued in the Spring. Late in Summer of 2020, Gov. Kelly used *Executive Order #20-58* to delay the start of school until September 8th, about a 3-week delay from the normal school year. As the pandemic became more politicized, the executive orders were allowed to be overturned by local authorities, so some schools opted to start at their normal dates and others

opted to wait until September 8th (Robertson, 2020). Waiting to start until September gave schools some time to purchase masks, thermometers, plexiglass dividers, technology, etc. to meet the procedural requirements (Camera, 2020). This also allowed teachers to plan changes to their classroom procedures and learning environment. Teachers were given some additional professional development and told to be prepared to teach in-person or remote learning, including being able to switch from in-person to remote learning with only one day notice. Teachers also needed to be prepared to teach students who were at home in quarantine and that students and staff might be rotating in or out of the building as people were exposed to the virus. Once again, much of the focus was on online learning platforms to reach both in-person and at-home students; often at the same time through synchronous systems. Many of these changes were forced changes for teachers and a change they wouldn't have otherwise made (Klein, 2021).

Contextual Framework Overview

The act of pivoting or shifting educational practices due to the pandemic required teachers to construct new understandings of teaching and learning and examine the role of the teacher and student in this new situation. As teachers, administrators, and students navigated the changes to school brought about due to the pandemic, they were constructing new experiences related to school, learning, and teaching. Constructivism is “an approach to learning that holds that people actively construct or make their own knowledge and that reality is determined by the experiences of the learner” (Elliott et al., 2000, p. 256). While constructivism usually defines how content is learned, in this instance, the pandemic changed not just what, but how students learned and how teachers taught; in other words, they were constructing new ways to conduct school. Teachers found themselves reimagining the classroom in a remote or combination of

synchronous remote and in-person learning (Henriksen, Creely & Henderson, 2020). The experiences teachers had prior to and throughout the pandemic play a role in the strategies and tools available in shifting the learning environment and methods of instruction, but this had to be combined with new methods and uses of technology-often with little time or training. Thus, known methods of classroom instructional change through practice-observe-provide feedback by Joyce and Showers (1988) weren't able to be utilized. The process of teacher development and educational change has been studied by some time (Fullan and Hargreaves, 1992); however, widespread forced change to new tools and methods of teaching was a unique situation and directly opposed to previous suggestions and research on implementing change (Fullan, 1992). Some teachers might have experience of teaching during a natural disaster or a short time with high cases of the influenza; however, teaching during a global pandemic that has impacted all schools/teachers during three school years was a completely unique situation (Onigbinde, 2018; Donnelly & Patrinos, 2021).

Instead of using research-based school-reform methods to implement changes, during the pandemic schools had to implement “forced changes” to operational procedures in the classroom, classroom expectations, and curriculum methods and delivery with online options. Previous research on forced change indicates “imposition of change can lead to low morale, dissatisfaction and reduced commitment. If schools and teachers do face changes not of their own devising, one way forward is for managers to take an active, participative, democratic approach to the management of that change” (Sikes, 1992, p. 49). An individual teacher's ability to maintain some control and choice over instructional decisions and to be flexible through this forced change plays an important role in how successfully they adapt to the new changes and feel confident in their teaching ability. Furthermore, Fullan and Hargreaves (1992) note “that age,

stage of career, life experiences, and gender factors-things that make up the total person-affect people's interest in and response to innovation and their motivation to seek improvement. Most strategies fail to take these differences into account, and consequently fail to be effective for many teachers. Teacher perceptions of their own competency and efficacy impacts their influence on student achievement, especially low-income and culturally diverse students (Tucker et al., 2005). During the 2020-21 school year, many teachers experienced the stress of the pandemic on themselves and their families and as well as the impact on their students and their families. Some teachers felt like teaching during the pandemic was as stressful as their first year of teaching and many more teachers than usual considered leaving the profession (Zamarro, et al, 2021).

Problem Statement

For many teachers, teaching online was a completely new experience with little time for preparation or training (Adams, 2020). Even more complicated were situations where teachers had students in the classroom and students at home live via video camera in a hybrid learning situation (Henriksen et al., 2020). Teachers who had never taught online were forced to make some significant changes to their classroom procedures and instruction (Adams, 2020).

Additionally, engaging a student at home versus in-person at the same time is not easy when the same resources aren't available (Howard et al., 2020). Moving assignments to electronic versions takes significant time by itself, but wasn't an option for the 2020-2021 school year, it had to be completed immediately. Teachers explored various technology tools: Google Classroom, Padlet, Kahoot, FlipGrid, online textbooks/resources, etc. The procedural changes like maintaining 6-foot social distance and wearing masks made doing small group work difficult, so adaptations had to be made to instructional strategies (Schwartz, 2020). Sharing supplies, books, textbooks,

computers, going to the library or computer lab, using lockers, etc. were not options that school year, so changes to creative projects or supplies had to be made as well. For some teachers, these changes were easy to make, in fact they had already been teaching using 1-to-1 Chromebooks, giving assignments via Google Classroom, and other technology tools, so the amount of change needed to adapt was minimal. For other teachers, the amount of change was monumental, overwhelming, and could put them on the brink of wanting to leave the teaching profession; even during the middle of a school year regardless of their contract (Zamarro et al., 2021).

During the 2021-22 school year, schools were still experiencing the pandemic, in fact rising case numbers caused many schools to move to remote learning or quarantine significant numbers of students and staff (Camera, 2021). Even now, four years after the initial shutdowns, schools still experience staff and students who are sick and need to complete the 5-day quarantine; what is unknown is how schools, teachers and students will continue to adapt. Some students have been unsuccessful in remote or hybrid learning environments, while others have flourished--and the same could be said for teachers--some overwhelmed and others have been able to adapt (Hinton, 2021).

Today, schools are in their fourth year of dealing with the consequence of the pandemic and have had to make several changes to curriculum, operations, and methods of teaching. Several months into the pandemic, many people experienced fatigue at the restrictions and were opposed to mask mandates or other safety measures. Some communities were divided by individuals who continued to ignore safety restrictions and moved about as if the pandemic wasn't happening, while others continued to stay home in quarantine (Yong, 2021). This same divide appeared in schools as families of both extremes and those in the middle were sending their kids to school where parents clashed about safety procedures (Frieden, et al., 2020). The

politicizing of the pandemic has had a significant impact on schools because plans to reopen were based on politics rather than public health (Valant, 2020). Early in the pandemic, parents were thankful for teachers continuing to teach, but as the pandemic continued some parents were frustrated with their schools and teachers. Unfortunately, with the number of positive cases so high in the winter of 2020 and again in July-September 2021, it was increasing likely that everyone knew someone who was sick, had COVID and even likely that they know someone who died as over 250,000 people died of COVID in the US as of November 2020 (CDC, 2020). By Aug 2021, the number rose to 640,000+ deaths and was likely higher (CDC, 2021). The first wave of the pandemic didn't impact children as much as the Delta variant wave in 2021. While vaccines were available for free to anyone 12-years old and older, the number of vaccinated individuals was still too low to reach enough immunity to slow the spread of COVID-19 (D'Souza & Dowdy, 2021), so schools continued to deal with the role they played in keeping their communities, students, and staff safe.

While some of the changes to schools have been positive others have had a negative impact, and the long-term impact of the pandemic on teaching/learning/schools is still uncertain. In the Department of Education's report, *Education in a Pandemic: The Disparate Impacts of COVID-19 on America's Students*, detailed 11 observations regarding how the pandemic was impacting students but did not address how the pandemic was impacting teachers or instruction. The pandemic will certainly have some impact on all areas of the education field, so it is important to document those changes during and after the pandemic. Years from now, researchers will study the impact of the pandemic on all facets of society, including education and these studies and observations made during the pandemic will be one of pieces of evidence.

Purpose of the Study

The purpose of this study is to examine how teachers constructed new understandings of teaching and learning and adapted their methods of teaching during the 2020-2021 school year as a result of the COVID-19 global pandemic. Additionally, to document the experiences and changes teachers underwent in hybrid and remote/virtual learning environments to prepare for this unprecedented, forced change. The pandemic forced some teachers to make some drastic changes to the way they teach with very little training. By hearing from teachers' first-hand experiences during that time of transition, researchers have the opportunity to learn from and document the changes as they happen. Additionally, insight on how those changes might impact the future of schools and learning can help predict if the pandemic will serve as a catalyst for change in the field of education pre-pandemic versus post-pandemic.

Research Questions

The study sought to understand the teacher perspective of educational change during the COVID-19 global pandemic, particularly the 2020-2021 school year. I collected the descriptions of teacher's experiences during remote learning and how their classroom instruction changed.

Overall Research Question: In what ways, if any, did teachers' past experience and pedagogical knowledge influence their transition to remote/hybrid learning during the 2020-2021 school year?

1. In the teachers' perception, in what ways, if any, did their teaching practices change as a direct result of the pandemic? The descriptions of teaching prior to the pandemic and during can help identify key differences or similarities. Some teachers may feel pressure by the forced changes and others may welcome the opportunity to try different teaching strategies/methods.

2. What factors or characteristics contributed to teachers' perceptions of their success and challenges in teaching during the pandemic? There could be a variety of factors, including but not limited to years of teaching experience, prior experience teaching online, flexibility in teaching methods, confidence in using technology, etc.
3. What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years? It will be interesting to see if teachers see the changes due to the pandemic as permanent or temporary changes to their practice; thus, impacting the future of education. This last question is more pivotal for the implications of how the pandemic creates change within the overall field of education. Is it enough to spark more systematic changes at all levels--national to local policies and practices?

Methodology

Due to the subject matter and context of this study, I utilized a qualitative design using a descriptive case study approach. This approach was best for hearing the voices of the teachers as they described their experiences and perceived changes due to the pandemic. The research took place in a rural Kansas school district within two secondary school buildings--a middle school (grades 6-8) and high school (grades 9-12). The teachers within these buildings experienced the same integration of technology, similar professional development, and common students/families, including socio-economic and diversity. Teachers were asked to reflect on and describe their classroom instructional experiences during the 2020-2021 school year.

An anonymous Qualtrics survey was sent to approximately 100 teachers) middle and high school teachers in one rural school district was utilized to gather information about the amount of perceived change and types of changes/adaptations the teachers experienced during the 2020-

2021 school year. The survey gathered information about the amount of change required to teach remotely. Additionally, 10-15 teachers were invited to complete a more in-depth interview with the possibility of a follow-up interview if it was needed. The Qualtrics survey results were used to triangulate information gathered from interviews. The interviews included more in-depth descriptions of the experiences and perceptions of teachers teaching during the COVID pandemic and descriptions of the changes to their classroom instruction.

Delimitations

While widespread change was experienced throughout schools in the United States, I focused this study on the experiences of teachers in one rural Kansas school district at the middle and high school levels. The study was limited in that it was the views of just one school district, so other districts may have had similar or different experiences based on a variety of factors from prior technology integration or professional development. All school districts handled the pandemic differently, some did not implement hybrid or synchronous learning of in-person and remote students, so each school/district does have some variance to the types of changes that were created due to the pandemic. However, there were enough school districts with similar situations that the experiences of these teachers will be similar to those in other school districts. By narrowing the scope more depth could be explored related to prior teacher experience and flexibility to forced change without having to explain multiple school district's nuanced approach during the pandemic. As other researchers explain their own situations, a wider body of research can be compiled to learn the broader implications of the pandemic on teaching.

This research focused on the remote learning and hybrid learning experiences of teacher and not on online learning. Online learning as a teaching model has been around for many years now and is grounded in pedagogical best practices and research.

Rationale for Significance

Prior to the pandemic, the field of education was experiencing a transition from *No Child Left Behind* to *Race to the Top* to *Common Core Standards* and the following public backlash--in many ways the field of education was stagnant--scores had stalled and there was still evidence of a factory model of learning with pockets of innovation (Lehman, 2019). Both NAEP and PISA scores showed a flatline in student growth in reading and math since early 2000s (Desilver, 2017). Many schools had increased the availability of technology and even dabbled with blended or online learning, but it was not uniformly accepted or incorporated equitably (Milakovich & Wise, 2019). The pandemic forced widespread change throughout the United States--unlike previous education initiatives. How students were impacted by the pandemic was well documented in a report from the U.S. Department of Education: *Education in a Pandemic: The disparate Impacts of COVID-19 on America's Students*. How teachers and students interact for educational purposes in the United States, and even the world, has never experienced such drastic change in such a short amount of time--change that could only happen because of catastrophic measures. No doubt the pandemic will have a significant impact on teaching and learning--some positive and negative. Studying and documenting how teachers navigated these changes is important for recording what happened and using it for future change and impact on the field of education.

Rural Schools faced unique challenges during the pandemic, especially with internet access since high-speed internet is not available to some teachers or students who live outside coverage areas. In a survey of Kansas educators, “approximately one-third (32.6%) of educators indicated the use of personal hotspot for connectivity ... and 68% reported collaborating with community partners” (Bonella, et al, 2020, p. 2). The challenge and inconvenience teachers

experienced trying to connect live with their students or uploading assignments or videos made teaching much more difficult during remote learning. For students, this meant missing out on the live instruction or feedback from the teacher and the opportunity to socialize with peers during remote learning. The pandemic has shown Harmon's (2001) conclusion on rural schools as just as important today that "...the mission of rural education is to meet student needs while addressing community needs" that the key characteristics of rural schools can be a powerful way to not just help students, but also the community in general (Harmon, 2001, p. 14).

Rural schools were more likely to offer in-person learning than urban schools. A RAND Corporation survey found that "only 17 percent of urban districts, compared with 42 percent of rural districts were offering fully in-person instructions" (Schwartz, et. al, 2021, p. 3). This disparity comes partly due to internet access, but also the politics of rural communities. Being open to in-person learning also meant dealing with lots of absences or closures due to quarantining or active COVID-19 cases. With remote learning and school closures it also meant more challenges with distributing food to students. In an urban setting, distribution was localized to a smaller area, but in rural schools with vast geographic areas, distributing food to students became much more challenging (McConville, 2020). Food, technology access, and ability to interact with adults were challenges for all schools, but uniquely so for rural schools.

Schools, administrators, and educational organizations will want to know the impact of forced change on teachers for understanding the change process, especially as it relates to future change initiatives. Additionally, the perceptions of teachers on how successful they were teaching during a time of uncertainty and widespread changes can help explain the impact on student learning.

Researcher Positionality

As an educator with 20+ years of experience, I'm working in the field and school district I studied. However, my relationships with the teachers hopefully yielded more honest and detailed accounts of what they experienced while teaching during the pandemic. My understanding of the situation within my district allowed for more nuanced explanations of the impact of the pandemic on teaching. And while not all schools had the exact same experience, many of the teacher experiences were similar.

I was raised attending public schools in Kansas and attended my local university to pursue a degree in education. I've been a teacher for 21 years in Kansas. I started teaching as a high school English and debate teacher. Currently, I work as an academic coach (instructional coach) at a large rural high school with approximately 850 students. In my position, I mentor new teachers, help design and deliver professional development to all staff, am the building testing coordinator, serve on various school and district committees, including the building leadership team, etc. I've been in education long enough to work with several different administrators and experience several iterations of standards/curriculum changes. In my experience, significant change is often slow and often requires getting buy-in from staff and opportunity for training. The type of leadership can make an impact on how successful change happens.

Even though I serve on the leadership team, my job contract is still a teaching contract and I'm seen as a peer to other teachers. I also still teach the debate class in school, so many still see me as a teacher—I still enter grades and prep for a class like any other teachers. However, not all teachers, especially newer teachers might not consider me as an equal at the beginning. However, I work hard to build relationships of trust with teachers and see my role is to also learn from them as well, especially since at the secondary-level teachers are content-specialists. I don't

consider myself as better than any of the teachers I work with, but I do recognize we all have different strengths and weaknesses and those are to be valued. I saw this research as an opportunity to further build relationships with staff as a listener and document their experiences. I have found that teachers often just want to be heard.

I have long advocated for technology integration in the classroom—not as an end, but as a means to improve learning and to give all students access to technology tools. I served on our districts original technology committee that adopted 1:1 technology over 10-years ago. I’ve helped many teachers become more proficient in using technology in their classroom. I recognize that everyone was in a different place with technology integration and witnessed first-hand during the 2020-21 school how some teachers adapted easily to remote learning and others struggled. Sometimes the struggle wasn’t related to the actual technology, but how teach and engage students in a different mode of learning. I also witnessed successes as teachers embraced a new style of teaching and were able to reach some students in a new way. As a debate teacher, I worked with other debate coaches to convert to online tournaments via Zoom—it wasn’t easy, and not ideal, but it was better than nothing.

Definitions of Key Terms

The following definitions will help to clarify the scope of this research:

Asynchronous: Students learn online from materials that the instructor has sent or posted in an online learning management system (LMS). The student can access the materials anytime they choose to work on the material. (Scheiderer, 2022).

COVID-19 Pandemic: A global outbreak of coronaviruis (SARS-CoV-2), first detected in China in December 2019 and spread rapidly around the world. The World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC) in March 2020.

In May 2023, WHO downgraded from PHEIC to endemic-an ongoing health issue. The WHO estimates that 3.4 million people died from the COVID-19 pandemic. (WHO).

Emergency Remote Learning: “a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated” (Hodges, et al., 2020). I would further clarify that the Spring 2020 shutdown and move to remote learning was true crisis teaching. The remote learning of the following school year was still emergency remote learning, but teachers did have some more time and preparation for remote learning in the 2020-2021 school year.

Forced Change: Changes that teachers are required to implement without their input or without using a research-based implementation process. (Sikes, 2002).

Hybrid Learning: A mix of in-person and online instruction, sometimes occurring at the same time with students physically in the classroom and students off-site connecting into the classroom virtually (Lieberman, 2020).

Online Learning: “Online education is defined as education being delivered in an online environment through the use of the internet for teaching and learning. This includes online learning on the part of the students that is not dependent on their physical or virtual co-location. The teaching content is delivered online and the instructors develop teaching modules that enhance learning and interactivity in the synchronous or asynchronous environment” (Singh and Thurman, 2019). Online learning has specific pedagogical and research-based process that include the course design, interaction between students and students and instructor and contained within a learning management system (Lockman & Schirmer, 2020).

Quarantine: Separates and restricts the movement of people who were exposed to a contagious disease (CDC). Schools had to quarantine students and staff for 5-10 days depending on their exposure and if they became sick (KDHE).

Remote Learning “Remote learning, a phrase regularly used in schools and universities in their 2020–21 pandemic guidance, simply means learning which happens when the learner and teacher are not in the same place, and possibly not active at the same time. So this can encompass both synchronous (live) and asynchronous (at different times) learning activity. This sounds like a very simple distinction but is one which is regularly misunderstood” (Greener, 2021)

Rural School: A rural territory is defined by the National Center for Education Statistics as rural-fringe that is less than or equal to 5 miles from an urbanized area to rural-remote as more than 25 miles from an urbanized area. (National Center for Education Statistics, 2022).

Synchronous: Students attend class virtually at a scheduled time with the instructor and other classmates. Similar to an in-person class that has a schedule day and time, but meets virtually. (Scheiderer, 2022).

Teacher’s Perception: An awareness of their own teaching is related to their knowledge, beliefs, and attitudes. A construct of their reality in the classroom, of their teaching and student learning. (Purković, D. & Kovačević, S., 2020).

Teacher’s Experience: The actual lived experiences of the teacher from their point of view.

Experience gained over time enhances the knowledge, skills, and productivity. (Rice, 2010).

Organization of the Study

The remainder of this study will include the following: a review of the literature in Chapter Two, a discussion of methodology utilized in Chapter Three, research findings in Chapter Four, and implications and suggestions for further research in Chapter Five.

Chapter 2 - Literature Review

Introduction

The abrupt closure of so many schools during the COVID-19 global pandemic is unprecedented in modern times, especially in the United States. Certainly, there have been times of temporary closure, such as snowstorms or even more substantial closures, such as Hurricane Katrina in the South; however, nothing of this duration and scope in the United States. EdWeek (2020) reported that “Only two states (Wyoming and Montana) did not close their schools for the remainder of the [2019-20] year” (para. 20). Closure did not mean learning stopped as schools moved to remote or virtual learning to complete the school year, as school is more than just a place of academics, as UNESCO (2020) stated:

School closures carry high social and economic costs for people across communities.

Their impact however is particularly severe for the most vulnerable and marginalized boys and girls and their families. The resulting disruptions exacerbate already existing disparities within the education system but also in other aspects of their lives (p. 73).

