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The Impacts of an Online Planning Tool on Online Co-teaching Practices During a Pandemic

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THE IMPACTS OF AN ONLINE PLANNING TOOL ON ONLINE CO-TEACHING PRACTICES DURING A PANDEMIC

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DEDICATION

I dedicate this dissertation work to my wife, Emily Norris, who has been a champion and inspiration through this process. My dog, Dudley, who always kept me company. To my colleagues. To Wanda Littlejohn, Kimberly Jenks, and my friends who encouraged me to achieve my dreams. This work could not have been done without them. To my colleagues in Cohort Vader at the University of South Carolina, who provided me support and laughs. Also, to my dissertation chair, Dr. Arslan-Ari, for consistency and understanding. Her help in this journey cannot be matched.

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ABSTRACT

Co-teachers at three Atlanta area schools are not providing the appropriate instruction to students with disabilities in the co-teaching setting due to the lack of collaboration in planning and teaching. The purpose of this action research was to evaluate the impact of the use of Microsoft Teams (MS Teams) as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the use of this online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use.

The study was guided by three overarching research questions. Research Question 1 was: How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting? Research Question 2 was: How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting? Research Question 3 was: What are general and special education co-teachers' perceptions toward using the online planning tool?

The methodology was a convergent parallel mixed methods design. Data were collected from six participants who represented three co-teaching pairs using a planning observation checklist, a survey, and individual semi-structured interviews. The survey and checklist data were analyzed through quantitative analysis using descriptive statistics.

Participants used MS Teams to implement practices and responsibilities of co-teaching and found the tool useful and easy to use with appropriate training and support. Qualitative data were collected through semi-structured interview questions. The data were analyzed through inductive analysis. Five major themes emerged from the qualitative data: (a) co-teachers' experiences using MS Teams for collaboration caused mixed perceptions of the tool, (b) MS Teams provided possible avenues for collaboration with multiple stakeholders, (c) MS Teams provided avenues for planning and instructional practices in an online co-teaching setting, (d) MS Teams as an online planning tool presented barriers in the online co-teaching setting, and (e) the integration of MS Teams requires supportive action steps to improve its usefulness and ease of use. The results of both types of data were compared for discussion and implications.

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CHAPTER 1

INTRODUCTION

Researchers and school leaders have taken many measures to ensure students with disabilities (SWDs) receive a fair and equal education as mandated by the Individuals of Disabilities Education Act (IDEA; Turnbull, Turnbull, Wehmeyer, & Park, 2003; Yell, 1998). The inclusion of SWDs in general education courses as a means of providing an equitable learning experience is a matter of social justice and equality (Lalvani, 2013). However, general education teachers have experienced challenges in their ability to provide the needed services to special education students in the heterogeneous classroom as they lack the necessary background knowledge (Long, 1995). The addition of a co-teacher, a certified special education teacher, in the inclusion classroom is one way to assist with planning for instruction and implementing accommodations (Scruggs & Mastropieri, 2017). Still, teachers struggle to plan and provide differentiated instruction to students while providing mandated specially designed instruction (SDI) and accommodations for multiple students based on their Individual Education Plans (IEPs; Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012). Special and general education co-teachers must collaborate and plan to address students' IEPs (L. McDonnell, 2014).

Research has established the importance and benefits of collaborative planning among co-teachers to provide tailored instruction to all students in the inclusive co-teaching classroom (W. Carter, 2007; Rimpola, 2014; Swanson & Bianchini, 2015). Tzivinikou (2015) conducted a case study of 15 pairs of co-teachers in which results

showed the positive effects of collaborative planning. Co-teachers improved instructional delivery to all students when they were responsible for planning with their co-teachers. Results of a case study conducted by Strogilos and Avramidis (2016) showed that when co-teachers collaborated on a daily plan, they were able to provide more one-on-one instruction compared to teachers in classes that were not co-taught. The increased amount of time spent collaborating leads to a well-developed plan to increase student engagement, which can result in higher learning outcomes for special education students in the co-taught classroom environment (Hoffman, 2007). However, what lacks discussion in many of these studies is what tools teachers are using to overcome the barrier of limited time, which is an issue for many teachers as a result of their multiple responsibilities.

