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IMMEDIATE AND RESIDUAL EFFECTS OF EMERGENCY REMOTE TEACHING:

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EFFECT OF EMERGENCY REMOTE TEACHING



Approval of Dissertation

The undersigned certify that they have read the dissertation entitled

IMMEDIATE AND RESIDUAL EFFECTS OF EMERGENCY REMOTE TEACHING: A CANADIAN CASE STUDY

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Dedication

I am extremely excited to dedicate this dissertation to a few people who were instrumental in my pursuit of this goal. First, I want to dedicate this to a colleague/friend, Corrie Macdonald, who was determined that I needed to complete a doctorate and convinced me to apply. That is really where this journey began. Second, I want to thank my daughter, Shay, who was undoubtedly the best technology one person support team I could ever ask for. I truly appreciate that you took the time to find the answers to my “how can I make Word do this” questions so I could easily fix the issues. Third, I want to dedicate this to so many of my colleagues who took the time to participate in my research, to have in-depth conversations about what I was learning, and to celebrate my milestones of progress with me; you all know who you are, and I can’t thank you enough for that. It has truly been “our” journey. Fourth, I need to dedicate this to my Mom, who was always inquiring about my progress, attended my defense, and, then, told anyone who would listen that I had been successful. Lastly, to my partner, Mark, I thank you for always being interested in what I was reading, indulging my need to read to the horses out loud on many sunny afternoons, listening to my frustrations about moving ahead when I had the endless supervisor issues, willingly listening to numerous practice presentation run throughs, and of course, for helping me deal with the many activities I have on the go at any given time so that I could ride those horses as much as possible in order to remain sane. You get me and for that I am grateful. I look forward to being able to play with the ponies together and just hang out. I feel like we have both benefitted from this experience together in so many ways. Now onto the next one.....

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It has been a long and windy road, but my support network has made the journey so much more than just another degree. Thank you all for that.

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Abstract

COVID-19 had a direct impact on how British Columbia K-12 educational institutions provided their educational programs to students following Spring Break 2020. The Ministry of Education in British Columbia put in motion its continuity of learning goals by implementing Emergency Remote Teaching (ERT) for all schools in the province. Teachers were required to completely shift their teaching practices and educational program delivery to satisfy the Ministry of Education's new educational program delivery plans. ERT had an immediate and residual effect on K-12 teachers and educational structures, such as school schedules, timetables, individual education plans, and report cards. Limited research has been done on the topic of ERT in general, therefore, this study has provided valuable insights and direction for further studies.

This pragmatic study incorporated a single case mixed methods study approach to explore the effect of ERT on secondary school teachers in a central British Columbia school district during and following the implementation of ERT. Quantitative and qualitative data was collected through an initial survey and a subsequent interview with volunteer survey respondents. The focus was on ERT and its immediate effects as well as residual effects on K-12 teachers in general and, specifically, secondary school teachers in British Columbia. This study found that teachers experienced notable effects in several areas including workload and health. Teaching quality was a concern as was use of technology, teaching online, and educational structures. There is a definite need for teachers to have technology knowledge and training, understand online pedagogy and receive online training, and have access to flexible educational structures, such as timetables, schedules, reporting periods and formats, and innovative attendance expectations.

Keywords: Emergency Remote Teaching, secondary school, educational program delivery, teaching practices, distributed learning, educational structures, online learning, online educational structures, TPACK

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Glossary

Term	Definition
Administrator	For the purpose of this study, an administrator is any person tasked with the administration of a school(s) staff and operations.
Asynchronous Learning	As per Irvine (2020, p.2), this is learning that is time-delayed through tools such as email, static websites, forums, and images.
Blended Learning	For the purpose of this study, blended learning is an educational program that incorporates learning in-class with online learning.
Blended Synchronous	(Synchronous Hybrid) is a model that provides learning and teaching for remote students who participate in face-to-face cases through rich-media synchronous technologies such as video conferencing, web conferencing or virtual worlds as per Irvine (2020, p. 6).
Distributed Learning	For the purpose of this study, refers to all educational programs that are accessed from a distance not in a face-to-face setting replaced by “online learning” in November 2021 by the BC Ministry of Education.
Educational Structures	For the purpose of this study, educational structures are practices and policies that K-12 teachers understand that they must teach within this includes but is not limited to school schedules, timetables, individual education plans, and report cards.
Emergency Remote Teaching (ERT)	For the purpose of this study, emergency remote teaching (ERT) refers to teaching practices for in-person learning that occurred in BC immediately following the end of Spring Break in 2020.
Flexible Learning	Is a subjective term and can mean one has full choice of modality of learning and can move between modalities whenever one chooses as per Irvine (2020, p.9).
Flipped Learning	Is where content is learned before class through recordings or other resources as per Irvine (2020, p.11).
Hybrid Learning	Another term for blended learning as per Irvine (2020, p. 9).
Hyflex	A form of learning that combines both online and face-to-face learning and is flexible. Students have a choice on whether to attend face-to-face sessions or not as per Irvine (2020, p. 4). The students control the modality.
Instructor	For the purpose of this study, an instructor is any person who provides instruction who is not a certified teacher.
Modes of Learning	Refers to the location and timing of student interactions in an educational setting as per Irvine (2020, p.1).

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Multi-Access	Is a model of learning that offers four levels of access, namely face-to-face, synchronous online, asynchronous online and open access as per Irvine (2020, p.5).
Online Learning	New term for BC as of November 23, 2021, formerly known as Distributed Learning, refers to all educational programs that are accessed from a distance not in a face-to-face setting. It is open and accessible as per Irvine (2020, p.8).
Professional Development	For the purpose of this study, this refers to learning that teachers do to improve or develop their professional skills as teachers and their understanding of evolving educational objectives and goals. Professional development is the goal of providing teachers the opportunity to stay current with the educational climate as it evolves.
Secondary School Teachers	For the purpose of this study, secondary school teachers will be teachers teaching any grade(s) 8-12.
Synchronous Learning	Learning that occurs as “live” interactional communication as per Irvine (2020, p. 2).
Teacher	For the purpose of this study, a teacher is any person who holds a valid Teaching Certification.
Traditional Teaching Practices	For the purpose of this study traditional teaching practices refer to the practices used for teaching prior to ERT

Chapter 1: Overview

Introduction

As we transition into the third decade of the 21st century, access to educational opportunities for many Kindergarten to Grade 12 (K-12) students is not as diverse as it might be, given the growth of online learning and the rapid improvement in technology, as well as its increased availability. Under the restrictions related to COVID-19 placed on Canadians, as well as others from around the world, K-12 education made an immediate mass shift to a variety of forms of Emergency Remote Teaching (ERT) as the avenue for continuity of learning to complete the 2019-2020 school year. Prior to the issues in K-12 education created by COVID-19, access to educational opportunities for students through online learning was recognized as providing the potential to improve outcomes for all students (Saultz & Fusarelli, 2017). Online learning allows for educational structures, such as timetables, specific school hours and days, school building layouts, and report card schedules to be flexible, thereby increasing the opportunities to address the unique needs of any given group of learners as a “one size fits all education does not work” (Rogers-Shaw, 2018, p. 20). The new British Columbia (BC) K-12 Curriculum “is being redesigned to respond to this demanding world our students are entering” (British Columbia Ministry of Education success, 2021, para. 5). The new curriculum is focused on further developing K-12 online learning opportunities for students.

COVID-19 has created the necessity for the stakeholders of K-12 education to consider the effect of the shift to ERT programs on K-12 educational programs during COVID-19 restrictions. Additionally, these same stakeholders (school board trustees, superintendents, senior business officials, school-based administrators, teachers, support staff, learners and parents) need to consider the lasting effect ERT programs have had on K-12 teachers and how this knowledge

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can assist in the planning of future ERT programs. The realization of a worldwide pandemic forced the shift of K-12 program delivery from a primarily face-to-face approach to an ERT approach immediately overnight and as a result the need to assess the effect of that shift on K-12 teachers.

Purpose of Study

Although research in K-12 online learning has grown in recent years, there is limited investigation into K-12 online learning educational structures and their effect on educational opportunities for K-12 online learning programs (Barbour, 2011; Martin et al., 2021). Research in the area of online learning program structures for K-12 students could influence the direction of further education research. Much of the research has been focused on K-12 student performance in online settings as well as the quality of the learning experience (Barbour, 2005; Martin et al., 2021). Additionally, there is definition confusion in the field as indicated by Irvine (2020). The glossary for this study is designed to provide greater clarification.

The pandemic caused by COVID-19 resulted in the necessity of implementing ERT programs in K-12 schools with teachers having minimal, if any, time to prepare. Through case study research methodology, I looked at the opinions, feedback, and reflections of secondary school teachers in one school district in British Columbia (BC) with ERT educational structures that they were mandated to deliver through the BC curriculum. This study looked at understanding the knowledge participants had or gained about themselves and their teaching as well as the skills they had, they gained, or they needed during ERT and since moving out of ERT. Therefore, the purpose of this study was to gain valuable insight into the opinions, feedback, and reflections of this group of secondary school teachers. By understanding the opinions, feedback and reflections of this group of teachers, ERT program planners will be able

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to adapt future emergency programs thereby improving the quality of those program implementations when and if the need arises. ERT research provides valuable data that contributes to the understanding of how online learning in K-12 can enhance educational program opportunities. This chapter sets forth the rationale for the need to do this case study and concludes with the research questions followed by the purpose of the study questions.

Rationale

Learning is a complex cognitive process and learners are successful in a diverse range of educational opportunities (Hoy et al, 2013). Many K-12 educational structures that are prevalent in the west, as well as in many areas of the world, have been in place for decades. There tends to be a preconceived understanding of what a K-12 school structure will “look” like as most of the western world’s population has attended at least one such institution in their lifetime (Sleeter, 2019). The world is changing, and, in the 21st century, those changes, such as technology, curriculum and connectivity, are rapid. These changes are having a resulting effect on the educational needs and opportunities for learners at all levels including at the K-12 level (Saultz & Fusarelli, 2017). The K-12 educational structures, such as timetables, educational settings, required attendance within hours of the day and days of the week, and reporting protocols that have become common practice from previous decades, are slow to adjust. Despite this resistance to change, online learning provides the unique ability to be extremely flexible in many areas including educational structures.

There seems to be a desire, as well as a legal obligation, in BC at the K-12 educational level, to adjust teaching strategies to encompass new approaches to learning, such as Universal Design for Learning (Rogers-Shaw et al., 2018). There is no evident acknowledgement that there

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is a need to consider shifting or adjusting how K-12 educational structures look to support the spirit of the new learning by the Ministry of Education.

Educational structure has not significantly changed in over one hundred years despite the promotion and adoption of technology into most classrooms (Kensler & Uline, 2019; Rose, 2012). We continue to incorporate the use of rigid timetables, bell schedules, age-based grade levels, rates of success, teacher effectiveness, and physical space requirements of the traditional factory model structure of K-12 education that has prevailed from the 19th and 20th century (Kensler & Uline, 2019; Leland & Kasten, 2002; Rose, 2012). The pursuit of technology and other 21st century skills to become part of the K-12 educational program is not enough to transform K-12 education to reflect the needs of the 21st century world (Mishra & Mehta, 2016; Rose 2012). The time has come to focus on classroom models where the available technology and necessary skills can be utilized (Rose, 2012) “to teach, assess, and value children as individuals” (Leland & Kasten, 2002, p. 14). “It is not that we misunderstand what public schools are; rather, we resist consideration of possibilities about what they might be, in deference to the status quo” (Kensler & Uline, 2019, p. 1201).

Online learning has flourished in some areas and struggled to take hold in others (Saultz & Fusarelli, 2017). Throughout Canada, the various Education Acts and School Acts reference online learning by definition or by providing the “ability to create, approve, or regulate K-12” (Barbour, 2020, p. 5) online learning. It is a somewhat unique reality that these online programs exist as an entity of their own (Barbour, 2011). Online learning provides the ability for administrators of online schools to create the way their own school structures will look. Online learning has the potential to allow online schools to create a variety of unique educational structures in K-12 settings, such as 12-month school calendars, altered day schedules, and a

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variety of potential school settings to name a few. However, there is limited researched data available to show what online learning educational K-12 structures exist and, whether they differ significantly from the traditional model structures that have carried over from the 20th century.

The COVID-19 pandemic forced the world to shift K-12 education methods into an ERT setting. This shift has laid the foundation for the need to evaluate the ERT efforts and approaches (Hodges et al, 2020, p.1). The evaluation of ERTs can be satisfied by any number of approaches, including teacher experiences and ultimate effect on pedagogy, as well as the effect on future teaching practices (Hodges et al., 2020). There is a need to look more closely at the educational programs and processes that were put in place as a result of the COVID-19 protocols and their effect on teachers, as expressed through opinions, feedback and reflections provided by K-12 teachers in these virtual classroom settings. There has been a significantly high rate of growth for K-12 student enrolment into online educational opportunities over the past decade (Barbour, 2015; Barbour, et. al., 2020). Barbour (2015) continued to indicate that, even though K-12 online learning has the potential to become an effective mode of instruction at this level of education, there is a need to implement practices that are innovative, reflective of or derived from clear research in this area.

The scope for the evaluation of the quality of K-12 educational offerings has been very limited (Barbour et al., 2019). This evaluation has been focused mainly on course content. Policies for online and blended K-12 education providers as directed by all levels of government have been derived from these evaluations (Barbour et al., 2019). Considering that K-12 students' learning experiences encompass more than just course content interaction in traditional settings, K-12 online students' experiences would arguably encompass more than just course content interaction. As K-12 online learning continues to evolve and enrolment holds steady or increases,

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the need to investigate the effect of the flexibility of online learning for K-12 learners continues to grow (Adelstein & Barbour, 2017). “Flexibility with deadlines for assignments within courses, course policies, and institutional policies should be considered” (Hodges et al., 2020, p.1) within K-12 ERT programs as well as K-12 educational opportunities being realized with the shift out of ERT approaches.

K-12 education, as well as K-12 online education, needs to be more than just using technology to access educational opportunities digitally (Moon, 2018). A great deal of research has been completed discussing the knowledge deemed necessary for 21st century learners to acquire (Hartong, 2016). The reality of COVID-19 demonstrated the flaws in K-12 educational programs and planning to adequately and efficiently provide a reasonable continuum of educational opportunities for all students in emergency situations (Kaden, 2020). There is a clear need to actively modernize these programs and plans to allow the legacy practices derived from distance education/online digital education to begin to move towards its full potential in K-12 educational programs, and specifically ERT program plans (Hodges et al, 2020).

There is the issue that “one of the difficulties facing educators is ... providing an adequate research base in the professional literature” (Curtis & Werth, 2015, p.164) regarding K-12 online learning, online learning, and, most recently, ERT programs. In my study, I looked closely at the implementation of ERT programs and their effect on K-12 teachers. “Online learning is little understood by policymakers” (Rice, 2006, p. 429) and that lack of understanding has led to applying existing policies that were designed to address the needs of K-12 physical school to online schools (Rice, 2006). Online learning and its technologies have the potential to provide powerful learning opportunities for K-12 students (Rice, 2006; Shamir-Inbal & Blau, 2021). ERT programs needed to make use of learning at a distance technology and platforms to be

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implemented during the spring of 2020. The possibility of a need to implement ERT programs in the future is a real one. For that reason, it is important to begin to understand the effect that the implementation of the COVID-19 ERT programs has had on K-12 teachers. This understanding will aid educational leaders by providing them access to practical data enabling positive enhancements to their ERT plans.

When we consider, “there is strong evidence that the field of K-12 online learning is growing at an accelerated pace” (Ameson et al, 2019, p. 50), specifically with the realization of the recent worldwide pandemic, it becomes more important to gather data-based evidence collected from the experiences and results of the implemented ERTs. Data-based evidence can provide the means to support and sustain all or part of the ERT programs that were/are currently evident in K-12 educational institutions. This same evidence can also encourage policy makers to redesign their K-12 educational policies and structures to complement the flexibility that online learning can provide to K-12 educational programs under normal circumstances.

Purpose of a Conceptual Framework

A conceptual framework allows the researcher to define the variables in a study and the relevance of the variables to each other. It provides the researcher the opportunity to draw their own conclusions about the relationships between the variables chosen. A conceptual framework is used to solve real world problems. Conceptual frameworks encourage understanding of issues by relating new data to earlier learning or theories and includes a visual representation of the relationships between the variables that are expected. “The conceptual framework is thus the umbrella term relating to all the concepts and ideas that occupy your mind as you contemplate, plan, implement and conclude your research project” (Kivunja, 2018, p. 47). Through a conceptual framework, I have identified the variables that this study will focus on to answer my

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research questions. My conceptual framework has allowed me to map out the direction I want my research to go as well as set the boundaries for what I am researching (Lew, 2019).

Conceptual Framework

The conceptual framework for this research is comprised of three components, specifically, the theory of the technological pedagogical content knowledge model (TPACK), online learning, and educational structures. The first component, TPACK, is a theoretical framework that has been used to explain the level of technology integration that teachers incorporate in their classrooms (Mishra & Koehler, 2006). The second component is online learning. I was interested in the relationship between TPACK and teachers' opinions, feedback and reflections with respect to ERT online continuing learning and subsequently online learning in general. Educational structures is the third component of the study's conceptual framework. I am interested in how educational structures are connected to online learning and TPACK individually and holistically. Figure 1 provides a visual of the possible relationship between all three components.

The technological pedagogical content knowledge model provides an understanding of how technology, pedagogy and content knowledge needs to be integrated in order to provide teaching situations that allow for optimal learning opportunities (Franssen & Holmberg, 2012, p. 197). Mishra and Koehler (2006) stated how important it was to have a theoretical framework to address the practice of teacher education, training and professional development with regards to the relationship between technology and teaching. Teaching is a complex practice and teaching while integrating technology even more complex (Mishra & Koehler, 2006). TPACK provides a clear theoretical framework to allow teachers to develop their practices to successfully integrate technology into their classrooms (Mishra & Koehler, 2006).

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Online learning is an alternative educational delivery mode accessed by students in public and independent school settings that are funded through the BC Ministry of Education. TPACK was originally intended for the incorporation of technology with in-class instruction. COVID-19 forced K-12 secondary school teachers to move their instruction completely online, therefore, it is necessary to consider the concepts of TPACK related to online learning best practices as well as the ideas of TPACK related to the shift to ERT program delivery. Moore-Adams et al. (2016, p. 334) suggested that TPACK alone is enough of a framework to determine teachers' preparedness for teaching in an online setting. However, it does not take into consideration elements of course design, teacher communication channels, and technology infrastructure accessibility which online learning best practices does.

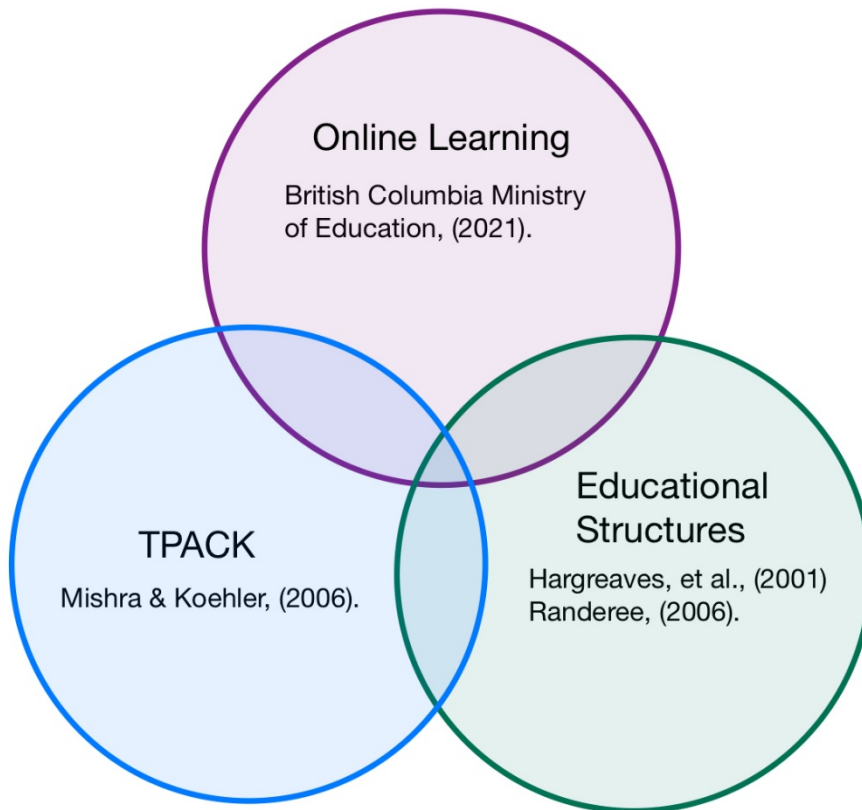
Educational structures include a wide array of concepts that are part of a K-12 school environment. In general, these educational structures have been institutionalized after decades of use. "There is a distinction between building an educational system and providing educational opportunities to people" (Levin, 1990, p. 388). The educational structures are the established system of common, expected structures that are part of an in-depth description of what "school" is including, but not limited to, timetables, schedules, calendars, buildings, classrooms and their physical appearance, bells, and reporting. Further, educational structures need to make up the third component of the conceptual framework as many educational structures may have been incompatible with ERT. Shannir-Ibal and Blau (2021, p. 1246) stated there were issues with school schedules being inconducive with ERT or online learning as well as overlapping lesson times and an overload of assignments (Dillon, E. & Tucker, B., 2011). Additionally, Marshall et al. (2020, p. 48) noted other issues such as reporting schedules and reporting structures that were

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incompatible with ERT plans. Therefore, it is a necessity to include educational structures as part of the conceptual framework for this study.

Figure 1

Conceptual Framework



In my case study, I used the conceptual framework pictured in the above Venn diagram as the basis to analyze the effect of ERT on secondary school teachers in one BC jurisdiction. ERT required teachers to fully integrate technology into their teaching practice as the sole method of providing continuity of learning to students after Spring Break in British Columbia until June 1, 2020, when the expectation was slightly modified to allow some students to attend school on a partial face-to-face schedule. At the center of the Venn diagram are the areas where all three concepts cross and this is where quality of teaching and teacher mental and physical

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health can be found. When teachers are provided access to the necessary technological and online pedagogy knowledge, access to appropriate online resources, and flexible educational structures, teachers can experience positive mental and physical health and feel confident that they are providing quality teaching. The three components, TPACK, online learning and educational structures, are central to this research study.

Positionality Statement

For the purpose of this research, it is important to understand my positionality. First, I have an undergraduate degree in K-12 Education and a master's degree in education (Distributed Learning). I have thirty years of teaching experience in K-12 education and have taught at several schools in central British Columbia, all within the same public-school division. Additionally, I taught under ERT and have continued to teach during the transition out of ERT to the present. One of my parents was a teacher who successfully taught for over thirty years in this district as well. One of my children is also a teacher who has taught for the last eight years partially in British Columbia and recently in the United States, including teaching during and following the COVID-19 pandemic in the State of Arizona.