UNESCO goes on to identify 13 key consequences of the COVID-19 school closure. This literature review attempted to make sense of the forced shift teachers had to undertake as a result of closure and possible impacts on the future of classroom instruction based on these changes.

Forced Change

In education, change is slow - really slow. Major reforms can take years to implement, analyze the data, and determine if the change was impactful or not; even minor reforms can take months and years to result in full adoption, and even longer to get reliable data about the change efforts (Brady & Hazelkorn, 2019; Zhao, 2021). However, the COVID-19 pandemic forced one of the

quickest changes on nearly every teacher and student in the US and around the world. Fullan (2020) commented that at the beginning the pandemic provided an opportunity for

“‘positive innovations’, as in ‘a crisis is a terrible thing to waste.’ But as the pandemic became prolonged, I began to see that the disruption was also an opportunity for what I would call ‘negative change’, such as proliferation of technology without good pedagogy, or the move to privatize public education systems. It could be referred to as a ‘free for all’ with a range of change makers in the mix” (para. 6).

Teachers were forced to move quickly to a remote learning environment with virtual learning experiences and without much time for in-depth training (Adams, 2020). For many teachers that meant video conferencing via Zoom, Google Meet or another platform to teach class live from their home to the homes of their students (Klein, 2021). Millions of students were left behind who didn’t have access to a device or reliable internet (Richards, et al., 2021). It is too early to see the full impact of this shift, but certainly the move to online teaching by so many at one time was one of the fastest education reforms to take place recently (Zhao, 2021). This shift is unique in that this scale of change would otherwise seem impossible based on previous research of system-wide reforms in education and changes at the classroom level.

Education change at the broader system level and individual classroom level has been the focus of research for several decades now (Zhao, 2021). Districts and administrators often fret over how to make change within their schools to improve the learning environment and student outcomes (Lynch, 2014.) From a behavioral science perspective, the concept of change and how a teacher adopts changes can be described with three types of schematic changes: first, second, and third order change (Bartunek & Mock, 1987). For teachers who already adopted technology tools, moving to remote learning would be considered a “first-order change: the tacit

reinforcement of present understandings” (Bartunek & Mock, 1987, p. 23). However, for teachers who were reluctant to use technology, their level of stress in not only moving to remote learning, but also adjusting their beliefs on how they teach required “second-order change to commence, some type of crisis must be associated with the present schema” (Bartunek & Mock, 1987, p. 23). The “crisis” created by the pandemic resulted in major changes to teacher instructional practices and integration of technology. Some of the changes were successful and others were not, and other impacts may not be fully known until post-pandemic (Zamarro et al., 2021).

Change leaders and researchers, Fullan and Hargreaves, have spent their entire careers studying educational change and the complexities of teacher beliefs and leadership style that creates effective change. However, during the pandemic there was no guide for navigating “traditional” change methods from leadership, using data-driven ideas, relying on school culture, or building capacity do not address how to lead successful change during a pandemic (Adams, 2020). Instead, this change was crisis change; an analogy was used—“flying the plane while building it” (Brown, 2020). Fullan even warned in his book, *Leading in a Culture of Change* (2020), “If they [leaders] are in too much of a hurry, they will fail—you can't bulldoze change (p. 15)” However, schools didn't have a choice, but to hurry and change. Fullan elaborates further:

The odds favor the status quo—and if they do that, they favor *decline*. In dynamic times, there is no such thing as standing still. When people contemplate change, what is being lost is palpable and immediate; the gains are theoretical and in the future (2020, p. 17)).

In this case, the crisis may have been just the push that was needed to make change. Time will tell whether the changes made during the pandemic will be positive or negative. Heifetz (1994) offers an explanation to how leaders help navigate change in times of crisis:

In a crisis...we call for someone with answers, decision, strength, and a map of the future, someone who knows where we ought to be going—in short someone who can make hard problems simple...Instead of looking for saviors, we should be calling for leadership that will challenge us to face problems for which there are no simple, painless solutions—problems that require us to learn new ways. (p. 21)

The solution to teaching during a pandemic required new ways of teaching, new ways of connecting with students and families, and engaging students in learning (Zhao, 2021). Imposed change can often lead to negative results. Patricia Sikes (1992) warned that:

Changes that are imposed from outside threaten and can undermine the values and beliefs and the ways of doing things which make up teacher cultures. The result can be that people lose their sense of meaning and direction, their ‘framework of reality’, their confidence that they know what to do, and consequently they experience confusion and a kind of alienation (pg. 43).

While Sikes wasn’t discussing changes imposed based on a crisis or a pandemic, but by politicians; however, the results may end up being similar due to some teachers disagreeing with the direction education takes as a result of the changes. Sikes continued to discuss how experienced teachers might respond in imposed change situations: leaving, resistance and sabotage or a reverse by using the change as an opportunity they didn’t initially see as positive (Sikes, 1992). While living through the pandemic, it is hard to forecast the long-term effect of the pandemic on the teaching workforce. The connection between how a teacher viewed the imposed change could greatly impact the strength of the teaching force over the next 5-10 years. How schools supported teachers during the pandemic may play a significant role in various aspects of the future of teaching/schools from job satisfaction to the types of instructional

strategies teachers utilize in the future to what types of professional development is successful to create change.

Integration of Technology

The integration of technology in classrooms has been a hot topic for the past decade or more as more schools purchase technology, including 1-to-1 devices. A significant amount of time, money, and energy has been put into training teachers to effectively use technology in the classroom (Ganimian et al., 2020). Toledo (2005) summarizes three of the adoption models in Table 2.1, of how confident teachers are in integration of a technology tool with the goal being how to move teachers along to better and more effective integration. Afterall, schools and districts want to ensure the expensive technology is being utilized in classrooms and to the benefit of students.

Table 2.1. Summary of Stages of Adoption of an Innovation

Stage	Rogers Innovation–Decision Process	Gladhart Adoption Rubric for Computer Technology Integration	Russell Learning to Use Technology
1	Knowledge	Entry	Awareness
2	Persuasion	Adoption	Learning the process
3	Decision	Adaptation	Understanding and application of the process
4	Implementation	Appropriation	Familiarity and confidence
5	Confirmation	Invention	Adaptation to other contexts
6			Creative application to new contexts
(Toledo, 2005)			

However, the pandemic forced schools to adopt technology and move classrooms to online environments at the turn of a switch (Adams, 2020). Nearly every teacher and student experienced some level of digital learning. At the same time, the inequities of access to devices, home internet, etc. have risen to the surface. Moving to online learning during the pandemic, highlighted some of the inequalities in digital access and infrastructure as highlighted by Bessette in following quotation:

Our students face challenges due to unequal access, and we are finally taking those considerations seriously as institutions. As we move to distance delivery, our students are moving into spaces where they may not have access to the tools, technology and infrastructure necessary to keep learning this semester (Bessette, 2020).

For years, many schools had been making gains in increasing technology use and training and building the network needed for daily classroom use; however, not schools had not been moving to a fully online model prior to the pandemic, so the technology and training needed for online learning is different than in-person technology use.

Early in the pandemic, stories of students walking to sit outside their schools to access the internet could be found in the news, such as Jonathan, age 9 in New Mexico who walked every day to school to access the internet to complete schoolwork (Dreier, 2020). Like Jonathan, “3.7 millions households, had internet available sometimes, rarely or never” and “4.4 million households had limited or no access to a computer” (USA Facts, 2020, para. 3) making Jonathan’s situation not rare, but a reality for some students. The pandemic proved that access to the internet and a computer no longer is a privilege for only those who can afford it or live in an area with coverage but a necessity (Haderlein, et. al, 2021).

Pre-pandemic schools could have teachers at all different stages of technology integration (Adams, 2020). COVID forced some teachers to be further along in their use of technology, possibly even skipping some stages, which may lead to inadequate or harmful integration (Adams, 2020; Dabrowski, 2021). Toledo goes on to explain a five-stage model for universities to adopt to help prepare pre-service teachers, as seen in Table 2.2, which may be a model some K-12 schools/districts may also want to consider.

Table 2.2. Five-Stage Development Model of Computer Integration

Stage	Toledo Five-Stage Development Model of Computer Integration	Key Elements
1	Pre-Integration	Lack of leadership or support Not using or underutilizing computer technology Lack of infrastructure
2	Transition	Requirements of technology produces a shift Increase interest and vision for the use and integration.
3	Development	Acquisition of technical resources and information Planning and implementing faculty development programs
4	Expansion	Strengthening training and support Environment where risk is encouraged
5	Systemwide Integration	Evidence of technology embedded
(Toledo, 2005)		

The Toledo (2005) model in Table 2.2 represents a systematic way schools can implement technology tools in a planned method that systematically includes an pre-planning and

implementation. Using this plan, schools can effectively introduce technology; however, the pandemic meant skipping or only briefly visiting a phase, which could cause poor implementation or confusion. Notice that Stage 1 includes strong leadership and proper infrastructure are key to successfully using the five state process.

Despite teachers being forced to utilize technology, some of the frustration of teachers, students and parents might be due to teachers who don't have full confidence in their skills using a particular technology tool. (Shrier, 2021). When technology is working effectively for the teacher and student it seems invisible because the tool is working. However, when technology is most visible is when it isn't working, either due to teacher setup, student understanding, or network issues. Schools received very little time to train teachers on using new technology tools, such as video conferencing tools (Adams, 2020). The success or stress from pandemic teaching will greatly depend on the confidence a teacher has to utilize the technology tools available (Shrier, 2021).

Learning Environment During Remote Learning

Many states previously had seat time requirements for the length of time students needed to be in school per year to count towards funding and awarding credit for learning (Lieberman, 2021). However, in the time of the pandemic those seat time requirements still existed, so students and teachers found themselves working many hours on a computer during remote learning, including hours of Zoom or Google Meet classes (Noonoo, 2020). Some students and teachers were online for 7+ hours per day, which amounts to a significant amount of screen time. Whereas other schools shortened the school day and the time that students were required to be live online and actively engaged in learning and provided additional off-line learning (Mader, 2020). In a 2017 study by Parent et al. stated, "Findings indicated that, regardless of the

developmental stage of the youth, higher levels of youth screen time were associated with more sleep disturbances, which, in turn, were linked to higher levels of youth internalizing, externalizing, and peer problems” (p. 282). Increasing screen time for schoolwork may have negative consequences for youth beyond the isolation from learning at home (Parent et al., 2017).

While the move to a more integrated technology-rich learning environment could be positive, there was not enough time to fully implement best practices for online learning (Shrier, 2021). Teachers did not receive enough training to properly use the technology tools they were forced to adopt while conducting remote learning (Adams, 2020). Crespín-Trujillo & Hora argue that

future efforts to improve teaching and learning in community colleges should eschew the notion of ‘best practices’ that should be universally adopted, and instead meet faculty where they are to develop interventions, programs, and policies that are responsive to the realities of the post-pandemic community college classroom (2021, p. 19).

The same best practices need to apply to secondary classrooms as well. Zhao (2021) suggests the pandemic had the opportunity to make positive change, but “remote learning does not automatically make learning better. It only provides the opportunity for schools to rethink how education can be offered” (p. 8). Zhao continues to explain that the pandemic has highlighted the problems in the status quo’s educational design that looks the same for everyone. The teaching during the pandemic won’t fix the problem—it just shows that their other ways to design an educational model that can meet the needs of students differently (Zhao, 2021). Thus, what long-term changes teachers make to their teaching practices based on the pandemic is still not clear.

Impact of the Pandemic on Teaching

The student impact of the pandemic has been a regular topic in both news and research, including the U.S. Dept. of Education report, and is a focus area in the research (Donnelly and Patrinos, 2021). There is emerging research about the impact of the pandemic on teachers, and there is some regarding how the teaching field as a whole will be impacted--loss of life, the stress/burnout of teaching during a pandemic (Zamarro et al., 2021). It is hard to know the full impact of the pandemic on teachers at this time, as teachers and schools are still being impacted the experience, but the continual stress and fatigue is exhausting (Harris, 2021). Kim and Asbury's (2020) recent study on the impact of the school closure on teachers in England "identified six themes: (1) uncertainty, (2) finding a way, (3) worry for the vulnerable, (4) importance of relationships, (5) teacher identity, and (6) reflections" (p. 1070). These themes were identified from the narratives of teacher experiences during the initial shut down in the Spring 2020. Kim and Asbury conclude, "Teachers are the social fabric that holds the educational system together, and it is therefore important to protect their ability and capacity to fulfil their role" (2020, p. 1079).

Unfortunately, as the pandemic continues, fatigue, and impatience with the stress of following the operational procedures and bouncing back and forth between in-person, hybrid, and remote learning is taking a toll on teachers. The long-term impact of the pandemic on teachers is unclear and concerning, right now some teachers are experiencing burnout and stress unlike previous year's teaching (Zamarro et al., 2021). Surveyed teachers share the stress and burnout is more than usual:

The type of burnout that teachers are experiencing now is intimately related to how unrelenting the stress is. There is no end in sight for the pandemic, and this ambiguity can lead to an overwhelming sense of loss of control. Arguably this makes for a more

insidious form of burnout, one that is harder to shake off. This burnout is different because it affects far more teachers, leading to a systemic issue of demoralization” (Teach for America, 2020, para. 6).

As America continues to recover schooling from the pandemic, there are significant questions that need to be answered: How many teachers will be permanently sick or die as a result of the pandemic? How many additional teachers will leave the profession early due to burn-out and exhaustion? These will be aspects of the pandemic and education that will need further study.

Early in the pandemic, families and communities were very supportive of schools and teachers. However, that support has waned as the pandemic continued and parents were often at odds with the school over mandates such as masks or quarantining procedures (Zamarro et al., 2021). This added hostility towards schools and teachers as the pandemic continued just added another layer of stress and frustration and potential long-term problems for the teaching profession.

Teacher Perceptions

Some research and studies are emerging regarding the impact of the pandemic on teachers and students. One study examined teacher’s perceptions of how students coped with the pandemic. Teachers were more likely to make changes to their instruction if they see the change benefiting their students so they can be successful during the pandemic. “*Teachers’* perception of how their learners are coping have a strong automotive influence on their teaching effectiveness and may result in a self-fulfilling prophecy” (Jelińska & Paradowski, 2021, p. 9). Thus, teachers were more willing and likely to make changes if they believed their students would benefit from those changes rather than if they were just asked to make changes from administration. They also found that years of experience or knowledge of subject matter were unrelated to changes, but

changes came from how students were coping (or not coping) with the changes in instructional delivery via remote learning caused by pandemic. If more students were not coping, the teacher was more likely to make changes to their instructional style (Jelińska & Paradowski, 2021).

A study of higher education professors found that “The pivot most profoundly affected faculty with little or no previous online teaching experiences” and it was a heavy burden to switch numerous courses from face to face to online (Smidt, et al., 2021, p. 2). For most middle schools and high schools, learning pre-COVID was predominately face-to-face with even less infrastructure for online classes than college/university levels. As a result of the needed changes, “faculty burnout -- exacerbated by pandemic-related stressors, absent childcare and school, and unrelenting or even accelerating work expectations from colleagues -- poses real and serious risk for mental health challenges of unprecedented scope” (Flaherty, 2020, para. 4). The complicated nature of hybrid, online, and numerous shutdowns to school during the 20-21 school year added additional frustration for teachers (Schwartz, 2021). In an online environment, some teachers could not conduct the same classroom activities they would do in a classroom. Class discussions, group activities, labs, etc. are all more difficult in a Zoom session. Additionally, the one-on-one conversations teachers can have with students in person isn’t possible in a Zoom room full of students who are listening. How teachers adapted their activities and individual engagement of students could be an indicator if they felt successful or not teaching remotely.

A study in Germany surveyed new career teachers to better understand their ability to shift to online teaching due to the pandemic. This study examined two issues: the teacher’s connection with students and families and use of technology. The study concluded that students were able to maintain communication with parents, but interestingly, “Contrary to our expectations, early career teachers’ status as belonging to the generation of ‘digital natives’ does

not guarantee that they have developed sophisticated digital skills in general” (König, et al., 2020, p. 618). While new career teachers were often comfortable using technology, they weren’t as knowledgeable when it came to integrating technology and the curriculum together when delivering it to students (Harris, 2021). My own study examined both new career teachers and experienced teachers to see if they are similar or different in their experiences making the shift to remote learning and the impact of that shift.

In a qualitative study of secondary teachers (Howard, 2021) via an online survey shared through social media, the researcher created a TPACK (Technological, Pedagogical, and Content Knowledge) profile of teachers based on their readiness to convert to online teaching during the pandemic. Howard concluded that prior experience and strong institutional support were key factors for a positive effect on the transition. My own study examined some of these elements, but from a qualitative point of view.

No doubt that education itself will be changed by the pandemic, but it will take several years to see the impact and the extent of the changes to teachers, schools, and students. Fullan describes the change during this time as *de-skilling*,

We are all de-skilled in this prolonged period of non-linear ambiguity. We are in a more complex world compared to any time in the past. From a change perspective, there is nothing so complex to solve than the situation we have at present times, and there is no indication that conditions will get better (2020, pg. 27).

Undergoing the change to remote learning meant teachers had to think differently about classroom instruction, for some teachers that meant adapting and using technology in new ways (Henriksen et al., 2020). When adopting major changes, including “de-skilling” teachers can feel like novice teachers again, one teacher reported that “It feels like we’re building the plane while

we're flying it and the destination keeps changing on us" (Cardoza, 2021, para. 14). The uncertainty and complexity of teaching during a pandemic completely shifted previous beliefs and procedures on how school reform/change is conducted for teacher effectiveness.

Theoretical Framework - Change Theory

Change theory applies to school reform prior to the pandemic but is even more relevant as schools and districts were faced with the need to change the way school had been conducted as a result of the pandemic. Examining the change theory from Lewin (1947) or Rogers (2003, 1962) was useful in examining how teachers move through the change process during typical school reforms. Knowing how change was constructed as helpful in determining the best methods for studying how change occurs with teachers, schools, within curriculum, etc. Based on Rogers' Change Theory there are five stages, which have similar elements to Lewin's, but expanded to further break down the thinking involved in the change. In the Table 2.3 below, Mitchell (2013) illustrates how Lewin and Rogers have overlapping stages of change.

Table 2.3. Comparison of Change Theories

Lewin, 1947	Rogers, 2003
Unfreezing	Awareness
Moving	Interest Evaluation Trial
Refreezing	Adoption
(Mitchell, 2013)	

However, the pandemic forced some teachers to make some significant changes to their instruction without unlearning or reflecting on their beliefs; teachers had to jump into integrating

specific strategies or technology without unfreezing or having a trial period. Thus, teachers didn't exhibit the typical change patterns as explained by Lewin and Rogers in the above table. The changes teachers had to make for remote learning may actually go against their beliefs about learning/teaching but were adopted in a time of emergency (Howard et al., 2020). Thus, these teachers experienced a "negative perception of their readiness to teach online" (Howard et al., 2020, p. 154) Yet, for other teachers who had previously integrated technology, the pandemic was an opportunity to try out different digital tools that they might find to confirm their thinking about using technology as an effective tool for classroom learning. The impact of not going through the typical change process could impact the quality of instruction and teacher's perception of their success teaching during remote learning since the typical supports were not in place.