In a study conducted by Hang and Rabren (2009), co-teachers recognized the importance of collaborative planning but identified time as a barrier that prevented the ability to plan together. Teachers have identified difficulties with scheduling a planning time and agreeing on the length of planning time as some of the issues that affect collaborative planning (N. Carter, Prater, Jackson, & Marchant, 2009). This lack of time to plan leads to teachers' inability to provide effective instruction to students in the inclusion classroom (Scruggs & Mastropieri, 2017). Bauml (2016) discussed the importance of schools providing avenues to overcome the time barrier for collaborative planning. As the literature contains limited explanation of how school leaders and teachers can establish the time to plan collaboratively, additional research must be conducted to explore how teachers can use available technology to support collaborative planning.

Collaborative planning and teaching are learned skills that do not come naturally. Teachers are conditioned through preservice training and experience to work as individual mentors and educators (Kanellis, 2008). When teachers are in the co-teaching environment, they are expected to work as a team with unique roles and the shared responsibility of providing instruction to all students (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). Thousand, Villa, and Nevin (2006) identified that one challenge co-teachers face is understanding their roles in both planning and in the classroom. The ability of general and special education teachers to communicate and plan increases each teacher's ability to address students' learning needs (Stewart, 2005). N. Carter et al. (2009) found a common philosophy of teaching and an understanding of the role of each co-teacher must be established between the co-teachers to develop a relationship. The promotion and skill development of authentic collaboration between special and general education teachers is essential to successfully implement inclusion with the use of co-teaching within schools (W. Carter, 2007).

Local Context

The research for this study was conducted at three Atlanta area schools and involved a focus on how the use of an online planning tool influenced co-teachers' practices related to their responsibilities for planning and online teaching. The schools are referred to as high school 1 (HS1), high school 2 (HS2), and middle school 1 (MS1). The three schools are in populated areas surrounded by neighborhoods and shopping centers. The travel distance to downtown Atlanta from the three schools is approximately 20 miles. The 2018 graduation rate for HS1 was 97% and the student demographics by race were as follows: 56% White, 26% Asian/Pacific Islander, 9% Black, 7% Hispanic, and

2% multi-racial (The Governor's Office of Student Achievement, 2018). The 2018 graduation rate for HS2 was 92% and the student demographics by race were as follows: 42% White, 26% Black, 24% Hispanic, 4% Asian/Pacific Islander, and 4% multi-racial (The Governor's Office of Student Achievement, 2018). The student demographics of MS1 by race were as follows: 39% White, 10% Black, 45% Hispanic, 4% Asian/Pacific Islander, and 2% multi-racial (The Governor's Office of Student Achievement, 2018).

Co-teaching in the inclusion classroom is the instructional model used within the chosen schools to serve special education students in an on-level, general education setting. The schools serve 310 special education students who are in general education classrooms for more than 80% of the school day. The schools' co-teaching teams include 42 general education co-teachers and 29 special education co-teachers. The academic schedule is broken into six 50-minute online synchronous and asynchronous instructional periods. One of the six periods is a teacher planning period. Teachers' planning periods are not aligned with those of their co-teachers and vary among the teachers. Co-teachers do not teach with the same co-teacher for all academic periods.

I am an SDI coach for the chosen school district in the Atlanta area and have observed the barriers teachers face when attempting to collaboratively plan and understand the roles and responsibilities of co-teaching in the co-taught classroom setting. Co-teachers at the three schools struggle with implementing co-teaching models to provide services to all special education students. My informal discussions with teachers at the school have revealed some common barriers for collaboration are (a) co-teachers do not have common planning time, (b) teachers have multiple responsibilities before or after school that impede on their time to meet and plan, (c) there is a minimal

expectation to collaboratively plan, (d) there is no standard or model for collaborative planning, and (e) there is a lack of an understood and shared plan for implementing a lesson. Based on my observations and emails with teachers at the schools, there are indications teachers are not comfortable or adequately prepared to use technology for collaboration. This results in a need to understand teachers' experience and comfort with using technology and whether technology is a potential avenue to mitigate barriers to collaborative planning.

During the 2019–2020 school year, a survey was given to all co-teachers at the three schools to evaluate teachers' understanding of student IEPs. The results of the survey showed there were some discrepancies in the areas of teachers' roles and responsibilities for implementing IEPs and teachers' knowledge of IEPs. These results revealed teachers have different levels of knowledge about special education at the three schools. There is a need to identify the misinterpretations of teachers' roles and responsibilities in the co-teaching environment.

Statement of the Problem

Co-teachers at three Atlanta area schools are not providing the appropriate instruction to SWDs in the co-teaching setting.