From 2006 to 2015, I taught online full-time and in a blended assignment from 2015 to the present. I taught a variety of subjects in this assignment including middle school and high school levels (i.e., grades 8-9, grades 10-12). Within my teaching practice, I have always sought to utilize technology for instructional methods and student assignments. I recently completed my Teacher Librarian Certification which required full immersion and understanding of TPACK. Lastly, I am very comfortable with the use of technology in my teaching practice and open to exploring new opportunities in this area.

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Lastly, I am acutely aware of the challenges faced by Indigenous peoples especially in rural communities. My own children are recognized as Canadian status Secwepemc people and belong to a rural reservation in the interior of British Columbia. I have worked closely with Indigenous students throughout my teaching career both in rural settings and urban settings, as well as face-to-face and online. I became quite aware of the similarities in educational challenges that exist between the rural and urban Indigenous students during the COVID-19 pandemic, including challenges with access to technology equipment, acceptable technology training, and connectivity. I am extremely motivated to gather valuable data from secondary teacher's opinions, feedback, and reflections during COVID-19 and following to allow for the opportunity to create practical resolutions to begin to remove these barriers for all K-12 students' access to technology and online learning opportunities.

Purpose of Study and Research Questions

The purpose of my study was to describe and analyze the effect of the implementation of ERT on K-12 teachers. A case study approach allowed for an in-depth investigation into the opinions, feedback and reflections of a specific group of K-12 teachers, to collect the data necessary to effectively describe and analyze the structure of the ERT plan that was implemented for that specific group K-12 teachers, and its initial effect on these teachers. Additionally, from the study, I was able to describe and analyze any lasting effect the implementation of the ERT plan has had on this same group of K-12 teachers (Yin, 2018). This study had one primary question and two subset questions which are:

Primary Question:

How were secondary school teachers in one BC school jurisdiction affected by the shift to ERT?

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Subset Questions:

1. What pedagogical effect did the ERT experience have on secondary school teachers' view of the use of online programs as an educational delivery approach?
2. Given the shift out of ERT, what have been the residual effects on teaching practices?

Quantitative data, gathered from an anonymous survey, provided descriptive statistics including, years in the profession, educational levels and certificates, subject areas, online learning experience, and individual age. Qualitative data gathered from an anonymous survey and subsequent selective interviews, such as personal views on various aspects of general teaching and teaching during ERT, provided information specific to each participant's overall teaching experience and practices.

Considering that "online education first gained popularity for advanced learners, but at-risk populations are increasingly enrolling in online learning environments" (Curtis & Werth, 2015, p. 163), it is necessary to gain insight into the opinions, feedback, and reflections of secondary school teachers providing all content to every student through ERT. The resulting data will allow educational policy makers and administrators to accurately assess the success of ERT and use that understanding to plan future ERT programs. Under ERT, "students and staff --- are being asked to do extraordinary things regarding course delivery and learning that have not been seen on this scale in the lifetimes of anyone currently involved" (Hodges et al., 2020, p. 1). ERT created an unprecedented situation forcing all K-12 students and teachers to experience some form of online educational program delivery.

There is a need for stakeholders to expand how they approach assessment of K-12 online learning opportunities (Barbour et al., 2019) including ERT program assessment. Examination and analysis initially through secondary school teachers' opinions, feedback, and reflections will

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provide data that can be considered when addressing the merit of K-12 ERT programs in the future. Furthermore, this study elicited data that can be considered when designing or redesigning K-12 online learning educational programs in general.

Limitations and Delimitations of the Study

This study was limited as it looked at only one specific ERT example and assessed the opinions, feedback, and reflections of secondary school teachers only. Additionally, the study utilized a small sample of secondary school teachers who had volunteered to participate. This sample did provide a variety of evidence from teachers in various subject areas but was limited in evidence from teachers with under 10 years teaching experience.

The delimitations of the study were that the researcher focused on just one BC school jurisdiction. Another delimitation was the requirement to recruit participants by poster placed in secondary school staff rooms as many secondary school teachers do not frequent the staff rooms at their schools therefore limiting the limiting eligible participants. Nevertheless, this study provided reasonable evidence to direct further research into the effect of ERT programs.

Summary

This chapter has provided an overview of the study including the rationale, purpose, and research questions. Online K-12 education continues to be an area that requires further research in the data-based area (Ameson et al., 2019). The worldwide pandemic, COVID-19, created the need to establish and implement ERT programs. This reality has further supported the need for research that reflects the effect of these ERT experiences on K-12 educational stakeholders, specifically, secondary school teachers. K-12 ERT program research into teacher experiences has provided valuable practical insights that can influence future research in this area. This study also provided valuable data analysis and recommendations to consider in order to improve

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educational practices specifically with respect to ERT programs and generally with respect to online programs overall.

In Chapter Two, a critical review of the existing literature is provided to allow for a clear overview of ERT and online learning for the purpose of this study. Additionally, literature related to a background of online learning in K-12 schools, online learning in K-12 schools in general, online higher education best practices, online K-12 best practices, the need for change in K-12 schools, emergency remote teaching, TPACK, educational structures, and what's new in K-12 online research. In Chapter Three, a description of the case study research approach, and the method for this study is covered. In Chapter Four, the raw data is provided including figures and tables organizing varying aspects of the data. In Chapter Five, an analysis of the raw data is provided with conclusions. Chapter Six is a summary of the dissertation including recommendations.

Chapter 2: Literature Review

Introduction

British Columbia (BC) is one of the most geographically diverse provinces in Canada. Its population is concentrated in several regional centers surrounded by many rural communities. BC also has a large population of diverse Indigenous communities. Many parts of BC are quite remote and K-12 schools in these areas are not able to offer the same variety of programs or educational opportunities that the larger centers can offer. There are other obstacles that have consistently created educational roadblocks for many BC communities, such as transportation and connectivity, due to its highly mountainous geography, with four major mountain ranges. Learning at a distance in a variety of forms has been viewed as a viable solution for these communities over the past century and has become a viable alternative educational delivery program for K-12 schools in all communities in BC. In the 2019-2020 school year, 69 district-level distributed learning schools were operating in BC (“British Columbia,” 2021).

There has been an array of literature written that focuses on varying aspects of K-12 online learning around the world and throughout North America (Barbour, 2010; Francom et al., 2020; Machusky & Herbert-Berger, 2022). In the past few years, and with the effect of COVID-19 on educational systems worldwide, researchers have been prompted to publish literature that focuses on many aspects of online learning in K-12 education. In 2017, Alturki and Aldraiweesh completed a review of articles published in the *International Review of Research in Open and Distance/Distributed Learning (IRRODL)* with no mention of K-12 online learning. Nevertheless, the research available through a multitude of other journal sources allows for a basis of comparison of the reality and issues surrounding K-12 online learning and, specifically for K-12 online learning in BC. In a more recent review of K-12 online learning, Arneson, et al.

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(2018) found that the number of articles had grown significantly thereby allowing for a greater understanding of K-12 online learning over the past two decades. Additionally, there are numerous articles that focused on topics that are not considered mainstream K-12 online learning topics, such as librarians for online learning, added costs, and policies that have helped or hindered the growth of online learning (Arneson et al., 2018).

The COVID-19 pandemic created a huge challenge for the K-12 educational system and forced teachers to shift their mode of teaching almost overnight (Dhawan, 2020; Wiedlich & Kalz, 2020). Even though ERT is a new concept and an emergency response approach to educational program delivery, due to COVID-19, there is some literature available and more becoming available as time passes and journals publish research from this unusual educational period. From my review of the literature, despite the recent growth of research, the literature focused on K-12 ERT is sparse and K-12 ERT literature focused on BC schools is even more sparse. Nevertheless, there is enough K-12 ERT literature available to provide a brief overview of the initial academic response to ERT in K-12 settings. There is a definite need for more research in this area as K-12 educational organizations continue to be inundated with the need to address the reality of K-12 education in this new COVID-19 world and moving forward through the 21st century.

Background of Online Learning in K-12 Schools

At the beginning of the 21st century, online learning in K-12 school settings was considered a relatively new reality (Rice, 2006). However, learning from a distance is not a new concept for schools in British Columbia (Winkelman et al., 2010, p. 14). Due to the geographical realities that are the province of British Columbia, it was difficult to provide face-to-face instruction to all K-12 students requiring the provincial government, in 1919, to provide

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distance learning opportunities through a centralized paper-based correspondence school (Winkelman et al., 2010, p.15). Over time that centralized school was decentralized into regions and by the 21st century, many technology-based online learning schools had emerged (Winkelman et al., 2010, p.22).

Research by Rice (2006) examined a comprehensive look at online learning in K-12 schools in the United States and openly recognized issues that needed to be addressed in order to support the shift to online learning to becoming a viable educational program alternative in the K-12 setting. In Canada, online learning, itself, has a much longer history (Barbour, 2010). Barbour (2010) notes that it is in Canada and the United States where single entity online learning schools can mainly be found and the same can be said about many of the research articles focused on K-12 online learning prior to 2018 (Barbour, 2010). Barbour (2010) stated that the research indicated that the first two K-12 online learning programs in Canada began operating in British Columbia in 1993. Although, it is most important to note, that Newfoundland and Labrador had successfully offered courses in K-12 Mathematics and Science online as pilot projects starting in 1988 until the formal creation of the Center for Distance Learning and Innovation in 1999 (Bainbridge & Wark, 2023; Saqlain, 2016). Further, the reason behind the growth of K-12 online learning schools in British Columbia was due to the need of students to take courses in order to supplement their face-to-face (f2f) timetables because of the reality that many students in British Columbia attend rural K-12 schools and rural schools have limited course selection or opportunities for credit recovery (Barbour, 2010). Currently, issues relating to teacher workloads, digital access and connectivity, and adequate resources in K-12 online learning settings are still very real issues (Kaden, 2020).

Online Learning in K-12 Schools

Prior to COVID-19 and to the present, online learning exists in many forms (such as using LMSs as learning platforms, partial in-class and online instruction, and other blended learning variations). In a research study conducted at a rural school in Idaho, it was determined that online learning was a viable option to improve the educational opportunities for the K-12 students that attended this school (Southwick, 2003). Southwick (2003) supported the notion that K-12 rural communities and their K-12 rural schools are unique and there was a real benefit to research the needs of K-12 students in these settings. An educational consortium was created to delve into the options available for K-12 rural students to access educational programs from a distance. They concluded that a broadband video conferencing network would best serve the K-12 rural students in their area (Southwick, 2003). “Effective distance education must be able to guide the learner, discern whether learning is taking place, and remove the barriers to the learner’s comprehension” (Southwick, 2003, p. 5). This concept of unique communities and subsequent unique K-12 schools within those communities is not exclusive to just rural communities. Online learning can be a feasible way to erase the disadvantages of educational opportunities for K-12 students in any community (Southwick, 2003). This fact is very encouraging for K-12 school communities in British Columbia since the COVID-19 pandemic.

In other research, it was noted that “access to quality education and schooling is critical in determining the economic prosperity, future development and existence of communities in rural locations” (Mulcahy et al., 2016, p. 1). In this study, the focus was on the state of online learning in Canada, specifically in the rural regions of Newfoundland and Labrador. They noted that the public’s approval of online learning as an avenue to earn credits towards graduation had increased (Mulcahy et al., 2016). British Columbia had the highest percentage of students’

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accessing educational opportunities through online learning than any other area in Canada prior to the COVID-19 pandemic (British Columbia, 2021). The original purpose of online learning in the rural areas of Newfoundland and Labrador was to provide supplemental programming, but, in many areas, it has become the only avenue of access to educational opportunities for K-12 students (Mulcahy et al., 2016). The results of this study indicated two major issues for K-12 students regarding access to educational opportunities, namely limited access to a variety of educational opportunities and the increasing need to rely on online learning as the mode of access to educational opportunities (Mulcahy et al., 2016). These same issues may be prevalent in British Columbia, including but not limited to rural areas, explaining the high percentage of K-12 students accessing online learning educational opportunities. The increased number of K-12 students choosing online learning requires a closer look at what best practices for K-12 online learning are.

Online Higher Education Best Practices

There has been a significant amount of research done that focuses on best practices in online learning at the higher education level and because of the limited K-12 online learning research, the K-12 community looks to these higher education findings. Online best practices are considered those practices that reduce or eliminate any barrier to a student's access to online services and academic success (Shimoni et al., 2013). Higher learning institutions need to fully commit to online delivery modes not just consider it as an additional delivery mode part of the in-class experience (Shimoni et al., 2013). Additionally, it is important to have policies that deal with quality of programs, provide appropriate training opportunities and support for instructors, collaboration between institutions, and more funding options (Kuruvilla et al., 2012; Shimoni et al., 2013). Further, Kuruvilla et al. (2012) stated that by differentiating the fee structure for

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online versus face-to-face courses, marketing to the right audience, and planning for the best courses to be offered online, as well as which instructors will teach online, will allow the shift of higher education institutions to include online programs to be a shift that will be successful.

In order to successfully provide online learning opportunities for students, higher education institutions need to have the appropriate technology infrastructure in place to support academic services and learning (Makruf et al., 2022). Course design to allow for scaffolding of learning within online course programming is necessary to ensure and enhance the quality of learning for students (Doo et al., 2020). Additionally, it is important to have a viable process for evaluating the quality of the program delivered and the quality of the learning achieved (Makruf et al., 2022). Overall, higher education online best practices include a viable evaluation of course materials process, appropriate technology and academic support for both students and instructors, well designed courses, and ample professional learning opportunities for online instructors. Higher education online learning knowledge provides viable examples of how online learning in K-12 can be more effective.

Online K-12 Best Practices

Best practices in K-12 online learning tend to reflect those identified in higher educational online learning programs. Loewenthal et al. (2021) looked closely at the processes traditionally used to evaluate the accessibility quality of online courses. They concluded that in order to make online courses more accessible to students it was necessary to strive for inclusivity rather than compliance to improve accessibility to online educational opportunities for more K-12 students (Loewenthal et al., 2021). Barbour (2010) suggested that evaluation of online courses needed to go further to determine whether perceived best practices aligned with their implementation.

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It has been recognized that teaching online and teaching face-to-face requires different skill sets (Moore-Adams et al., 2016; Tabor, 2020). It is necessary to create a framework for evaluating K-12 teacher preparedness for online instruction (Moore-Adams et al. 2016).

Teachers need to be adequately trained and provided with reliable digital learning platforms and technology tools (Tabor, 2020). Defining and identifying characteristics of pedagogical practices that allow K-12 teachers to facilitate positive achievement for their online students is of utmost importance (Rice, 2009). K-12 online best practices do not deviate from K-12 teaching best practices in general and are a further extension of sophisticated skills. K-12 teachers need to be provided adequate ongoing professional development and the technological tools to achieve successful educational program opportunities for online K-12 learners. It is also necessary to look at the availability of technology for use by K-12 learners in all communities.

The Need for Change in K-12 Schools

Research done to investigate the use of information technology by Indigenous communities in Canada demonstrates the need to look at changing educational programming within K-12 schools, including rural schools (Voyageur, 2001). The reality of the effect of the COVID-19 pandemic on K-12 education has further demonstrated this need in real time. Even though the Voyageur (2001) article is 21 years old, it still adequately represents the reality of Indigenous communities presently and supports the research that reflects the Calls for Action from the Truth and Reconciliation Commission (Wotherspoon & Milne, 2020) and, therefore, is still very relevant. A large representation of Canadian Indigenous communities is situated in rural settings (Voyageur, 2001; Wotherspoon & Milne, 2020). Voyageur (2001) noted that the use or lack of use of technology, such as email or electronic bulletin boards, had nothing to do with availability as the technology was and is readily available to be set up for use by all

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members of the communities. Indigenous students are closely tied to their communities and need to be given access to technology to allow K-12 students access to a variety of educational opportunities (Voyageur, 2001; Wotherspoon & Milne, 2020). COVID-19 forced all K-12 students to be able to access emergency remote learning programs to complete the school year 2019-2020. This requirement highlighted further the lack of access to technology that K-12 students in British Columbia are experiencing in all communities, including Indigenous communities. There is an urgent need to provide changes to Canadian K-12 schools and K-12 schools in British Columbia because approximately 30% of the 200,000 Indigenous peoples in British Columbia live in rural communities (“Issue 17-138: 2016 census: Highlights from the Indigenous People in Canada release”, 2017) and 32% of approximately 573,000 K-12 students in British Columbia attend rural schools (“British Columbia Rural Education Report,” 2017). Nevertheless, Indigenous communities in all settings appear to face the same issues regarding access to educational technology for their K-12 students.

There has been a wide array of research completed that has focused on K-12 rural schools in Canada and internationally (Mulcahy et al., 2016; Southwick, 2003; Voyageur, 2001; Winkelmanns et al., 2010). Many of these studies have pointed out common themes, such as poor connectivity, the need to learn and have access to new technologies and provide adequate resources and professional development opportunities for K-12 teachers (Kaden, 2020). The COVID-19 pandemic has allowed for the realization that K-12 students in all areas of British Columbia are facing similar issues to those that have previously only been researched in K-12 rural school settings.

Emergency Remote Teaching

Emergency Remote Teaching (ERT) is a new concept or shift of educational instructional delivery mode that was implemented in 2020 to allow for continuity of education in higher learning education settings as well as K-12 educational settings (Alqabbani et al., 2020; Hodges et al., 2020). Hodges et al. (2020) stated that the choice of ERT was appropriate as it was the K-12 teachers that that were tasked with adjusting their practices as a professional to ensure continuity of learning for their K-12 students. ERT incorporated aspects of online learning but cannot be classified as online learning (Hodges et al., 2020). ERT is far different than online learning in the sense that online learning can be considered well designed and deliberate (Bozurt & Sharma, 2020; Wiedlich & Kalz, 2021). ERT was sudden and considered a temporary shift of educational delivery (Hodges, et al., 2020; Kaden, 2020). Another important objective of ERT that differs from online learning is that ERT was implemented to “replace” instruction that was fully or partially face-to-face (Hodges et al., 2020). It was necessary to provide a term that distinguished the uniqueness of this new mode of teaching and learning from that of online learning.

Most K-12 teachers in British Columbia were unprepared for the immediate shift from their traditional mode of educational delivery to ERT (Barbour et al., 2020). “Other industries have been transformed, and learners have changed but education hasn’t changed” (Raths, 2014, p.1). Areas of K-12 education have changed a lot, such as curriculum, but the educational structures themselves have not. K-12 education has seen the dramatic shift in the ability to deliver educational programs outside of the traditional methods available in past centuries (Alvarez, 2020). However, K-12 educational institutions have not fully embraced the concept of adapting educational delivery modes to enable greater flexibility of teaching and learning

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(Hodges et al., 2020). ERT forced this change to happen at a pace that was unprecedented and staggering for most (Hodges et al., 2020).

There were many challenges experienced with the sudden switch to ERT with limited time provided or available for preparation overall (Wiedlich & Kalz, 2020). Several challenges associated with the sudden switch to ERT closely align with the issues that have been researched and documented for distance learning in K-12 rural settings, such as issues with digital access and connectivity and the need to learn new technologies (Alvarez, 2020; Kaden, 2020). Additionally, “not one single model for [remote teaching] will provide equitable educational opportunities for all” (Kaden, 2020, p. 11). Moreover, the time provided to K-12 educators to make the shift from traditional in-class teaching to ERT was grossly inadequate considering that planning, preparation, and development of a fully online university course requires anywhere from 6 to 9 months (Hodges et al., 2020). Additionally, Rapanta et al. (2021) noted that a well-designed online course “includes constructive and interactive learning activities” (p. 716).

It is important to review the results of research in the area of ERT. “In the event of a disaster an organization needs to communicate with its members and wider community concerning the process of resolving the disaster or crisis” (Tull, et al., 2017, p.2). Tull et al. (2017) also stated that there are many barriers to the adoption of online learning practices and educational structures, including lack of time, workloads, teaching materials and practices, and limited academic staff knowledge. Tull et al. (2017), also, stated that there is a definite need to be prepared for emergency responses in education for the responses to be successful. Hodges, et al. (2020) argued that the COVID-19 pandemic was not the first time in the world that there has been a need for ERT, and it most certainly will not be the last as climate emergencies and pandemics will continue to occur. ERT needs to be made part of every K-12 teacher’s skill set

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(Hodges et al., 2020). The reality of the pandemic has not subsided and, additionally, other regional, national, and international crises have come to fruition, such as the atmospheric weather disaster that affected British Columbia, requiring further need of ERT. Tull et al., (2017) states that it is important to continue to build skills, like those needed for successful ERT experiences, in times when crises are not evident thereby allowing for smoother transitions when necessary. It is beneficial to evaluate the ERT experience of 2020 in order to gather the data needed to create ERT responses that can be effective and just.

TPACK

“Teaching is a highly complex activity that draws on many kinds of knowledge” (Mishra & Koehler, 2006, p. 1020). Teaching requires a conceptual framework for research that reflects that complexity. Technological Pedagogical Content Knowledge (TPACK) is a conceptual framework to allow for the development of good content through the interweaving of three important sources of knowledge, namely technology, content, and pedagogy (Mishra & Koehler, 2006). This is a new framework that is built on the pedagogical content knowledge (PCK) that has driven teacher education programs for several decades. PCK focuses on how a teacher interprets a subject and then creates a variety of ways to represent that subject matter to make it possible for a variety of learners to access that same subject matter (Mishra & Koehler, 2006).

With the advancement of technology and the inclusion of technology in K-12 educational settings, technology knowledge (TPK) needed to be considered equivocally as content knowledge and pedagogy knowledge. TPK is knowledge in a state of flux and teaching successfully with technology is not an easy feat (Koehler et al., 2013). It requires teachers to continuously reestablish equilibrium between content, pedagogy and the rapidly evolving technology (Koehler et al., 2013). In essence, it is the idea that teachers knowing how to use

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technology is different than teachers knowing how to teach with technology (Mishra & Koehler, 2006). TPACK is a framework that can allow researchers to identify what is important in the discussion of “teacher knowledge surrounding using technology for teaching subject matter” (Mishra & Koehler, 2006, p. 1046). XK includes the knowledge and understanding that teachers have of the educational structures that regulate how they teach.

TPACK has been challenged with respect to several aspects (Siefert et al., 2021). First, “the building blocks PK, CK, and TK have been insufficiently conceptualized” (Siefert et al., 2021, p.2). Specifically, it can be unclear as to what kind of technologies TK is comprised of (Schmid et al., 2020; Siefert et al., 2021). Second, the relationship between the different knowledge components is not clear (Schmid et al., 2020; Siefert et al., 2021). It is unclear whether the relationships are integrative or transformative (Schmid et al., 2020; Siefert et al., 2021). Lastly, the assessment methods are lacking in reliability and validity (Schmid et al., 2020; Siefert et al., 2021). More research is needed to address each of these issues.