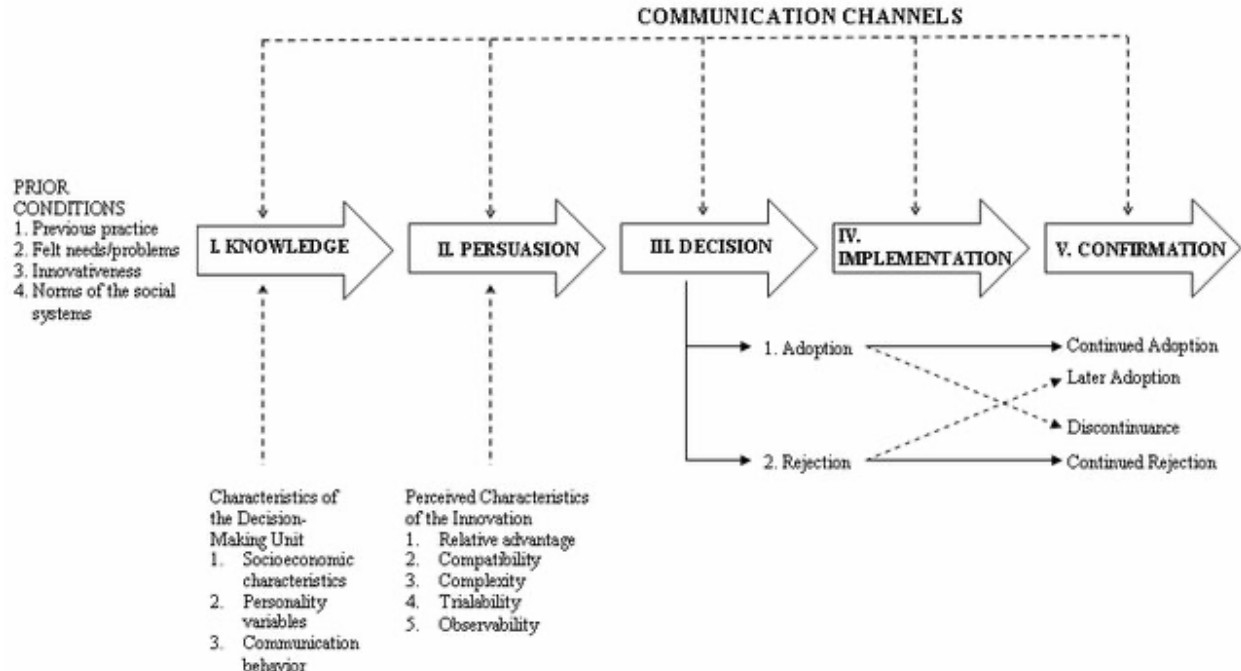
In Roger's *Diffusion of Innovation Theory* (2003), there are four main elements in the diffusion process, as illustrated in Table 2.4:

Table 2.4. Roger's *Diffusion of Innovation Theory*

An Innovation Perceived attributes of innovations: 1. Relative advantage 2. Compatibility 3. Complexity 4. Trialability 5. Observability	An idea, practice, or object i.e. technology that is perceived as new.
Communication Channels	Participants create and share information with one another.
Time	The passage of time in the process by which an individual passes from first knowledge to adoption or rejection.
Social System Types of decisions made: 1. Optional innovation-decisions 2. Collective innovation-decisions 3. Authority innovation-decisions	The individuals, groups, or organizations that are engaged in joint problem solving to accomplish a goal. And who decides if the innovation will be adopted or not (individuals, consensus or from authority).

All four of the elements in Table 2.4 are factors in how innovations are adopted (or not). In the case of teachers during the pandemic, the new innovation was remote and hybrid teaching. Communication channels came from the school and school district and also shared on teacher groups on social media. Time was a restraining factor since there was very little time to learn and put into practice the remote and hybrid learning. After the innovation is communicated, the innovation moves through the Innovation-Decision process in Figure 2.1, which illustrates the knowledge phase to implementation and confirmation. A person can initially implement, but later decide to discontinue or rejection of the innovation. For teachers during the pandemic, they were forced to implement Google Meets (virtual meetings) and online methods for sharing and collecting work through Google Classroom (LMS).

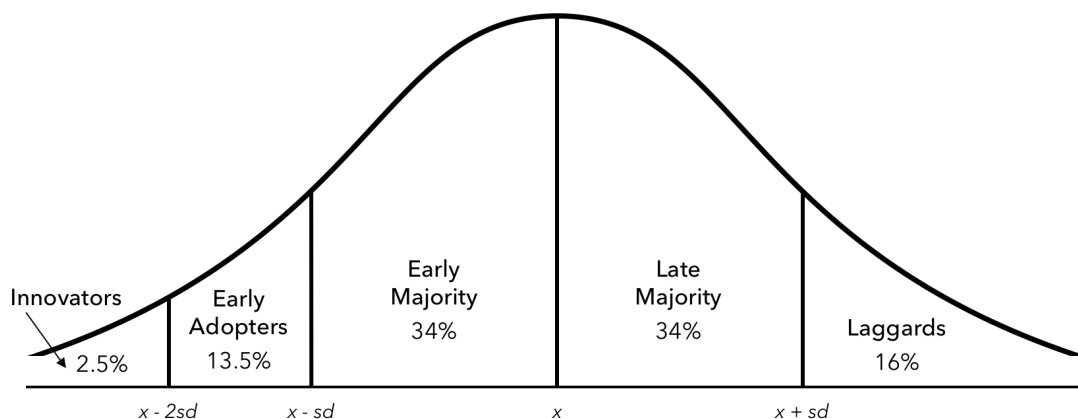
Figure 2.1. A Model of Five Stages in the Innovation-Decision Process (Rogers, 2003)



(figure created by Sahin, 2006)

From the main elements of *Diffusion of Innovation theory*, there are five different stages of adopters (see Figure 2.2) from innovators, early adopters, to the early majority in the middle, late majority/skeptical, and laggards at the back. Schools will often have teachers at various points in the continuum. Prior to the pandemic, some schools had adopted 1:1 computers and teachers received training on integrating technology and some schools received very little prior training. Some teachers had attended online class themselves, so knew what it was like to experience classes from a student perspective. Where a teacher stands with technology integration prior to the pandemic will play a factor in their experiences of success or failure moving to remote and hybrid learning. The types of adopters also apply to how teachers adopt and utilize tools for online and hybrid teaching. Some teachers will be early adopters to using various tools, the majority will fall in the middle, and there will be a few laggards who don't integrated the tools for online and hybrid learning.

Figure 2.2. Rogers' Diffusion of Innovations – Types of Adopters



Relationship between types of adopters classified by innovativeness and their location on the adoption curve.

SOURCE: Everett M. Rogers, *Diffusions of Innovations*, 5th ed. (New York: Free Press, 2003), p. 281.

How a teacher falls in this continuum for technology integration may indicate how successful a teacher adapted to online teaching during the pandemic. Previous studies have researched

adoption of technology in the classroom using Roger's Diffusion of Innovation theory. Jwaifeel and Gasaymeh, (2013) studied the adoption of interactive whiteboards and Fisher (2005) studied the sustained use of innovations during staff development. Teachers who could be described as innovators are willing to take more risks and adopt new technologies without much training or support (Howard et al., 2020,). Whereas teachers in the late majority or laggards will typically wait to see how innovations are implemented and will need significant support or training to finally adopt the change (Adams, 2020). The changes required to teach during the pandemic went directly opposed to the normal process of Roger's theory, especially with time and the ability to trial the technology before deciding to adopt or not.

Literature Review Summary

While the effects of pandemic continue, it is important to capture the voices of teachers in a qualitative manner to understand now how teachers are handling the increased demands of online learning as well as predict future impact on education. While higher-education teachers have been studied and some surveys of secondary teachers have been conducted, the qualitative aspect is missing. Some anecdotal information has been shared on social media, but not captured in a structured manner. How teachers handled the forced change of traditional to online teaching due to the pandemic is one of the greatest changes in education in the past decade. The move to remote teaching during the 2020-21 school year was a change in instructional procedures without the traditional training and support teachers normally receive when a school/district undergoes major instructional changes. Integration of technology prior to the pandemic was at various stages in different schools, but also different levels based on teacher experience and skills. The remote teaching forced all teachers to adopt the use of technology in unprecedented ways and not following the usual methods of Roger's *Diffusion of Innovation Theory*. Thus, the previous

models for teacher instructional change may or may not apply to the changes required during remote learning. Studying the teacher perceptions of their teaching experiences during remote learning can help researchers better understand how teachers change and how the pandemic is impacting change in teaching methods.

Chapter 3 - Methodology

Introduction

The goal of this study was to hear from teachers regarding their experiences with the forced changes due to the remote/online and hybrid teaching requirements during the COVID-19 pandemic. The research focused on teacher's experiences during the 2020-21 school year. Teachers from one middle and one high school (grades 6-8 and 9-12) in a rural Kansas school district volunteered to be surveyed; with the option to also be interviewed for more details. The research examined the curriculum and technology changes teachers used to adapt their teaching to face-to-face, hybrid, and/or remote teaching and how that impacted their success and/or stress during that time. Additionally, information was gathered about how teachers are still incorporating (or not) those changes into their classrooms.

Overall Research Question: In what ways, if any, did teachers' past experience and pedagogical knowledge influence their transition to remote/hybrid learning during the 2020-2021 school year?

Depending on how a teacher integrated technology before the pandemic might reveal how challenging the changes a teacher had to undergo to feel successful teaching during the disruptions of the 2020-2021 school year. Information was gathered regarding what skills and strategies teachers utilized during remote teaching and what they plan to continue using into the future.

Purpose of the Research

The purpose of the research was to identify and describe how secondary teachers changed their teaching methods due to the need for hybrid and online/remote learning during the 2020-21 school year as a result of the COVID-19 pandemic.

Research Questions

1. In the teachers' perception, in what ways, if any, did their teaching practices change in direct result of the pandemic?
2. What factors or characteristics contributed to teachers' perceptions of their success and challenges in teaching during the pandemic?
3. What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years?

Research Design

A qualitative descriptive case-study was conducted that included teacher volunteers for a survey and interview component to capture how teachers perceived the change to online/remote and hybrid learning during the 2020-21 school year. The experience of teaching during a pandemic was a unique situation and it continues to be important to capture not just the quantitative information but to hear the voices of teachers who described their classroom experiences. The pandemic disrupted many professions, but especially teaching and it will be studied for many years--not just to identify what happened, but what can be learned about how change happens and how that might impact the future of education. Thus, a qualitative study was fitting for this study and provided the best descriptions of teacher's perceptions.

Merriam (2016) defines case study as an in-depth analysis of a bounded system thus this study, focused on the perceptions of secondary teachers in one school district in Kansas during the COVID 19 pandemic. Previously, case studies have been used in the education field to study teacher instructional practices and has come to be a respected type of research in the field (Simmons, 2009; Corbitt-Whittier & Hamilton, 2012). Some recent case studies have also been published regarding teaching during the pandemic, including a case study on the remote

lockdown teaching at the beginning of the pandemic (Peimani & Kamalipour, 2021). A case study in Indonesia was conducted on the perceptions of primary school teachers during the COVID-19 pandemic using surveys and interviews (Aliyyah, et al., 2020). Case study is an effective approach to collect data from interviews about a bounded experience and “uncover participants’ understandings of their experiences” (Merriam, 2016, p. 24). Case studies in rural schools are valuable in understanding the unique experiences of those communities. In one case study of rural principal’s leadership practices during COVID, school principals are viewed as the “caretakers of their school communities” and must wear multiple hats inside the school and community (Hayes et al., 2021).

This research is relevant to other researchers wanting to study how teachers adapted during the pandemic and could be used to contribute to larger meta studies about the overall impact on education and future implications to the teaching field. A descriptive case study approach is also suitable to the goals of the study which is to identify how teachers perceive the changes to their classroom instruction as a direct result of the pandemic. Furthermore, of those changes, what do the teachers plan to continue to utilize or not into future school years. From interviews, teachers can explain more in-depth to the changes they made and considered versus merely statistics. At the school/district level, the information is useful in understanding what training or support teachers need going forward or how the change process impacts teachers. The process of analyzing the interviews into clusters and identifying themes will help to get to the “essence” of the teacher experience (Merriam, 2016).

Questions from the interviews were analyzed for how they relate to the theoretical framework and the research questions. The Table 3.1 shows the connection between the research

questions, interview questions, and Roger's *Diffusion of Innovation Theory*. This illustrates the alignment between questions and theory.

Table 3.1. Chart of Research Questions/Interview Questions/Framework

Research Questions	Interview Questions	Rogers Theory
1. In the teachers' perception, in what ways, if any, did their teaching practices change as a direct result of the pandemic?	What do you remember most about the preparations and changes during that time frame? How would you describe the remote and hybrid learning from Fall 2020 to a non-educator? Describe in what ways, if any, how your classroom policies and procedures changed for remote and hybrid learning? (grading, late work, types of assignments, etc.) What technology changes did you make to your instruction? What training and from whom did you receive the technology changes? Was it adequate or not? Which year did you experience the most changes to your instruction? (19-20 - emergency teaching, 20-21 - delayed school, hybrid and remote, 21-22 Omnicron variant - remote, 22-23 - current school year) Overall, how difficult was it to make classroom changes for remote and hybrid learning for the 2020-2021 school year?	Innovation -What was the "new" practice to be adopted. What were the advantages and disadvantages? Compatibility - how consistent is the new practice to my current values, experiences. Communication - How was information shared within the social system? Time Frame - What was the rate of adoption over time? • Complexity - how difficult was the new practice? • Compatibility - how was the new practice consistent with current values and experiences?
What factors or characteristics contributed to teachers' perceptions of their	Describe the training and professional development you received for the teaching changes you were making. What was	Communication - how was the new practice shared within the social stems? How

success and challenges in teaching during the pandemic?	successful and what was challenging? What changes did you have the autonomy to make in your classroom instruction and policies? What changes did you not have a choice to make: How did you feel about the imposed changes you needed to make to your instruction? As a rural school, what was the impact of changing to remote and hybrid learning? What were some of the successes and challenges for your students with the instructional changes? How did students respond? What were the factors for the success and/or failure of your instructional changes? Can you describe any successes or challenges teaching during remote/hybrid learning in the 2020-2021 school year? Reflecting back, do you feel that the changes made for remote/hybrid learning were successful or not? Explain	was information created and shared? Compatibility - how was the new practice consistent with current values and experiences? Complexity - how difficult was the new practice to understand given the constraints? Confirmation – what was supporting evidence that this new practice was working?
What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years?	Looking back now, what, if anything, would you do differently to your instruction? Now that we are past that school year, describe your instruction now - is it similar to pre-pandemic, is it similar to during	Observability - Are the results visible to others? Trialability - how long was there time to try it out and experiment?

	the remote/hybrid learning or is it something different? Explain, give some examples. Do you see any impact from remote/hybrid learning on student learning in your classroom now? Give some examples. – Does being a rural school play a factor in those changes now? Are the changes imposed on your practices during remote and hybrid learning still in place now? Examples? Has your philosophy, policies or practices changed as a result of remote and hybrid learning? Explain/give examples. If you had to teach remote and hybrid again, would you feel prepared to make the change(s)? How so? What do you see yourself doing in the next 5-years? Has remote/hybrid learning impacted/changed your plans?	Relative Advantages - the degree to which the new practice is perceived as better. Complexity - how difficult is the new practice to understand and be required to do something. Confirmation - what support exists that this is working? Relative advantage - what are the advantages to continue this practice? Will it make being prepared easy again in the future?
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Research Questions	Survey Questions	Rogers Change Theory
2. In the teachers' perception, in what ways, if any, did their teaching practices change as a direct result of the pandemic?	Prior to the COVID-19 pandemic (prior to March 2020), what was your experience with online teaching? Q42 Prior to the COVID-19 pandemic (prior to March 2020), what was your	Compatibility - how was the new practice consistent with current values and experiences?

	experience integrating technology in your classroom? The assignments and activities students completed during remote and hybrid learning (2020-21 school year) were similar to in-person? My classroom policies and procedures for remote and hybrid learning were similar to in-person instruction? How often did/do you use these technology tools during any given month in your classroom? The amount of professional development I received to prepare for the change to remote and hybrid learning for the 2020-21 school year was... (remember that school was delayed for students until Sept. 8th, so teachers could prepare). Give an example of professional development that was helpful to prepare for the change to remote and hybrid learning for the 2020-21 school year. During remote and hybrid teaching during the 2020-21 school year, how much change to your teaching practices did you make from in-person formats? Describe one or two examples of changes you made to your teaching practices for teaching remote and hybrid during 2020-21 school year.	Compatibility - how was the new practice consistent with current values and experiences? Time Frame - What was the rate of adoption over time? • Complexity - how difficult was the new practice? Communication - how was the new practice shared within the social stems? How was information created and shared? Compatibility - how was the new practice consistent with current values and experiences? Knowledge/Awareness - what are the key features of the new practice/innovation? Time Frame - What was the rate of adoption over time? Implementation - Using the tools, possibly with uncertainty.
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	How would you describe remote learning (of 2020-2021) to a non-educator? How would you describe hybrid learning (of 2020-2021) to a non-educator. Briefly explain how you prepared for changing to remote learning when you only received one or two day's notice. Rank order which school year during the pandemic has caused the most change (#1) to your teaching practices to the least change (#4). Describe one or two changes to your teaching practices for the school year with the most changes. What else would you like to share about your experiences teaching remote and hybrid learning during or after the 2020-21 school year?	Complexity - how difficult was the new practice to implement?
What factors or characteristics contributed to teachers' perceptions of their success and challenges in teaching during the pandemic?	What did you enjoy about teaching remote and hybrid (during the 2020-2021 school year)? What did you dislike about teaching remote and hybrid (during the 2020-2021 school year)? Overall, how difficult was it for you to change to remote and hybrid learning for the 2020-21 school year?	Relative advantage - what are the advantages (and disadvantages) to implement this practice? Complexity - how difficult was the new practice to implement? Compatibility - how was the new practice consistent with

	Describe how your instruction changed when students or yourself needed to quarantine during the 2020-21 school year? Compare and contrast how much change you experienced related to each category: prior to the pandemic versus remote and hybrid teaching during the 2020-21 school year. Thinking back, what professional learning do you wish you had to support the change to remote and hybrid learning? The change to teaching remote and hybrid learning was... What was the driving force behind the changes you made to your teaching practices during the 2020-2021 school year? What made working from home during remote learning (during 2020-2021 school year) easy? Why? What made working from home during remote learning (during 2020-2021 school year) difficult? Why? During remote and hybrid learning (2020-21) how often did you have opportunity to collaborate with other teachers?	current values and experiences? Communication - how was the new practice shared within the social stems? How was information created and shared? Persuasion - the attitude (good or bad) behind the decision to adopt a new practice. Complexity - how difficult was the new practice to implement? Social System - the communication within the group that are working together to solve a problem. Complexity - how difficult was the new practice to implement?
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	Compare and contrast how often you were asked to substitute or needed a substitute during the 2020-2021 school year to other school years. How did needing to substitute on your plan period change your teaching practices? How did planning for a substitute change your teaching practices, especially with regards to lengthy quarantine absences? What, if any, impact did being a rural school have on the changes you made for teaching and learning during the remote and hybrid learning of the 2020-2021 school year?	Complexity - how difficult was the new practice to implement? Complexity - how difficult was the new practice to implement?
3. What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years?	In my classroom now, I continue to use some of the changes I made from teaching during remote and hybrid learning of 2020-2021. Give an example of a teaching change you made during the pandemic that you continue to use now. Why? What aspects of remote learning do you plan NOT to use in the future? Why? If you had to teach remotely again, would you feel prepared to make the change? Would you consider teaching an online class in the future	Compatibility - how was the new practice consistent with current values and experiences? Observability - the results of adopting a new practice are visible to others Confirmation - Examining success rates to determine continued implementation.

	after your experiences remote teaching? Have you considered a change in your teaching position, due to the remote and hybrid teaching experience during the pandemic?	
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Setting and Participants

The school/district information was protected using a pseudonym. Crestway City school district was in rural Kansas with one high school and one middle school. Crestway City had a population of about 12,000; the major employers in the community are a packing plant, the local public school district, several manufacturing factories, and a community college. The high school was a medium-sized rural high school in the state with about 800 students. The middle school had about 600 students and fed into the only high school. The high school had about 65 teachers; the middle school had about 45 teachers. Many of the teachers also attended the school in the district as students themselves and have stayed or returned to the community to teach. It was considered a high-poverty district with about 70% of students on free or reduced lunch. There was a shortage of doctors and health care options for the community, especially access to mental health services. The city had a high-crime rate and high-drug use, which contributed to its rating as one of the more dangerous communities in Kansas.

Crestway City Public Schools adopted a 1:1 technology 10-years ago--first with iPads, netbooks, and then adopted Chromebooks. Numerous professional learning hours were spent on technology integration over the past decade. Despite all of those hours of training, not everyone fully utilized the technology in their classroom. At the beginning of the pandemic, the district realized how the lack of internet access at home (for students and teachers) would be problematic

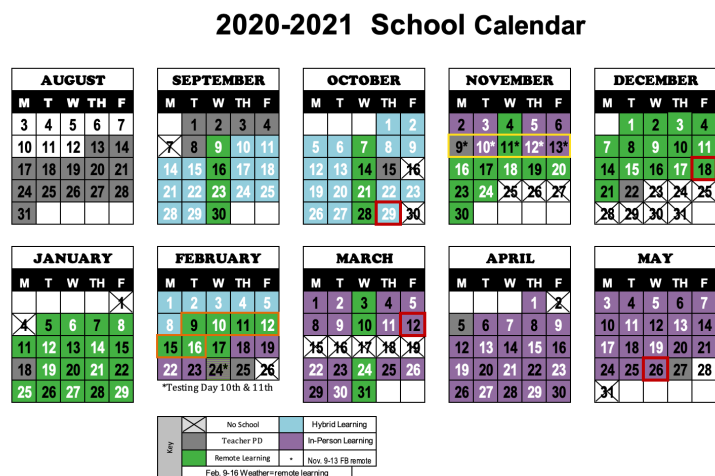
for remote teaching. Thus, in the Spring 2020, students were given paper packets, flash drives, etc. to complete work. Additionally, during the Spring 2020 shutdown, students only completed work for grade improvement. Many students disengaged during this time period—it was considered “crisis” teaching/learning.