Purpose Statement

The purpose of this action research was to evaluate the impact of using Microsoft Teams (MS Teams) as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use.

Research Questions

1. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting?
2. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting?
3. What are general and special education co-teachers' perceptions toward using the online planning tool?

Researcher Subjectivities and Positionality

I am a high school SDI coach for a school district in the Atlanta area. I serve as an instructional coach supporting special education teachers in planning, implementing, and monitoring SDI in interrelated small group and co-taught inclusion courses. I support 29 special education teachers through monthly professional learnings and individual coaching cycles. During one-on-one coaching cycles, I collaboratively work with special education teachers to set personal goals to improve their teaching practices so they are better aligned with SDI.

As a witness to school leaders taking on the challenge of moving the curriculum to an online platform and implementing one-to-one technology, I have observed several challenges and missed opportunities by teachers and school leaders. Being a part of the pilot program in schools in which I have previously taught, I have acquired additional insight and understanding of the opportunities technology can create in education. I view educational technology as a practice for benefiting teacher development and student

growth. Teachers may not share this view because they do not have the same opportunity or training to understand how to use technology as a tool for collaboration.

My teaching experience has been in the area of special education. For the past 5 years, I have worked in the co-teaching environment providing instruction as a special education teacher in the inclusion classroom. During this time, I have observed co-teachers struggling to understand co-teaching and sync with one another to deliver authentic instruction to both general and special education students. Through my experiences and research of co-teaching, it has become apparent that collaboration is vital for co-teachers to practice co-teaching in a manner where roles and responsibilities are shared and there is an impact on student learning. I believe educational technology can benefit teacher collaboration by enabling teachers develop their practices to increase the impact on student learning in the co-teaching environment.

As an instructional coach at two of the schools where I conducted my research, it was essential for me to be aware of my biases. There was potential for my opinion toward the current state of collaboration to affect the way I interpreted the data. Furthermore, my bias may have been present during field notes, interpretation, and findings. My bias may have affected how I viewed the data from special education co-teachers compared to general education co-teachers.

My worldviews fall in the transformative paradigm, which involves a focus on the social injustice of the marginalized to bring about social transformation (Creswell, 2014; Mertens, 2014). Additionally, the transformative paradigm enables a researcher to interact with all parties involved while serving as an active link between the study and the participants (Romm, 2014) simultaneously. It is important as an insider researcher to

interact with participants and collaborators of the study. This action helped define my positionality with the research.

Herr and Anderson (2014) discussed factors that can affect insider collaboration within research. As the researcher, I needed to avoid power relations. To accomplish this, I identified my role as the researcher and maintained this role throughout the study. The collaborators needed to know the purpose of the research and trust I was only conducting the research to provide a potential intervention for the improvement of co-teachers' collaborative practices. Another factor discussed by Herr and Anderson to avoid is collusion. I needed to ensure the stakeholders in the study as well as myself as the researcher did not influence or interpret the data with a bias to benefit the stakeholders. The goal of the research was to develop a plan for improvement within the organization and provide opportunities for co-teachers to improve professionally and personally while protecting their values (Herr & Anderson, 2014; Kirby, 2017).

Definition of Terms

Accommodation. Used to alter how a student responds to an assessment or receives instructions. It does not dilute the content or change measurements of student understanding. Accommodations are meant to provide equity in instruction and assessment, not to serve as an advantage (Georgia Department of Education, 2019a).

Classroom technology. Any digital or non-digital tool or device that assists in classroom instruction, learning, or collaborating when appropriately implemented (F. Liu, Ritzhaupt, Dawson, & Barron, 2017).

Collaborative planning. Time spent by special and general education co-teachers working together to plan content and instructional delivery (Graziano & Navarrete, 2012).

Co-teaching. "The sharing of instruction by a general education teacher and a special education teacher or another specialist in a general education class that includes SWDs, is a relatively recent application" (Friend et al., 2010, p. 9).

General education co-teacher. The teacher in the inclusion classroom who is primarily the content knowledge expert in the learning environment and is certified to teach the academic subject of the learning environment (Cosier, Causton-Theoharis, & Theoharis, 2013).

Online planning tools. Digital and non-digital tools that assist in the collaborative planning process. Digital tools can include digital devices, software programs, online resources, and digital communication devices. Non-digital tools can consist of workspace, furniture, organizational tools, and writing utensils (Thoma, Hutchison, Johnson, Johnson, & Stromer, 2017).