Educational Structures

Every level of education has some form of educational structures that instructors, teachers, administrators, and learners work within. Tyack and Tobin (1994) refer to these educational structures as the basic grammar of schooling (p. 454). Their definition of grammar is “the regular structures and rules that organize the work of instruction” (Tyack & Tobin, 1994, p. 454). Cuban (2013) stated that “deep seated continuity in schooling and teaching” has allowed generations upon generations to be familiar with what should occur in K-12 classroom and what is expected of a K-12 school (p. 109-110). These familiar educational “structures arrange and regulate the school environment” (Randeree, 2006, p. 399). These structures include school calendars, physical buildings, hours in a day, timetables, length of classes, types of resources,

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student assessment, reporting periods, and many other entrenched, legislated or contracted structures (Randeree, 2006, p. 399; Hargreaves et al., 2001, p. 160). “Organizational structure, rules, and regulations define school life for teachers, students, and administrators” (Kilinc et al., 2016, p. 617). Hargreaves and Fullan (2020) questioned teaching in the context of the coronavirus. They found that teaching during COVID-19 “undermined” (p. 327) the traditional teacher-student-parent educational relationship. Hargreaves and Fullan (2020) further noted how easily many private schools transitioned their students to continue learning during COVID-19 while public schools scrambled to adjust. They suggest that there is a need for change in education. Namely, Hargreaves and Fullan (2020) state that “educational reform in the post pandemic age must be transformational and not seek to return to normal” (p. 327). Randeree (2006) also notes that researchers have not focused enough research on how physical and organizational structures can hinder changes in K-12 education (p. 399).

Cuban (2013) stated that teachers and those who determine educational structures do not have the same experiences, values, and incentives with respect to educational structures (p. 116). He also stated that policymakers are too focused on personality traits of teachers rather than organizational structures as the determinacy of success in changes for K-12 education (p. 117). Cuban (2008) suggested that policymakers introduce educational structures and educational structural changes to assist them in achieving their own goals and those goals quite often conflict with teachers’ goals (p. 248). Clark et al. (2019) state that it is important for decision makers at all levels of K-12 education to work together to undertake evaluations of school structures to identify educational structures that hinder K-12 educational goals for students (p. 133). Overall, there is a need to do further research on the effects of educational structures on K-12 teachers’ ability to implement successful change in their classrooms.

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What is New in K-12 Online Research

COVID-19 provided the right climate to improve the number of studies in K-12 online education as well as encourage researchers to focus their research in the area of K-12 education. Machusky and Herbert-Berger (2022, p. 9) found that many K-12 schools in the United States experienced extreme shortcomings in technologies brought to light with the shift to ERT. They followed up their research with an implemented android application for teachers to access (Machusky & Herbert-Berger, 2022). Shannir-Inbal and Blau (2021) also carried out a study that focused on the implications of the ERT experiences on K-12 schools and teachers following COVID-19. They found that there were issues with adequate technology infrastructure (Francom et al., 2021) and traditional pedagogy stating that “effective online learning during emergency events is based on the relevant skills that teachers and students have developed during regular learning” (Shannir-Inbal & Blau, 2021, p. 1244).

Much of this new research supports the findings of earlier works. Francom et al. (2021, p. 598) stated the importance of providing ongoing technological professional development learning opportunities for K-12 teachers to allow for teachers to be prepared to teach in online environments. Barbour (2010, p. 9) stated how important it was to focus new research on how to improve teaching and learning in K-12 online settings. Shannir-Inbal and Blau (2021) provided evidence that new research in K-12 online learning is mainly focused on ideas of improvement of K-12 online teaching and learning (p. 1246).

Position of Researcher

From the review of the literature, I found very little research focused on the connection between TPACK and teaching online learning as well as very little research focused on ERT and issues with educational structures in K-12 settings. There was no research on the residual effect

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of ERT on teaching practices following the shift out of ERT. I position my study to focus on these key areas of interest.

Summary

British Columbia is a very diverse province geographically with distinct rural and urban areas. Online learning has been an educational program option for K-12 students in British Columbia for over three decades. Research, although limited, has been completed in the area of online learning in K-12 settings and K-12 rural settings. British Columbia has been one of the leading provinces in the area of implementing online learning educational opportunities for K-12 learners (Barbour, 2010). The implementation of Emergency Remote Teaching (ERT) to address the issues in access to K-12 education caused by the COVID-19 pandemic has led to the need to research the effect of that sudden shift on K-12 education and specifically K-12 secondary school teachers. It is important to conduct research projects that focus on the effect of the implementation of ERT in K-12 settings in order to provide with the insights to allow the Ministry of Education in British Columbia and individual school boards to take the steps necessary to build plans for future emergency teaching needs. As a result of the terrain and the size of the province, British Columbia continues to find itself in emergency situations, therefore, the need to create viable and feasible ERT plans is a real necessity. In my research project, I will provide insight for future research projects to enhance the understanding of the area of ERT on K-12 secondary teachers as well as to contribute to the growing literature of K-12 online education.

Chapter 3: Methodology

Introduction

In this chapter, I provided the theoretical position for this study along with an overview of the case study methodology. Additionally, a discussion of the rationale for choosing case study methodology, research design, the outline of the study, and the specifics of the study are provided. Finally, a discussion of the reliability and validity of the study is included.

Theoretical Position

The purpose of this study was to examine the effect of Emergency Remote Teaching (ERT) on K-12 secondary school teachers. The shift to ERT was a very sudden and unexpected necessity created by the COVID-19 worldwide pandemic. As this area of reality is very new, there has been minimal research focusing on topics relating to ERT in K-12 educational institutions. ERT was a solution based educational delivery mode created to address the need for continuity of learning for students to allow them to complete their studies for the year 2019/20. The continuing concern for the world that COVID-19 has allowed for the realization that plans to address future educational program interruptions need to be designed to minimize the effect of these interruptions (Tull et al., 2017). ERT was an emergency response in an area that had not experienced this type of disruption previously. It is important to understand the practical effect of the implementation of ERT on the teachers tasked with adapting their classrooms accordingly. For this study, quantitative and qualitative evidence was gathered to gain a clear understanding of the opinions, feedback, and reflections one group of K-12 secondary school teachers had implementing ERT in their K-12 educational setting.

A case study approach provided the opportunity to examine ERT as implemented by a specific school district to understand its effect on the teachers in that district, specifically the

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effect on secondary school teachers. This area of research is very new and needed to begin on a small scale to gain valuable insight into the effect of ERT in a K-12 setting. A case study approach is a preliminary mode of inquiry (Yin, 2018). This study has provided a basis for future research in this area of K-12 education. There is a definite need for an understanding of the effect of ERT on K-12 secondary school teachers in order to assist with planning of future ERT policies. The worldwide COVID-19 pandemic has brought to reality the need for K-12 educational institutions to have viable and feasible emergency educational plans in place. Therefore, a case study approach allowed the researcher to connect the K-12 teachers' opinions, feedback, and reflections with ERT to provide clear data to assist with informing decision makers (Breslin & Buchanan, 2008).

Epistemology and Ontology

Pragmatism has a long history in education. John Dewey believed that pragmatism was the best approach for education as a democratic society is flexible and education needed to allow teachers to be able to adjust approaches to reflect individual student needs (Sharma et al, 2018). Dewey saw the importance of experience in education but, also, the need for education structures and approaches to adapt, adjust, reorganize, and reconstruct as required to ensure systems that continued to work (Sharma et al., 2018). Through inquiry processes, education systems and structures would be poised to understand problems, identify concrete questions, and use the appropriate tools to transform these same systems to resolve the problems (Legg & Hookway, 2018).

K-12 education requires a practical, solution-based approach to research. The recent reality of the world threatened by the ongoing COVID-19 pandemic has further solidified this approach quickly. Pragmatism allows for a way to find the meaning of things and to find ways in

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which to act upon those things (Almeida, 2012). Pragmatism focuses on solutions to “practical problems in a practical world” (Cohen, 2011, p. 23). Learners’ experience of learning is “a process of acting, doing, and living” (Rideout, 1965, p. 126-127). A pragmatic approach to addressing issues in K-12 education will permit students to experience a balance within their communities (Rideout, 1965). Pragmatism recognizes the need to focus on what has been implemented for K-12 ERT and to build on that basis to provide insight into future structures and designing of K-12 ERT educational opportunities as well as design considerations for online educational programs (Pavlis & Gkiolos, 2017).

Case Study Methodology Overview

Case study methodology was a feasible research approach for this endeavour since there has been limited research completed into ERT in the K-12 area, and specifically focused on K-12 secondary school teachers. “Case studies have a rich history for exploring the space between the world of theory and the experience of practice” (Breslin & Buchanan, 2008, p. 1). Case studies have been conducted in many social science disciplines and have provided results that have been used for exploratory, descriptive and explanatory purposes (Yin, 2018). Case studies can be conducted using qualitative, quantitative or a combination of both types of evidence (Harwati, 2019; Yin, 1981). This study used both qualitative and quantitative evidence.

Case study research offers a clear view of the case and, subsequently, offers areas for further inquiry (Gerring, 2016; Yin, 2018). This research project was concerned with the effect of ERT on K-12 teachers thus the decision to utilize a case study approach was a reasonable one and provided very specific insight into the opinions, feedback, and reflections of the K-12 secondary teachers in one British Columbia secondary school. As there is limited research currently in this area of K-12 education, case study methodology provides for results that reflect

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real time data in a small enough scale to begin to understand the connection between ERT and K-12 secondary school teachers' opinions, feedback, and reflections of these situations.

For this research study, the use of a realist approach allowed for the possibility to see the reality of the actual effect of the sudden shift to ERT on K-12 secondary school teachers in one school in British Columbia. It could lead to future comparative case studies that would provide a stronger understanding of the reality of the effect that the implementation of ERT on K-12 teachers in British Columbia and/or Canada (Yin, 2018).

Rationale for Case Study Methodology

Case study methodology has been challenged as a legitimate social science research methodology since it does not have well-defined protocols nor well-structured protocols (Yazan, 2015). There are three prominent case study methodologists, namely Robert K. Yin, Sharan Merriam, and Robert E. Stake. Merriam and Stake both place case study under the qualitative research umbrella with no recognition or consideration for quantitative research (Yazan, 2015). Yin considers a case study one of "empirical inquiry" (Yazan, 2015, p. 17) where data sources are both quantitative and qualitative. Merriam offers more consideration for structure in some areas of her position regarding case study methodology than does Stake, neither she nor Stake provide a guide to case study that provide well-define or well-structured protocols (Yazan, 2015). Yin (2002) does provide that definition and structure. I find myself better aligned with Yin (2002) as I am an inexperienced researcher and his clear and logical approach to case study methodology provided clear direction for me to design a case study that I can successfully complete. Despite being less flexible in his case study methodology than Merriam and Stake, Yin (2002) and his lack of flexibility allows the researcher to stay focused on the questions asked and ensure that there is a clear relationship between the questions and the data collected (Yazan

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2015). His position complements my pragmatism that allowed me to objectively answer my research questions and allowed me to consider directions of future research to build on the results of this initial study.

As K-12 education adjusted to conditions created by COVID-19, secondary school teachers in one BC jurisdiction found themselves forced to shift from their traditional teaching methods to the mandated provincial emergency remote teaching directive. *“How were secondary school teachers in one BC school jurisdiction effected by the shift to ERT?”* This main question of study materialized through my own opinions, feedback, and reflections while teaching at the beginning of COVID-19 pandemic. Yin (1981) states that case study research does not demand the use of a specific type of evidence. Case studies can be conducted using qualitative, quantitative or a combination of both types of evidence (Harwati, 2019; Yin, 1981). The main question sought to gather data to understand the opinions, feedback, and reflections of secondary school teachers as they were affected with the shift of teaching through their usual mode of teaching to that mode as prescribed by ERT. Case study research “benefits the researcher undertaking the project.....and.....can have utility for others” (Harland, 2014, p. 1114). Therefore, the first question lent itself to a case study research approach (Yin, 1981).

ERT created the need for all secondary school teachers to completely shift their mode of teaching regardless of their knowledge or experience with alternative modes of education program delivery (Hodges et al., 2020). It also created the need for every secondary school student to be taught using ERT. Traditionally secondary school teachers would be using alternative teaching methods to only those advanced learning secondary school students that chose to access learning through alternative modes such as online programs (Arneson et al., 2019). The goals were to allow for continuity of learning for all secondary school student and

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maintain student mental health (Bryant et al., 2020). However, there is some suggestion that a rush to ERT was not necessary as up to 10 weeks of school shutdown may not have an adverse effect on student learning (Schroeter, 2021). It is important to understand the opinions, feedback, and reflections of secondary school teachers actively engaged in ERT in order to critically assess its effect of these goals on these same teachers.

Case study research is a data-based research method that provides for greater researcher objectivity through collection of data that can be both quantitative and qualitative (Gerring, 2019; Yin, 1981). The successful completion of this study has provided valuable findings that provide insight into the personal opinions, feedback, and reflections of secondary school teachers who have first-hand knowledge of teaching within an COVID-19 implemented ERT program. These findings and recommendations could influence how future emergency situations are planned for through K-12 online practices and possible changes in future online programs (Harland, 2014; Pearson, et al., 2015). Additionally, “case study allows a new researcher to learn from experience” (Harland, 2014, p. 1121) and, as a new researcher, I have benefited from successfully completing my study following the guidelines of case study methodology.

Research Design

The research design for the study was a single-case mixed-methods design (Yin, 2018). This design allowed for the collection of “a richer and stronger array of evidence” (Yin, 2018, p. 63). My hypothesis was that secondary school teachers in one BC school jurisdiction were affected by the shift to ERT in both their professional and personal lives. I also hypothesized that secondary school teachers in one BC school jurisdiction continue to be affected by the shift to ERT in both their professional and personal lives.

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I incorporated an online survey and personal interviews to gather data for my study. Case study research offers flexibility in data collection procedures (Yin, 2018). Because case studies are defined as an observational form of analysis for research studies, the use of a survey and personal interviews as data collection tools are reasonable choices (Gerring, 2019).

Outline of Study

This study focused on secondary school teachers in one BC jurisdiction and their individual opinions, feedback, and reflections during the shift of teaching to ERT by the Province of British Columbia to provide continuity of learning after Spring Break of the school year 2019 – 2020 as well as their individual opinions, feedback, and reflections in the following school years to the present. Quantitative data was gathered through an anonymous survey (see Appendix B). Data was collected that included gender, level of education, years as a teacher, teaching areas, and experience with online learning. Quantitative data was, also, collected about the structure of ERT each teacher used to satisfy the Ministry of Education’s goal of continuity of learning to complete the 2019-2020 school year.

Qualitative data was collected as part of an anonymous survey that requested longer answers (see Appendix B). Data was collected that included changes in individual teacher’s professional and personal lives. Data was, also, collected about individual teacher’s experiences in their professional and individual lives in the subsequent school years to the present. Further qualitative data was gathered through personal interviews of individual teachers who volunteered to participate in a further personal interview (see Appendix C).

Participants

The participants in this study were volunteers of secondary school teachers within one BC school jurisdiction. The initial survey invite was put forth to all secondary school teachers

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through an invitation to participate poster placed in each staff room. Additionally, invitations to participate were forwarded by secondary teachers to their colleagues. These invitations to participate resulted in 33 voluntary survey completions overall.

All participants that personally volunteered were invited at the end of the survey to participate in a follow-up interview by providing the necessary information in the space provided. The contact information provided by the volunteers was used to make contact and set up the further interviews. The interview took place via Zoom thereby allowing for greater flexibility in availability of volunteer participants. This group of subjects was noticeably smaller than the initial survey group, but nine volunteers were able to participate in the personal interview opportunity. A draw for a \$25 Chapters gift card for their participation was done and received ethics approval.

Timeline

This study took place during the spring of 2023 and all data collection was completed by April 15, 2023, following ethics approval and approval from one BC school jurisdiction to conduct the survey. There were no issues receiving ethics approval for this study as the subjects were adults in the teaching profession.

The surveys were accessible by QR code shortly after candidacy and ethics approval. The survey was available via invitation poster placed in every secondary school staff room. There was a link to the online survey through a QR code which created using Survey Monkey. The deadline for survey submission was April 15, 2023, as set by the BC school jurisdiction approval.

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The contact information for the survey participants that indicated a desire to participate in the focused interview was gathered and interview times were set up with them and all interviews were completed by April 15, 2023.

All interviews were conducted using Zoom as it created a transcript of each interview recording that was used to be check for accuracy of responses. The tools within Survey Monkey were used to formulate the results of the quantitative data collected. Open coding was used once the data was collected. It is important to do an intensive analysis after all data has been collected and prepared (Flick, 2013). The first step was to code the data allowing for the grouping of several observations under a particular concept or theme (Flick, 2013). A thematic analysis of the qualitative data collected from the survey and personal interviews provided several common themes, specifically workload, health, teaching, technology, online, and educational structures. Through the coding process, the researcher was able to find the emerging themes and considered the themes as they related to each research question.

Braun and Clark (2006) provided the process the researcher followed to analyze the data. This was a six-step process of data analysis. The first step involved becoming familiar with the data. The next step was to generate a set of initial codes. Next, using the initial codes, it was important to search for possible themes and take the time to consider how to define them. Once the themes were defined, then the themes were considered in relationship to each other and to the research questions. The final step in the process was to do the write-up of the research.

Informed Consent

Each participant of the survey was provided with the particulars of the study, including the questions being studied and the reasons for the study (see Appendix A). Each participant that took part in the survey did so willingly and through informed consent from all volunteer

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participants (Yin, 2018). Again, prior to the commencement of the focused interviews, participants were provided with a pre-interview overview of the study and its purpose. Additionally, the participants were read the pre-interview preamble to provide the participant with the parameters of the interview and the rights of the participant during the interview, as well as ensure that each participant was comfortable before commencement.

Privacy and Data Storage

All participant's data was kept on the researcher's personal computer that is passcode encrypted and only the researcher was able to access. Any hard copies were held in a secure location. All research data will be destroyed after five years as per Athabasca University's (2018) ethical guidelines. There will be no transferring of any of the participant's data for any reason. The data collected was used in my final report only.

The final report will be archived in the Athabasca University Library's Digital Thesis and Study Room and will publicly available. Any participant will have access to the complete summary of the study's findings or the completed study if they request it, otherwise, as stated above, it is available online.

Validity and Reliability of Study

This study is a single case study that utilized convergence of multiple sources of evidence (Yin, 2018). Although, single case studies do not carry the same validity as multiple case studies, this single case study provided data and results that can be replicated using other cases (Gerring, 2019; Yin, 2018). The use of an initial survey with structured and open-ended questions allowed for the collection of data that is quantitative and qualitative as provided by volunteer participants each of whom experienced the effect of ERT during COVID-19 and have continued to experience the effect following ERT. The follow-up interviews with those survey participants

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who have volunteered to participate in a more focused interview provided important insights to the evidence provided in the initial survey. By analyzing the information collected from both the survey and the focused interviews, the researcher was able to have data triangulation which improves the validity of the study findings (Yin, 2018). The focus of this study was on the opinions, feedback, and reflections of the participants, therefore, the more opportunity to gather data that provides in-depth insight into those opinions, feedback, and reflections will increase the validity of the results of the data analysis.

The survey and interview questions have been vetted by a secondary school administrator, a secondary school teacher librarian, and a secondary school English/Physical Education teacher for clarity and understanding. My survey and interview questions are accessible by others allowing for retrieval at any time during the study and following the completion of the study and subsequent report. Other researchers will be able to use these tools for other similar subject groups. This has allowed for greater reliability of the results of this study (Yin, 2018). This database included survey responses, personal notes taken during focused interviews, and consented recordings of focused interviews. The researcher provided an interview process that was consistent for each participant to minimize bias thereby increasing the reliability of the data collected. The researcher allowed each interviewee the opportunity to review their responses to provide any corrections prior to moving onto the analysis phase of the study which has increased the reliability of the data collected (Yin, 2018). Overall, the study has internal validity and overall reliability.

Dual Roles and Ethics

I have taught in the same district for over three decades in many schools. All the volunteer participants were colleagues of mine, and I recognized the potential that some or all the

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participants that volunteer to participate in the personal interview portion of this study may be colleagues that I personally know or have taught with over the years. I am confident that I remained neutral in my own feelings towards any participant who volunteers to participate in the personal interviews. I felt that if I did carry a bias towards a particular volunteer, I did not include that individual in my participant selection and would follow up with a reply thanking them for their initial participation.

I also recognize that for some individuals the opinions, feedback, and reflections that I will require them to speak about as part of the personal interview portion of this study may cause a traumatic response. If that occurred, I would have stopped the interview and provided the interviewee a few options, namely time to gather themselves before continuing with the interview, reschedule interview to continue at another time, or to opt out of the interview process completely. Additionally, I was prepared to offer the appropriate information to access the resources at our disposal for health and wellness to any of my interviewee that may require that information.

Summary

This research explored the effect of ERT on secondary school teachers in one BC school jurisdiction. This chapter has provided a detailed overview and rationale for the use of case study methodology, research design, theoretical framework for the study, forms of data collection, and participant selection process. Further, this chapter has, also, covered the actual timeline. Ethical considerations, such as informed consent, data storage and other privacy issues have been discussed to ensure transparency and consideration of Athabasca University's ethical standards with respect to research with human subjects. The following chapters of the subsequent report include details about the actual research process, data collected and final outcomes.

Chapter 4: Research Data and Findings

The purpose of this study was to understand the knowledge that one group of secondary teachers in British Columbia had or gained about themselves and their teaching as well as the skills they had, they gained, or they needed during ERT and since moving out of ERT. The research aimed to assist ERT program planners to adapt future emergency programs whereby improving the quality of implementation of these emergency programs if the need arises. Additionally, the research aimed to illicit valuable data to be used in the enhancement of educational opportunities for online learning in K-12 settings.

In this chapter, I provided a detailed review of the data collected from two sources used to complete the research for this study. The data was collected through an anonymous survey that collected both quantitative and qualitative data and through a follow-up personal interview with volunteer participants from the initial survey. The findings from both sources will be discussed and presented.