At the beginning of the 2020-21 school year, the district started school 3-weeks later due to Governor Kelly’s executive order delaying the start of school until Sept. 9, 2020. Many districts in Kansas delayed start, but it was a local district option. Even though the start of school was delayed, teachers reported to school at the normal contract time of August 12th and completed 3-weeks of professional development to prepare for procedural and curriculum changes. Time was spent in training and application of that training to prepare for the changes needed to teach in hybrid and remote classroom environments. For example, teachers learned to make short videos using Screencastify or Loom to welcome students and explain weekly expectations or content in the morning. Then the afternoon was spent in department or small teams to create several videos they would use for the first several weeks of class. Teachers utilized Google Classroom to share and collect student learning whether face-to-face, hybrid, or remote. While many teachers had already utilized Google Classroom platform in previous school years, there were other teachers that had not utilized it at all.

At Crestway City schools, the 2020-2021 school year started in a hybrid model, which meant half the students attended Monday and Tuesday in person, everyone did remote learning on Wednesday and the other half of students attended on Thursday and Friday. When students were not at school, they completed work asynchronously so they did not need to video conference or synchronously connect to the classroom. The Crestway City community was very divided over the hybrid model. The community also did not adopt the mask mandate for the city,

but the schools were ordered by the Governor to wear masks and take temperatures at the door. At the end of October 2020/Quarter 1, the Board of Education voted to return to full in-person learning. However, this change lasted only 3-weeks and then COVID cases in the county rapidly increased and the entire district moved to remote learning.

Figure 3.1. 2020-2021 School Calendar for Crestway City



Teachers were instructed from the beginning of the school year to prepare for a transition to remote learning with only one day notice. Remote learning was the primary instructional model until from mid-November until late-January 2021. Then students returned to school for in-person learning for the remainder of the 2020-2021 school year, but with students and teachers frequently quarantining (for 10 days) as positive cases were identified. The focus of this study was on teacher perceptions from the 2020-21 school year. Teachers were surveyed and interviewed at the end of the 2023 school year, so enough time has passed to reflect and report on what happened during that school year and be able to share what teaching methods they are currently using to show a change, if any, in their teaching methods.

Data Collection Methods

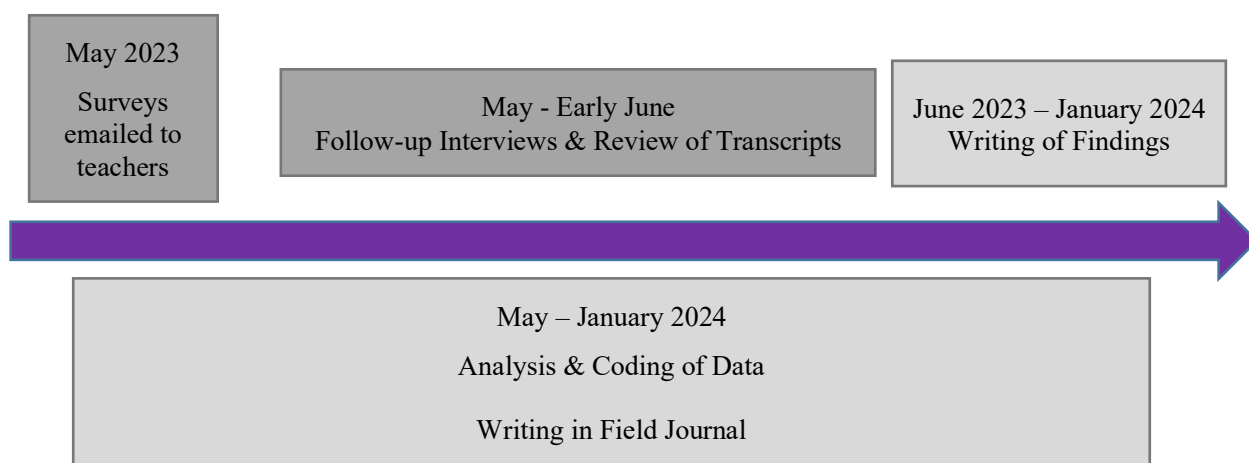
Prior to sending the survey out to teachers/participants, three people who are aware of education issues, but not within the survey group were asked to preview and pilot the survey and give feedback to me, the researcher. Based on their feedback, the survey was adjusted for wording and question formatting. By piloting the survey, I was able to identify potential errors and strengthen questions to best gather data from participants. For example, question 5 needed to be formatted differently to gather the correct information. The pilot participants were able to give me feedback on the length of time it took to complete the survey so that could be shared with participants. The pilot increases the validity of the survey instrument and is a necessary component of qualitative research (Mocorro, 2017).

Permission was granted from the district superintendent and both the middle school and high school principals to conduct the survey and interviews. The University's IRB protocols were followed, and permission was granted from the IRB proposal IRB-11669 on 4/28/2023. The implied consent was collected in Qualtrics, and steps were taken to protect each subject's identity in the survey. Informed consent was gained prior to each interview. Pseudonyms for teachers were used and teachers were renamed to protect their privacy. Surveys from Qualtrics were kept within a closed system and password protected. Any reports downloaded were kept on a hard drive that is password protected. Electronic recordings of the interviews were placed on a hard drive and password protected--names are kept separately from the interview transcripts and recordings. Each teacher was told he or she is free to depart from the study at any point, and an explanation of the data collection and storage process was provided to participants in the informed consent. Participants were given the opportunity to review the transcript of the interview for accuracy and provide any additional information.

Data Collection Schedule

Surveys were electronically shared with teachers via email in early May 2023 and a reminder sent at the end of May and early June. Interviews were conducted in late May - June as schedules allow and for follow-up interviews to take place as needed to clarify information. All interviews were conducted outside of the teacher's contracted teaching time. Analysis of the data was ongoing as it was collected. Teachers had an opportunity to review transcripts.

Figure 3.2. Data Collection Flowchart



Data was collected from teacher participants who volunteered to answer survey questions in Qualtrics (Appendix A) via an email invitation and link. An interview with some teachers was conducted using an interview protocol (Appendix B), interview participants volunteered based on an invitation at the end of the survey. A survey in Qualtrics was prepared and sent to all high school and middle school teachers (approximately 100 teachers) via email regarding their teaching experiences during the pandemic, specifically the 2020-21 school year. From the survey, teachers could volunteer to be interviewed to provide more details. A link to volunteer for the interview was provided at the end of the Qualtrics survey which linked to a separate survey to record their willingness to be interviewed, which protects participant

responses/identifies from participation in the initial survey. Then volunteer teachers were interviewed via video conferencing or in-person outside of their teaching contract time. Potential teachers were invited to voluntarily participate in the study with an explanation of the goals of the study given to each participant. Initial in-person interviews lasted 45-60 minutes. An implied consent form was included in the Qualtrics survey, and an informed consent provided separately at the beginning of the interviews. Fifty teachers completed the implied consent for the Qualtrics survey with 28 teachers completing the survey questions. The survey questions did not require an answer for the survey to be submitted, so some questions have more and others fewer responses. Ten teachers were interviewed from different career lengths and content areas at the middle school or high school levels. Follow-up interviews were conducted as needed to clarify and expand on ideas from the initial interview Interviews were recorded for analysis and the identification of themes.

Demographics of Participants

The following demographics represent the teachers interviewed and those who participated anonymously in the survey who completed demographics information.

Table 3.2. Years of Teaching Experience

	Interviews	Qualtrics Survey
1-4 years	3	2
5-10 years	0	6
11-15 years	3	4
16-20 years	1	3
21-25 years	2	5
25+ years	1	7
Unknown*		1

Total	10	28

*Not all questions were required for the survey to be submitted.

Table 3.3. Chart of Grade Levels Taught

	Interviews	Qualtrics Survey
Middle School	3	8
High School	7	19
Unknown*		1
Total	10	28

*Not all questions were required for the survey to be submitted.

Out of 100 possible participants, 28 participants/teachers completed the Qualtrics survey and 10 volunteered and were interviewed.

Interviewed Teachers Biographical Information

Pseudonyms were created to protect the identity of the teachers who were interviewed. Ten teachers from the middle and high school levels volunteered to be interviewed.

Table 3.4. Chart of Interviewed Teachers Biographical Information

Teacher Pseudonym	Years of Experience Range	Middle or High School Level	Core or Elective Teacher
Brad	1-4 years	High School	Core
Richard	25+ years	High School	Core
Kyle	1-4 years	Middle School	Core
Alex	1-4 years	High School	Core & Elective
Nancy	21-25 years	High School	Elective
Chelsea	11-15 years	Middle School	Core

Deborah	21-25 years	Middle School	Elective
Heather	16-20 years	High School	Core
Angie	11-15 years	High School	Core
Brittany	11-15 years	High School	Core

The teachers had a variety of years of experience with some experiencing the pandemic during their first year of teaching and others with many years of experience. It is important to note that many of the participants lean towards using more technology in their classroom based on the survey and interview results.

Data Analysis

This study was conducted using a qualitative design with the use of a survey, narrative interviews, and a written field journal by the researcher. A sequential design was used for gathering data: first the survey to get initial thoughts and information, followed by interviews to provide the depth, detail, and voice of teacher experiences and perceptions. However, analysis took place in a “simultaneous process” as surveys are submitted, and interviews conducted (Merriam, 2016, p. 195). Interviews and surveys were analyzed to determine the effect on the transition to teaching remotely during the pandemic. The voices of teachers who experienced the pandemic are important to document. The field journal written by the researcher synthesizes thoughts and ideas from the survey, interviews, and analysis process (Phillippi & Lauderdale, 2017). How teachers experienced change, including forced change was examined and analyzed using Roger’s *Diffusion of Innovations* as a framework.

In Vivo Coding

The interview transcripts were first coded using In Vivo Coding “using actual language...terms used by participants themselves” to identify key points (Saldana, 2021, p. 137). By using In Vivo Coding, an inductive style of coding, for the initial review of information the focus remained on the voices from the teachers and their experiences. In Vivo Codes and notations were added in the margins of transcripts (of interviews and surveys). This method helped identify numerous codes, which were analyzed, and a master listed created. The master list of codes was sorted into common categories. Below in Table 3.5 are some example initial codes.

Table 3.5. Table of Initial Codes

Initial Code	Number of participants contributing	Sample Quote
Technology – Significant Prior Use	7	“I was already pretty comfortable with Google Classroom because I was tech all the way. I didn’t have a time without tech” (Brad).
Students Cheating	6	“I really find a lot of kids just more and more and more not really caring about education, they cheat like crazy and they don’t care about learning” (Deborah).
Increased Communication Expectation	8	“so it was our responsibility to check in every single day with our advisory kids at least and then try to contact our classes. That first year, I go so desperate that I just gave all the parents my personal cell phone number...then I had several that I had to call and wake up every morning” (Chelsea).
Student & Teacher Emotional Health	7	“I can tell you, like as a teacher, that whole time I was super stressed out, like to the point which I eventually asked the doctor for medication, which helped me tremendously” (Heather).
Rural Impact	7	“I think our district was really good about getting everyone internet where they could and delivering the hotspots, but I think some of our kids that live in the country, out of city limits, I don’t know if we were every able to successfully get it to them, even with a hot spot, right. It just wasn’t possible for some of them. I think that some of them missed an entire year of their education because they couldn’t get access to the

		internet. I know it's not their [student] fault, but I don't know whose fault it is." (Chelsea)
Changed teacher beliefs	4	"I think really, the only thing that's changed is my faith in the education system and a little bit of burnout, if I'm being honest" (Angie).

A-Priori Coding

A second cycle coding method of the transcripts used a deductive style of coding known as A-Priori coding. Using the key components of the theoretical framework: Roger's *Diffusion of Innovation*, the transcripts were labeled based on key words from the framework and sorted for common themes. Some different themes were revealed from the A Priori coding versus the In Vivo codes – those codes were compared/contrasted, and field journal notes taken. Field notes help keep me as the researcher grounded in synthesizing the survey findings and interview data based on the theoretical framework, which are considered essential in qualitative research (Phillippi & Lauderdale, 2017). By using the framework for documenting my thoughts in the field notes, the focus remains on the responses in relationship with the research questions. Examples of the A-Priori codes are listed in Table 3.6 below along with some sample quotations.

Table 3.6. A-Priori Codes

A-Priori	Number of participants contributing	Sample Quote
Social System	6	"I benefited greatly from having my mentor in particular. She reached out a lot and we did a lot of collaborative work online" (Alex).
Complexity	9	"It seems like there was a lot of unknown because I remember being given a lot of work time, but we weren't entirely sure what it should look like because there were still so many unknowns on like when school was going to start and what school was even going to look like. It was really hard to figure out what we should be planning for" (Brittany).
Compatibility	9	"I did have experience taking an online class because when I worked on my master's it was all online, so there was that component with teaching remotely

		seems to be easy to navigate. Even with Google Meets, even though it wasn't something that I had ever done before it seemed pretty straightforward on how to do it" (Brittany).
Implementation Pitfall - Cheating	4	"The sad part about electronic is because a lot of students cheat...students would finally take the test and they wouldn't know anything because they cheated on the questions leading up to the test" (Brad).
Implementation Pitfall - Attendance	5	"I would take roll two or three times during the [Google Meet] period because students would show up for an initial roll call basically and then disappear" (Richard).
Implementation - Success	3	"They [Google Meets] would be more like one-on-one tutoring sessions. Students were able to pop into like the chat and just kind of like walk through what they were struggling with specifically" (Alex).
Relative Advantage	3	"Different programs were put on the internet...we used this program that had great Google forms and videos and things to go with it. I know that exploded because of COVID because people were looking for things on the internet. I saved a lot of time being able to create those things that weren't cheesy, but quality resources online" (Kyle).
Confirmation – Still Using	6	"I always had a Google Classroom, but I never posted much in it. And I would say now that is another thing, we go to Google Classroom at least a couple of times a week and it does make things easier for my kids, like if they are gone, I can post things they can stay caught up" (Chelsea).
Impact – Learning Loss	7	"The quality of student work was less, but it wasn't less because they weren't capable of doing it. I think that a lot of kids learned very quickly, 'oh, I'm not at school. I can't work today' And so the quality of work was less because they were spending less time on it" (Deborah).

Field Notes

Field notes helped me reflect on the statements from the interviews and synthesize the ideas presented. "Comprehensive field notes, especially those that include critical reflection...They create a record of the study unfolding over time and are exceedingly valuable in analysis." (Phillippi & Lauderdale, 2017, p. 383). A field notes were taken during the

collection of data, the analysis, and writing process. The following Table 3.7 is a sample of some field notes collected and taken by the researcher.

Table 3.7. Field Notes Chart

Date	Sample Notes/Thoughts
6/05/2023	Even though I didn't ask questions about student and teacher mental health, 7 out of 10 teachers interviewed talked about mental health during their interview.
11/11/2023	From using the A-Priori coding, I found that 9 out of 10 teachers felt the change to online wasn't that bad, a minor change from their current teaching methods. There was some uncertainty in the structure/plans for school, but once teachers had a plan, they felt pretty confident they could follow it through.
11/11/2023	The social system within a school for teachers was important, more important than the professional development provided by administrators. Teachers really relied on their peer teachers to implement remote teaching.
11/22/2023	I'm struck again by the stress and mental health concerns teachers faced during COVID. It was difficult to focus on teaching when teachers were concerned about their own families, students, their own health, etc. The number of barriers: technology, rural setting, student motivation, student attendance were all enormous factors during COVID and most of them were out of the teacher's control or direct influence. Interesting that it doesn't matter if you receive a lot of professional development, if you can't connect with students (via online methods) because of Wi-Fi availability or attendance then the professional development on technology tools isn't as valuable.
12/12/2023	Plan time is great, but if the unknowns are too many – then it is hard to use the time effectively. Professional learning can help to an extent, but not enough for a person to feel confident in moving forward. The importance of peers to help the implementation of professional learning is key! Having teacher leaders can make a difference on the success of implementation.

Trustworthiness

Data was triangulated by not simply relying on interviews but using the survey results; as well as the researcher's field journal to collect notes and analyze data. Using more than one data collection method "is a powerful strategy for increasing the credibility or internal validity"

(Merriam, 2016, p. 245). Study participants were allowed to review and clarify transcripts from the interviews to ensure their experiences were accurately conveyed, which also helps for “ensuring internal validity” (Merriam, 2016, p. 246). I made every attempt to limit my bias during the survey and interviews by focusing on the narratives of the study participants, but also recognize my role as a researcher and practicing educator places my experiences within the case study. My experience as a practicing educator does give me additional knowledge and insight into the day-by-day experience of teaching during COVID, so my questions were more detailed and specific. I monitored my own work by reviewing my notes, meeting regularly with my research chairperson, and keeping a regular writing schedule that allows for breaks to reflect on notes and data. I have a trusted friend that I’ve had conversations with about my thinking and ideas, which helps me reflect on the progress of analyzing the data.

Methodology Summary

Chapter 3 – Methodology provided the details for the qualitative research in examining how secondary teachers changed their teaching methods during the COVID-19 pandemic. Data was collected through interviews and a survey from teacher participants then analyzed and coded for themes. Field notes were taken to continually reflect on the research and provide triangulation in the data. In Chapter 4, an analysis of the findings is presented with narrative data from teacher participants provided to support the themes identified. In Chapter 5, conclusions and recommendations will be shared.

Chapter 4 - Findings

The purpose of this study was to identify and describe how secondary teachers changed their teaching methods due to the need for hybrid and online/remote learning during the 2020-21 school year as a result of the COVID-19 pandemic. An anonymous survey was sent to all middle and high school teachers and self-selected interviews were conducted at the end of the 2023 school year (April-June 2023). The benefit of time since the 2020 school year allowed for teachers to reflect on what happened and what they are doing now. However, one drawback is that enough time has passed that the initial stress and unknown of the beginning of the 2020 year has subsided and is not a recent experience. The following research questions are examined in the context of Roger's *Diffusion of Innovation* theory as a framework for understanding how the change was implemented and continued to be adopted or rejected.

Research Questions

1. In the teachers' perception, in what ways, if any, did their teaching practices change in direct result of the pandemic?
2. What factors or characteristics contributed to teachers' perceptions of their success and challenges in teaching during the pandemic?
3. What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years?

Change in Teaching Practices

Research Question 1 focused on how teaching practices changed as a direct result of the pandemic. Some teachers entered the pandemic with some previous experience learning online and frequently using technology in their classrooms. The pandemic forced teachers to change to remote teaching methods when schools were closed due to high transmission of COVID-19 in

the community. The school district had already adopted one-to-one use of technology almost a decade prior to the start of the pandemic, so the use of technology was widespread. However, those uses of technology didn't always translate to remote learning. From the Qualtrics survey, 20 out of 28 (71%) teachers experienced a lot or a great deal of change in their prior use of technology versus during the pandemic. Additionally, teachers had always had in-person ways to help students that didn't include using technology.

When asked which year was the most disruptive year to their teaching due to the pandemic, 9 out of 10 teachers interviewed selected the 2020-2021 school year (selected from 4 possible school years):

Table 4.1. Most Disruptive Year Teaching Due to COVID-19

Schools Years impacted by COVID	Description of Impact	Number of Teachers selected as the most disruptive year.
2019 – 2020	March Emergency Shutdown	0
2020 – 2021	Hybrid and remote learning with a delayed start	9
2021 – 2022	Omicron Variant/ Frequent 5–10-day quarantines	1
2022 – 2023	Absenteeism/Learning Loss	0

The 2020-2021 school year was selected as the most disruptive due to the unknown's teachers experienced. The start of school was delayed due to implementing protocols on cleaning, spacing, masking, etc. Additionally, teachers had to plan both remote teaching, hybrid teaching, and in-person teaching with the chance that the mode of teaching could change from one day to another with very short notice. While the other years had disruptions, they didn't have as many changes in the teaching mode or unknowns as the 2020-2021 school year.