Responsibility. The specific task or duty required to carry out the role of the co-teacher in planning or implementation (Georgia Department of Education, 2019b).

Role. A position a co-teacher takes in the team. The role is clearly defined and determines the tasks assigned to each teacher in planning and implementation (Georgia Department of Education, 2019b).

Practices. Actions taken by co-teachers in planning and instruction that include teaching strategies, student grouping, and teaching responsibilities. Practices also include

aligning content delivery to the specific learning needs and knowledge gaps of students (Josephson, 2014).

Special education co-teacher. The teacher in the inclusion classroom who is the expert on providing special education services to SWDs in the learning environment and is certified in special education (Wischnowski, Salmon, & Eaton, 2004).

CHAPTER 2

LITERATURE REVIEW

The purpose of this action research was to evaluate the impact of using MS Teams as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use. The review of related literature focuses on the three research questions:

1. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting?
2. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting?
3. What are general and special education co-teachers' perceptions toward using the online planning tool?

Based on the research questions, I used five main variables to guide the search for literature: (a) special education, (b) co-teaching, (c) roles and responsibilities, (d) online planning and teaching, and (e) collaboration. I used a variety of search tools to collect the resources for this literature review. For my search, I accessed electronic databases through the University of South Carolina's (Columbia) library services. The databases

included Education Source, ERIC, Teacher Reference Center, Dissertations and Thesis Global, and Google Scholar. I used multiple combinations of keywords to locate articles and to search titles, text, abstracts, and subjects. Keywords included *co-teaching*, *team teaching*, *teaming*, *inclusion*, *special education*, *SPED*, *students with disabilities*, *SWD*, *disabilities*, *access*, *planning*, *co-planning*, *collaboration*, *communication*, *instruction*, *specially designed instruction*, *SDI*, *roles*, *roles and responsibilities*, *duties*, *expectations*, *attitudes*, *perception*, *special education law*, *technology*, *barriers*, *Microsoft features*, *Microsoft Teams*, *constructivism*, *constructivist*, *social constructivism*, and *social constructivist*. I used a variety of combinations of the keywords over time to locate appropriate resources for the literature review. I also located online resources using federal and state government websites. These websites provided the U.S. Department of Education and Georgia Department of Education handbooks, regulation guides, best practice professional development resources, and legislative documents. Additionally, I used the technique of mining resources from the bibliography sections of articles that aligned with my variables. This method helped me identify significant authors and resources for the review.

The literature review is presented in five major sections. The first section aligns the theory of constructivism with the importance of teacher collaboration. Section two covers the historical foundations of inclusion and the impacts of legislation on special education. The third section contains a focus on collaboration among co-teachers. The fourth section relates to teachers' perceptions, attitudes, and practices of SDI. Finally, the fifth section is a review of the use of technology and the COVID-19 pandemic.

Theoretical Underpinning

The theoretical framework of this study aligns with the theory of constructivism and social constructivism. The constructivist theory is based on the idea that learners develop knowledge and skill by making sense of their experiences through an active process (Bada, 2015). Social constructivists believe an individual constructs knowledge and skills from their social influences and interactions (Mallory & New, 1994). This section presents a review of the literature behind constructivism and social constructivism. The literature review provides a synthesis of how social interaction and co-teacher collaboration can improve teachers' understanding of the co-teaching model and best practices in the inclusive setting.

Constructivist Theory

The idea that learners construct understanding and meaning of a body of knowledge is rooted in the work of Dewey, Piaget, and Vygotsky (Hunter, 2015; Neutzling, Pratt, & Parker, 2019). The constructivist theory reflects a shift in educational pedagogy with the emphasis that knowledge is constructed rather than passively accepted (Fosnot, 2005). An individual builds knowledge through exploring experience and reconstructing prior knowledge or events (Pritchard & Woollard, 2010).

Social Constructivist Theory for Co-Teachers

Social constructivism involves a focus on the growth of knowledge through active interaction and reflection on social experiences. Social collaboration can result in new knowledge and skills when the learner makes sense of their current knowledge and new experiences (Brackenbury, 2012). "The fundamental nature of social constructivism is collaborative social interactions in contrast to individual investigation of cognitive

constructivism" (Applefield, Huber, & Moallem, 2000, p. 38). Social constructivism supports the use of group work for professional growth (McKinney & Sen, 2016). Improvements in pedagogy can occur for co-teaching partners when they plan, communicate, and collaborate (Turkich, Greive, & Cozens, 2014).