Participant Group

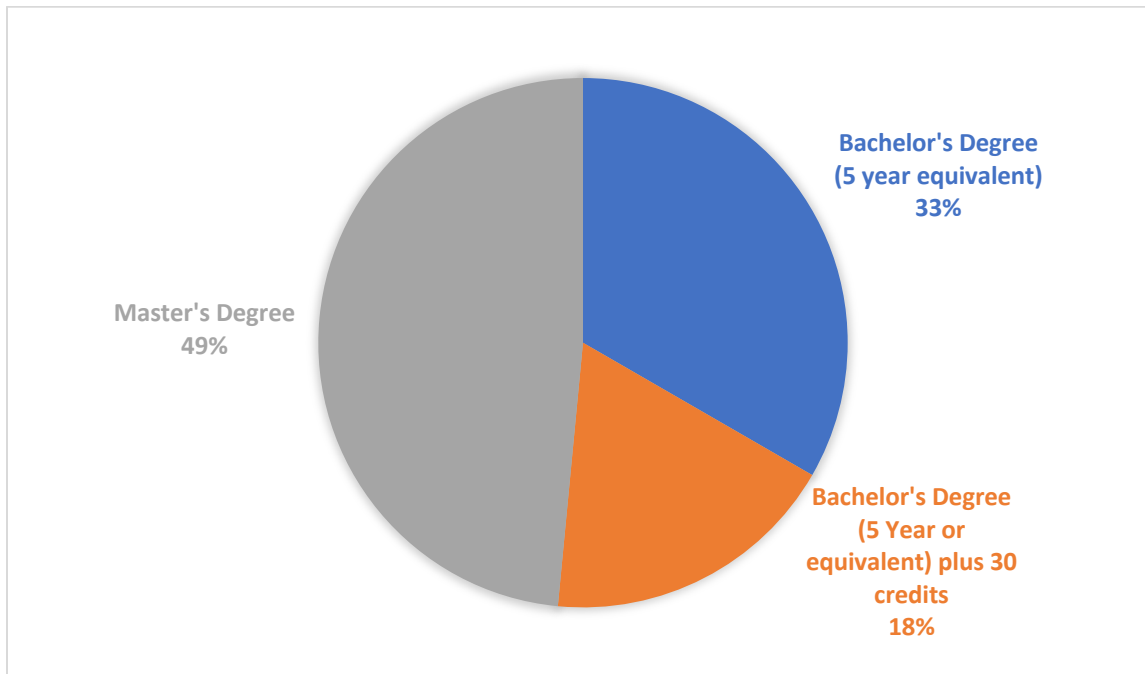
A total of 33 teachers completed the anonymous survey. Twelve of the survey participants volunteered to participate in the follow-up personal interview. All the teachers who indicated that they would be willing to participate in the personal interview were contacted to set up an interview time. Nine teachers completed the personal interview portion of the research study. The participants overall were experienced teachers and almost half of the participants held graduate degrees. Over 50% of the participants were “academically and professionally trained and certified” (BCTF, 2023, p. 2) over the certification requirements to obtain a teacher certificate in BC.

Demographics

As part of the survey portion of the data collection, participants were asked to report their education level, their years in teaching, the subjects they teach, their gender, their online teaching experience, the number of sick days used during ERT, how many of those sick days were unpaid, the number of sick days used after ERT, and how many of those sick days were unpaid. The results of these questions are presented in the figures below.

Figure 2

Participant Level of Education



Note. Figure 2 above shows the participant's level of education. There was a total of 33 teachers that completed the initial survey. Eleven teachers have a bachelor's degree (5 year), six teachers have a bachelor's degree (5 years) plus 30 credits, and 49% of teachers have a master's degree, which is a significant portion of the overall number of participants. The BCTF data indicates that 38% of teachers have master's degrees Province wide as indicated in their recent survey (BCTF, 2023, pp. 2). The highest level of salary in BC is attainable with the completion of a graduate

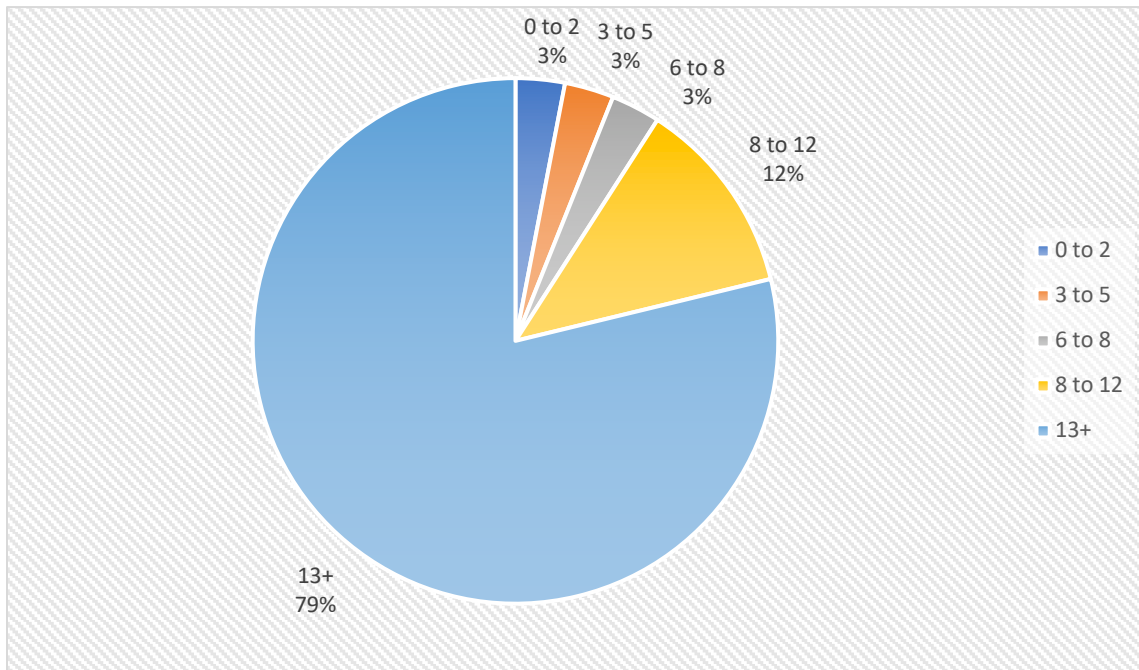
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degree and teacher pension is based on the best 5 years of wages. None of the participants possessed any other levels of education.

Participants were asked to identify their years of teaching experience. Twenty-six of the teachers reported that they had 13 or more years of experience; four teachers reported that they had 8 to 12 years of experience; one teacher reported their years of experience for each of the following: 6 to 8 years, 3 to 5 years, and 0 to 2 years. Figure 3 below provides a visual of these responses.

Figure 3

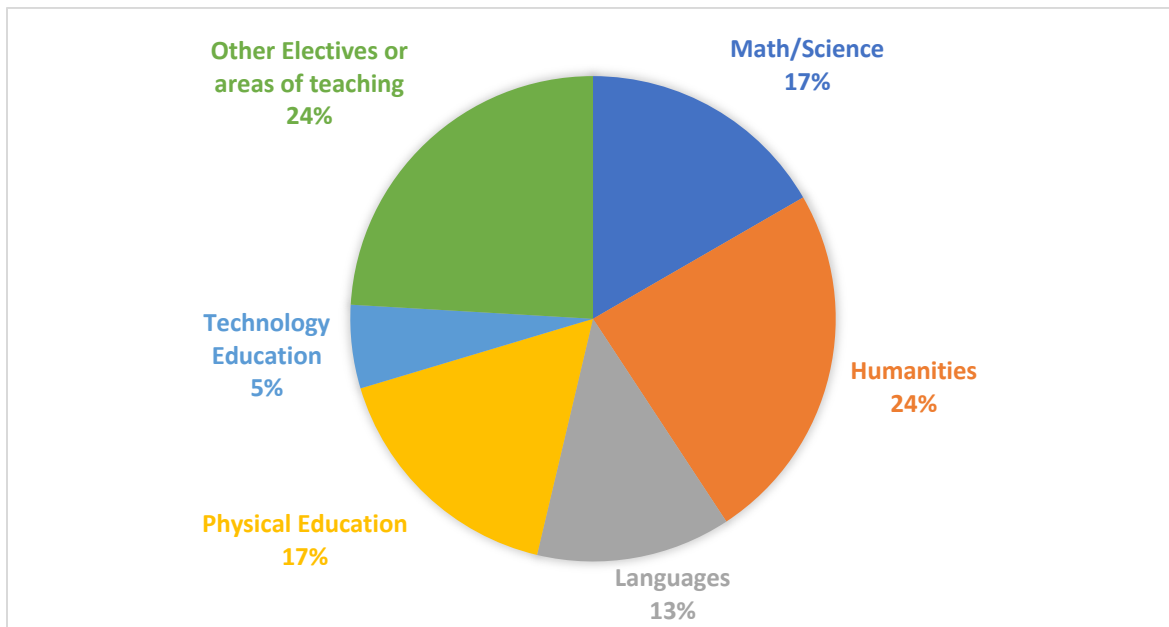
Participant Years of Teaching Experience



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Figure 4

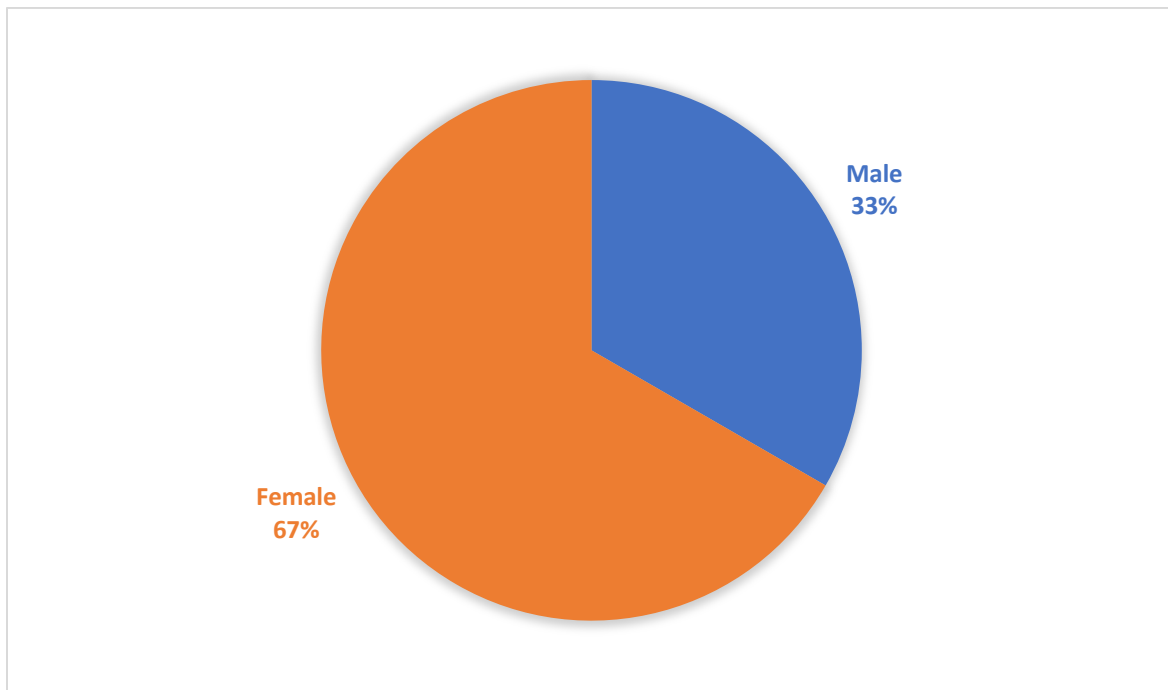
Participants teaching subject area(s)



Note. The participants were asked what subject areas they taught in the initial survey. Nine of the teachers surveyed taught Math/Science; 13 of the teachers taught humanities; another 13 of the teachers surveyed taught other electives or were non-enrolling teachers such as Teacher Librarians, Learning Assistance Resource Teachers, or Counsellors; seven of the teachers were language teachers; nine of the teachers taught physical education; and three of the teachers were technology education teachers. Figure 4 illustrates these responses.

Figure 5

Participants' Gender



Note. Figure 5 shows the participant’s gender identification. There were 33 participants that completed the initial survey. Eleven teachers identified as male, while 22 identified as female. None of the participants chose “other” and there were zero “no response” recorded.

Quantitative Data

The survey included both quantitative and qualitative questions for the participants to answer. The full set of survey questions are located at Appendix A. The quantitative questions covered online teaching experience, use of sick days before and after ERT, how many sick days were paid, types of technology used to achieve remote learning, how often did participants meet with students virtually per week, digital tools teachers had used prior to ERT, changes teachers experienced during ERT, how prepared teachers were to shift to ERT, familiarity with online course design, changes experienced during ERT, continued changes after ERT, view of viability of online educational delivery prior to ERT and after ERT, understanding of the pedagogy of

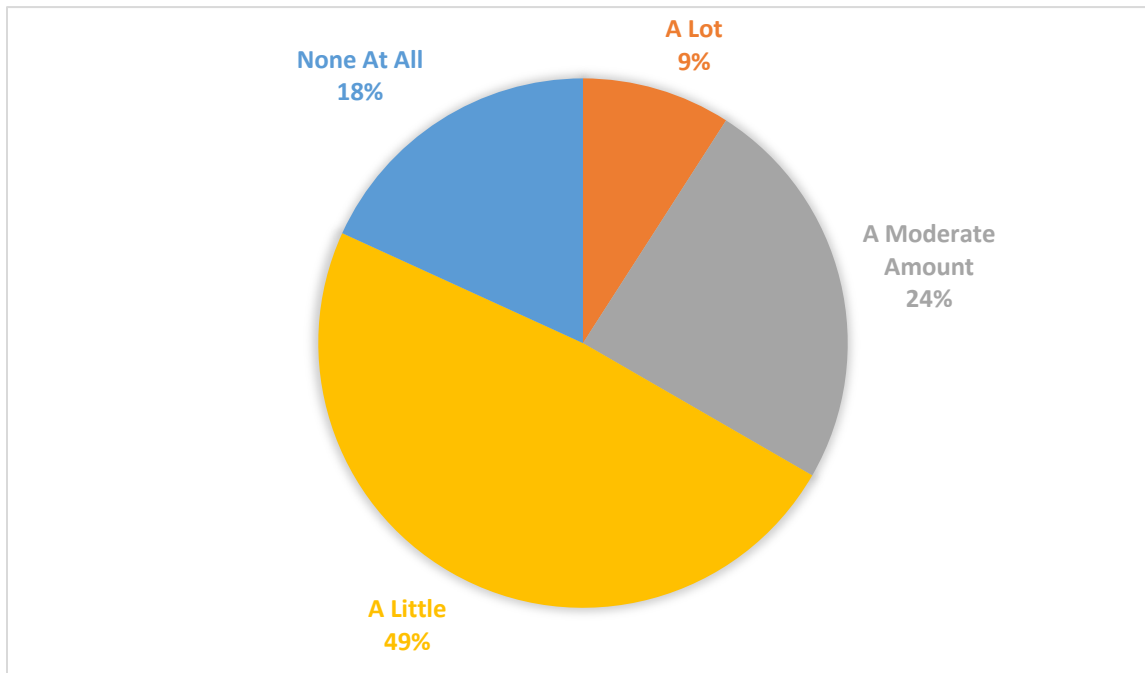
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teaching online prior to ERT and following ERT, and impact of ERT on teaching practices following ERT.

The participants were asked in the initial survey were asked to identify their level of experience teaching online or remotely using none at all, a little, a moderate amount, a lot, or a great deal. Figure 6 below illustrates their responses. Six teachers responded, “none at all”, 16 teachers responded, “a little”, eight teachers responded, “a moderate amount”, three teachers responded, “a lot”, while zero teachers responded “a great deal.

Figure 6

Experience Teaching Online or Remotely



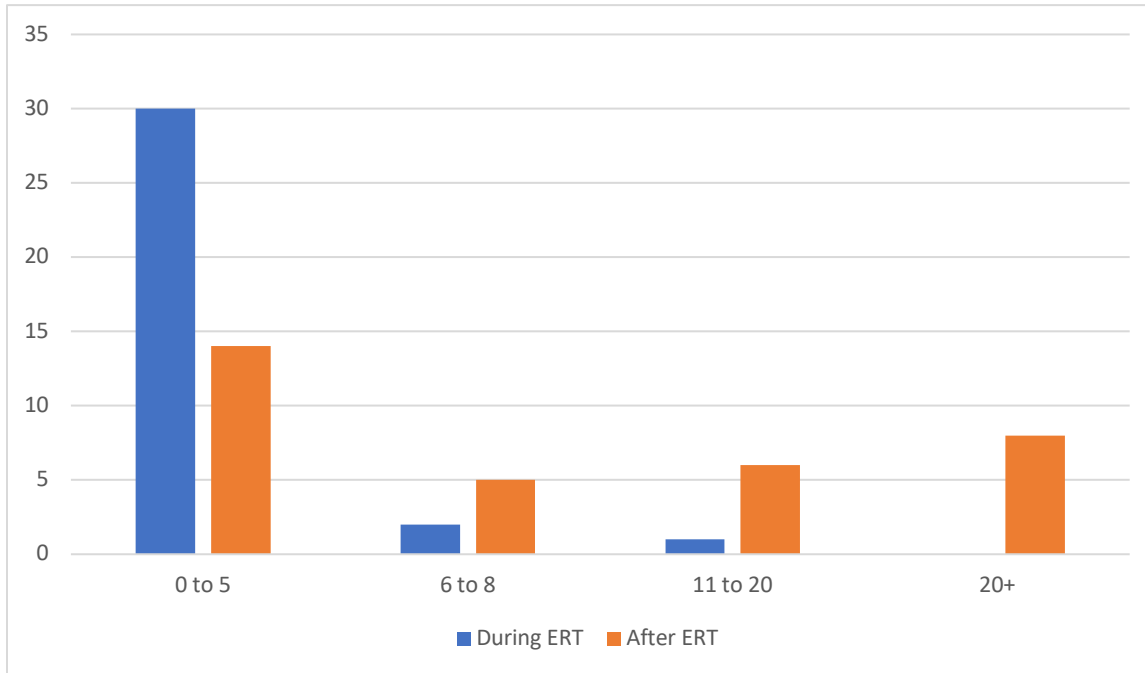
The participants were asked in the initial survey to provide how many sick days they used during ERT and after ERT. Figure 7 below illustrates their responses in comparison. Prior to ERT, 30 teachers responded zero to 5 days, two teachers responded 6 to 10 days, one teacher responded 11 to 20 days, and zero teachers responded 20 or more days. After ERT, fourteen

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teachers responded zero to 5 days, five teachers responded 6 to 10 days, six teachers responded 11 to 20 days, and eight teachers responded 20 plus days.

Figure 7

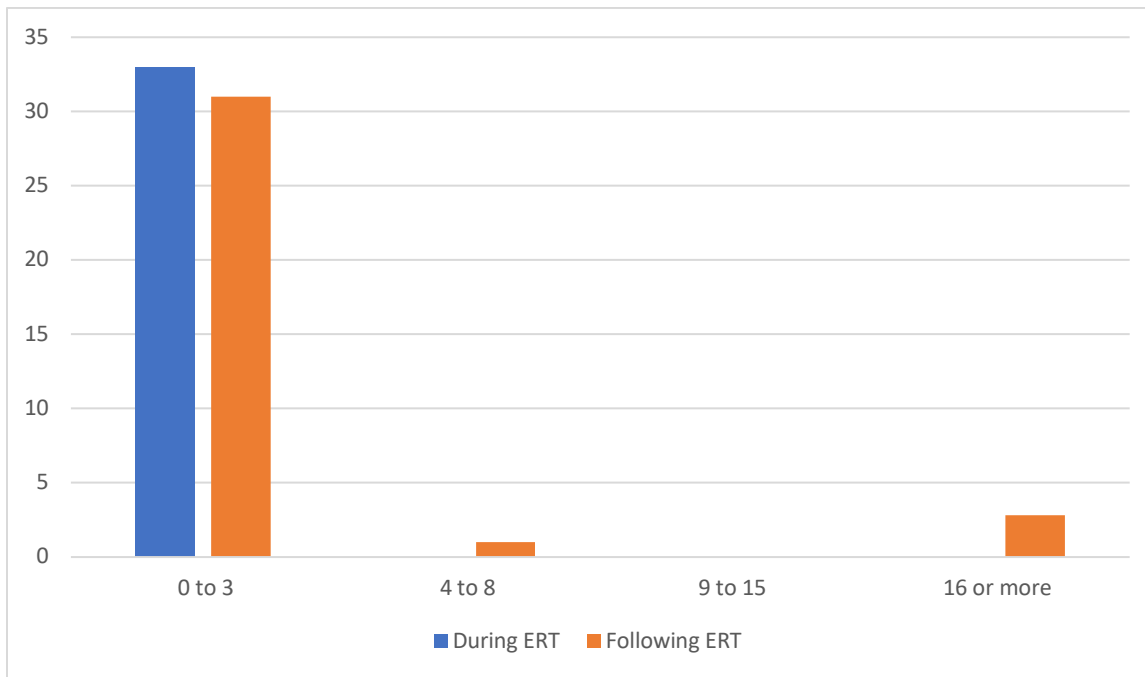
Sick Days Taken During ERT and After ERT



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Figure 8

Sick Days Unpaid During and After ERT



Note. The participants were asked how many of the sick days taken during and following ERT were unpaid. Figure 8 illustrates their responses. Thirty-three teachers answered both questions. All 33 teachers responded 0 to 3 of the sick days were unpaid during ERT. After ERT, 31 teachers responded 0 to 3 sick days were unpaid, one teacher responded 4 to 8 sick days were unpaid, zero teachers responded 9 to 15 sick days were unpaid, and one teacher responded 16 or more sick days were unpaid.

The participants were asked what technology(s) was used to achieve remote learning. Thirty-three teachers responded to this question. Figure 9 below illustrates their responses. Twenty-eight responded “google classroom”, two responded “other learning management system”, 24 responded “zoom virtual classes”, four responded “teams virtual classes”, two responded “other”, and ten responded “other (please specify).

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Figure 9

Technology(s) Used to Achieve Remote Learning

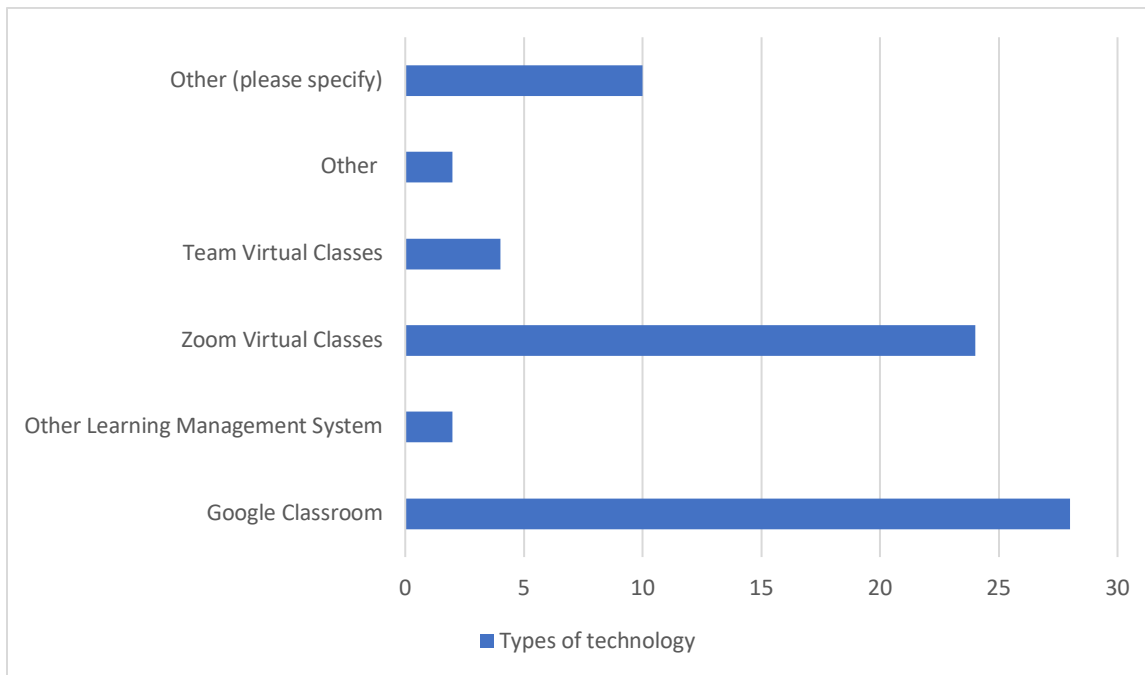


Table 1

Other Technologies Used to Achieve Remote Learning

Type of Technology	Number of Teachers
Google Meet	3
Screencastify	3
Email	2
Phone/conference calls	2
Audacity	1
Text	1
Socrative	1
Remind	1

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Note. The participants that responded “other (please specify) illustrated in Figure 8 totaled ten.