Compatibility with Prior Technology Use

In Roger's Diffusion of Innovation, an attribute of the rate of adoption is how compatible the innovation/technology is to current values and experiences. All the teachers interviewed had used technology due to the district-wide one-to-one technology initiative, during their teacher preparation, or taking online master's classes. Most of the teachers interviewed felt comfortable using technology and stated they only needed to make minor changes to adjust for remote learning. For example, Brad stated his comfort using technology, "I was already pretty comfortable with Google Classroom because I was tech all the way. I didn't have a time without tech and we had technology in the classroom in college, so I knew what was coming." Brad's prior use of technology helped him be more confident using online learning methods. Additionally, Brad being a first-year teacher was fresh out of the college experience of using technology to submit classwork and so could replicate it for his own students. Richard had already used some flipped learning in their classroom and felt prepared to use those videos during the pandemic:

I thought I was better prepared than most [teachers]...I had all of my lectures on video, so the kids got to hear whatever I had to stay at home just like I they would at regular school. The only thing that I had to adjust to was basically accepting assignments remotely.

As a veteran teacher, Richard had spent many hours trying new technology methods in his classroom, which became invaluable during the pandemic. He did have to change how students submitted work to him but having so much already prepared made that a minor change to his teaching methods leading up to the pandemic.

Being an online student made it easy for some teachers to adapt their own classrooms to remote learning, Brittany explained:

I did have experience taking an online class because when I worked on my master's it was all online, so there was that component with teaching remotely seems to be easy to navigate. Even with Google Meets, even though it wasn't something that I had ever done before it seemed pretty straightforward on how to do it.

Brittany was able to transfer her prior knowledge from being an online student and apply it to new technology that she implemented as a teacher. Like Brittany, seven of the teachers interviewed all had similar prior experience using technology, which gave them more confidence switching or adding new technology. From the Qualtrics survey, 82% of teachers reported slight or no knowledge of teaching online prior to the pandemic. However, 75% of survey teachers reported moderate or higher integration of technology in their teaching prior to the pandemic. Having some prior experience with technology made the transition to remote learning easier for teachers and didn't require a complete change in their teaching methods. It also helped teachers tackle some of the new tasks with ease because there was a level of comfort in current technology use that translated to learning other types of technology without too many issues.

Complexity of Remote Learning

Even though teacher's shared ways that they felt prepared to use technology, they also shared examples of the complexities of how remote learning would work in Fall of 2020. Roger explains complexity as how difficult it is to understand the innovation, which can be a barrier for implementation at times. From the survey, 16 of 28 (57%) of teachers marked the change to remote and hybrid learning to be extremely or somewhat difficult. Despite the interviewed teachers being frequent users of technology, they wrestled with the complexity of remote learning. Heather described the pressure and rush to find tools that could communicate and engage with students in a remote learning environment:

Initially, was sort of like a scramble trying to figure out how to use some technology that had not used before, like Screencastify or Loom or EdPuzzle, so initially it was sort of a technological barrier and trying to figure out the best way to effectively reach the student through the technology.

Heather mentioned the “scramble” to implement new technology tools that she hadn’t used prior. While Heather did have prior technology experience, new tools took time to learn and implement effectively. The unknown of how to communicate the best way was stressful for even experienced teachers.

In the Fall 2020, school was delayed for several weeks by order of the Kansas Governor, so schools and teachers could prepare. During that time, teachers had training and work time to learn new online technology tools. Brittany stated:

It seems like there was a lot of unknown because I remember being given a lot of work time, but we weren’t entirely sure what it should look like because there were still so many unknowns on like when school was going to start and what school was even going to look like. It was really hard to figure out what we should be planning for.

The “unknown” as Brittany stated was a barrier to being able to plan for school. There was a helplessness in not knowing how school will run, so not knowing where to start or what to do was an issue for some teachers during the Fall 2020. Chelsea described the plan to open school with a hybrid model with some students in the classroom and some students at home learning synchronously and or asynchronously:

I remember the biggest issue was that we were going to have some kids in person and then some kids online and it was a disaster trying to figure out how we were going to teach kids in person and online at the same time.

Chelsea's concern for having a mixed class of students on the computer at home and some in the classroom during hybrid learning was a concern for even experienced technology users. There were limits to how many tasks a teacher can manage simultaneously. Chelsea also shared, "I had never recorded any of my lesson prior to COVID and so that was kind of a learning experience for me." Even experienced technology teachers, like Chelsea, learned completely new skills and while they might not describe them as difficult or easy, they were quickly implemented and utilized.

Even with some technology integration and regular use in the classroom, Kyle described the unique problem the pandemic posed with not knowing if each day/week would be in-person learning or remote/online. If sickness numbers increased, teachers had to be prepared to move to remote learning with only one to three days' notice as required by administration: "I would say that the biggest change was getting everything to be online to where I could be ready if we had to jump back to remote learning with everyone" (Kyle). Teachers were told they had to be ready to move from in-person to online teaching with less than 2- or 3-days' notice and wouldn't know when that change would happen, if at all. Experience with technology makes the change somewhat easier, but the unpredictability required teachers to be more mindful of planning, sometimes planning multiple ways to do an activity, one with technology and one without.

Changes to Content, Delivery and Policies

Teachers made significant changes to their teaching; they changed their content, delivery, and policies. From the surveyed teachers, 17 of 28 (60%) teachers marked that the types of assignments and activities students completed during remote and hybrid learning were dissimilar to in-person assignments. At the start of the 2020-2021 school year, Kansas condensed content/subject standards to focus on major focus area standards at each grade level. Teachers

spent time adapting their curriculum maps and pacing guides to match the new state guidelines. Alex commented on this adjustment, “I favor a more condensed approach [to the curriculum] without too much fluff and I think that’s kind of stayed the same throughout COVID as well.” Alex favored the approach to condensing the teaching standards predicting that the school year would have disruptions. By only focusing on the key grade-level content standards some of the unnecessary information could be removed from the curriculum. However, Richard points out that:

Their [student] math background is a lot weaker than it once was at least that’s my impression. Part of that has to do with COVID, I’m sure, but I also think part to do with the adoption of new standards that dropped a lot of things that used to be routine, like logarithms for instance.

Richard points out that the change in standards as well as COVID contributes to learning loss; thus, condensing the standards wasn’t in the best interest of students. Now three years past this implementation, the full standards are expected of students.

To address the changes in teaching mode from in-person, hybrid or remote; Heather shared how she changed from student notetaking on paper to using Nearpod:

Before COVID, I did a lot of take notes [students] take notes on your own paper. Now, if I do that in class, it’s pretty much with a handout, or I like to use Nearpod, where they have to follow along on the screen and participate with quick checkpoints along the way, which I really liked when we were doing remote learning as well because then I can actually get feedback from them.

Nearpod allowed the teacher to control the student screens and can be interactive. The teacher could use Nearpod in all teaching modes. Nearpod allowed this teacher to change to more

interactive teaching that allowed feedback from students continuously during the lesson. This type of delivery helped teachers feel successful in their delivery of content regardless of the teaching delivery method.

With COVID, many organizations and technology resources became available online and accessible for the first time. Kyle had access to online resources that weren't previously available, he stated:

Different programs were put on the internet...we used this program that had great Google forms and videos and things to go with it. I know that exploded because of COVID because people were looking for things on the internet. I saved a lot of time being able to create those things that weren't cheesy, but quality resources online.

Being able to have access to quality online resources was a key component of teaching during COVID. It made sending a textbook home possible. It allowed teachers to do some experiments or videos that engaged students in learning at home or in-school. Quality online resources allows for asynchronously learning opportunities as well, which was important when teachers or students were sick and unable to connect at the same time.

During COVID teachers changed some of their assessment methods and policies on student submissions. For example, Brittany explained how they changed their tests due to COVID:

I cut down my test quite a bit because prior to COVID I would give 20-30 questions, but with the limited amount of time that we had with students it ended up seeming pointless to me. Why would I give a kid five of the same type of question because they know how to do it, or they don't. So now I give one type of each question. I feel like the data is the same, but it is easier for me to remember if they are getting it or not.

With less teaching time it and more condensed standards it made sense to Brittany to ask fewer questions on the assessments. Teachers could be more specific and aligned to the standards when asking fewer questions. It allowed the teacher to get feedback returned sooner and keep track of how students were making progress or not. Another policy change that several teachers commented on was their late work policy. Alex reflected, “I used to be pretty strict about late penalties and deadlines, but with COVID I’ve definitely become a lot more flexible in accepting late work.” The school asked teachers to be more flexible due to sickness and technology, but many teachers were even more flexible than they were required to be including Chelsea who would “accept work up until the end of the quarter” when grade cards were sent home. Teachers found that students needed grace in getting their work completed, especially if they or a family member were sick. It takes more time to answer questions remotely, so allowing extra time was helpful. Some teachers have kept allowing extra time since COVID.

Feedback to students was different with different teaching delivery modes and extra time. One drawback was noted by Deborah, “There was just less personal feedback that I could give on a piece of writing and so where I would maybe be able to go in and say you need to change this look at what you’ve done. I had less time to do that than I did before.” For many teachers, it seemed like everything took longer with the different teaching modes, so that meant less time for timely, personalized feedback. However, Alex explained how Google Meets allowed for unique tutoring opportunities, “They [Google Meets] would be more like one-on-one tutoring sessions. Students were able to pop into like the chat and just kind of like walk through what they were struggling with specifically.” Google Meets might be best for one-on-one tutoring and some teachers utilized it to meet with students individually and give instant feedback. However, with 100+ students it wasn’t practical to have Google Meets with many of individual students every

day. Several teachers had a Google Meet session available, similar to office hours, to meet with students as needed, but only a few highly motivated students would take that opportunity.

Handling behavior problems during COVID was different since many students and teachers were under stress and worry about their own health or family members. Chelsea shared who she handled behavior problems differently:

I had more leniency for the students and especially for my students who act out, like you're coming to find out why and I think you're acting out for one of these reasons and rather than get irritated and upset, we kind of take a break and talk about it.

Teachers had permission, they really were encouraged, to give students mask breaks if they were in person or computer breaks if they were online. Teachers had discretion on when the breaks would be given and how. Some teachers took students outside for fresh air and to distance to be able to take off masks and other teachers let students get up and move around. These types of breaks were not typical in a high school or middle school prior to COVID, so that was a major change in taking breaks. From the survey, 64% of teachers reported a different procedure/policy for giving students breaks from remote versus in-person teaching. Chelsea went further to talk about specifically taking breaks when students had behavior problems because she recognized the behavior was a type of communication or a problem. Since COVID, schools have spent more time on Social-Emotional Learning (SEL) and incorporating it into classes.

Professional Learning

At the beginning of the Fall 2020 school year, school was delayed for several weeks, so teachers had nearly a month-long professional learning and work time to prepare for the 2020-2021 school year. When teachers asked about the professional learning they received, most did not find the training helpful. Providing the same professional training to all staff can be problematic

when there are a variety of prior experience, especially as it related to technology usage. When asked if the professional learning was helpful, Richard responded, “Not that I recall...I didn’t have to make any actual technology changes.” Deborah, when asked if the professional learning provided at the beginning of 2020-2021 school year was helpful, stated:

No, because I had been forced into it [integrating technology] already, so I had gone through some struggles quite a bit over the previous years and am at a far more advanced level than my peers...I was already doing what they modeled.

Both Richard and Deborah felt that they were more advanced than their peers and that the training provided didn’t help them with the changed needed to move to online learning. They were both already integrating technology in their classrooms. Providing training that is the same for everyone is not helpful for those who perceive their skills as more advanced.

Prior experience using technology plays an important part in how much training teachers needed to move from face to face to online teaching. Kyle shared that being an online student prior to the pandemic was the most helpful training:

The biggest form of training was probably being a student in online learning beforehand. I took a lot of this setup that my master classes had and the things that I liked about that and I used that in my class.

Alex shared a similar experience as Kyle, “I was able to be a student on the online side of things so I knew what it is like when they would turn off cameras and mics and go away because my friends and I had done that.” The prior experience as a student himself, Alex was able to predict student behavior in his own online classroom.

Professional learning that didn’t consider the protentional pitfalls or barriers could impact implementation and the amount of success experienced by teachers. Heather explained how the

useful technology tools didn't really have an impact, if students didn't have access or showed up to the Google Meet:

There was definitely not a lack of some really cool software programs or whatever that we could use with students, that wasn't the issue. I thought we got provided with that. I think there was a lack of we didn't have students on the other side of the computer screen.

Heather's frustration is not with the tools themselves, but that student attendance hindered the ability to use the tools effectively to engage students. Professional learning needs to meet the needs of the teacher and address protentional problems or barriers for success.

Teacher Social System – Peer Support

Despite the professional learning opportunities described as not being as helpful, teachers found a great deal of help from peer teachers. Roger's called this the social system because they are solving a similar problem as others in the same group. One teacher in the survey reported, "I learned more by trying things out with my cohort when we were given additional time to plan together." The peer support of teachers made an impact on teacher innovation and adoption during this time: Nancy depended heavily on a friend to move from mostly paper to electronic assignments:

I have a dear friend, a dear teacher that really helped out a lot and put a lot of things on Google Classroom because I don't do that...I was fortunate enough to have her help me...Anytime we had technology, I always buddy up with someone. I don't have the confidence.

Nancy benefited from having peer support during the transition to online/remote learning. A peer who had more confidence/experience helped Nancy start using Google Classroom, a necessity

during the pandemic. Having a peer to work through the problems of implementing new learning was helpful, especially when implementing technology because they can help test or walk through the steps. Brittany was supported by her department and another teacher for some new technology integration, “My department decided to make videos so we could share with students when we were sick or if they were sick. Another teacher taught me how to make a form on Google Classroom.” Having the collective decision of the small group was helpful for Brittany in knowing how and where to start tackling the stress of not knowing what to do at the beginning of Fall 2020. Having another peer teacher walkthrough the steps in creating a form was helpful in providing instruction right when it was needed and in a safe environment.

Working with a partner teacher could make tackling systems easier when both teachers could share the load of creating and understanding how the new system will work. Kyle wanted to work closely with a partner teacher to develop similar systems to use during the pandemic:

My teaching cohort and I taught the same thing and we wanted to keep everything on this on the same page, same operations and so we really focus on the operations of technology in our classroom, of the systems that we would use, so that kids were understanding the vehicle for the learning, so the kids could be able to just eventually do the learning because they didn’t have to think about how to turn things in or where to go for this or that, so that was at the forefront going into it.

The ability for students to focus on the learning and not on the system was a goal and the support of a peer teacher makes that goal easier to achieve. Both teachers could problem-solve and troubleshoot the new system and develop material together.

Mentor teachers were helpful for new teachers in navigating the entire school organization and daily tasks that teaching involves. Alex benefited from collaboration with his

mentor, “I benefited greatly from having my mentor in particular. She reached out a lot and we did a lot of collaborative work online.” New teachers during the pandemic experienced all the same concerns and issues as any other year, so having a mentor they could spend time working together with was invaluable. Having a mentor system established prior to pandemic aided in the success of continuing the mentoring throughout the pandemic, even if the setting or procedures changed.

More experienced teachers spent time helping colleagues with the implementation of new technology. Chelsea spent a lot of time helping colleagues, as she described:

I was doing a lot of instruction to my fellow colleagues...I think you got to see different strengths from different people. Then you got to see some people just shut down completely and not figure it out, so being able to help some of them a little bit more was neat.

This was a similar experience for Deborah, who spent time answering questions for co-workers because of their prior experience using technology, they were considered a leader:

I think the hardest thing for COVID teaching for some of my co-workers because they were coming to me a lot with questions about what the hang-ups were going to be that students had and they couldn't prepare for them because if you haven't been teaching that way, you don't know what's going to be a problem until you've done it.

When a school has a mix of experienced and new teachers then mentoring could continue and experienced teachers could help those with less experienced, regardless of their years' experience. In this case, the amount of prior technology integration was a factor in who helped colleagues. Both Deborah and Chelsea had more than 10+years teaching experienced and a lot of

prior technology use, so they were confident in teaching pedagogy and moving to online learning.

Perceived Success and Challenges

Based on Roger's Diffusion, innovations with a relative advantage over current systems lead to success in adoption. Teachers experienced both some success in teaching during the pandemic, but many failures that made teaching stressful and more time consuming. Research Question #2 is focused on the factors or characteristics that contributed to teachers' perceptions of their success and challenges teaching during the pandemic.

Google Meets Successes and Challenges

Google Meets was the primary way students and teachers met for class remotely at Crestway Schools. Prior to the pandemic, 25 of 28 (89%) teachers surveyed had never used Google Meets and during the pandemic 27 out of 28 (96%) reported using Google Meets daily for instruction. Teachers perceived Google Meets as both a success and failure to remote learning. IT was successful because they had the ability to easily meet with students individually and it was convenient to connect with students, but it was a failure when trying to meet with a larger group of students.

Alex shared an advantage to Google Meet, "They [Google Meets sessions] would be more like one-on-one tutoring sessions. Students were able to pop into like the chat and just kind of like walk through what they were struggling with specifically." This was a similar experience for Deborah, who stated:

I have open communication with students, and they were comfortable emailing saying 'I don't know how to get to that or I'm confused' I could open just open up a Google Meet

really quick hop on, verbally walk them through it, they could share their screen with me and we were fine.

Alex and Deborah both had success being able to meet with individual students using virtual Google Meets to walk through problems or answer questions students had about the learning material.

Google Meets also presented problems for teachers as they tried to teach groups of students. Heather observed, “If we were just on a Google Meets, they could just kind of sit there very passively and never have to participate. You weren’t really sure if they were paying attention at all.” Alex shared a similar experience, “It definitely felt like I was just talking to a blank wall a lot of times.” Brad related this as well, “I really couldn’t tell if they’re engaged or not or zoned out.” Large groups of students in a virtual Google Meets was hard to engage, especially students who did not want to turn on their camera or speak in front of the group. The dynamic was very different than being in the classroom. So, although it did allow the teacher to meet with everyone and share information, it was very difficult to gauge how students were receiving the information. Teachers describe a mostly passive experience by the students.

Trying to find ways to engage students to keep them present for the virtual session, meant teachers looked for creative solutions. Richard shared one way he tried to make students stay for Google Meets, “I would take roll [attendance] two or three times during the [Google Meet] period because students would show up for an initial roll call basically and then disappear.” Teachers were required to take attendance for Google Meets since it counted for the state required “seat-time” for the class. Based on the interviews, teachers found Google Meets or virtual meetings more useful for one-on-one situations rather than whole-class meetings.

Communication Success and Challenges

Teachers shared both positive and negative factors for communication with students and parents during the pandemic. Teachers were expected to communicate with students and families frequently and often in new ways, since students were learning remotely. There was an increased communication expectation on teachers at the middle/high school level, more than it had been previously; partially due to the state requiring regular communication as part of attendance requirements. This increase in communication, often to just check-in for attendance, took a lot of time from the teachers, especially when they were already limited on time. Heather shared the high communication expectations:

Communication expectations were the highest I've ever been held to, I guess, as a teacher, so constantly sending emails, text messages. I wish we would have had *Talking Points* during that time that would have been fabulous. But trying to reach your advisory kids every single day. I had several of them we would just text every day. And there were a few who I could never ever reach their parents, so it was very challenging. If they're not showing up, short of knocking on their door, there was not a whole lot that I could do. Teachers were expected to check-in with 15-20 students who were in their advisory class every day for attendance purposes. Normally teachers would see students at school and not need to track them down at home or talk to their parents as frequently for daily attendance. Alex shared the amount of time spent talk with parents for parent-teacher conferences:

My first year they pushed a lot of the parent communication, and I ended up making something like 80 phone calls, I think that took me the better part of a week to do. I just kept calling people one after another. It ended up making my parent-teacher conferences kind of meaningless because we had already just talked about everything.

Parent-teacher conferences were remote as well during the 2020-2021 school year. Prior to COVID, parents would come to the building and meet with teachers briefly, so teachers didn't have to spend time calling or reaching out to parents. Making 80+ phone calls in one-week would take a lot of time from a teacher's plan period or off-contract time to make.

The weekly check-ins may have taken time, but teachers shared how they found out more about students and were able to make stronger personal connections. Chelsea shared how they felt more open to discuss with student's things happening at home:

It has opened up more communication with me and my students. I don't always feel like I can get to know them, if that makes sense. So like I'm not afraid to have those conversations with kids. Whereas before it's like oh, can I talk to them about this or can I ask them about their home life? So I think the biggest thing has come down to the communication with the kids, getting to know them a little bit more.