The literature presents different methods for teacher interaction to encourage growth. Collaboration among teachers through mentorship, learning communities, and planning can improve their understanding and implementation of best practices. Turkich et al.'s (2014) findings indicated that through social interaction and collaboration with a co-teacher mentor, a teacher builds their knowledge and improves classroom practices. Collaboration within a learning community can prompt growth in a teacher's methodology (Schneider, Huss-Lederman, & Sherlock, 2012). Khabiri and Marashi (2016) found an improvement in student achievement in a collaborative teaching environment. Teachers who have access to peers with knowledge of co-teaching and best practices can construct an understanding of the model and improve their practices through collaboration.

Inclusion in Education

Legislation and public law beginning in the 1950s established the need for inclusion in education. The relatively young promotion of education to SWDs in the same setting as their non-disabled peers has leaders of school systems continuously looking to improve teaching to impact the achievement and academic growth of SWDs. Inclusion for all is a matter of social justice. The argument for classroom inclusion for all students began with an examination of social injustice in the education system (Hall, Collins, Benjamin, Nind, & Sheehy, 2004; McCoy, 2018; Obiakor et al., 2012). In theory,

inclusion classrooms provide SWDs access to the same curriculum as their non-disabled peers (Gilmour, 2018). This section presents a discussion of the literature associated with (a) historical foundations and the law, and (b) inclusion's impact on education.

Historical Foundations and the Law

The road to inclusion for SWDs in education began with the civil rights movement of the 1950s. *Brown v. Board of Education of Topeka* was the first legal action to establish equal education for all. The enactment of the Education for All Handicapped Children Act of 1975 (Public Law 94–142) introduced legislation for the rights of SWDs. This law became reauthorized as the Individuals of Disabilities Act (IDEA) and guarantees access to a free appropriate public education (FAPE) in the least restrictive environment (LRE; Yell, 1998) for all students. Congress reauthorized the IDEA in 1990, 2004, and again in 2015 (U.S. Department of Education, n.d.). The law is currently referred to as the Individuals with Disabilities Education Improvement Act (IDEIA; Farris, 2011). Harrison, Soares, and Joyce (2019) defined the current state of inclusion as "the practice of educating all children in age-appropriate general education settings with needed supports and services and instruction focused on the general education curriculum regardless of any challenges" (pp. 1209–1210).

The shift to inclusion brought about increased accountability and responsibilities for administrators, teachers, and stakeholders. A team effort is required to ensure all students receive a FAPE in the LRE (Lamport, Graves, & Ward, 2012; Yell, 1998). The IDEIA (2004) demands an inclusive setting for FAPE. Mackey (2014) acknowledged FAPE is the element of IDEA that brings SWDs into public education and promotes placement in the general education setting. Kirby (2017) emphasized that special

education is not an exclusionary setting but a placement of supports in the general education setting. The LRE ensures students are provided education to the maximum extent and are not removed from the general education setting unless the severity of their disability requires a specialized environment (Balan, 2010; Farris, 2011; Gottfried, Hutt, & Kirksey, 2019; IDEIA, 2004).

Inclusion's Impact on Education

The rigorous demands of legislation and IDEA regulations create complex challenges for school leadership and teacher practices. SWDs are expected to achieve the same level of mastery as their non-disabled peers on state testing assessments and in the curriculum of the same general education classes (Friend et al., 2010). Ensuring students have access to the curriculum in the LRE is one effort school leaders are pursuing (McKenna, Muething, Flower, Bryant, & Bryant, 2015). These reforms in education have leaders of school systems attempting to identify the best practices for student success in the inclusion setting. Research has focused on the impact on non-disabled students and SWDs (Abbye-Taylor, 2013; Da Fonte & Barton-Arwood, 2017; Hehir & Katzman, 2012; Kirby, 2017; Lamport et al., 2012; J. McDonnell et al., 2003).