Table 1 above lists those responses. Three teachers specified *Google Meet*, three teachers responded *Screencastify*, two teachers responded *email*, two teachers responded *phone/conference calls*, one teacher responded *Audacity*, one teacher responded *text*, one teacher responded *Socrative*, and one teacher responded *remind*. One teacher did not provide any form of technology instead stated that they were not teaching during ERT in 2020.

Table 2

Digital Tools/apps Used in Teaching Prior to ERT

Digital Tool/Apps	Number of Teachers
Google Classroom	17
Google Apps (slides, docs, tools, others)	4
Moodle	3
Remind 101	3
Book Creator	2
Video Instruction	2
Socrative	1
Canva	1
Instagram	1
None	7

Note. The participants were asked what digital tools/apps they had used in teaching prior to ERT.

Thirty-two teachers responded to this question. Seventeen teachers responded Google Classroom, four teachers responded Google Apps (slides, docs, tools, others), three teachers

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responded Moodle, three teachers responded Remind 101, two teachers responded Book Creator, two teachers responded video instruction, one teacher responded Socrative, one teacher responded Canva, one teacher responded Instagram, and seven teachers responded none.

Table 3

Digital Tools/apps started to use for or during ERT

Digital tools/apps	Number of Teachers
Google Classroom (apps)	21
Zoom	21
Screencastify	4
Teams	2
Scanning	1
Canva	1
Moodle	1
Virtual phone/text	1
Kahoot	1
None	3

Note. Thirty-one participants responded to this question. Twenty-one teachers responded Google Classroom (apps), 21 teachers responded Zoom, four teachers responded Screencastify, two teachers responded Teams, one teacher responded scanning, one teacher responded Canva, one teacher responded Moodle, one teacher responded virtual phone/text, one teacher responded Kahoot, and three teachers responded none.

The participants were asked how often they met with students virtually per week. Figure 10 below illustrates their responses. Thirty-three teachers responded to this question. Eight

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teachers responded 0 times, 13 teachers responded 1 to 2 times per week, five teachers responded 3 to 4 times per week, and seven teachers responded 4 + times per week.

Figure 10

How Often Teachers Met with Students Virtually Per Week

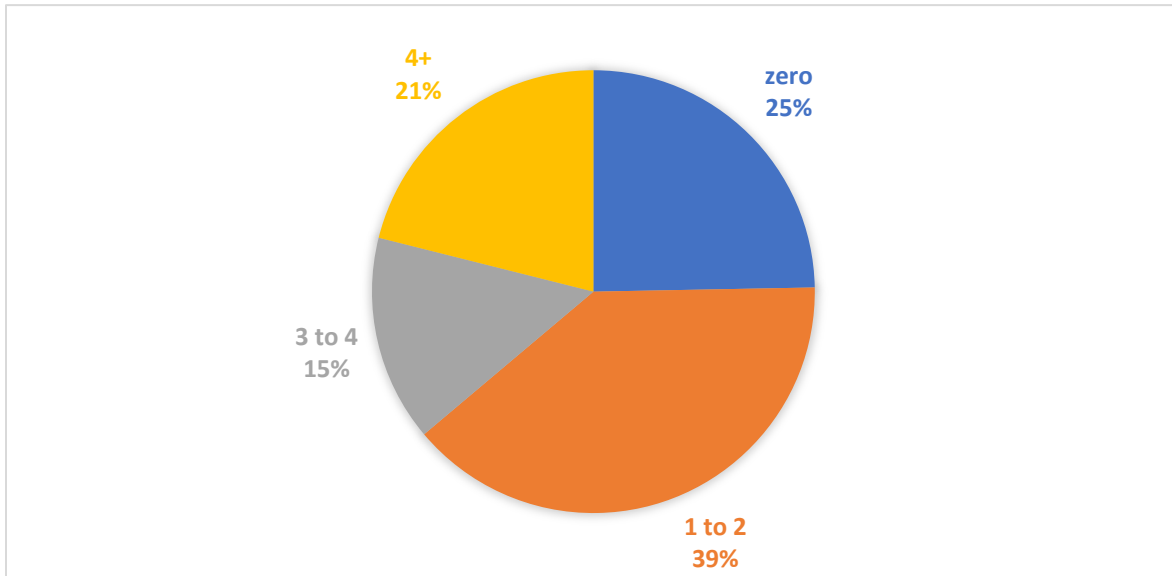
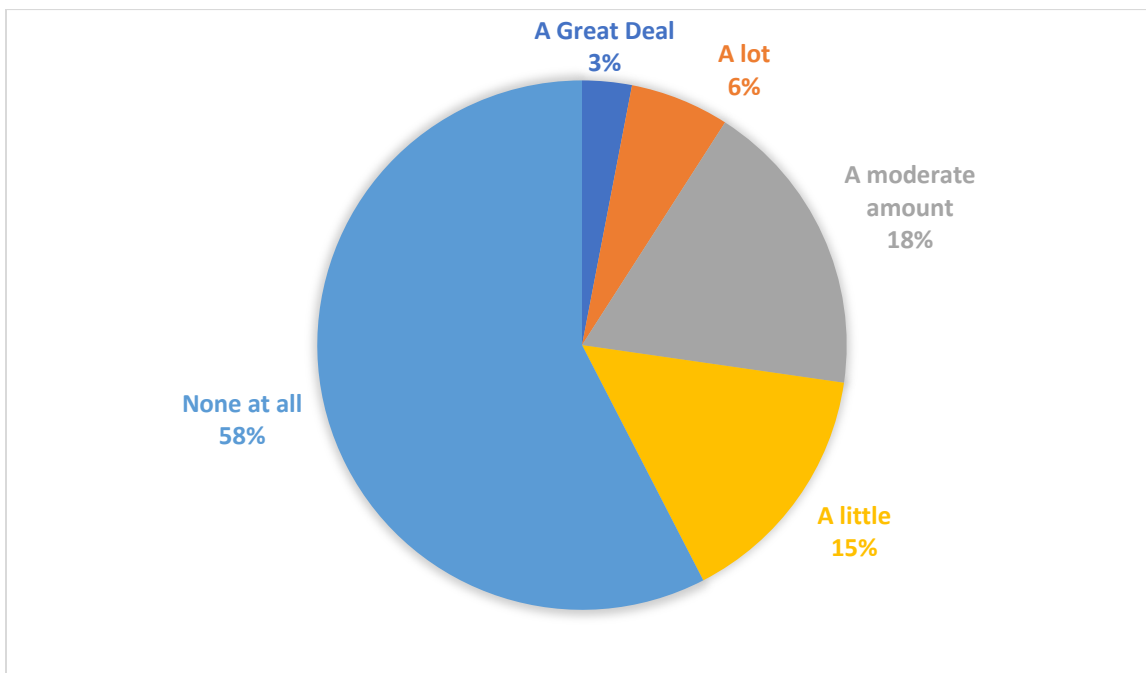


Figure 11

How Prepared Teachers Were to Shift into ERT



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The participants were asked how prepared they were to shift in Emergency Remote Teaching.

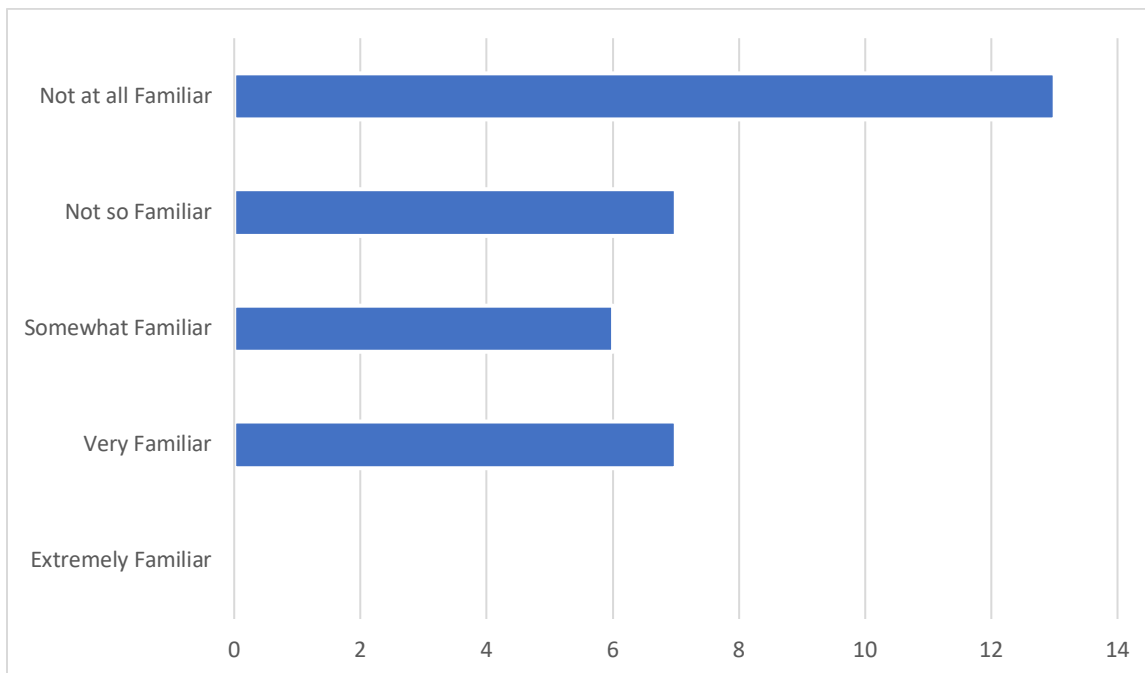
Figure 11 above illustrates their responses. All 33 participants responded to the question.

Nineteen of the teachers responded none at all, five of the teachers responded a little, six of the teachers responded a moderate amount, two of the teachers responded a lot, and one teacher responded a great deal.

The participants were asked how familiar they were with online course design. Figure 12 below illustrates their responses. Thirty-three teachers responded to this question. None of the teachers were extremely familiar, seven of the teachers responded very familiar, six of the teachers responded somewhat familiar, seven of the teachers responded not so familiar, and thirteen of the teachers responded not at all familiar.

Figure 12

How Familiar Teachers Were with Online Course Design



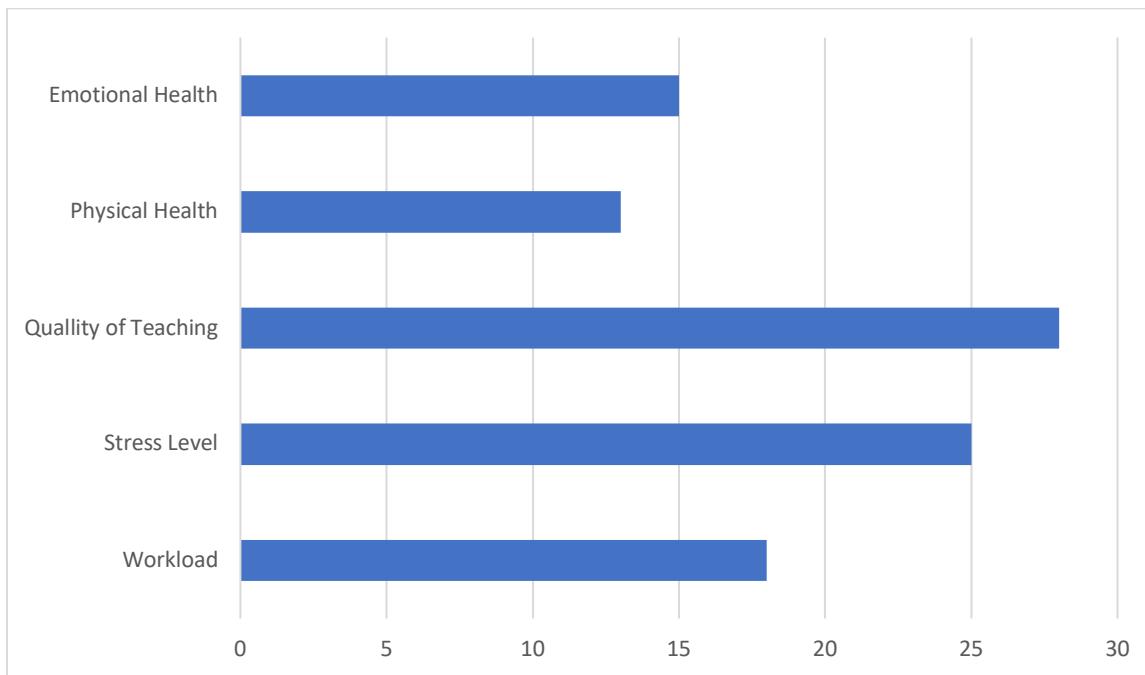
The participants were asked if they experienced any changes in workload, stress level, quality of teaching, physical health, and/or emotional health. They were asked to check all that

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applied to them. Figure 13 below illustrates their responses. Thirty-one teachers responded to the question. Eighteen teachers responded to workload, 25 teachers responded to stress level, 28 teachers responded to quality of teaching, 13 teachers responded to physical health, and 15 teachers responded to emotional health. Two teachers provided no response to this question.

Figure 13

Changes Experienced by Teachers Under Emergency Remote Teaching

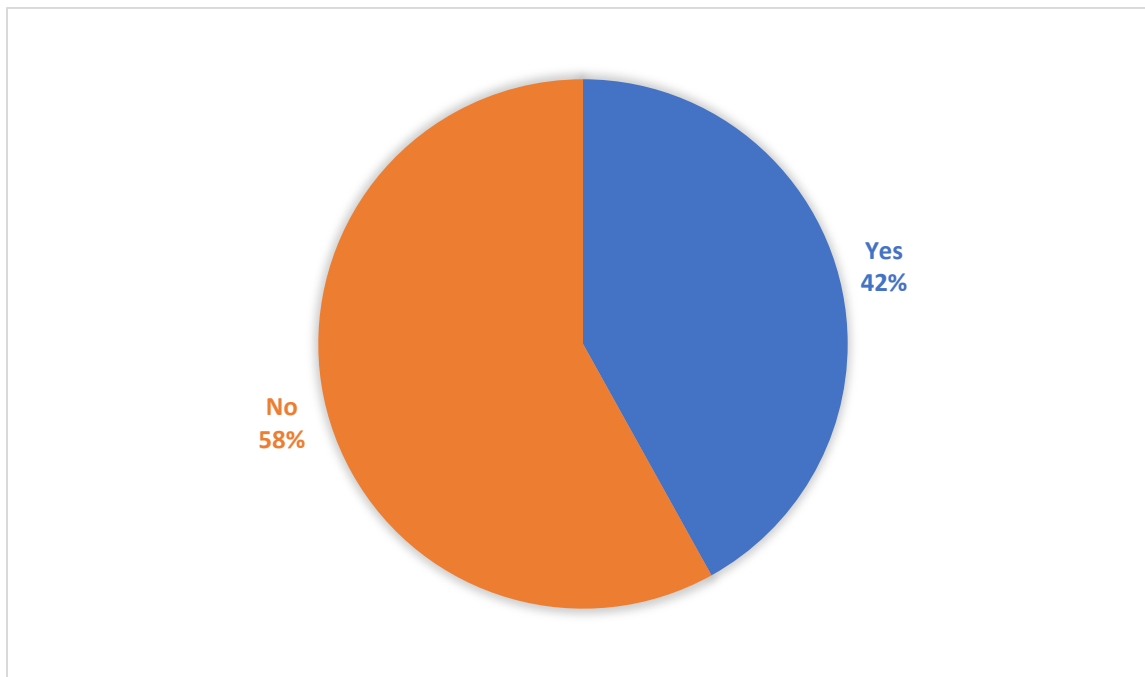


The participants were asked if they had continued to experience any of the changes as illustrated in Figure 13 after Emergency Remote Teaching. Figure 14 below illustrates their responses. Thirty-one teachers responded to the question. Thirteen responded yes and 18 responded no. Two of the participants did not respond to the question.

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Figure 14

Have the Changes Continued After Emergency Remote Teaching



The participants were asked if they thought online programs were a viable educational delivery mode prior to Emergency Remote Teaching and then they were asked if they thought online programs were a viable educational delivery mode after Emergency Remote Teaching. Figure 15 below illustrates their responses. Thirty-three teachers responded to both of these questions. One teacher responded strongly agree prior to ERT while three teachers responded strongly agree after ERT. Eleven teachers responded agree prior to ERT while 13 teachers responded agree after ERT. Eleven teachers responded neither agree or disagree prior to ERT while five teachers responded neither agree nor disagree after ERT. Eight teachers responded disagree prior to ERT while seven teachers responded disagree after ERT. Two teachers responded strongly disagree prior to ERT while five responded strongly disagree after ERT.

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Figure 15

Are Online Programs Viable Educational Delivery Modes

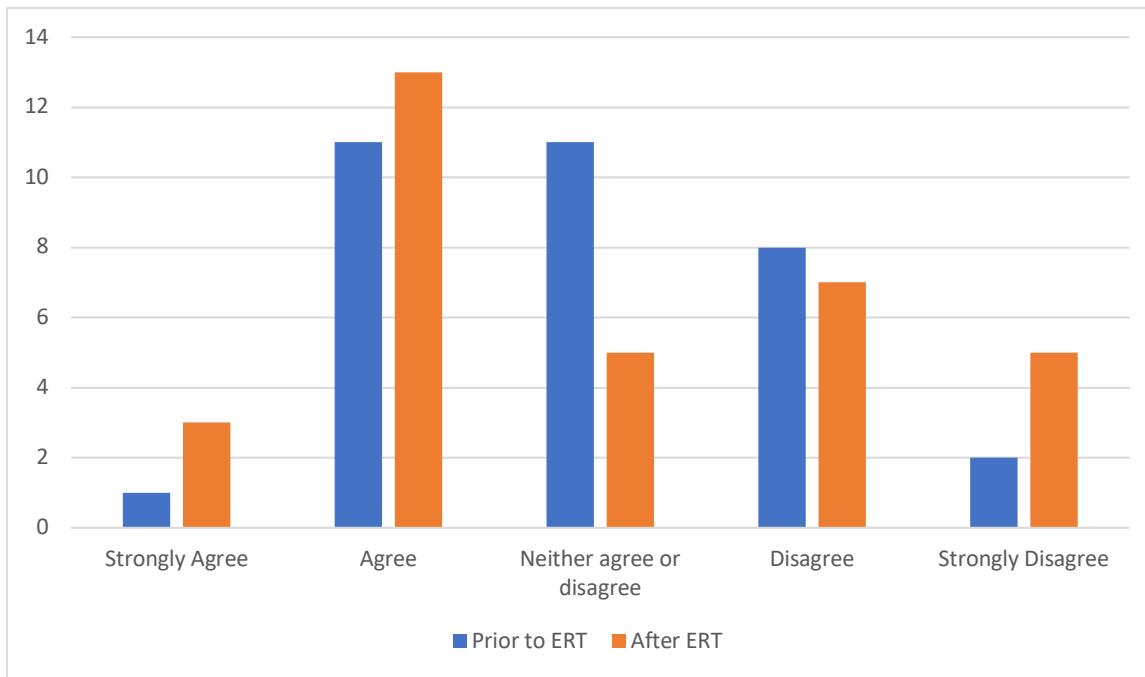
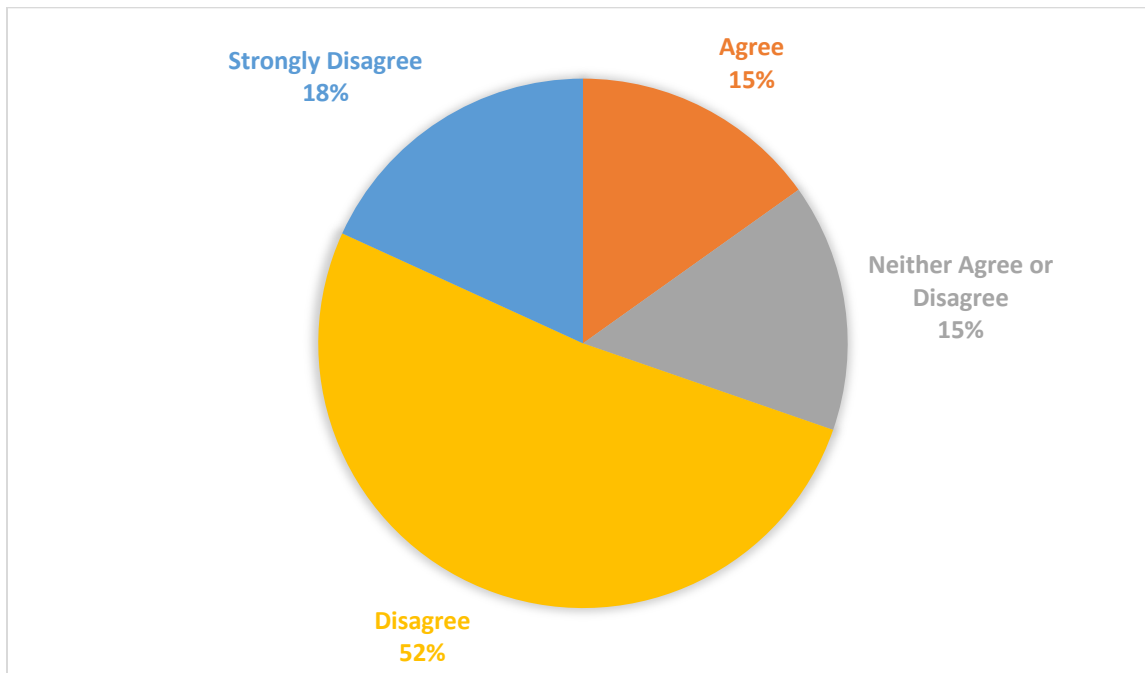


Figure 16

Is the Pedagogy of Teaching Online Similar to Teaching Face-to-face



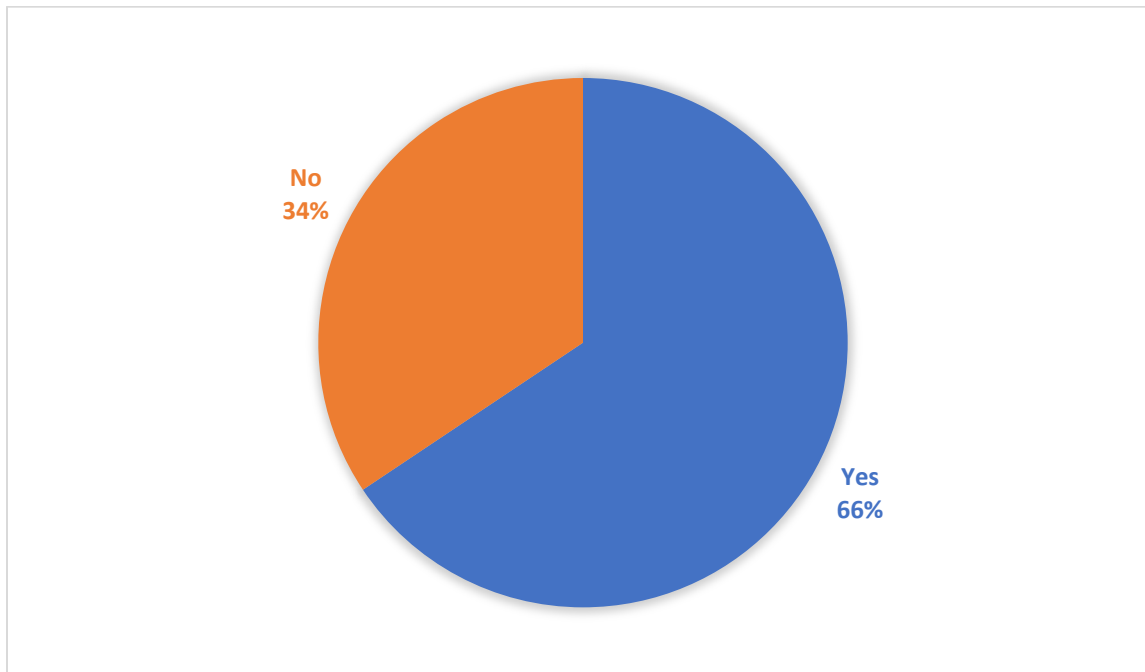
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Note. Participants were asked if they thought the pedagogy of teaching online was like the pedagogy of teaching face to face. Thirty-three teachers responded to this question. Zero teachers responded strongly agree, five teachers responded agree, five teachers responded neither agree or disagree, 17 teachers responded disagree, and six teachers responded strongly disagree.