Chelsea felt that prior to the pandemic some topics were not okay to talk with students about, but the pandemic allowed teachers to ask more questions about their daily lives; such as, if students or their family were feeling okay or something about their homelife. The Google Meets at home certainly opened a different level of personal information about families, students, and their homes. Brittany felt she knew students better based on the weekly check-ins with students:

I remember having a weekly check-in with my advisory students where you had to contact them every single week and log that we contacted them. I think that helped build some positive relationships because you find out more about your kids that way, like I had one kiddo that had surgery and his mom was very surprised because I knew about the surgery from those weekly check-ins and I had called a few hours after surgery was

supposed to be done to see how he was doing and if he was okay. She was surprised and thanked me for that. So definitely a lot more communication with the families.

Frequent check-ins meant knowing more closely what students were experiencing at home.

Brittany was able to check-in and be specific about what the student was facing in a medical procedure that might have been kept private in previous school years.

Having students who don't speak English made it more difficult to make daily/weekly contact with the students and their parents. Chelsea explained the problem communicating with a language barrier, "We have so many Spanish speaking families, my Spanish is not great, so being able to translate or getting messages to families was difficult." Normally, teachers have access to translators in the building who could help make phone calls, but during the pandemic, when everyone was working from home, it was more difficult to work with a translator to find students/parents.

Teachers had more responsibility for reaching out to students and parents to identify problems, send materials, or take attendance. Angie shared her concern for the lack of accountability on parents/students during this time:

A lot of stress and just not knowing what was going to happen the next day or the next week and not a lot of accountability on students or parents/guardians as far as their role in taking part of their own education, or the parent/guardian role and helping hold their students accountable on their end

There wasn't much teachers could do if students weren't showing up to Google Meets or submitting timely work for teachers to grade. A lot of pressure was put on teachers and not as much on students or parents. Some parents even didn't want their students to be doing online schoolwork. As Kyle said:

It was tough when especially when parents were supportive of them not being on [Google Meets], I remember talking to one parent and them saying ‘they felt like it was more important for their kid to play video games online because they’re socializing with other kids than doing their homework

Even when teachers were doing everything right some parents didn’t agree with remote learning and it made it difficult to teach all students.

Barriers – Rural and ESL Internet Access

Teachers shared some of the barriers to learning, including students and teachers without reliable access to the internet and the problem of being in a rural school district complicated access.

Richard shared that high-speed internet access was a problem for some students noting, “There were some students that didn’t have access to the internet, at least a fast enough internet. I had some kids for instance, that were still using dial up internet, believe it or not.” In rural and poor economic communities, some families didn’t have internet or fast enough internet to run Google Meets. Deborah also explained how the location was problematic for internet access:

The biggest impact I saw was there were people who wanted and were able to afford the correct and useable internet connectivity that they needed, but because of the location that they lived in, there was not cell tower coverage to, even if we provided a hot spot, they still couldn’t quite get the connectivity that they needed, so that definitely was a problem. Even with a hot spot provided by the district or the ability to pay for better service, sometimes that service just isn’t available in rural areas. Heather shared how students tried to adapt to no internet at home, “Some students were having to drive to the parking lot [of the school] for internet access.” The school provided Wi-Fi access in all of the district school parking lots, so if

a student could get to the parking lot, they could have access for free. Distance to the school or weather were a factor in accessing the outside Wi-Fi.

Some teachers had problems or no access to reliable internet as well. Heather was one of the teachers who stated, “When we went remote and hybrid, my house where I lived, I didn’t have really high-speed internet. I had satellite internet, which was not the best and so I worried about that a little bit.” Nancy commented, “I didn’t have any internet at my house and so that of course affected what happened during COVID.” The teachers ended up bearing the expense of getting internet access or increasing internet access at home.

Internet access was a barrier for teachers and students to successfully be able to do remote learning, which may have put them behind in school expectations. Chelsea observed, “I think some of them missed an entire year of their education because they couldn’t get access to the internet. I know it’s not their fault, but I don’t know whose fault it is?” The school did try to provide hot spots, but those didn’t always work because it still required access to service. The question of, “Is it the school or family’s responsibility to provide internet for learning?” was a new question that came about due to the pandemic. Families who had language barriers and who didn’t have internet access had were impacted greatly, as Brittany acknowledged:

It made it more challenging for ESL population because I think most of the student already had internet access except for my ESL population. I really feel like they probably didn’t get as good of an education just because of the language barrier and the internet access.

Even three years post-pandemic and some students were still experiencing problems. Angie conceded, “I know that we were still having issues with connecting to the internet at their house or wherever they were currently staying in may not have been one that was WiFi appropriate.”

Having adequate Wi-Fi was important in subsequent school years as students and teachers had to quarantine and there were fewer remote learning days, but more individual days of sickness and quarantining times.

Paper packets were a solution during the emergency shutdown in Spring 2020, but still remained a solution for students who just couldn't access Wi-Fi. Angie explained:

I definitely think us being a rural school we were at a disadvantage as far as all of things that could have done more with remote learning, but we were limited, so some students were mailed packets to complete or do a home visit. It was a struggle for a lot of teachers and my issue was trying to do all of that and drop something off for you and then nothing. It is hard to do any kind of determination of what a student is mastering or not mastering, it's just like them missing class every day.

Paper packets were not the same level of education students who had Wi-Fi experienced. Paper learning without support of the teacher on a regular basis was problematic to knowing how a student was understanding or progressing through the material. Plus, lack of internet access was a huge barrier for students and teachers in this rural school district.

Implementation Pitfalls – Student Cheating

Teachers perceived that when students learned remotely it increased cheating on assignments and diminished student learning. When the teacher wasn't able to monitor the student work in the classroom, then there was an increased chance that students would use the internet, friends, or family to do the work. Alex remarked:

I think students got better at cheating...almost everything when electronic which makes it easier for them to just pass it along [to another student]. I saw a lot more instances of

excessively similar answers because I'm not able to monitor their progress as they're working.

Alex shared how students would share electronic assignments between friends and copy work to then submit. It is hard to prove who did the work and who copied. Brad shared the impact of cheating on the daily work impacted test grades, "The sad part about electronic is because a lot of students cheat...students would finally take the test and they wouldn't know anything because they cheated on the questions leading up to the test." Brittany explained how cheating had an impact on overall student retention of information:

It was a lot harder to catch cheating because there's lots of resources out there on the internet for students just to get the answer, you know, copy and paste the question and put it in. I think some of them it was more shift of how to get an easy good grade opposed to learning the material, so some of those students squeaked by you know, but they're going to end up paying for it now that we're back into regular school and they don't know what they're doing.

Cheating on work had a short and long-term impact on student learning and the ability to apply that knowledge to future learning. In the short term, student's grades suffered from copying answers and then doing poorly on an exam. Long-term students won't have learned what they need to learn the next step or more complicated information.

Mental Health

Teachers commented on changes to teacher and student mental health during the pandemic. Even though teachers were not specifically asked about mental health, when asked about successes and failures or changes to instruction, mental health was the most frequently mentioned topic. The

pandemic has had a tremendous impact on teacher and student mental health during the 2020-2021 school year and has continued through to 2022-2023 as well.

Student Mental Health.

Students experienced a disruption to their normal school routine with remote and hybrid learning. Older students often spent time alone or looking after younger siblings. Students experienced worry about loved ones during the pandemic is a type of trauma that prevents students from thinking about their learning. As Deborah realized:

I think philosophically one thing that was a change, I didn't believe this way before, it is something that I paid attention to though is that sometimes the kids who were there weren't learning because they were worried about somebody at home who had COVID or I just missed the last two weeks of school and I'm so lost and I don't know what to do here. I think I've tried to pay more attention to that than I did before. I had already had kind of a monumental flip on that due to personal issues in my own life and really realizing on what level trauma can do on your ability to focus.

Deborah having experienced her own family trauma prior to the pandemic understood how students couldn't focus on learning when they were worried about family and friends.

As a result of student mental health, some teachers changed classroom policies about late work or gave more grace. Nancy expressed this sentiment:

I think it's just an extension of my personality just not coming down on [students] for things that were not in their control, but they weren't really sure how to maneuver to get there. I think we need we all need to be much more understanding, and I'm not just talking about late work, but just the frustration sometimes on their [student] faces.

It was more than just accepting late work through; some students were just frustrated with how much was just out of their control and normal routine. Nancy felt students were really stuck sometimes and didn't really know what to do and since really nothing similar has happened there wasn't anything to rely on for knowing how to navigate the changes or when it would end.

Social Emotional Learning (SEL) has become an important part of the school curriculum in the last few years. A move away from character education, to social emotional learning. Brittany has always felt strongly about SEL (Social-Emotional Learning) having an impact on student learning:

I've always been pretty adamant about mental health first and then education second, which was the focus during the pandemic was taking care of our kid's emotional needs first and I'm really glad to see that we're putting more of an emphasis on SEL now because if you've got a kid in our class who isn't there mentally then they're not learning the material anyway.

Brittany touched on the impact of emotional needs being a priority in order for learning to happen in the classroom. Since the 2020-2021 school year, schools have been adopting social-emotional curriculum and making it a larger part of the school day.

Teachers were interviewed in Spring 2023, so they were able to comment on what they saw as a long-term impact in the classroom compared to the 2020-2021 school year. Several teachers shared how students have changed because of the unknown from the pandemic and the disruption in school routine. Alex shared the increase in student anxiety:

They won't present in class without having a major anxiety attack and it's to an extent where it's not just that there is a few kids with anxiety like public speaking, but it's like the entire class. And I don't think that's normal.

Alex noticed that students have more anxiety around public speaking in class. For several years, students weren't asked to speak in-person in front of their peers or in class discussions. Angie discussed some of the changes to students during and since the pandemic that impact other students in the classroom as well:

There are things I've never done before, but they're definitely more on the social emotional side of the learning. I had a student this year that I couldn't have the lights fully on or another student who would have frequent panic attacks. So spending more one-on-one time and class time catering to students when they are depressed when they have anxiety, when they are uncomfortable, when they are having episodes. And sometimes at the cost and uncomfortability of other students. Just a huge uptick in students with emotional needs.

Angie shared how different the classroom was with students who are experiencing anxiety, depression and how it impacts other students. Angie keeps the lights mostly turned off to help students feel comfortable in her room. Angie goes on to share how student apathy increased during the pandemic and has continued even now, 2-years since the initial start of the pandemic:

I felt like student apathy really increased during the shutdown and I remember thinking it was pretty bad, but understandably you know with what everything that was going on, but I think student apathy has continued to increase even when we got back in person and two years later.

Student worry during the height of the pandemic was understandable as people were getting sick and the disruption in the school routine. Angie shares that even since there has been an increase in apathy towards school as students try to navigate the return to school that looks more like pre-pandemic times.

Teacher Mental Health.

Teachers also experienced stress and impacts to their own mental health, which ultimately impacted their teaching. From the Qualtrics survey, 25 out of 28 (89%) teachers answered that they experienced a moderate or more stress teaching during 2020-2021 school year than prior to the pandemic. Teachers felt they had to make changes to their teaching to try to engage students and had to compete with video games and television, so had to make school more entertaining for students. Angie expressed this concern,

If they're [the students] not entertained by it [the lesson] are they going to be engaged? I felt like that there's been a lot of pressure, I try really hard. I think there's a lot of pressure since then to be more of an entertainer instead of a teacher.

The pressure to engage students and keep them learning in different formats was difficult. There were a lot of competing interests for students during the pandemic.

Even in the classroom, teachers had to change their usual behavior and routines and that had an impact on how they interacted. Deborah felt that she couldn't keep their proximity to the students during the pandemic which impacted their instruction:

I think that the mental load was so difficult for myself, I mean I'm worried about the kids, and I don't know what to do, so it wasn't the instructional changes...so I was super worried about giving my kids COVID, so one major change in my teaching is the proximity to kids. I kept away from them behind a plexiglass partition.

Not being able to walk around the room and interact with students like they previously would, out of fear of getting or giving COVID, made teachers change the environment of their classroom. Sitting behind plexiglass was a more sterile and less welcoming environment.

The daily stress for teachers was significant, it required a lot of work for teachers, some who had a lot of teaching experience to adjust their lessons to different delivery methods.

Brittany reflected:

I'm working harder than I did as a first-year teacher because you know your first year you have nothing. It was hard finding a line between work and life, I was doing Google Meets with kids a 7 or 8 o'clock at night, so I was working harder than a first-year teacher. It was hard to read the amount of nasty stuff I was reading about how lazy teachers were not doing anything.

The public perspective of teachers took a drastic swing from the early Spring 2020 support of teachers to a negative and sometimes public outcry when schools went remote in Fall 2020-2021 school year. Parents were exasperated with remote learning and wanted their children to be in school, so they could go to work. The public disdain was stressful and impact teachers who were working very hard to meet with students.

The stress of the pandemic and public pressure was hard for many teachers. From the survey, one teacher shared that "teachers were given no trauma care, and no grace, no consideration. We had to dive-in regardless of our own trauma responses and be everything to everyone at all times." Teachers didn't receive any training for the emotional toll of the pandemic, the training was mostly focused on policy/procedure changes and academic content. Heather was brave and shared she had to get medication for herself due to the stress of teaching during the pandemic:

Like as a teacher, that whole time [teaching during COVID] I was stressed out like to the point where I eventually asked the doctor for medication which has helped tremendously. I remember it was 2020-21 and going out of town and on the way back to town because I

had school the next day I just felt this sinking feeling in my chest, like it was just a lot of unknowns and it was scary, so it was tough.

The ability for teachers to access mental health services during and after the pandemic was a huge need and one that wasn't often discussed, probably partly due to the public pressure during the pandemic.

Instructional Changes Post-Pandemic

Research Question #3 focused on instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years? This was to gauge the impact of the pandemic on teaching now and into the future. Since teachers were interviewed at the end of the 2023 school year, they had a chance to reflect on the changes they made during the 2020-2021 school year and since then. Teachers did keep some pandemic changes, but not very many. Teachers also shared post-covid concerns and impacts with increased behavior problems and learning loss.

Confirmation - Still Utilizing

Everett Roger's states that confirmation comes at the end of the innovation-decision process and is the point at when a decision to adopt or not is made. From the survey, 19 of 28 (68%) teachers reported they strongly agree to somewhat agree that they continue to use changes made from teaching during remote and hybrid learning of 2020-2021 in their classrooms today. Teachers stated several ways they continue to use technology and other changes from the pandemic. For example, Alex stated, "I'm still using Google Classroom." Chelsea continued to utilize Google Classroom (a Learning Management System-LMS):

I always had a Google Classroom, but I never posted much in it. And I would say now that is another thing we go to Google Classroom at least a couple of times a week and it

does make things easier for my kids, like if they are gone, I can post things they can stay caught up.

Once teachers moved material to Google Classroom, a simple Learning Management System (LMS), it was easy for them to maintain using it to post assignments. Brad mused, “All assignments are still electronically focused; I still do electronic assignments. They’re easier to grade because they’re all in one spot.” Brad found that the electronic submission of work was easier to grade and keep in one spot for both him and his students.

Changes in instructional style were also present after the pandemic. Students desired more hands-on learning, something that was missed during the pandemic. Heather commented on this evolution:

My classroom instruction is similar, but I would say it’s evolved a little bit. I know I mentioned earlier I don’t necessarily say get your notebooks out let’s take down some notes, I’ve tried to do more guide notes with my students because of the attention span, like the attention span isn’t there. So if I can give them some guided notes, that means less time that I actually have to spend talking to up there talking to them...I would rather be doing something more hands-on. So it’s evolved a little bit into less me standing at the front of the room and more let’s all do this together type thing.

Instead of delivering notes, Heather has developed a change in her teaching style that reflected the shorter attention span of students by presenting guiding notes and then moving to more hands-on application of learning. This wasn’t a major change in her teaching philosophy, but a subtle change in what her classroom looks like.

For new teachers during the pandemic, they really didn’t know anything different other than their own experiences as a student. Alex was a new teacher at the start of the pandemic, he

shared how he allowed students more freedom to make mistakes and ultimately felt he became a better teacher post-pandemic:

Because I started out as an online/hybrid teacher (2020-2021), it was easier for me to transition into normal teaching because I had no baseline for normal things...so it made me a lot more flexible teacher with just being thrown in the deep end, my first year teaching...there was also a lot more understanding if things did go right and that allowed me to be able to kind of play around and experiment.

As a teacher, being able to make mistakes during the pandemic allowed teachers more flexibility in their content, delivery, pacing, etc. Alex felt the freedom and experience gained through trial and error during the pandemic contributed to his professional growth.

Discontinuance

In Roger's Diffusion of Innovations Theory, after a time of trial, there is either an acceptance and continued use of the innovation or the person decides to reject and discontinue the innovation. This was true for the teachers in this study. Many science and math teachers have moved back to using more paper-based classrooms. Chelsea shared the importance of seeing students' thinking while working math problems:

There are some things I prefer them to submit electronically but a lot of times with math, I find it easier to look at like a hard copy of their paper it's easier to see their mistakes; whereas, like on the computer they just put in an answer in there and it's like, okay, I have no idea how you got this answer, but when they can write it out on paper, then I can go back and fill in those missing gaps...I still don't know that math can be done at home [because middle school students] don't have the resources that we do [in the classroom].

Chelsea believed that examining the process of math is more important than just the problem's answer and found it easier to move around the room to look at student papers. Chelsea was concerned that when students were doing math at home it didn't allow for that immediate observation and feedback from the teacher and therefore weren't as successful for math. Brittany was frustrated with the push to continue electronic methods as an unneeded extra step, "I think it is kind of pointless to have Google Classroom because essentially all that I would post would link to Delta math, which students could bookmark anyway." She felt that there was pressure to continue using Google Classroom after hybrid/remote learning. While Brittany was using technology tools with Delta Math, in her view it was an unnecessary step to continue to use Google Classroom (an LMS) to just link a website. Richard shared that "I went back to paper. I'm a traditionalist." As a science teacher, Richard also preferred that students to complete work on paper and in notebooks. He tied working on paper to his beliefs about teaching. Nancy, an elective teacher stated, "I went back to doing more labs and hands-on learning in the kitchen. Students want to get experience cooking, measuring, and not being on technology all the time." Instead of using technology, Nancy focused on hands-on learning that students requested after the pandemic. There was an increase in class requests for Nancy's classes and she focused on the work in the labs rather than using technology.

From the survey, teachers had the most variance in not using/using Google Meets. Since the primary use of Google Meets was to connect with students remotely, when school wasn't meeting remotely, there wasn't a need for Google Meets. Prior to the pandemic 25 out of 28 had never used Google Meets; it was a completely new technology tool for most of the teachers. During the pandemic 27 out of 28 used Google Meets daily to meet with students. Two-years past the pandemic, 23 out of 28 using Google Meets less than three times per month with 20

reporting never using it. Google Meets served its purpose during remote learning, but it otherwise not needed by most teachers.

Pandemic Impact - Behavior

After students spent weeks in a cycle of in-person hybrid and home learning remotely, returning to the structure of the classroom was difficult. Teachers reported a significant change in student behavior after remote learning. Chelsea shared going back to the structure of school was hard for students:

After that Spring semester [2020], where they weren't there a lot of them like their attitude just changed. They didn't want to be there. I think they had gotten used to doing whatever they wanted at home and then trying to give them structure again was kind of difficult.

Chelsea explained that the shift in student behavior really started with the Spring 2020 emergency shutdown and continued. During the Spring 2020 shut down, students weren't expected to do the work, only the work to raise their grade, so many students disengaged from school. As a result, students were unconcerned with lower grades. Kyle observed, "Students had an apathy for learning...they were okay failing." Kyle found more students were failing and they were okay with failing grades. As a middle school teacher, Kyle found students struggled with being engaged with their learning.

The impact of not attending school regularly continues to be an issue, even two-years post-pandemic. Heather suggested, "I think those kids who are not intrinsically motivated, really, really struggled. I think we're still dealing with that a little bit because kids don't want to come to school still." Not having the intrinsic motivation to attend school was the reason Heather gave for the continued attendance problem at the high school level. Angie agreed and shared that even

intrinsically motivated students struggled to come back, stating: “I mean, even the students that were already intrinsically motivated struggle to come to class and if this is not something that’s fun and a game and flash, it was even a struggle to get them engaged sometimes.” Heather and Angie spoke to a general apathy they persevered among students and their desire to learn in a school setting. Students had much more free time during the pandemic; like an extended summer break. It was difficult for teachers to motivate students when there was not the excitement and celebration of going back to school. Back to school also meant wearing a mask and social distancing at times, so it wasn’t the same school experience students had in the past.