The inclusion setting places value on the uniqueness of all students and provides specialized instruction to meet the needs of every student (Hornby, 2015). In contrast to this belief, some writers argue against the effectiveness of the inclusion setting (Anastasiou & Kauffman, 2011; Cole, 2009; Zigmond & Kloo, 2011). Gilmour (2018) supported this claim by identifying student diversity in terms of disabilities and cognitive skills, teacher workload, and teacher preparedness for teaching in an inclusion setting as conditions hindering the effectiveness of inclusion. Recent studies have shown preservice

general education teachers are not receiving the training or skills they need to support the diversity of SWDs in their classroom (Forlin, 2001; Gottfried et al., 2019; Long, 1995; G. Williams & Obiakor, 2009). General education preservice teachers have identified special education knowledge, training, and instruction as areas of weakness (B. G. Cook, 2002).

There is a need for special education training to increase co-teaching and inclusion collaboration experiences for both general education and special education preservice teachers (Da Fonte & Barton-Arwood, 2017; Stewart, 2005). Results of a study conducted by Yuknis (2015) demonstrated there was no change in general education preservice teachers' perceptions, understanding, and attitudes toward SWDs after a single required special education course. However, an increase in exposure to the inclusion classroom setting has been shown to lead to a shift in attitudes among preservice general education teachers (Song, Sharma, & Choi, 2019; Sze, 2009; Taylor & Ringlaben, 2012).

The need for special education expertise in the inclusion classroom led to the development of the co-teaching model of one general education teacher and one special education teacher in the inclusion classroom (L. Cook & Friend, 1995). When it comes to the topic of co-teaching effectiveness, evidence shows some teachers, both novice and experienced, lack the knowledge to appropriately implement the co-teaching model (Brendle, Lock, & Piazza, 2017; Chitiyo & Brinda, 2018; Harrison et al., 2019). However, when implemented appropriately, co-teaching in the inclusive classroom has been shown to positively influence the academic and social outcomes of SWDs (Abbye-Taylor, 2013; Da Fonte & Barton-Arwood, 2017; Hehir & Katzman, 2012; Kirby, 2017; Lamport et al., 2012; J. McDonnell et al., 2003). True co-teaching can help terminate

labels and promote social and academic growth (Kirby, 2017). In this setting, SWDs have made statistically significant growth in social behaviors with no adverse educational impact on their non-disabled peers (J. McDonnell et al., 2003). It has been observed that the co-teaching model can have a positive impact on all students' academic performance in reading, writing, and attendance (Tremblay, 2013).

Collaboration Among Co-Teachers

The standard method for supporting SWDs in the inclusion setting is the co-teaching model. The relationship between general education and special education teachers develops through effective communication (Friend et al., 2010). Communication helps co-teachers support each other's ideas and strengthen collaboration (Okolo & Diedrich, 2014). In this section, literature is presented related to (a) defining collaboration, (b) defining co-teaching, (c) barriers of collaborative planning in co-teaching, and (d) impact of co-teaching.

Defining Collaboration

Graziano and Navarrete (2012) defined collaborative planning as time spent by special and general education teachers to identify learning targets and the delivery of instruction. Collaboration takes place in schools when pairs or groups identify learning targets and design lessons as a team (Bauml, 2016). Collaborative planning practices define the responsibilities of each co-teacher in the delivery of instruction (Ploessl, Rock, Schoenfeld, & Banks, 2010). Productive communication and planning during collaborative meetings result in meaningful instruction (Ronfeldt, Farmer, McQueen, & Grissom, 2015). Clear responsibilities support the co-teachers' delivery of SDI to SWDs in the co-teaching setting (Friend, 2015). Woodland, Lee, and Randall (2013) identified

four core domains for teacher collaboration: (a) dialogue, (b) decision making, (c) action, and (d) evaluation. These four domains empower teachers to work as a team and reflect on their efforts to improve student outcomes.

Defining Co-Teaching

Co-teaching was first defined by L. Cook and Friend (1995) as an applicable teaching model for inclusion classrooms. Co-teaching is a partnership between general education and special education teachers to jointly plan and deliver instruction to a diverse group of students (Hurd & Weilbacher, 2017). There are a variety of methods for implementing the co-teaching model, and varying styles throughout the year will increase student interaction and attention (Brown, Howerter, & Morgan, 2013; Bryant Davis, Dieker, Pearl, & Kirkpatrick, 2012; L. Cook & Friend, 1995; Friend et al., 2010).