Lastly, participants were asked if their teaching practices following their Emergency Remote Teaching experience had been impacted by that experience. Figure 17 below illustrates their responses. Thirty-two teachers responded to this question. Twenty-one teachers responded yes, 11 teachers responded no, and one teacher did not respond.

Figure 17

Did Teaching Practices Change After ERT



Participants were asked in what way they had continued to incorporate ERT learning technology in their teacher practices after ERT. Table 4 below illustrates their responses. Thirty participants responded to this question. Twenty teachers responded Google Classroom and apps, six teachers responded Zoom, one teacher responded instructional videos, one teacher responded

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electronic submission of assignments, one teacher responded apps in general, and four teachers responded none.

Table 4

Use of ERT Learning Technologies in Teaching Practices After ERT

Learning Technology	Number of Teachers
Google Classroom and apps	20
Zoom	6
Instructional videos	1
Electronic submission of assignments	1
Apps in general	1
None	4

Qualitative Data

The qualitative questions in the survey allowed participants to provide more specific information regarding their own personal experiences. Qualitative questions were posed to the participants that volunteered for the personal interview portion of this study to allow participants to provide in-depth responses reflective of their own personal experiences. Survey participants were assigned numbers and are referenced using S1-S33. Interview participants were assigned numbers and are referenced using T1-T9. Through the coding process, codes were identified from the data that occurred most often from the participants responses. Table 5 below illustrates those codes.

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Table 5

Coding for Qualitative Survey Questions and Personal Interviews

Themes	Codes
Online	Course Design Access Notice/planning Experience Resources Teacher support
Technology	Resources Learning Student Support Quality of teaching Availability Teacher Support
Workload	Time with Students Planning Creating Online Type of Work Collaboration
Health	Anxiety Emotional Health Stress Physical Discomfort
Teaching	Student Support Students' preparedness for following school year Quality of teaching Teaching approach
Educational Structures	Workday Report cards Type of technology Access to Resources Pro-D Access No fail mandate Teacher support Google Classroom

The first qualitative survey question asked that, if the participant had experienced change in the areas of emotional health, physical health, quality of teaching, stress level, and workload (as noted in Figure 13) to provide three to five examples of the most important changes. *“Have*

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you experienced any changes in the following under ERT? a) emotional health, b) physical health, c) quality of teaching, d) stress level, and e) workload “. Twenty-eight participants responded to this question. Many of the teachers provided examples of specific changes in their workload including longer hours of contact with students, more time to prepare lessons and adapt lessons from paper based to online, more time to learn new technology, and increased need to “chase” students for assignments (S21). One teacher stated they “struggled to create a balanced workload” (S23). Another teacher responded they “had to constantly spend more time trying to connect with kids” (S2). In general, workload was an area many teachers provided examples of.

Many teachers provided specific examples of changes in their emotional health, physical health, and stress levels including increase stress levels, deteriorating physical health, and emotional exhaustion. One teacher stated, “it was difficult to sit all day – my back hurt” (S7). Another teacher commented it was “stressful trying to be professional and also make sure your own children’s needs and safety were being looked after” (S12). Additionally, one teacher stated that “isolation caused a huge change in my mental and physical health” (S24). Overall, teachers provided examples of changes to their health.

Several teachers specifically provided examples of changes in their quality of teaching including how prepared students would be for the next year, differences in learned skills from previous years, and struggle to get completed course work from students. One teacher stated that they were “feeling inadequate in educational delivery” (S23). Another teacher commented that “students were less engaged in their work [and] parents were not able to provide the same level of support at home” (S25). Generally, teachers were concerned about changes in their quality teaching.

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A few teachers provided examples of changes they experienced with online program delivery including moving to online without notice or a plan, making paper-based lessons accessible online, course design challenges, and student engagement issues. One teacher stated that it was “tough to get students online when it wasn’t their choice” (S18). Another teacher stated that they had “little to no support to transition to online learning” (S17). Another teacher stated that they had a “lack of understanding about online and f2f pedagogy” (S28). Teachers seemed frustrated with the shift from in class teaching to online course delivery.

Several teachers provided examples of changes with respect to technology including responsibility to learning new technology, lack of access to technology, support for use of technology, and issues with connectivity. One teacher stated, “we weren’t given any tech to do our jobs, none!” (S16). Another teacher stated that many students were not online “due to the lack of technology on their end” (S18). In general, teachers noted several changes in the use of technology.

Lastly, a few teachers provided examples of educational structure changes including the expectation that every student would be successful regardless, less administration support, reduced expectations for student engagement, and increased evidential teacher accountability. One teacher stated that “the announcement that every student would pass took away almost all motivation for students” (S16). This is a direct link to the “no fail mandate” noted under Educational Structures in Table 5. Another teacher stated we were required to “provide detailed reports to account for all the things you did in a workday” (S12). Teachers noted that the expectations for students were lowered while the accountability for teachers was increased.

The second qualitative survey question asked the participants who answered yes to the question, “*Have you continued to experience any of these changes after ERT?*” (illustrated by

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Figure 14), to provide 3-5 examples of changes that they have continued to experience after Emergency Remote Teaching. Thirteen teachers responded to this question. A few teachers provided examples of health changes specifically with respect to increased levels of stress and challenges with emotional health. One teacher stated, “when we returned to school, for the hybrid between remote and in-school learning, the stress level was high and emotional health was challenged” (S1). Another teacher commented, “just overall higher levels of stress and the inability to deal with it” (S10). One teacher had the opposite to say, specifically, “I had to learn to care for myself better. Learned to mediate and heal emotional trauma. Fully recovered and have never been healthier and happier in my life and work” (S12).

Many teachers provided examples of workload changes. One teacher commented, “it feels like there is more to do with less time” (S3). Another teacher states, “the workload for teachers has been increased steadily since the pandemic” (S5). One teacher commented, “workload has remained higher in response to more frequent and longer duration student absences” (S7).

A few teachers provided examples of changes in teaching including delivery mode and teaching focus areas. One teacher noted, “I have noticed a change in student work habits. Many do not persevere through challenging questions, [they would] rather give up and copy answers” (S8). Another teacher stated, “students produce less work, expect higher grades, [and] want more time for everything” (S9). Additionally, one teacher stated, “[I am] teaching online as well as teaching in person” (S4). Lastly, one teacher specifically commented about the use of technology. They stated that they continued to have “a lack of understanding about online and f2f pedagogy” (S13).

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Several teachers provided examples of educational structures that have changed including decreased teacher support, constantly fluctuating guidelines and rules, and expectations for teachers to incorporate ‘Google Classroom’ as part of their instructional delivery. One teacher stated, “there are too many interruptions in my instructional day.....and extracurricular activities feel like they have priority when by definition they do not” (S4). Another teacher commented that there is “insistence from admin to maintain constant communication with home despite parents’ accessibility to marks programs” (S11). One teacher stated, “admin and school district are still in the mind frame ‘just pass them’ it’s all about graduation rates” (S9).

The third qualitative survey question asked participants that answered yes to the question, *“Have your teaching practices following your ERT experience been impacted by that experience?”* (illustrated by Figure 17), to provide examples of how their teaching practices have been impacted following Emergency Remote Teaching. Twenty-one teachers responded yes, but only nineteen responded to this follow-up question. Many teachers provided examples of the impact on teaching specifically. One teacher stated, “I communicate better now” (S3). Another teacher stated, “keeping students engaged is harder without the apps” (S16). One teacher stated, “I do a lot more one-to-one teaching [with] more effort to present teaching material that develop student competencies” (S6). Lastly, one teacher stated, “[I] try to use multiple modes of delivery for students that may be absent for a prolonged period of time” (S13).

Several teachers provided examples of changes with respect to being online. One teacher stated, “[I] continue to use some of the online methods” (S7). Another teacher stated, “I have had to work to incorporate more engaging virtual activities for when students don’t show up for class” (S12). One teacher stated, “[I am] offering online option[s] for students more than before” (S18).

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A few teachers provided examples of changes regarding health awareness. One teacher stated, “[I] try to incorporate more awareness around mental health and connection with the actual person” (S15). One teacher stated, “students are more ‘anxious’ so engage in discussions less and less” (S16). Another teacher stated, “I place way more importance on teaching/learning about mental health, addiction, [and] trauma. I place more value on the role of connection and relationships with staff and students” (S17).

A few teachers provided a specific example of an educational structure, namely ‘Google Classroom’, that has remained in place with an expectation that teachers will continue to use it. One teacher stated, “I use google class[room] to manage my assignments” (S4). Another teacher stated, “I have become more adept at using [Google Classroom] for students to access” (S10). Lastly, one teacher stated, “I repost assignments in Google Classroom (S5).

Several teachers provided examples of workload changes. One teacher stated, “I have tried so many different ways to provide students with worksheets/Powerpoints/notes” (S8). They commented on the need to provide instruction using online and f2f delivery modes. Additionally, teachers commented on the diversity of skills of students within classes and the need to provide educational opportunities at many different levels within one class. Lastly, one teacher commented, “I am prepared for the absent student” (S14).

A few teachers provided examples of changes with respect to technology. One teacher stated, “[ERT] provided me with new tools I can use” (S11). Another teacher stated, “I’ve become adept at more technological practices and am exploring more tech smart ways to supplement the learning” (S2). Several teachers commented on their continued use of technology including Zoom and Google Classroom/apps.

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The fourth qualitative survey question asked participants that answered ‘no’ to the question, “*Have your teaching practices following your ERT experience been impacted by that experience?*” (illustrated by Figure 17), to provide examples of how their teaching practices had not been impacted by Emergency Remote Teaching. Eleven teachers responded ‘no’ and eleven teachers provided examples to support their response. Most teachers provided examples of their teaching that were not impacted. One teacher stated, “back in the classroom means returning to old techniques and habits” (S7). Another teacher commented that “ERT did not give me any experience in which helped me now” (S3). Lastly, one teacher simply stated, “I enjoy face to face teaching” (S4).

Several teachers provided examples with respect to technology. One teacher stated, “I already used a fair deal of technology in my teaching” (S2). Another teacher commented, “teaching an active based course the need to use technology is limited” (S6). Lastly, one teacher stated, “there was no need, but I do appreciate Zoom” (S9).

A few teachers provided examples with respect to online learning. One teacher stated, “online and f2f pedagogy are different” (S11). Another teacher stated, “I don’t really have an interest in exploring online teaching practice; I do see the value in online learning” (S4). Lastly, one teacher stated, “I do have more experience with online teaching practices” (S3).

Follow-up Interview Questions Summary

Participants of the survey were asked if they would be interested in volunteering for a follow-up interview. Eleven teachers volunteered to participate in the follow-up interview. All teachers were contacted to schedule an interview time. Two of the teachers were unable to successfully schedule an interview time. Nine teachers were successfully interviewed. All

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teachers interviewed were asked nine follow-up qualitative questions. Every teacher interviewed responded to all nine interview questions.

Interview Question #1

“What was your initial response to the expectation of the shift of teaching to Emergency Response Teaching in the spring of 2020?”

Table 6

Participant Responses for Question 1

Participant	Response
1.	Bewilderment No experience teaching remotely Little knowledge of Google Classroom
2.	A little bit of humor What we were directed to do and reality not the same How to teach the full curriculum online Learners not online learners Let's make this happen
3.	Surprised Happy education would continue
4.	Very, very anxious Lack of knowledge of technology Didn't know what Zoom was
5.	Was experienced online teacher Worried about others who were not experienced
6.	Being taken aback Shocked that we did not get time to prepare Uncertainty Inequity across the Province
7.	Lot of work for startup No clear expectations Required to assist my colleagues with troubleshooting
8.	A bit terrified
9.	Caught off guard Surprised at how independent I had to be even finding resources

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Note. The participants had varying responses to the immediate shift to ERT. Each teacher commented on some form of emotional impact. Some of the teachers shared their concerns with the shift, while others commented on the work they would need to do.

Interview Question #2

“Did you feel prepared to shift your teaching from your normal practice to that of Emergency Remote Teaching?”

Table 7

Participant Responses for Question 2

Participants	Responses
1.	Absolutely not
2.	Yes Fully qualified online teacher with experience Had tablet for video instruction and uploading notes Concerns with time to get setup
3.	At first did not feel prepared Was not physically prepared
4.	Technologically not prepared Pedagogically prepared Had to learn how to provide instruction digitally
5.	Prepared in training and pedagogy Felt a lot of stress for my colleagues
6.	No preparation ahead of time Not prepared for the student expectations to be lowered Not prepared to dial back curricula Did understand a wide range of technology
7.	Not prepared Had some experience teaching online Google Classroom was a huge independent learning curve Had to find own online tools
8.	Not prepared Not comfortable with the technology Never used Google Classroom or any other online platform
9.	Not prepared Went right to work

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Note. Most participants commented that they were not prepared. They provided various reasons for their statements including lack of technology knowledge and no time to prepare. Some of the teachers, even though they had some online experience, still felt that they were not prepared, but they noted that they personally started doing their best to prepare.

Interview Question #3

“Can you elaborate on your use of sick days?”

Table 8

Participant Responses for Question 3

Participant	Response
1.	Maybe 1 or 2 Not really having a defined time of not working No time that was my own
2.	Used more this year Infected in Oct [22] took 5 or 6
3.	No sick days Nobody to meet students if I was sick
4.	No sick days
5.	Used none during ERT A lot of days since due to stress
6.	None while at home At least 1 or 2 when we came back to the building
7.	None during ERT Hard to use sick days due to feelings of guilt Will I get someone who can do the lesson plan
8.	Never did take sick days I should but I work through it
9.	None during Learned to place boundaries and take days when needed Sick days means I'm sick no working

Note. Participants responded that they did not use sick days during ERT at home. Most participants used minimal sick days overall for various reasons including guilt, no replacement and the responsibility to do their job.

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Interview Question #4

“How did you feel about online delivery of educational programs prior to COVID-19?”

Table 9

Participant Responses for Question 4

Participant	Response
1.	Never thought about it Did not know what that would look like
2.	A bona fide way to learn
3.	Had little knowledge about it Did not know it was as widespread and successful
4.	Vital for the @KOOL kids Student learning not high
5.	Has a place in education Needs knowledge of how to use it and where it is effective
6.	A viable option for some people A way to provide opportunities for education for those who have trouble accessing
7.	A great way to deliver There is a need for it
8.	Pro classroom-based teaching
9.	Missing the best part of teaching Did not consider it valuable

Note. The participants provided mixed views about online delivery of educational programs prior to COVID-19. Some teachers had no knowledge, some were pro face-to-face, whereas others were supporters of online delivery of educational programs.

Interview Question #5

“How do you feel about online delivery of educational programs since Emergency Remote Teaching?”

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Table 10

Participant Responses for Question 5

Participant	Response
1.	Needs to be structured Not for everyone teachers or students It is viable for motivated students Need to be more confident to teach online
2.	Expectation to teach online simultaneously with the classroom
3.	Delivery can be successful Appropriate for many students Much more valuable than previously thought to be
4.	A lifesaver for a lot of students Online delivery has been perfected with so many platform options
5.	It is an expectation for teachers It has increased workload
6.	Great options for some not for all Needs to be semi-synchronous for richer learning experiences
7.	Expectation to provide online as well as classroom instruction
8.	It has come a long way Variety of ways to receive material It's great
9.	It's skewed people's perspective Online learning is not about building student connections as ERT

Note. Participants had a wide range of views regarding online delivery of educational programs. Some teachers commented on the new expectation of classroom teachers providing both online and classroom learning simultaneously, while other teachers stated more structure delivery of online programs was needed.

Interview Question #6

“Can you elaborate on the important changes you experienced under Emergency Remote Teaching?”

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Table 11

Participant Responses for Question 6

Participant	Responses
1.	Highlighted a deficiency in my teaching re: online No training Used my own time to learn/prepare Use of Google Classroom is stronger not my online teaching
2.	Paired down teaching to minimums Loosened up the rigor Difficult to protect the integrity of learning
3.	Pressured to be prepared for anything all the time
4.	Hard to sit in front of a screen all day Mental exhaustion Increase workload
5.	Flexibility in learning structure Issue with non-tech friendly people
6.	High demand for support with technology Sourcing out free tools Concerns with disinfection Purchasing work related items personally (bigger monitor)
7.	More flexible teacher Greater awareness of student homelife
8.	More adaptable Expectation to offer both online and in class instruction More confident with technology
9.	Can do things from a computer (Zoom meetings) More resilient

Note. Participants provided a diverse range of responses to question 6. Some teachers commented on their personal changes including becoming more confident with technology and being more flexible in their teaching. Other teachers commented on expectations placed on them through educational structures.

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Interview Question #7

“Can you elaborate on how the Emergency Remote Teaching experience has or has not impacted your teaching practices?”

Table 12

Participant Responses for Question 7

Participant	Response
1.	Google Classroom capability Understanding how to engage students online Been less engaged in the profession
2.	Using Google Classroom Using rubrics Better teaching
3.	More organized and better planned Teaching is clearer and concise Better understanding of the students
4.	Back to normal routine Meetings done through Zoom leads to more collaboration Refined my practice
5.	Admin pressure for student success Greater focus on skills, communication, responsibility and independent learning Focus on technology skills
6.	Focus on use of Google Classroom
7.	Better teacher Spend greater time on own learning Use new tools and strategies Empathetic awareness of students’ lives More flexible and understanding
8.	Expectation to use Google Classroom Increased workload More confident with technology but isolated re: support
9.	Reach out directly to students rather than parents Use more technology

Note. Participants commented on various changes to their teaching practices including greater use of technology, greater workload, notable teacher learning, and new administration expectations.

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Interview Question #8

“How would you compare your job prior to Emergency Remote Teaching to your job at the present?”

Table 13

Participant Responses for Question 8

Participant	Response
1.	Now common expectation to have everything available online Use Google Classroom Job is harder More aspects to the job
2.	Teaching is harder Moving set of goal posts
3.	Need to be more empathetic to changing, diverse needs of students
4.	Student connections are the same Communication with colleagues has opened up with technology (Zoom)
5.	Education profession is drowning Workload has increased Admin does not recognize the workload issues
6.	Back to the same old, more or less
7.	Expectation that teachers use Google Classroom
8.	More work/double Greater exhaustion Virtual parent meetings/no f2f
9.	Easier prior to pandemic Students do not attend/expect home support District has not built systems to manage that

Note: Participants commented that the job is harder or more work intensive than prior. They commented on changes with respect to technology use and expectations as well as student needs.

Interview Question #9

“Are there any other experiences or thoughts that you would like to share at this time?”

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Table 14

Participant Responses for Question 9

Participant	Response
1.	Screen fatigue General tech expectations that they are needed to improve student engagement Expectation of use of Google Classroom No balance between technology and f2f
2.	Nothing more to respond
3.	More aware of the extra challenges to teach a range of students
4.	ERT has shown districts how to save money (meeting travel) Technology is an enhancement Fear of moving strictly to remote learning
5.	Not recovered from the emotional, social stress of COVID-19 Greater workload Admin expectations that every kid will pass
6.	Made numerous changes in library routines
7.	Felt better prepared for ERT than my colleagues Frustration being part of one of the 1 st districts faced with ERT
8.	Appreciate the value and opportunity technology provides
9.	Believe in the value of distance education Systems need to build new things do not continue to use old systems and expect a different look

Note: Participants responded to this question providing new thoughts about their experience as well as reiterating areas that they had responded to previously. One teacher had nothing more to respond.

The coding illustrated in Table 5 highlighted 6 overall themes that emerged through the qualitative survey question responses and the follow-up personal interview responses. The following information discusses these results of the personal interviews.

Interview Data Themes

Online

The coded information in Table 5 indicates the areas that participants commented on in their interview responses. The interview participants highlighted the theme of online learning as an area of concern. Teachers commented on the need for resources, teacher support, and experience as areas to enhance the human interactions within online learning. One respondent stated, “I had not had much experience delivering remotely other than a little bit of work in Google Classroom prior” (T1). Participants also highlighted course design, access, and notice/planning as areas that had a huge impact on their transition to ERT and following ERT. One respondent commented, “online is good.....you have to use it where it’s best applied” (T5).