Pandemic Impact - Learning loss

In the short term since the pandemic, teachers shared their own examples of the impact of the pandemic on student learning. Teachers felt that students experienced a learning loss based on several factors. Deborah shared that the loss was not completely due to student ability, but to work ethic:

The quality of student work was less, but it wasn’t less because they weren’t capable of doing it. I think that a lot of kids learned very quickly, ‘oh, I’m not at school. I can’t work today. And so the quality of work was less because they were spending less time on it.

Being at home meant students had other activities vying for their attention and less direct support from their teacher, so students were not as motivated or supported to do work. As Deborah shared, the students could and can do the work, they just had other things to do with their time. Brad shared a similar experience, “I would say they’re behind instructionally...they tried to find the easy way out during covid so they do as minimal as work as they could, so they are behind academically.” Brad suggested that being allowed to do the minimum during the pandemic has had an impact on their academic skills.

It wasn't just students doing less work, but teachers were also covering less curriculum, as established by Kansas Department of Education (KSDE) in the *Navigating Change* documents released the summer of 2020. The focus was changed to the major topics at each grade level.

Deborah noticed this:

It [amount of curriculum covered] was definitely less, but I got through considerably more than most of my coworkers did. I would say I hit somewhere about 80 to 90% of what I had done before and most people were nowhere near that.

While Deborah moved much of her curriculum to digital forms prior to the pandemic, she felt like she was able to teach a significant amount of her curriculum, but that other teachers weren't as successful in teaching the curriculum. Richard shared the change of curriculum focus to the impact of student learning and time spent with the teacher:

Part of that has to do with COVID, I'm sure, but I also think part to do with the adoption of new standards that dropped a lot of things that used to be routine, like logarithms for instance. I'm not minimizing the impact on the students, because they're trying to master challenging technical material with only, at most, half of the instructional attention from me that they would normally get, they deserve a medal for surviving, I think.

Richard doesn't blame the students for learning loss, but from the changes in standards and curriculum that required less of teachers. Additionally, students had less direct instruction and support from the teacher since the hybrid and remote days required less direct instruction and more time for students to work independently.

As the data was collected two school years past the 2020-2021 school year, the teachers reflected on the curriculum changes and learning loss that they were experiencing long-term. Angie had noticed a change two-years since 2020-2021 school year:

I didn't really notice it the first two years, but this year was the first year that when I asked students to write a summary they couldn't. I noticed that critical thinking was major lacking and that students were just happy to complete notes and listen to a lecture or happy to look up answers that they could Google. I mean, it's funny that they started requesting lecture because they don't have to think as much.

Angie noticed more of a change now than during or directly after the pandemic in student background knowledge and skills. Students even have requested work that was more teacher directed rather than independent work. Chelsea observed, "I think we are shifting back to how the attitudes were prior to COVID, the willingness to learn. I think now we are just lower than we were and like they've [students] missed out on years of instruction." Chelsea described the move back to pre-COVID years in attitudes in teaching, but feels students are academically lower than before due to several years of disrupted instruction. Students did less work, partly due to the nature of the pandemic and how learning was delivered, but teachers also taught less due to time constraints and how standards were more narrowly focused.

Summary

From the survey and interviews, teachers shared how their teaching changed due to the COVID-19 pandemic and the successes and failures they experienced. With interviews being conducted two school years after the 2020-2021 school year, teachers were able to reflect on what changes they made and the impact of those changes on their teaching now. Chapter 5 will discuss the implications of the COVID-19 pandemic on teachers and further research suggestions.

Chapter 5 - Discussion and Implications

This qualitative case study examined the changes teachers experienced to their teaching methods during the COVID-19 pandemic. The pandemic was very disruptive in many career fields and people's personal lives. Teachers experienced a rapid shift in the delivery method of instruction and many unknowns. Some changes were required by government agencies or the Governor, some changes stemmed from the local board of education or school administration, and a few changes were of the discretion of the teacher. Various ideas and expectations of what schools and teachers should "do" came from parents, students, politicians, community members, administrators, even teachers had differing ideas. Being able to interview teachers and share their experiences from the pandemic will be important in understanding the short- and long-term impacts will have on teachers and the broader field of education. This study will be one of many that records the experience that can be examined in the future to draw broader implications. A rural school district in Kansas may only be one perspective, but it is one that must be considered within the context of the pandemic to get a full picture of how different types of schools were impacted by the pandemic.

As an instructional coach for many years, I've had a personal interest in how teachers change; what motivates them to change their teaching methods or to try new technology tools. The pandemic offered a unique experience to study how teachers change, especially because all teachers were impacted by the pandemic thus wide-scale change happened to all teachers at the same time. Yet, the change was very personal for teachers as each had to examine their current methods and make changes; albeit similar changes by adopting online classroom environments and technology tools to assign and collect student work. Ten teachers were interviewed about their experiences and changes to their teaching methods due to the pandemic. The focus of this

study was the Fall 2020-2021 school year when teachers had to make changes without really knowing what the school year would look like. Since teachers were not interviewed until the Spring 2023, they had time to reflect on what happened during that time and share what changes they continue to use or not. However, that distance of time also decreased the urgency and stress of those changes from the initial experience to being more of a reflection or memory of what happened; our memory is more forgiving.

This chapter will include four key topics: (1) importance of the study, (2) answers to the research questions, (3) suggestions for additional research, and (4) study limitations. Each of these sections will discuss the findings and implications from the perspective of the research questions, themes, and theoretical framework as it relates to the literature.

Importance of Study

The importance of this study is to examine what changes teachers made to their teaching methods due to the pandemic and if any of those changes are still present two years since implementation. Roger's *Diffusion of Innovation* provides a framework of successful change within an organization in adopting new innovations. While Rogers' provides a framework for what change implementation should look like, the nature of the pandemic offered a shift in that experience due to the need to change quickly and caused by an outside force: COVID-19 pandemic. The way teachers perceived the change process due to the pandemic offers some insight into how teachers make changes and shifts in their methods. Additionally, this study documents how those changes have impacted teachers and teaching methods two years since the pandemic. There are some lessons learned about change process and the impact of a global pandemic on rural teachers from one school district.

Indications from Research Questions

The following research questions were examined, and findings presented. The implications of those findings highlight some areas the pandemic impacted teaching methods.

1. In the teachers' perception, in what ways, if any, did their teaching practices change in direct result of the pandemic?
2. What factors or characteristics contributed to teachers' perceptions of their success and challenges in teaching during the pandemic?
3. What instructional changes, as a result of teaching during the pandemic, do teachers plan to keep utilizing and/or eliminate in future years?

Change in Teaching Practices

Research question #1 examined how teachers made changes as a direct result of the pandemic. The level of prior technology use had an impact on how teacher perceived the ease or difficulty of the shift to remote learning and the long-term adoption of technologies. For many of the teachers interviewed and surveyed, their prior use of integrating technology in the classroom or as an online student learner themselves made the move to online teaching more of a minor rather than major change to their teaching methods. Continuing to develop teacher capacity in technology use can make a difference for adopting future use of online or blended learning methods.

Prior Experience and Peer Support

In thinking about how schools might initiate future changes in their schools, considering who has prior experience would be helpful in identifying teacher leaders who could guide that change and professional learning (Hickey & Harris, 2005). Adding new and different technologies isn't as difficult if a teacher can transfer their current knowledge. Continuing to provide professional learning for teachers to develop technology skills is valuable and

worthwhile if schools want strong integration of technology. The most change for 2020-2021 didn't come from the professional learning provided by the district or administration, but from peers. Teachers felt supported and able to take risks through small peer groups or departments. Further developing peer professional learning groups and peer coaching for developing new knowledge would be practical and more successful for implementation than a top-down approach from administration. This is not a new approach as research from Joyce and Showers (1982) has shown for decades that peer coaching can be very successful for teachers to learn new skills. The problem is that this approach isn't always used by administration, or the time provided for teachers to meet; it isn't the norm in high schools or middle schools to use peer coaching (Bambrick-Santoyo, 2012). Leaning into a peer support professional learning model post-pandemic would provide a research-based model for improvement and a way for teachers to reconnect after the stressful and traumatic experience of working through a global pandemic.

Perceived Success and Challenges

Research question #1 examined the factors that contributed to teacher successes and challenges during the pandemic. From the interviews and survey results, teachers experienced a great deal of challenges and very few successes. Teaching during the COVID-19 pandemic was very stressful for teachers.

Barriers

Being a rural school, teachers experienced barriers in being able to successfully teach remote and hybrid model to students who had limited WiFi access, even teachers experienced issues with internet access. ESL students were particularly impacted by the lack of access and communication barriers (Villegas & Garcia, 2022). Even though the school district provided WiFi access outside all of the school buildings, it required reliable transportation to go to a

school site. Hot spots were also provided for teachers and students, but in a few instances even the hot spot couldn't provide the level of access needed to run a live Google Meets session. Internet access was increased due the pandemic but has since found that rural areas are falling behind on maintaining that access (Hampton, et al., 2023). The impact of not being able to reach all students may not be visible by the collective group/data, but the individuals who weren't able to access were greatly impacted on an individual level at that time and in the loss of learning opportunity. They couldn't participate in the group Google Meets and therefore left behind socially and academically--more isolated. Teachers felt helpless to provide access. Access to internet may have been uniquely needed during remote learning, but as schools continue to integrate technology and use remote learning for snow days, access to reliable internet at home is a basic necessity, not a luxury (Ascione, 2022). Working with local government and businesses to provide adequate WiFi access going forward would benefit teachers, students, and families. Work can be done now to ensure adequate access is available in the future.

Communication

During the pandemic teachers were expected to communicate with students and parents at much higher levels than they were ever expected before – the state even asked teachers and parents to keep a log of student remote learning work. Even when the log was dropped as a requirement, teachers were still expected to contact students for attendance purposes, which was difficult when students were not showing up for Google Meets sessions. The increase of communication was met with mixed reviews with some parents wanting to be more informed of their student progress whereas others didn't want all the daily details/check-ins (Hodgman, et al., 2021). Parents want meaningful communication from the school, not daily/weekly check-ins for attendance (Carrión-Martínez, 2021). The workload stress of communicating daily was an added

task for teachers that took time away from time spent planning, grading, or working with students (Jones, et al., 2022). Teachers also found it more difficult to communicate with the language barrier of ELL families. This was a huge need prior to the pandemic, that the pandemic highlighted for the school district how important it is to have staff and tools to communicate across language barriers (Feng, 2021). The school district has since purchased *Talking Points* as a tool to communicate with families through text that sends translated messages. Several teachers shared during the interview that they wished the district had *Talking Points* during the initial phases of the pandemic. Meaningful communication will be an important way to bridge the divide between parents and schools and also communicate student learning progress as learning loss is addressed.

Mental Health

Even though mental health was not specifically a question that was asked in the interview, it was a topic that most of the teachers discussed in the interview when talking about challenges. The teachers interviewed indicated that both teachers and students' mental health suffered due to the pandemic. One study has reported that teachers experienced higher prevalence of mental health compared to healthcare and office workers (Kush, 2022). The stress of making major changes to their method of delivery and types of assignments they gave students felt like being a new teacher again. Teachers gave examples of how students behavior has changed due to the isolation of the pandemic. Teachers also shared how the return to school has been challenging due to student apathy. Training regarding the trauma involved in working and learning during a global pandemic was not provided to teachers or students with everyone just expected to go back to pre-pandemic routines.

Teachers received a great deal of support and praise during the initial emergency shutdown in spring of 2020 as families were so appreciative for the work that teachers do on a normal basis. However, once remote and hybrid learning came about the community was less supportive of the school and teachers (Ferguson, 2021). The community demanded that schools return to in-person learning so parents could work. The public backlash of schools was particularly stressful for teachers who were experiencing the stress of working during the pandemic and make significant changes to their instruction/work at the same time (Packer, 2022). The backlash and stress of COVID has more recently led to an increase in teacher turnover, teacher shortages, and fewer people wanting to become teachers (Barnum, 2023). Addressing the mental health, stress and burnout of teachers will be key to solving a teacher shortage. Schools have increased their instruction of social emotional learning for students as required by the state; however, these are geared towards students and not staff and teachers. Additionally, curriculums are not a replacement for trained therapists in dealing with trauma and mental health. Unfortunately, even these programs are being politicized and attacked and considered governmental overreach, so students may only receive limited social-emotional curriculum, if any, to deal with the trauma of learning during a pandemic (Stanford & Meisner, 2023). This is especially troubling when the levels of stress and mental health concerns are at a level to be considered a national emergency (Collins, 2023). Of the interviewed teachers in my study, they all intend to remain in the profession, but several plan to seek out different roles, not in the classroom. However, data since the pandemic has shown an increase in teacher shortage (Barnum, 2023). Time for mental health and healing for teachers is one way school districts could retain teachers.

Instructional Changes Post-Pandemic

Research Question #3 examines the instructional changes teachers made during the pandemic and what, if any, they've kept since then. Knowing how the shift in teaching methods and increased technology use translates long-term can help us understand the long-term impact on teaching pedagogy and integration of technology. In Roger's Diffusion theory, we know that innovations are either adopted or discontinued after an initial trial phase.

Missed Opportunity

With the shift in instructional methods and delivery, the pandemic was a prime opportunity to try out different teaching tools and better integrate technology to leverage learning. However, based on the interviews, many teachers have kept only a few elements of technology use from the pandemic, with many of them returning to pre-pandemic teaching methods (Vegas, 2022). Teachers interviewed said they returned to paper/pencil learning and using the LMS – Google Classroom just to link to other resources. Granted some of the technology isn't immediately needed right now; for example, teachers don't need Google Meets to run virtual classrooms. However, teachers also only received enough professional development to get started and at that time teachers were stressed and overburdened with all the other changes and expectations to classroom procedure and curriculum requirements presented in the *Navigating Change* document from KSDE. Quality professional development and opportunities to practice with low-risk were qualities of the professional development provided during the Fall 2020 school year. Many teachers just wanted the pandemic remote and hybrid learning to be over and have some normalcy in their classroom teaching routines, so they rejected some of the pandemic tools. A collaborative or peer approach to integrating technology

may prove to be more successful since from the interviewed teachers that is the best method for applying and integrating the technology tools (Ley, et al., 2022).

As teachers are experiencing student learning loss, now and in the future, in addition to different student behaviors, now is the time to utilize effective technology tools to motivate and engage students. Technology can be used to individualize/personalize education for students to provide learning where there are gaps and give quick, informative feedback (Major, 2021). There are new and old technologies that can be utilized to address student apathy and attendance (Long, 2023). Schools should continue or increase efforts to integrate technology through professional learning that addresses teacher concerns regarding learning loss, student apathy, and behavior. Blended Learning might be the best approach to combine the best of online and face-to-face teaching methods in a post-pandemic learning environment (Thahir, 2023). Blended learning was already utilized prior to the pandemic but did not have widescale adoption in K-12 education. Teacher professional learning is a key component to any initiatives. Using effective professional learning and change processes and lead to increased adoption of technology. If not technology, then more hands-on, real-world learning opportunities that increase student collaboration, choice, and exploration (Hamlet, 2022). Teachers will want to address student needs, so addressing apathy, learning loss, behavior, etc. will be a catalyst for professional learning. It will take instructional leaders to help guide teachers and provide space for training, collaboration, peer coaching, and low-risk trial of new strategies: technology, blended, and real-world learning.

Suggestions for Additional Research

An abundance of research will come from studying the impact of the COVID-19 pandemic on all areas of education. This qualitative case study sought to contribute to the research being collected. As a researcher from the field, who conducted a survey and interviews, there are

some additional research areas that should be considered. The scale of the research should be conducted in numerous states and in local communities, so that it can be collected and studied in future meta-analysis studies. There should be separate focuses on teachers and students and all other areas of education as well. Future research should also examine long-term impacts on teachers with additional teacher reflection as additional time passes.

Research that addresses the barriers to success during the pandemic should be examined and used for future policy changes and advocacy. Future pandemics are possible, but many of these barriers are from inequality educational resources or practices that should be addressed regardless of a pandemic. Additional research on the mental health impact of teachers and students during the pandemic and how that can be addressed in schools in the near future. The mental health of teachers could also help address the teacher shortage and retention efforts and is worthwhile in strengthening the profession. Teachers who are equipped to address their own mental health struggles can be better able to help their students and offer better quality teaching in the classroom.

Studying the barriers to professional learning experiences and adoption of integration of technology would be impactful for understanding ways school leaders can be more successful in creating change in schools. Lots of research on best practices and changes exists, but there is a disconnect with actual implementation in schools. The pandemic was an opportunity to increase the knowledgebase of all of the teachers within the school, but if they are mostly returning to pre-pandemic methods, the opportunity for real long-lasting change was missed. There is still time to capitalize on the training of new technology tools and to address post-pandemic student concerns: apathy, attendance, behaviors, etc.

Study Limitations

This study was limited to one school district in a rural school district, so was limited to the views of a small number of teachers. Most of the teachers interviewed had previous technology use, thus the change to remote was more of a minor change rather than teachers who had limited technology use and required a major change. Future studies could examine the experience in other types of schools and regions. While this study examined prior research that was conducted on this topic, it is still a relatively new topic, so more additional research will be released that could reveal different results. The intersection of mental health and education is a specialized field that I'm not qualified to fully address, so a joint research project between experts would better address the concerns and solutions. While this study focused on teacher perceptions, examining it from different perspectives within the education field would provide additional insights into professional learning and addressing barriers that were highlighted due to the pandemic.

Conclusions

The COVID-19 pandemic has had a significant impact on education and specifically teachers as they experienced a sudden shift in the delivery of learning. The change in delivery to remote and hybrid learning exacerbated and revealed barriers to learning for students, especially at-risk students. The barriers to learning presented a stressful burden to teachers, who often didn't have the tools or power to overcome issues because they were bound the scope of teacher influence. The stress of the pandemic had a significant impact on teachers as revealed in the interviews and could influence the health and welfare of the teaching profession. The use of Rogers' *Diffusion of Innovation* theory to understand how teachers changed, if any, provided some framework to examine how teachers adopted or not adopted the innovations presented during the pandemic, but did have some limits since the change was required due to the

pandemic and not due to research-based or collective choice. The use of a social system of peer mentoring was evident as a successful way for teachers to implement change, an already known evidence-based process of implementation. The opportunity to make major changes in pedagogical practices isn't visible at this time though, so the long-term impact on teaching practices is unknown and future research will need to be conducted.

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Appendix A - Qualtrics Survey

Teacher Covid Survey

Start of Block: Block 1: Implied Consent

Implied Consent Remote Learning During and After the Pandemic Implied Consent and Questions

Purpose of the Study

During the COVID-19 pandemic, teachers were asked to shift from traditional face-to-face instruction to a remote and hybrid learning models. This study will focus on teachers' perception of that change and in what ways, if any, did teaching practices change as a result of the Covid-19 pandemic during the 2020-21 school year.

Research Procedures

If you choose to continue with this survey, you will be asked a series of multiple-choice, scaled, and open-ended questions about your experience during remote learning. You will also be asked demographic information about your teaching situation. The survey should take no longer than 15 minutes.

Risks of Being in the Study

There is minimal risk associated with this research study; however, as with any online related activity, the risk of a breach of confidentiality is always possible. To the best of my ability your answers in this study will remain confidential. The survey is anonymous.

Benefits of Being in the Study

There will be no direct benefits or compensation for your participation in this study. However, it will provide you with an opportunity to reflect on and discuss your experiences teaching during remote learning.

Confidentiality

Survey data will be collected through an online survey-collection program called Qualtrics. Qualtrics is a secure site with SAS 70 certification for rigorous privacy standards. Any data that you provide through this program will be encrypted for security purposes using Secure Socket Layers (SSL). Only the study investigators will have access to the data on Qualtrics.

If you provide answers to the open-ended questions in this survey, your answers may be quoted; however, because the information is collected anonymously, your actual name will not be associated with the survey data.

Your information collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.

Voluntary Nature of Participation

Your participation is completely voluntary. You have the right not to answer any question, and to stop the survey at any time or for any reason. If you begin the survey and change your mind, you may end your participation at any time without penalty.

Whom should I contact if I have questions?

You may ask any questions about the research at any time. If you have questions about the research, you should contact the researchers - Jamie Hibbs at 620-262-7391

(jamiehibbs@ksu.edu) or Dr. Suzanne Porath - 920-858-3010 - (sporath@ksu.edu)

For the subject should he/she have questions or wish to discuss on any aspect of the research with an official of the university or the IRB. These are: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Q23 Statement of Implied Consent:

Clicking the “Agree” button below indicates that you: are 18 years of age or older, read the previous information about the study, taught remote or hybrid learning in your district at Arkansas City HS or Arkansas City MS (2020-21) have not taken this survey before, are providing your consent to participate in this survey.

☐ Agree (1) (1)

☐ Disagree (2) (2)

End of Block: Block 1: Implied Consent

Start of Block: Default Question Block

Q1 Prior to the COVID-19 pandemic (prior to March 2020), what was your experience with online teaching?

- ☐ Not knowledgeable at all (1)
 - ☐ Slightly knowledgeable (2)
 - ☐ Moderately knowledgeable (3)
 - ☐ Very knowledgeable (4)
 - ☐ Extremely knowledgeable (5)
-

Q42 Prior to the COVID-19 pandemic (prior to March 2020), what was your experience integrating technology in your classroom?

- ☐ Not knowledgeable at all (1)
 - ☐ Slightly knowledgeable (2)
 - ☐ Moderately knowledgeable (3)
 - ☐ Very knowledgeable (4)
 - ☐ Extremely knowledgeable (5)
-

Q33 For the following questions, consider your experiences teaching remote or hybrid formats in the 2020-2021 school year during the COVID-19 pandemic (not the March 2020 emergency shut down).

Q17 The assignments and activities students completed during remote and hybrid learning (2020-21 school year) were similar to in-person?

- ☐ Strongly disagree (1)
- ☐ Somewhat disagree (2)
- ☐ Neither agree nor disagree (3)
- ☐ Somewhat agree (4)
- ☐ Strongly agree (5)

Q31 My classroom policies and procedures for remote and hybrid learning were similar to in-person instruction

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Breaks (1)	☐	☐	☐	☐	☐
Bathroom passes (2)	☐	☐	☐	☐	☐
Acceptance of late work (3)	☐	☐	☐	☐	☐
Attendance (4)	☐	☐	☐	☐	☐
Use of group work (5)	☐	☐	☐	☐	☐
Use of technology to submit assignments (6)	☐	☐	☐	☐	☐
Other (7)	☐	☐	☐	☐	☐

Q2 How often did/do you use these technology tools during any given month in your classroom?
Prior to the Covid-19 pandemic (March 2020), during remote and hybrid learning (2020-21), and currently.

	Google Classroom				Google Meet or Zoom				Screen Recording (Screencastify or other)				Online Quiz (Kahoot, Quizz, Quizlet, etc.)			
	Ne ver (1)	Da ily (2)	1- 2 ti m es pe r we ek (3)	1-3 tim es per mo nth (4)	Ne ver (1)	Da ily (2)	1- 2 ti m es pe r we ek (3)	1-3 tim es per mo nth (4)	Ne ver (1)	Da ily (2)	1- 2 ti m es pe r we ek (3)	1-3 tim es per mo nth (4)	Ne ver (1)	Da ily (2)	1- 2 ti m es pe r we ek (3)	1-3 tim es per mo nth (4)
Prior to Mar ch 2020 (6)	(			(	(			(	(			(	(			(
Duri ng Rem ote Lear ning (202 0- 21) (7)	(			(	(			(	(			(	(			(
Curr ently (8)	(			(	(			(	(			(	(			(

Q14 What did you enjoy about teaching remote and hybrid (during the 2020-2021 school year)?

Q15 What did you dislike about teaching remote and hybrid (during the 2020-2021 school year)?

Q3 Overall, how difficult was it for you to change to remote and hybrid learning for the 2020-21 school year?

- ☐ Extremely difficult (1)
- ☐ Somewhat difficult (2)
- ☐ Neither easy nor difficult (3)
- ☐ Somewhat easy (4)
- ☐ Extremely easy (5)

Q44 Describe how your instruction changed when students or yourself needed to quarantine during the 2020-21 school year?

Q5 Compare and contrast **how much change you experienced** related to each category: prior to the pandemic versus remote and hybrid teaching during the 2020-21 school year.

	None at all (53)	A little (54)	A moderate amount (55)	A lot (56)	A great deal (57)
Amount of interaction with my students (2)	☐	☐	☐	☐	☐
Student completion of my class work (3)	☐	☐	☐	☐	☐
Student participation in class (4)	☐	☐	☐	☐	☐
Amount of time preparing & planning (5)	☐	☐	☐	☐	☐
Amount of grading (6)	☐	☐	☐	☐	☐
Confidence in my teaching (7)	☐	☐	☐	☐	☐
Collaboration with other teachers (8)	☐	☐	☐	☐	☐
Support from Administration (9)	☐	☐	☐	☐	☐
My stress level in my job (15)	☐	☐	☐	☐	☐
Use of technology in my teaching (10)	☐	☐	☐	☐	☐
Amount of job satisfaction (11)	☐	☐	☐	☐	☐

Amount of
communication
with families
(12)

☐ ☐ ☐ ☐ ☐

Q4 The amount of professional development I received to prepare for the change to remote and hybrid learning for the 2020-21 school year was... (remember that school was delayed for students until Sept. 8th, so teachers could prepare).

- ☐ Extremely inadequate (1)
- ☐ Somewhat inadequate (2)
- ☐ Neither adequate nor inadequate (3)
- ☐ Somewhat adequate (4)
- ☐ Extremely adequate (5)

Q37 Give an example of professional development that was helpful to prepare for the change to remote and hybrid learning for the 2020-21 school year.

Q40 Thinking back, what professional learning do you wish you had to support the change to remote and hybrid learning?

Q6 During remote and hybrid teaching during the 2020-21 school year, **how much change** to your teaching practices did you make from in-person formats?

	None at all (1)	A little (2)	A moderate amount (3)	A lot (4)	A great deal (5)
instructional strategies (1)	☐	☐	☐	☐	☐
lesson planning (2)	☐	☐	☐	☐	☐
assignments (3)	☐	☐	☐	☐	☐
assessments (4)	☐	☐	☐	☐	☐
phone calls or emails to families (5)	☐	☐	☐	☐	☐
weekly information about the course (6)	☐	☐	☐	☐	☐
time needed to plan (7)	☐	☐	☐	☐	☐
individual contact with students (8)	☐	☐	☐	☐	☐
small group instruction (9)	☐	☐	☐	☐	☐
breaks during instruction (10)	☐	☐	☐	☐	☐
content of lessons (11)	☐	☐	☐	☐	☐
use of technology (12)	☐	☐	☐	☐	☐
other (13)	☐	☐	☐	☐	☐

Q10 Describe one or two examples of changes you made to your teaching practices for teaching remote and hybrid during 2020-21 school year.

Q9 The change to teaching remote and hybrid learning was

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
required by administration (1)	☐	☐	☐	☐	☐
required by outside organization (2)	☐	☐	☐	☐	☐
necessity of the pandemic (3)	☐	☐	☐	☐	☐
best for students (4)	☐	☐	☐	☐	☐
best for staff/teachers (5)	☐	☐	☐	☐	☐
best for the community/families (6)	☐	☐	☐	☐	☐
Other (7)	☐	☐	☐	☐	☐

Q48 What was the driving force behind the changes you made to your teaching practices during the 2020-2021 school year?

Q24 How would you describe remote learning (of 2020-2021) to a non-educator?

Q35 How would you describe hybrid learning (of 2020-2021) to a non-educator.

Q43 Briefly explain how you prepared for changing to remote learning when you only received one or two day's notice.

Q29 What made working from home during remote learning (during 2020-2021 school year) easy? Why?

Q36 What made working from home during remote learning (during 2020-2021 school year) difficult? Why?

Q19 During remote and hybrid learning (2020-21) how often did you an have opportunity to collaborate with other teachers?

- ☐ Never (1)
- ☐ Once a week (2)
- ☐ 1-2 times a Month (3)
- ☐ Daily (5)

Q47 Compare and contrast how often you were asked to substitute or needed a substitute during the 2020-2021 school year to other school years.

	Asked to substitute teach during my plan period					Needed a substitute for myself (quarantine or sick)				
	Much Lower (1)	Lower (2)	About the Same (3)	Higher (4)	Much Higher (5)	Much Lower (1)	Lower (2)	About the Same (3)	Higher (4)	Much Higher (5)

Prior to the pandemic (before March 2020) (1)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
During the 2020-21 year (remote and hybrid) (2)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
During the 2021-22 year (omnicro m) (3)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Current school year (2022-23) (4)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q49 How did needing to substitute on your plan period change your teaching practices?

Q50 How did planning for a substitute change your teaching practices, especially with regards to lengthy quarantine absences?

Q41 What, if any, impact did being a rural school have on the changes you made for teaching and learning during the remote and hybrid learning of the 2020-2021 school year?

Q45 Rank order which school year during the pandemic has caused the most change (#1) to your teaching practices to the least change (#4).

- 2019-2020 (emergency shutdown March-May) (1)
- 2020-2021 (remote and hybrid learning, delayed start to school to Sept. 8th) (2)
- 2021-2022 (shutdowns and quarantining for Omicron variant) (3)
- 2022-2023 (current school year) (4)

Q46 Describe one or two changes to your teaching practices for the school year with the most changes.

Q12 In my classroom now, I continue to use some of the changes I made from teaching during remote and hybrid learning of 2020-2021.

- ☐ Strongly disagree (1)
- ☐ Somewhat disagree (2)
- ☐ Neither agree nor disagree (3)
- ☐ Somewhat agree (4)
- ☐ Strongly agree (5)

Q34 Give an example of a teaching change you made during the pandemic that you continue to use now. Why?

Q16 What aspects of remote learning do you plan NOT to use in the future? Why?

Q13 If you had to teach remotely again, would you feel prepared to make the change?

- ☐ Strongly disagree (1)
- ☐ Somewhat disagree (2)
- ☐ Neither agree nor disagree (3)
- ☐ Somewhat agree (4)
- ☐ Strongly agree (5)

Q18 Would you consider teaching an online class in the future after your experiences remote teaching?

- ☐ Definitely not (1)
- ☐ Probably not (2)
- ☐ Might or might not (3)
- ☐ Probably yes (4)
- ☐ Definitely yes (5)

Q21 Have you considered a change in your teaching position, due to the remote and hybrid teaching experience during the pandemic?

- ☐ Definitely will not (1)
 - ☐ Probably will not (2)
 - ☐ Might or might not (3)
 - ☐ Probably will (4)
 - ☐ Definitely will (5)
-

Q25

What else would you like to share about your experiences teaching remote and hybrid learning during or after the 2020-21 school year?

End of Block: Default Question Block

Start of Block: Demographics

Q27 How long have you been an educator?

- ☐ 1-4 years (1)
 - ☐ 5-10 years (2)
 - ☐ 11-15 years (3)
 - ☐ 16-20 years (4)
 - ☐ 21-25 years (5)
 - ☐ More than 25 years (6)
-

Q28 What grade level do you teach?

- ☐ Early Elementary (PK-2) (1)
- ☐ Late Elementary (3-6) (2)
- ☐ Middle School (3)
- ☐ High School (4)

End of Block: Demographics

Start of Block: Interview invite

Q32 Would you be willing to be interviewed to share more about your experiences teaching remote and hybrid learning formats during the COVID-19 pandemic?

You will be redirected to another survey to share your contact information, so responses to this survey will remain anonymous.

- ☐ Yes (1)
- ☐ No (2)

End of Block: Interview invite

Appendix B - Interview Questions

Interview Questions: Remote Learning

My name is Jamie Hibbs. Thanks for participating in this conversation. The purpose is to get your perceptions of your experiences preparing and teaching during the COVID-19 pandemic during the 2020-21 school year. There are no right or wrong or desirable or undesirable answers. I would like you to feel comfortable to share what you really think or feel.

Recording:

If it is okay with you, I will be recording this conversation. The purpose of this is so that I can get all of the details. I assure you that all of your comments will remain confidential.

Section 1:

In Spring 2020, the pandemic shut down all schools just after Spring Break for the rest of the year and teachers did emergency remote teaching/learning. I'm not going to ask you about that experience. But about the next school year, think about the Fall 2020-21 school year, the first day of school was delayed by the Governor until Sept. 8th to give teachers time to prepare: What do you remember most about the preparations and changes during that time frame?

How would you describe the remote and hybrid learning from Fall 2020 to a non-educator?

Describe in what ways, if any, how your classroom policies and procedures changed for remote and hybrid learning? (grading, late work, types of assignments, etc.)

Describe the training and professional development you received for the teaching changes you were making. What was successful and what was challenging?

What changes did you have the autonomy to make in your classroom instruction and policies?

What changes did you not have a choice to make: How did you feel about the imposed changes you needed to make to your instruction?

What technology changes did you make to your instruction?

What training and from whom did you receive the technology changes? Was it adequate or not?

As a rural school, what was the impact of changing to remote and hybrid learning?

What were some of the successes and challenges for your students with the instructional changes? How did students respond?

Overall, how difficult was it to make classroom changes for remote and hybrid learning for the 2020-2021 school year?

Can you describe any successes or challenges teaching during remote/hybrid learning in the 2020-2021 school year?

What were the factors for the success and/or failure of your instructional changes?

Looking back now, what, if anything, would you do differently to your instruction?

Section 2:

Now that we are 2-years away from remote and hybrid learning, this interview will focus on the impact of your experience with remote and hybrid learning since the 2020-2-21 school year.

Reflecting back, do you feel that the changes made for remote/hybrid learning were successful or not? Explain

What instructional practices, if any, are you using now as a result of hybrid/remote learning from the 2020-21 school year? Give some examples

Now that we are past that school year, describe your instruction now - is it similar to pre-pandemic, is it similar to during the remote/hybrid learning or is it something different? Explain, give some examples.

Which year did you experience the most changes to your instruction? (19-20 - emergency teaching, 20-21 - delayed school, hybrid and remote, 21-22 Omnicron variant - remote, 22-23 - current school year)

Do you see any impact from remote/hybrid learning on student learning in your classroom now? Give some examples.

– Does being a rural school play a factor in those changes now?

Are the changes imposed on your practices during remote and hybrid learning still in place now? Examples?

Has your philosophy, policies or practices changed as a result of remote and hybrid learning? Explain/give examples.

If you had to teach remote and hybrid again, would you feel prepared to make the change(s)? How so?

What do you see yourself doing in the next 5-years? Has remote/hybrid learning impacted/changed your plans?

Appendix C - IRB



TO: Suzanne Porath
Curriculum and Instruction
Manhattan, KS 66506

Proposal Number: IRB-11669

FROM: Lisa Rubin, Chair
Committee on Research Involving Human Subjects

DATE: 04/28/2023

RE: Proposal Entitled, "Remote learning during and after pandemic.."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §104(d), category:Exempt Category 2 Subsection ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Lisa Rubin on 04/28/2023 1:14 PM ET

Appendix D - Implied and Informed Consent Forms

Informed Consent – Interview

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM **Interview**

Title of the Study: Remote Learning During and After the Pandemic

Researcher: Suzanne Porath (785-532-5889) (sporath@ksu.edu) and Jamie Hibbs (620-262-7391) (jamiehibbs@ksu.edu)

DESCRIPTION OF THE RESEARCH

You are invited to participate in a research study about your experiences with remote and hybrid teaching during the Fall 2020-2021 school year. You have been asked to participate because you indicated an interest in being contacted for an interview.

If you choose to participate, you will be interviewed for approximately 90 minutes (can split into 2 45-minute sessions if preferred). You will be asked to set the time and the interview will take place in-person or Zoom. If additional time is needed, it will be based on your consent and convenience.

Questions will revolve around your experiences with remote and hybrid learning – your experiences, communication, lesson planning, technology, and student engagement.

Audio recordings will be made of your interview for transcription and coding purposes. However, all data collected will be labeled with pseudonyms and any field notes and recordings made for this research will be used only by the researchers and will not be shared with an employer, former employer, or people who are not part of the research team, nor will the recordings be used in any presentations or publication. The recordings will be kept for three years after the end of the study and then destroyed. All data will be kept in a locked space and any electronic files will be password protected.

WHAT WILL MY PARTICIPATION INVOLVE?

If you decide to participate in this research you will be asked to set up an interview time and format (in-person or Zoom) with the researcher. The interview should take place outside of instructional time and will take about 90 minutes. If additional time is necessary, it will be arranged at your consent and convenience.

ARE THERE ANY RISKS TO ME?

Audio-taped interviews present little risk to you. The interviews will focus on your experiences with remote and hybrid learning. The interviews are not evaluative nor supervisory. As your privacy and confidentiality is important, your actual name will not be used in any publication, and any notes and recordings will be labeled with pseudonyms. You are welcome to discontinue the interview at any time, decline to answer any question, and can refuse to participate at any time without penalty.

ARE THERE ANY BENEFITS TO ME?

There will be no direct benefits or compensation for your participation in this study. However, it will provide you with an opportunity to reflect on and discuss your experiences during remote and hybrid learning.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

While there will probably be publications as a result of this study, your name will not be used; only group characteristics and/or pseudonyms will be published. If you participate in this study, I would like to be able to quote you directly without using your name.

Your information collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research, you should contact the researchers - Suzanne Porath at 785-532-5889 (sporath@ksu.edu) or Jamie Hibbs (620-262-7391) (jamiehibbs@ksu.edu)

For the subject should he/she have questions or wish to discuss any aspect of the research with an official of the university or the IRB. These are: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Your participation is completely voluntary.

**If you begin the interview and change your mind,
you may end your participation at any time without penalty.**

Providing Consent

Before setting an appointment for an interview, please read this consent form. If you are satisfied with the information in this consent form, we can schedule a time/date for the interview.

At the beginning of the interview the researcher will be recording your oral consent to participate in this research. The researcher will ask you to state your name and ask if you have read this consent form. You will have an opportunity to ask any questions about your participation in this research. The researcher will then ask if you consent to participate in this research and if you consent to having the interview audio-recorded. The researcher will then stop the recording of the oral consent. Your oral consent will not be associated with the data of the interview. The researcher will restart the recording for the interview.

Person Obtaining Consent

The participant has verbally acknowledged that he/she has read and understood the written Informed Consent. An explanation of the research was given and questions from the participant were solicited and answered to the participant's satisfaction. In my judgment, the participant has demonstrated comprehension of the information. The participant has provided oral consent to participate in this study.

The participant agrees to be audio-taped.	YES	NO
The participant grants permission to be quoted directly in publications without using his/her name.	YES	NO

Name of Researcher Obtaining Consent

Signature of Researcher Obtaining Consent

Date

Implied Consent – Survey

Remote Learning During and After the Pandemic Implied Consent and Questions

Purpose of the Study

During the COVID-19 pandemic, teachers were asked to shift from traditional face-to-face instruction to a remote and hybrid learning models. This study will focus on teachers' perception of that change and in what ways, if any, did teaching practices change as a result of the Covid-19 pandemic during the 2020-21 school year.

Research Procedures

If you choose to continue with this survey, you will be asked a series of multiple-choice, scaled, and open-ended questions about your experience during remote learning. You will also be asked demographic information about your teaching situation. The survey should take no longer than 15 minutes.

Risks of Being in the Study

There is minimal risk associated with this research study; however, as with any online related activity, the risk of a breach of confidentiality is always possible. To the best of my ability your answers in this study will remain confidential. The survey is anonymous.

Benefits of Being in the Study

There will be no direct benefits or compensation for your participation in this study. However, it will provide you with an opportunity to reflect on and discuss your experiences teaching during remote learning.

Confidentiality

Survey data will be collected through an online survey-collection program called Qualtrics. Qualtrics is a secure site with SAS 70 certification for rigorous privacy standards. Any data that you provide through this program will be encrypted for security purposes using Secure Socket Layers (SSL). Only the study investigators will have access to the data on Qualtrics.

If you provide answers to the open-ended questions in this survey, your answers may be quoted; however, because the information is collected anonymously, your actual name will not be associated with the survey data.

Your information collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.

Voluntary Nature of Participation

Your participation is completely voluntary. You have the right not to answer any question, and to stop the survey at any time or for any reason. If you begin the survey and change your mind, you may end your participation at any time without penalty.

Whom should I contact if I have questions?

You may ask any questions about the research at any time. If you have questions about the research, you should contact the researchers - Jamie Hibbs at 620-262-7391 (jamiehibbs@ksu.edu) or Dr. Suzanne Porath - 920-858-3010 - (sporath@ksu.edu)

For the subject should he/she have questions or wish to discuss on any aspect of the research with an official of the university or the IRB. These are: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Statement of Implied Consent:

Clicking the “Agree” button below indicates that you:

- are 18 years of age or older,
- read the previous information about the study,
- taught remote or hybrid learning in your district at Arkansas City HS or Arkansas City MS (2020-21)
- have not taken this survey before,
- are providing your consent to participate in this survey.