Technology

Participants shared their concerns regarding technology for teaching and for student learning. The need for resources and teacher support was overlapping from the online theme other areas were evident. Participants were concerned about learning to use technology for themselves and students. One respondent noted the importance of “understanding of some of the platforms that we could use and the technology we could use.” (T6). Participants commented the need to be aware of the availability of technology for their use. One respondent stated that there were numerous “free services, Screencastify for example, that gave full licenses to educators for a year” (T6). Participants also highlighted their concerns regarding student support and quality of teaching through technology. One respondent stated, “I feel there’s sort of an expectation around technology in the classroom that students engage less when they don’t have the computer” (T1).

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Workload

Participants amplified the theme of workload throughout their responses. The participants noted the increase in their workload during ERT and that that increase has continued following. One respondent stated, “there was quite a bit of startup work on our part” (T2). One respondent noted, “being on online learning I was scheduling kids every 5 min.” (T4). Participants expressed concerns over the type of work they needed to do, the planning required and the extensive need to collaborate. One respondent noted that since ERT, “the expectation is that they have [online learning] along with their face to face” (T7).

Health

Participants emphatically expanded on their survey responses under the theme of health. Participants were concerned about overall emotional health and physical health as well as specifically stress and anxiety. One respondent stated, “it was just basically survival” (T5). Another respondent stated, “I found at the end of the day I was absolutely mentally exhausted because what I did” (T4). One respondent stated, “I actually quite enjoyed working from home, but since then I’ve used a lot of my sick days and a lot of it is, for stress related [reasons]” (T5). Another respondent commented that since ERT, “I still feel like it’s a lot overwhelming. I still feel that I’m more exhausted” (T8).

Teaching

Participants illustrated their concerns with teaching throughout their responses. There was an overlap with regards to student support and quality of teaching. Participants demonstrated concern with students’ preparedness for following school year(s). One respondent stated, “kids aren’t learning the stuff. So, they might be going on to the next grade, but there is not the learning there” (T5). Participants provided reflective responses focused on their teaching

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approach. One respondent noted, “it’s actually probably made me a better teacher in the sense that it forced [me] to fully relook at some of the things that I would do in actual classroom” (T7). Another respondent stated, “I think my teaching got better for going back and looking at those things and learning them again, and even though I’ve done this for 25 years, it’s a good refresher to go back and say, Hey, these are the things you need to tighten up on” (T2). One respondent noted, “I’ve been less engaged in my profession, and I’m trying to find my motivation to enjoy practicing” (T1).

Educational Structures

Participants expressed their concerns with regards to educational structures throughout the survey and again during the personal interviews. There was overlap in responses in respect to teacher support, resources, student success, and learning as noted by professional development access. Participants overwhelmingly provided responses about the type of technology they had access to and specifically the expectations surrounding the use of Google Classroom. One respondent commented, “there seems to be an expectation now for teachers to use Google Classroom for kids” (T1). Another respondent stated, “we were still sort of told that we should have a Google Classroom site” (T8). Participants were concerned with the changes in reporting and the direction with regards to student success. One respondent stated “they’ve added workload for report cards and assessment practices” (T6).

Summary of Findings

The key findings from this study in relation to the research questions are illustrated in Table 15 below. Findings related to each question are further discussed.

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Table 15

Summary of Findings

Question	Summarized Findings
RQ1. How were secondary school teachers in one BC school jurisdiction affected by the shift to ERT?	Health Workload Technology Teaching Online Educational Structures
RQ2. What pedagogical effect did the ERT experience have on secondary school teachers' use of online programs as an educational delivery approach?	Viable delivery mode Recognition of differing pedagogy New learning
RQ3. Given the shift out of ERT, what have been the residual effects on teaching practices?	Increased workload Increased use of technology Increased educational structures Quality of teaching

As discussed in the initial survey and interview results, participants were affected by the shift to ERT as part of six main themes, namely health, workload, technology, teaching, online, and educational structures. Overall, most participants shared concerns regarding emotional and physical well-being. Participants provided recurring comments that reflected the prevalence of increased levels of stress. Some participants provided specific examples of physical health issues they endured during ERT. One participant noted, “I found myself sitting in an uncomfortable chair at home, . . . , my back was really, really sore, and then I found I needed to stand” (T6). Another participant noted, “I got an injury from too much sitting (tail bone injury)” (S22). Thirteen survey participants responded physical health with respect to changes under ERT and fifteen survey participants responded emotional health.

Most of the participants noted an increase in workload under ERT as discussed in the initial survey and interview results. The participants discussed increased workdays, increased responsibilities, increased marking, increased planning, and increased independent professional

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development. One participant stated, “I found I was teaching and had communication with students outside the workday” (T1). Many of the participants recognized the notable increase in work they had to do with regards to learning the necessary technology to accommodate the shift to ERT. One participant stated, “the increased time to prepare lessons were the result of responsibility to learn new technology and pivot curriculum plans” (T2).

Participants discussed the need for adequate resources, teacher support, and greater experience as well as course design, access to online programs, and the need for appropriate notice/planning time as areas that had a huge effect on the shift into ERT. One participant specifically stated they had “little or no support to transition to online learning” (S17). Another participant noted that there were “course design challenges” (S28). The survey responses indicated that approximately 61% of the participants had little to no experience with online learning and 58% were not prepared to shift to ERT.

Technology was a theme that clearly emerged through both the survey responses and the interview responses. Participants commented on several issues including resources, training, availability, support for both teachers and students, and quality of teaching. Many participants felt that they were not knowledgeable enough about technology uses to be successful being fully immersed in teaching with technology. One respondent stated that “technologically, no I did not feel prepared” (T3). Another respondent commented, “in terms of the relating of information or relaying the information on a technology platform or electronic platform was terrifying” (T8). Some participants elaborated on the availability of technology for students. One respondent stated, “there wasn’t enough technology to be shared around the family to use” (T7). Overall, participants generally acknowledged that technology was an area that had a noticeable effect on them with the shift to ERT.

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Participants of the survey and the follow-up interviews consistently discussed concerns about health. Many of the participants emphatically discussed issues with anxiety, stress, emotional health, and physical health. One respondent stated, “the disruption of everything took an emotional toll” (S1). Another participant commented, “I stressed about my inability to see whether my students were understanding the concepts due to limited contact time” (S15). Some participants were extremely affected by the shift to ERT. One respondent stated, “Isolation caused a huge change in my mental and physical health. [I] started to rely too much on alcohol and other unhealthy coping methods” (S24). Participants overwhelmingly discussed issues with respect to health.

Participants shared their concerns with teaching including teaching approach and quality of teaching. One participant stated, “[I was] not able to provide the same level of instruction as in person” (S25). One participant commented, “You don’t have the ability to converse with students the way you would face to face” (T1). Participants expressed concerns about student preparedness for following years as well as concerns they had about student supports. One participant stated, “I was very concerned about some of the students’ lack of support wondering if the students are getting ‘enough’ during this time to be prepared for next year” (S4). This would indicate that the shift to ERT influenced teaching and subsequent learning.

Lastly, participants expressed concerns about a wide variety of educational structures that they felt the effects of during ERT. Some participants noted that they were expected to follow a “regular” workday schedule. One participant stated, “we still ran on our bell schedule so [ERT] was synchronous” (T7). Most participants discussed the expectation that they would incorporate the use of Google Classroom during ERT. Twenty-one survey participants indicated that began using Google Classroom during ERT. One participant stated, “most people in our district have

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Google Classroom” (T9). Several participants noted their concern that the expectation was that every student would pass regardless. One participant commented that, “the [Government] announcement that every student would pass took away almost all the motivation for students” (S16). In general, participants appeared to express frustration with the educational structures that they were forced to adhere to during ERT.

What pedagogical effect did the ERT experience have on secondary school teachers’ use of online programs as an educational delivery approach?

Interview participants were asked how they felt about online delivery of educational programs prior and following ERT. Overall, participants expressed a pedagogical shift with respect to the viability of providing educational programs through an online delivery approach. Survey Participants were asked if they thought online programs were a viable educational delivery mode prior to ERT and after ERT. Figure 15 and Figure 17 illustrate their responses. The number of participants responding “strongly agree” prior to ERT increased to 3 after ERT. The number of participants responding “agree” prior to ERT increased from 11 to 13 after ERT. The number of participants responded “neither agree nor disagree” prior to ERT decreased from eleven to five after ERT. The number of participants responding “disagree” prior to ERT decreased from eight to seven after ERT. The number of participants responding “strongly disagree” prior to ERT increased from two to five after ERT. The survey participants were also asked if they thought the pedagogy of teaching online was similar to the pedagogy of face-to-face teaching. Figure 16 illustrates their responses. Of the thirty-three participants, twenty-three responded either “disagree or strongly disagree”. Only five of the total participants responded “agree” whereas zero participants responded, “strongly agree”. Overall participants appeared to

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have been pedagogically affected by the ERT experience with respect to their view of the use of online programs as a viable educational delivery approach.

Given the shift out of ERT, what have been the residual effects on teaching practices?

Participants were asked in the survey if their teaching practices had been impacted by their ERT experience and their responses are illustrated by Figure 17. Additionally, the participants who answered “yes” were asked to provide examples of the important changes they experienced. Overall, the participants provided examples of increased workload, increased use of technology, increased educational structures and changes in quality of teaching. One responded stated, “[I] try to use multiple modes of delivery for students that may be absent for a prolonged period of time” (S13). Another participant stated, “It has made me a better teacher; more flexible/better able to adapt to change” (S19). Several teachers commented on their use of technology and that they have continued to use Google Classroom. One teacher stated, “I use Google Classroom all the time” (S9). Another teacher stated, “it provided me with new tools that I use” (S11).

Survey participants who responded “no” to their teaching practices being impacted by the ERT experience were asked to provide reasons for their response. One participant responded, “I enjoy face to face teaching, so I don’t really have an interest in exploring online teaching practice” (S4). Another participant stated, “back in the classroom means returning to the old techniques and habits” (S7). In general, these participants seemed to see no need to continue with the practices that ERT required them to incorporate.

The interview participants were asked to elaborate on how the ERT experience had or had not impacted their teaching practices since ERT. The participants were also asked how their job at present compared to their job prior to ERT. Table 12 and table 13 respectively provides a

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summary of their responses. Generally, the interview participants elaborated on the continued use of technology and, specifically, their continued use of Google Classroom to provide online access for students to courses. One participant responded, “the [learning management system] that I tend to use is Google Classroom” (T5). Another participant responded, “I learned some new tools and some new strategies” (T2).

Participants commented on the increased workload. One participant stated, “I feel like it’s double the work” (T8). Another participant stated, “Oh, my God! It was so much easier before the pandemic!” (T9). Additionally, participants also commented on changes in educational structures such as student success expectations and diminished need for students to attend school. One participant stated, “kids barely attend, but they want all the work sent home and our district did not put anything in place to try to manage that” (T1). Overall, participants in both the survey and the interview shared a variety of residual effects ERT has had on their teaching practices.

Summary

The findings in this study suggest that secondary school teachers in on BC school jurisdiction were affected by the shift to ERT. Participant feedback through the survey and follow-up interviews indicated that there was also a residual effect on pedagogy and teaching practices following ERT. The study also revealed that some participants did not feel that there were any residual effects from ERT. Through analysis of the participants survey and interview responses the emergence of six themes, was evident, (1) workload, (2) health, (3) technology, (4) online, (5) teaching, and (6) educational structures. The findings from this research will be discussed in the following chapter.

Chapter 5: Analysis and Discussion

Introduction

The purpose of this study was to investigate the affect that the shift to Emergency Remote Teaching and the residual effects following the shift out of ERT had on a specific group of secondary school teachers in one British Columbia school jurisdiction. Further, the purpose of this study was to determine what supports are needed for teachers and planners to be prepared for future emergency educational situations. This chapter will provide an analysis and discussion of the results of this study. An examination of the significance of the findings of this research will be provided along with the conclusions that have been drawn from emergent themes that were analyzed.

The purpose of this research was to specifically investigate the research questions as follows:

- 1. How were secondary school teachers in one BC school jurisdiction affected by the shift to ERT?*
- 2. What pedagogical effect did the ERT experience have on secondary school teachers' use of online programs as an educational delivery approach?*
- 3. Given the shift out of ERT, what have been the residual effects on teaching practices?*

In this chapter, I will discuss how the participants' responses to the survey and the follow-up interview to discuss the findings in relation to the literature review discussion in chapter two. The possible implications and recommendations for positive action are also explored. Lastly, I will discuss the limitations of the findings.

Summary of the Research

This study followed a case study methodology using a mixed methods approach. Using quantitative and qualitative data gathered from participants responses through a survey and follow-up interview. The study identified the ways a group of secondary school teachers in one BC jurisdiction were affected by the shift to ERT during the COVID-19 pandemic and the residual affects following the shift out of ERT. Case study research allows for a preliminary mode of inquiry (Yin, 2018) which was necessary as this study was focused on a time in education that was unique to the world. This research approach allowed for participants to provide responses that will be used to direct future research. Thirty-three participants volunteered to participate for the online survey level of the study and nine participants participated in the personal interview level of the study. All participants at both levels retained their anonymity which provided a safe environment to share their opinions, feedback and reflections during ERT and following. This study was looking for practical applied data to form a basis for introductory level of understanding of the effects of Emergency Remote Teaching for one group of secondary school teachers. The anonymous survey allowed for participants to provide their opinions, feedback, and reflections on several areas. The follow-up interview provided participants the opportunity to elaborate on their survey answers to be provided greater clarification of the effects of ERT.

Interpretation of Findings

The data for this study was derived from two sources, namely an anonymous survey including both quantitative and qualitative data and a personal interview providing qualitative data. The qualitative data from both sources was coded and themed. The following six themes derived from analysis of the qualitative data: 1) workload, 2) health, 3) technology, 4) online, 5)

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teaching, and 6) educational structures. A description of each of these themes will be provided in the following sections along with an analysis that correlates to the respective literature.

Workload

The findings of this study indicate that workload was a recognized effect of Emergency Remote Teaching for the participants. Workload was an area that was identified in the literature review as one of concern for teachers with respect to digital educational programs and access to those programs (Barbour et al., 2020; Kaden, 2020; Rice, 2006; Tull et al, 2017). Teacher-participants reflected their reality of a change and increase in their workloads during ERT and following the shift out of ERT to the present. In general, most participants commented on a change in workload while many others commented on an increase in workload. When provided the opportunity to discuss workload one participant specifically commented that workload “shifted” (S5) while another participant specifically stated that their workload “increased” (S21). Participants reflected on a variety of issues that led to a change in their workload. A number of these issues were analyzed as specific themes and provided insight into these varied issues. They will be discussed specifically further on in this section.

Health

I ascertained from the literature that there was inadequate time provided to educators to be prepared to shift from traditional in-class teaching to ERT (Barbour et al, 2020; Hodges et al., 2020; Smith & Thompson, 2022;). The participants discussed how their health was impacted by the immediate shift to ERT. Many participants disclosed how they experienced consistent stress throughout ERT and have continued to experience noticeable stress following the shift out of ERT. The Alberta Teachers Association (2020) found in their report that teachers expressed increase concern for mental health and wellness as well as health and safety (p. 55). The

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literature revealed that many industries had transformed but education had not been as progressive (Hargreaves, 2021; Raths, 2014; Smith & Thompson, 2022). From the literature, I found the educational institutions had not allowed for more flexibility for teaching and learning (Hargreaves, 2021; Hodges et al., 2020). The participants discussed the impact of that rigid positioning on their overall health as it required teachers to “really work their magic” as one participant stated (T5). Additionally, participants noted the impact on their physical health. One participant stated that “it was difficult to sit all day – my back started to hurt” (S7). The need for teachers to make the rapid shift into ERT resulted in deteriorating health for the participants of this study. Some participants discussed their health issues but also stated that they did not use more sick days than previously whereas other participants stated that they found the need to access a larger number of sick days. Participants were not prompted to share the reasoning for this and did not volunteer their reasoning on their own. Overall participants expressed their concerns about the negative impact that the shift to ERT had on their health.

Technology

Technology was another area that the participants discussed. They were very concerned about the amount of technology they needed to learn in a short period of time as well as the need to build courses online for students with limited resources and support. The literature supports the idea that incorporating technology successfully in teaching through the conceptual framework of TPK is not easy to accomplish (Koehler et al, 2021). Technology is rapidly changing and teaching, itself, is complex therefore participants who had prior experience teaching with technology reflected on the fact that they felt more comfortable teaching during ERT than other participants that did not. Mishra and Koehler (2006) support the idea that teaching with technology is different than knowing how to use technology. Many of the

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participants discussed the difficulty they had trying to learn numerous forms of technology in a short period of time to be prepared to teach under ERT due to, as one participant stated, “lack of knowledge with technology” (T8).

In general, participants discussed the steep technological learning curve that many of them had to address to satisfy the expectation of continuity of learning for K-12 students. Alvarez (2020) and Kaden (2020), in their research, discussed the need for teachers to learn new technologies under ERT. The participants, also, expressed their concerns about the limited access to technology resources and limited support for both teachers and students. Participants noted that “there wasn’t enough technology to be shared around” (T7). Without adequate access to technology resources, the participants were fully aware that the success for teaching under ERT was hindered. According to Tull et al. (2017) and Kaden (2020), access to adequate resources has been a traditionally been a barrier to teaching using technology.

Online

Another area that participants expressed strong opinions about was teaching and learning online. Many of the participants did not feel that learning online was a viable educational delivery program prior to ERT. The literature does not support that position as online learning and online educational programs are well established in British Columbia and the rest of Canada (Bainbridge & Wark, 2023; Barbour, 2010; Saqlain, 2016). The participants overall made a positive shift in favour of online learning being a viable educational delivery program following the shift out of ERT. This would indicate that participants needed to have some experience with the idea of teaching and learning online to be able to provide an educated viewpoint. Participants discussed how some students were more successful in an online environment than they had been in a traditional classroom setting. One participant stated that “a structured” online learning

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environment would be viable “for students with higher levels of motivation” (T1). Other participants confidently stated that learning online is “a bona fide way to learn” and “it’s a lifesaver for a lot of students who can’t come to school for one reason or another” (T4).

Many of the participants did not feel comfortable or competent teaching in an online environment. Survey participants shared their concerns with teaching students online specifically one participant was concerned with “course design challenges” (S28). The participants felt that they did not possess the skills and knowledge to easily shift to ERT. Moore-Adams et al. (2016), Tabor (2020), and Machusky and Herbert-Berger (2022) discussed the importance for teachers to have adequate training and have adequate resources to allow for successful educational experiences and opportunities for K-12 students online. The participants with previous online teaching experience shared that they felt that they were able to confidently provide meaningful experiences for students. There was a definite relationship between participant experience and online skills and their positive experience during ERT.

Teaching

Participants overwhelmingly discussed the impact of ERT on teaching overall. The literature suggested the importance of teachers being prepared to teach online and the importance of providing adequate training and access to reliable digital learning platforms and technology tools (Machusky & Herbert-Berger, 2022; Moore-Adams et al., 2016; Tabor, 2020; The Alberta Teachers Association, 2020). Kaden (2020) stated that there was not one model that could provide equitable educational opportunities for all students under ERT. Participants were concerned with the quality of teaching they were able to provide students considering the amount of learning participants needed to do to shift to ERT. One participant specifically stated that “teaching quality was poor” (S5) and another participant felt that they had “better quality with

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face-to-face teaching” (S9). Many participants discussed their concerns with teaching stating the “quality of teaching was greatly reduced” (S22) and that they felt that they were not “able to provide the same level of instructions as in person” (S25).

Rice (2009) discussed the importance of teachers understanding the pedagogy of best practices for teaching online in order to provide positive learning experiences for in K-12 online educational settings (Tawfik et al., 2021). Participants overall commented on their concerns regarding being less than confident with providing meaningful experiences for students learning during ERT since many participants had no previous experience or knowledge with respect to teaching outside of the traditional face-to-face environments. A few participants shared their confidence teaching under ERT as they “had experiences as an online instructor” (T2) previously and their previous “training and experience made the transition straightforward” (T5). The participants clearly shared their concerns surrounding the difference in pedagogy and how previous knowledge and experience was an asset for teachers during ERT.

Educational Structures

The last area that participants indicated as an area of importance was how educational structures did not assist the shift into and out of ERT. Participants shared many examples of how the educational structures were not reasonable for teaching and learning under ERT. One participant noted that “we had to teach under the same schedule as we were following prior to ERT” (T7). Many participants shared their concerns regarding the rigidity of the educational structures during ERT, specifically reporting expectations, physical environment for teachers, expectations for use of specific technology tools, and reporting expectations of no failures from the Ministry of Education. The participants further shared their concerns regarding the educational structures that were put in place following ERT, specifically new reporting practices,

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expectations of providing both online and in class access to learning, noticeable change in student attendance requirements, and the continued use of virtual meetings for parent/teacher interviews. Hargreaves and Fullan (2020) noted the importance of educational structures adapting post pandemic and not just returning to what they were prior. Clark et al. (2019) further stated the importance of decision makers to work together to create goals that enhanced K-12 educational goals rather than hinder them. The participants adamantly shared their concerns that the educational structures and those administering them were indeed hindering the opportunity to a positive learning environment for K-12 students both under ERT and following the shift out of ERT.

Conceptual Framework

The conceptual framework, as noted in the first chapter Figure 1, for this research was comprised of three components, specifically, the theory of the technological pedagogical content knowledge model (TPACK), online learning, and educational structures. After analysis of the data, the three components of the conceptual framework have much more depth. Specifically, the participants indicated the importance of having prior experience with technology, having prior experience with online learning, and having educational structures that were flexible as major factors of positive experiences under ERT. The participants shared their concerns regarding teaching with technology, as well as teaching online with little to no knowledge or experience with either. Franssen and Holmberg (2012) suggested that technology, pedagogy, and content knowledge needs to be integrated to allow for optimal learning opportunities. However, the participants noted that pedagogy for f2f teaching and learning is not the same as online teaching and learning. Moore-Adams et al (2016) and Tabor (2020) support those views. Tabor (2020) stated that it was necessary for teachers to be properly trained to be able to successfully teach in

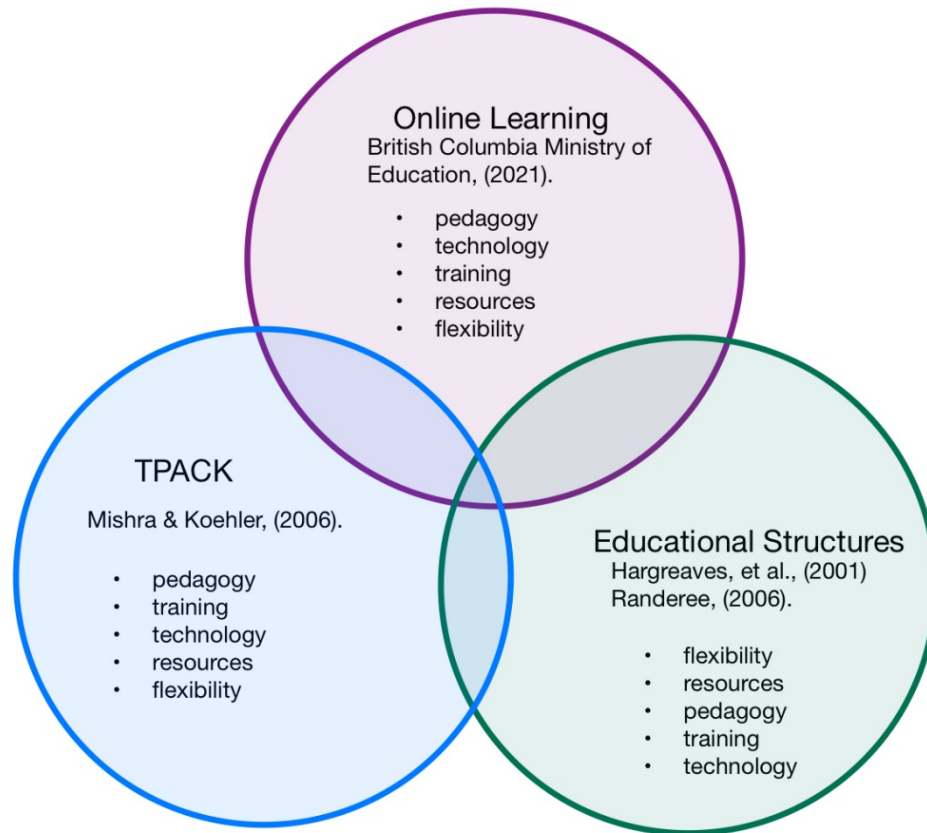
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an online environment. Further, Kilinic et al. (2016) stated that educational structures define life in school for teachers, administrators, and students. As the participants suggested in their responses, the educational structures that defined their lives during ERT hindered the ability to provide positive learning opportunities for students and hindered the quality of their teaching, as well.

Figure 18 below, provides a visual of the relationship between the components: TPACK, online learning, and educational structures. At the intersection of these components are elements of pedagogy, technology, training, resources, and flexibility. There appears to be a distinct connection between positive teaching and learning experiences in online alternate educational environments when teachers have technology experience, understanding of relevant pedagogy, and access to resources and adequate training to provide the necessary content to students. It is also necessary for teachers to be able to work within flexible educational structures allowing them to adjust and adapt educational opportunities while teaching in online environments with the use of technology. Participants who felt competent with their understanding of technology, their understanding of the pedagogy of teaching with technology in alternative online educational settings, their access to training and resources, and their ability to work within flexible educational structures reported positive experiences during ERT and following. It is necessary for all elements to be evident in all components at the same time to provide the opportunity to positive educational experiences for K-12 students in unique learning situations, such as ERT, as well as in learning situations moving forward.

Figure 18

Refined Conceptual Framework



Note. Figure 18 shows the elements that are evident in the overlap of all three components. The pedagogy of online learning, the pedagogy of effective use of technology in teaching, and the recognition of a difference in pedagogy from f2f learning within educational structures as they apply to alternative educational environments is necessary for positive learning and teaching experiences. The understanding of the use of technology itself, the use of technology in online learning, and ability to use effectively use technology within educational structures enhances positive learning and teaching opportunities. Educational structures need to allow for adequate resources and training of technology and online learning to promote positive learning and teaching environment in alternate educational environments, and all educational environments in

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general. Lastly, there is a need for flexibility within online learning, TPACK, and educational structures to provide for optimal positive educational environments in emergency settings and in general, thereby promoting positive learning and teaching experiences overall.

Limitations

A limitation of this study was the ability to access potential participants. Originally, the local teacher's union had agreed to share the initial anonymous survey with all secondary school teachers in the BC school jurisdiction that was the population for this case study. The local teacher's union withdrew their support at the time the data collection was about to begin. This withdrawal of support hindered access to possible participants and in turn reduced the number of participants for the survey portion of the study.

Another limitation for the study was the number of participants that had been teaching under ten years. Greater access to the entire potential participant population would have increased the number of participants that fell into this group. Nevertheless, there was representation participants for all experiential groups which allowed for reliable research data.

Lastly, nearly 50% of the participants in this study had a master's degree. This is a very high number of participants educated beyond the 5-year Bachelor of Education degree required to receive a teacher's certificate in British Columbia. If there had been greater access to the entire potential participant population, this percentage may not have been so significant with more participants under ten years' experience. Overall, a reasonable sampling of the potential participant population was obtained for this study.

Summary

Through an anonymous survey with quantitative and qualitative questions the participants shared their personal feedback, reflections, and opinions of providing their students' educational

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opportunities through ERT and their personal feedback, reflections, and opinions about their jobs after the shift out of ERT. Additionally, some participants willingly elaborated on their personal feedback, reflections, and opinions from the survey through a follow-up personal interview.

These interviews allowed participants to provide more clarity to their initial survey responses, as well as add their own unique perspective on areas that they felt were important to the study, specifically issues such as lack of preparation time, lack of adequate support and resources, little to no training in technology tools and/or online pedagogy, and inflexible educational structures.

The teachers who participated in this study all shared that they had experienced personal growth in many aspects of their professional and personal lives, including being more aware of their personal health, learning new technologies, recognizing the value in alternate educational delivery programs, and acknowledging unreasonable workload expectations. The participant responses brought forth the need for educational decision makers to be more cognizant of the affect their policies and decisions have on the teachers that are required to make those policies and decisions a reality in the classroom physically or virtually. This study highlighted the positive and negative effects of the sudden shift to ERT and residual effects after ERT for a group of secondary school teachers in one BC school jurisdiction. These teachers openly shared their concerns with sudden changes in educational policy and the need to reflect on those concerns in order to move forward in a positive manner. Participants clearly shared that the shift to ERT and out of ERT were both equally sudden in terms of educational change and they continue to be affected by those shifts in many ways.

Chapter 6: Recommendations and Conclusion

Overview

In chapter 1, data was shared about the impact that the worldwide pandemic, COVID-19, had on K-12 education programs, K-12 educators, and K-12 students. As the researcher, I assert that understanding the effects of ERT will influence the direction of further research in education as well as further research in K-12 online learning educational structures (Barbour, 2005; Barbour, 2011; Martin et al., 2021). Evidence was if there was a need to understand the effect of implementing emergency educational programs on K-12 education and understand how online learning can be used to enhance K-12 educational programs overall (Kensler & Uline, 2019). This study looked at the effect of the shift to ERT and subsequent shift out of ERT had on a group of secondary school teachers from one BC school jurisdiction to gather insight through their feedback, reflections, and opinions of this time. Additionally, this chapter provided a conceptual framework for the study, specifically to define the variables, TPACK, online, and educational structures, and to find the relevance of these variables to each other.

Chapter 2 focused on the literature that supported the need to do further research in K-12 online educational program delivery and the need to determine the effects of Emergency Remote Teaching specifically. It outlined the background and the present state of online learning in K-12 schools, detailed best practices of online learning in higher education and K-12 and examined the need for change in K-12 schools. It also introduced Emergency Remote Teaching and the need to see ERT as its own entity rather than a component of online learning (Alqabbani et al., 2020; Hodges et al., 2020; Moore & Hodges, 2023). The literature also provided insight into the concept of TPACK and its possible importance when researching aspects of teaching (Mishra & Koehler, 2006). In this chapter, I further discussed the idea of educational structures and the need to consider them when doing research in the area of K-12 education (Clark et al., 2019). Last, the

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literature highlighted what was new in K-12 online research, specifically how COVID-19 provided the right climate to encourage researchers to focus their research in the area of K-12 education (Machusky & Herbert-Berger, 2022; Francom et al., 2021; Shanir-Inbal & Blau, 2021).

Chapter 3 provided an explanation of the research design for this study. I described the use of a case study methodology. The purpose of using a case study approach was to provide an exploratory, descriptive and explanatory inquiry in an area with limited research (Yin, 2018). In this chapter, I fully explained the research design of data collection in two stages providing quantitative and qualitative data. First, an initial anonymous voluntary survey, with collection of both quantitative and qualitative data, and second, a voluntary follow-up personal interview to collect further qualitative data. I further described the participants, explained how the data would be analyzed, discussed validity and reliability, and summarized ethical considerations.

Chapter 4 offers an extensive review of the data collected through the two stages of this research study. It provided a summary of the participant demographics and quantitative data depicting their experience with online teaching, use of technology, use of sick days, and a variety of data relating to teaching practices. Additional information provided in this chapter included the presentation of participants responses to survey questions and personal interview questions that concluded the research process.

In chapter 5, I focused on the examination of the research findings and the analysis of these findings were discussed. Several themes emerged from the quantitative and qualitative data collected in both stages of the research study, namely the survey and follow-up interview. These themes were workload, health, technology, online, teaching, and educational structures. An important aspect of teaching under ERT became apparent from the participant responses and that

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was that health, both emotional and physical, was an area of great concern. Additionally, participant responses provided insight in a key area specifically how interconnected understanding how to use technology, knowledge of online pedagogy, and flexible educational structures are to a positive experience with learning in virtual educational environments. In chapter 5, I also discussed all the findings. Lastly, it exposed some of the limitations of the study including the importance of teacher union support to access a larger demographic of teachers within the participant pool.

In this chapter, I will conclude the research by summarizing the importance of understanding the effects of ERT on a group of secondary school teachers in one BC school jurisdiction. It will also provide recommendations based on the research findings and suggest potential further research areas to be studied.

Implications of Research Findings

The effects of ERT on a group of secondary school teachers in one BC school jurisdiction were broad and continue to be evident after the shift out of ERT. The increased workload and deterioration of teachers' health has significant potential impact on the quality of teaching and educational opportunities for students, as well as the teaching profession overall. If teachers are expected to provide positive and meaningful educational opportunities for students and encourage others to pursue a career in the teaching profession, it is imperative that consideration for teacher health and workload be addressed by decision makers. The findings of this study support the need to provide sufficient on-going training opportunities in technology and alternative educational program pedagogy as well as access to appropriate resources to support all educational program delivery modes in order to allow teachers to be prepared for the ever-changing K-12 educational environment naturally and in emergency situations. COVID-19 put

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all K-12 educators in a similar position and brought to the forefront the inability for K-12 teachers and educational programs to easily adapt to address emergency situations or to adapt in general. By providing consistent and adequate access to resources, training, and support, there is the clear potential to reduce the negative effects of any change in educational policy, sudden or gradual.

Recommendations

There are three recommendations that can be made from the findings of this study. It is important to remember that the following are recommendations only and whether they are implemented is not part of this research study.

Professional development training opportunities for teachers that provide access to new technology knowledge, and opportunities to incorporate alternative educational program delivery modes with guaranteed support including access to resources such as actual hardware and applications would be extremely beneficial for all teachers. First, new technology knowledge refers to teachers being provided opportunities to learn new technology and gain the knowledge on how that technology can enhance teaching and learning opportunities in educational settings. Second, by providing teachers and schools the opportunity to learn about the flexibility of educational delivery modes that reflect the needs of students as their needs change, decision makers would be allowing teachers and educational institutions to consider which delivery modes could provide the most viable teaching and learning opportunities for their population. Third, professional development opportunities that are designed to support teachers in their pursuit of gaining knowledge and understanding of relevant topics such as technology knowledge, should be willingly provided administrators and easily accessed by teachers, Lastly, decision makers need to make available necessary funds to allow teachers to have access to the

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resources required to successfully provide quality technologically supported educational learning opportunities for their students, such as new hardware and varied applications. Professional development opportunities like these would allow teachers to be better equipped to make necessary educational programs changes smoothly and positively. Additionally, stress related health issues would potentially be positively affected.

Through the creation of a system of tracking changes in teacher workload, policy makers would be able to regulate a consistent workload for teachers thereby allowing for teachers to potentially have adequate time to prepare engaging educational opportunities for K-12 students and, again, potentially positively affect teacher health. At the present, the teacher's workload for the study participants consists of five and a half instructional hours within a six-and-a-half-hour workday, necessary preparation time for the instructional day, time for marking, grading and reporting, as well as time to contact parents, school support systems/personnel, and set mandatory staff meetings. A teaching day can be greatly impacted by any change or increase in teacher responsibilities and can be dramatically impacted by major changes such as the reality of the changes created by ERT. A commitment to actively monitor teacher workload by administration would allow decision makers to show their support for teachers in the workplace in general which would potentially improve K-12 educational opportunities overall.

A commitment by decision makers to allow for flexibility with educational structures would provide the potential for positive educational program change at the K-12 level for natural evolution and for those potential emergency situations that require innovative educational program delivery. Educational structures like timetables, schedules, reporting and assessing practices, educational program delivery modes, and attendance expectations need to be flexible and fluid to allow for adaptations to structures that reflect the needs of a particular community,

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student, and/or educational opportunity requirement. In general, flexible educational structures would allow for the potential for any number of innovative and creative educational program delivery opportunities for K-12 educators and students.

Recommendations for Future Research

This study was completed using a single case study approach. It would be beneficial to conduct a comparative case study of secondary school teachers in a few BC school jurisdictions. This is a new area of research that could benefit from comparative data to provide a greater understanding of the effects of ERT on a variety of BC school jurisdictions.

This study was completed using a limited participant population. It would be beneficial and highly informative to broaden the participant pool to include either other secondary school teachers from other BC school jurisdictions and/or include all teachers within one BC school jurisdiction.

This research study appealed to teachers with ten years or more of teaching experience in general. This created limitations for the study. It would be highly beneficial to include a larger population of participants with a broader spectrum of experience to gain a greater comprehension of the overall effect of the shift to ERT and the shift out of ERT on K-12 teachers. This additional research would provide decision makers with a clearer understanding of the issues during ERT and following ERT to consider in the future planning.

Conclusion

Teachers were affected in many ways by the sudden shift to Emergency Remote Teaching, during Emergency Remote Teaching, and following the shift out of Emergency Remote Teaching. The experience has had a lasting effect on teachers both personally and professionally. Decision makers need to be aware of these effects and take the time to consider

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them when making all changes to K-12 educational policies during the normal course of educational change as well as preparations for possible emergency educational changes.

The conceptual framework allowed for the realization of the relationship between TPACK, online learning, educational structures, and positive learning opportunities in K-12 ERT delivery modes. It further provides an understanding of the how this relationship is necessary for the positivity of future K-12 learning and teaching opportunities. It is important to continue to focus on ways to for these components to work progressively together to further enhance all K-12 program delivery modes moving forward.

The findings of this study support the need for K-12 teachers to have access support, adequate resources, reasonable time expectations, and flexible educational structures to successfully implement any educational program change. K-12 teachers are concerned with the quality of their teaching and are more than willing to be catalysts for positive change in K-12 educational program delivery. Teachers articulated clearly the issues they encountered under ERT and many of those issues they have continued to encounter following the shift out of ERT. Teachers are a key component in K-12 educational programs. They are the ones that “make the magic happen” (T5) and need to be recognized for their integral role in the whole K-12 educational system. By providing K-12 teachers adequate tools and appropriate learning environments, decision makers can only increase the potential for the implementation of positive educational changes in the future.

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Appendices

Appendix A: Invitation to participate

Immediate and residual effects of Emergency Remote Teaching

ONLINE PARTICIPANT CONSENT FORM

Principal Researcher:

Corine LeBourdais,
clebourdais1@athabasca.edu

Supervisor: (if applicable)

Dr. Connie Blomgren,
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Dr. Susan Bainbridge
Susan.bainbridge@athabascau.ca

You are invited to participate in a research study about the effects of Emergency Remote Teaching during Covid-19 and since Covid-19. I am conducting this study as a requirement to complete my Education Doctorate of Distance Education.

As a participant, you are asked to participate in this study by completing a short online survey about your experience teaching in a secondary school during Covid-19 and since the return to traditional teaching. Participation will take approximately 20 to 25 minutes of your time. The survey is not timed.

Participation in this study will provide valuable insight into your unique experience of teaching secondary school under Covid-19 Emergency Remote Teaching parameters as well as your experience teaching following those parameters. Involvement in this study is entirely voluntary and you may refuse to answer any questions or to share information that you are not comfortable with. You will not be asked to provide any personal or identifiable information or data unless you are volunteering for the interview in which case the information will be anonymized.

You may withdraw from the study at any time by simply closing out of your browser. Once you submit your completed survey, however, data cannot be withdrawn as the survey is completely anonymous. Please retain a copy of this consent form for your records.

Your data is being collected anonymously and cannot be attributed back to you.

Please note that survey data may be collected and stored on a server outside of Canada and will therefore be subject to legislation in the country where it is stored.

The transcripts of the interviews will be hard copy as will the results of the survey. All hard copy data will be kept in locked cabinets in my home office. All electronic data will be kept in a password protected computer at my home. All information and records will be destroyed by confidential shredding; electronic records will be deleted, when all project requirements have been met approximately by December of 2023.

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Results of this study may be accessed by contacting the researcher after successful defense of my dissertation. The existence of the research will be listed in an abstract posted online at the Athabasca University Library's Digital Thesis and Project Room and the final research paper will be publicly available.].

If you have any questions about this study or require further information, please contact Corine LeBourdais, Dr. Connie Blomgren or Dr. Susan Bainbridge using the contact information above.

This study has been reviewed by the Athabasca University Research Ethics Board. Should you have any comments or concerns about your treatment as a participant, the research, or ethical review processes, please contact the Research Ethics Officer at 780.213.2033 or by e-mail to rebsec@athabascau.ca.

Thank you for your assistance in this project.

CONSENT:

The completion of the survey and its submission is viewed as your consent to participate.

BEGIN THE SURVEY

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Appendix B: Research Survey

Demographics

1. What is your level of Education? Bachelor Bachelor+ Masters other
2. How many years in teaching? 0-2 3-5 5-8 8-12 13 +
3. What subject areas do you teach? Math/Science Humanities Languages PE TechEd
other electives
4. Gender man woman other no response
5. How much experience teaching online or remotely? 1-5 1 being little to no experience
6. How many sick days did you take during ERT? 0-5 6-10 11-20 20+
7. How many sick days were unpaid? 0-3 4-8 9-15 16+
8. How many sick days have you taken after ERT? 0-5 6-10 11-20 20+
9. How many sick days were unpaid? 0-3 4-8 9-15 16+

Emergency Remote Teaching

1. What technology was used to achieve remote learning?
 - a. Google classroom
 - b. Other learning management system
 - c. Zoom virtual classes
 - d. Teams virtual classes
 - e. Other (specify) _____

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2. How often did you meet with students virtually per week? 0 1-2 3-4 4+
3. What digital tools/apps you used in teaching prior to ERT?
4. What digital tools/apps did you start using for or during ERT?
5. How prepared were you to shift to ERT? Scale 1-5 1 being little or not prepared
6. Are you familiar with course design? Scale 1-5 1 being little to no familiarity
7. Did you experience any changes in the following under ERT?
 - a. Workload
 - b. Stress level
 - c. Quality of teaching
 - d. Physical health
 - e. Emotional health
8. If so, provide 3-5 examples of the most important changes.
9. Have you continued to experience any of these changes after ERT?
10. If so, provide 3-5 examples of the most important changes.
11. After ERT, in what ways have you continued to incorporate ERT learned technology in your teaching practices?
12. Prior to ERT did you think online programs were a viable educational delivery mode?
Scale 1-5 1 being strongly disagree
13. Prior to ERT, did you think the pedagogy of teaching online was like teaching face to face instruction? Scale 1-5 1 being strongly disagree
14. After your ERT experience, do you think that online programs are a viable educational delivery mode? Scale 1-5 1 being strongly disagree

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15. Have your teaching practices following your ERT experience been impacted by that experience? Yes no
16. If yes, provide 3-5 most important impacts.
17. If no, provide 3-5 most important reasons why not.
18. Would you be willing to participate in a follow-up interview? If yes, please provide your name and your preferred form of contact.

Appendix C: Preamble prior to individual interviews

Thank you for making time to participate in this interview portion of study. The purpose of the personal interviews is to allow each interviewee the opportunity to provide greater context to the answers that have been provided through the survey. The questions that will be asked all relate directly to the information that each interviewee has provided in their survey responses. One hour has been allotted for the interview, but do not feel rushed by that time limit or pressured to use the entire time limit. You may take your time formulating answers and/or ask questions of me during the interview time.

All information gathered through the interview process will be kept strictly confidential and the data used for the purpose of satisfying the requirements of completing the dissertation process for Athabasca University Doctor of Education. This interview will be recorded and transcribed by Zoom allowing for accurate representation of each participant's responses. The transcript will be forwarded to you for verification. Each participant will be given a pseudonym and all information linking the participant to their pseudonym will be removed after transcript verification. All participants can withdraw from this study one week after the participant has received their transcript for verification. All quotes used for the final dissertation will be credited to the assigned pseudonyms only.

If you have any questions currently, please feel free to ask. If you consent to this interview, please email me your consent to clebourdais1@learn.athabascau.ca. I will acknowledge receipt of the email consent and then when you are ready to start, please let me know.

Appendix D: Individual Interview Questions

1. What was your initial response to the expectation of the shift of teaching to Emergency Remote Teaching in the Spring of 2020?
2. Did you feel prepared to shift your teaching from your normal practice to that of ERT?
3. Can you elaborate on your use of sick days?
4. How did you feel about online delivery of educational programs prior to COVID-19?
5. How do you feel about online delivery of educational programs since ERT?
6. Can you elaborate on the important changes you experienced under ERT?
7. Can you elaborate on how the ERT experience has or has not impacted your teaching practices since ERT?
8. How would you compare your job prior to ERT to your job at present?
9. Is there any other experiences or thoughts you would like to share at this time?

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Appendix E: Ethics Approval Form



CERTIFICATION OF ETHICAL APPROVAL

The Athabasca University Research Ethics Board (REB) has reviewed and approved the research project noted below. The REB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2) and Athabasca University Policy and Procedures.

Ethics File No.: 25120

Principal Investigator:

Ms. Corine LeBourdais, Doctoral Student
Faculty of Humanities & Social Sciences\Doctor of Education (EdD) in Distance Education

Supervisor/Project Team:

Dr. Susan Bainbridge (Co-Supervisor)
Dr. Connie Blomgren (Co-Supervisor)

Project Title:

Immediate and residual effects of Emergency Remote Teaching: A Canadian Case Study

Effective Date: February 16, 2023

Expiry Date: February 15, 2024

Restrictions:

Any modification/amendment to the approved research must be submitted to the AUREB for approval prior to proceeding.

Any adverse event or incidental findings must be reported to the AUREB as soon as possible, for review.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

An Ethics Final Report must be submitted when the research is complete (*i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable)*) or the research is terminated.

Approved by:

Date: February 16, 2023

Katie MacDonald, Chair
Faculty of Humanities & Social Sciences, Departmental Ethics Review Committee

Athabasca University Research Ethics Board
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