Barriers of Collaborative Planning in Co-Teaching

Collaborative planning among co-teachers is the practice of general education teachers and special education teachers developing lesson plans using each of their specialized knowledge. “Regardless of the collaborative structure being used (e.g., one-on-one interactions, co-teaching, collaborative consultation), successful collaboration requires planning time, effort, and administrative support” (N. Carter et al., 2009, p. 60). Experts in the area of co-teacher collaboration have identified two levels of barriers: first- and second-order. First-order barriers are external factors (e.g., lack of adequate access, time, training, and support) that prevent teachers from accomplishing a task (Ertmer, 1999; Rikala, Hiltunen, & Vesisenaho, 2015). In contrast, second-order barriers are internal factors (e.g., teacher’s pedagogical beliefs, perceived roles and responsibilities,

attitudes toward collaborative planning) that prevent teachers from accomplishing a task (Ertmer, 1999; Rikala et al., 2015).

First-order barriers. Studies have shown first-order barriers do affect a co-teacher's ability to plan collaboratively. Co-teachers lack the skills necessary to engage in productive communication and planning with peers (Wlodarczyk, Somma, Bennett, & Gallagher, 2015). N. Carter et al. (2009) argued effective collaboration among co-teachers requires time and administrative support. However, collective planning times are limited and school administrators do not prioritize joint co-teacher planning or co-teacher professional development (Campbell & Jeter-Iles, 2017). Walther-Thomas (1997) stated the lack of common space and planning time leaves co-teachers waiting for plans or resources from their partner. Furthermore, general education and special education preservice education programs do not always provide teachers with the collaborative skills and knowledge they need to engage in co-teaching (Gottfried et al., 2019; Keefe & Moore, 2004).

Second-order barriers. Studies have shown co-teachers encounter a variety of second-order barriers when attempting to plan collaboratively. Two areas of agreement within the research are attitudes toward collaboratively planning with a co-teacher and roles and responsibilities of co-teachers (N. Carter et al., 2009; Keeley & Brown, 2014; L. McDonnell, 2014; Murawski, 2009; Swanson & Bianchini, 2015; Trent, 1998). A teacher's pedagogy for instructing SWDs in the inclusion classroom may differ from their co-teacher's beliefs (N. Carter et al., 2009). Results of Swanson and Bianchini's (2015) case study showed co-teachers' contradicting mindsets of instruction can delude a clear understanding of each facilitator's role and responsibility for planning and instruction.

When a teacher's role is not clear, it is difficult to know their duties in the classroom, which will lead to disorder (Murawski, 2009). Co-teachers need to know their role in planning and instruction; this leads to meaningful collaboration in both the planning and implementation phase of teaching (L. McDonnell, 2014; Trent, 1998). Co-teachers with an ambiguous understanding of roles and responsibilities are unable to appropriately plan for intentional instruction that targets the needs of all students in the inclusion classroom.

Impact of Co-Teacher Collaboration

Collaboration among co-teachers is the bridge to overcoming the barriers of planning and instruction. Without team communication, decision making, and reflection, the co-teachers are no longer a pair, but two individuals who are acting independently. As a result, the classroom environment can confuse students and lead to discord among classroom facilitators (Keeley & Brown, 2014). The current literature contains a focus on two areas of impact when co-teachers collaborate: (a) teaching practices, and (b) student outcomes.

Teaching practices. Studies have demonstrated an overall improvement in teacher practices and a greater understanding of co-teaching roles when collaboration is present. Collaboration can improve the co-teachers' professional relationship to increase the sharing of resources and knowledge to positively affect student learning (Prizeman, 2015). Results of a mixed methods research study by Guise, Habib, Thiessen, and Robbins (2017) demonstrated an improvement in preservice teachers' practices when collaboration occurred between peers and course facilitators. Additionally, teacher engagement in planning and instruction will increase when collaborative co-teaching practices are established (Seo, Brownell, Bishop, & Dingle, 2008). Co-planning can

further improve practices by aiding in teacher reflection to determine roles based on experience and expertise (Murawski & Lochner, 2011). Co-planning can help co-teachers build a relationship of trust that presents greater opportunities for professional growth (Ricci, Persiani, & Williams, 2019). Tomlinson (2016) stated that when co-teachers collaborate, they can identify personal strengths that will lead to the establishment of roles to fill the co-teaching partner's gaps in skills and content knowledge. Without the support of a collaborative co-teacher, a teacher can abandon the use of instructional supports and advantageous assistive technology for students (Moore, 2017).

Richardson, Lingat, Hollis, College, and Pritchard (2020) found professional learning and support contribute to change in a teacher's practice. Change in practice is necessary for the integration of technology into planning and teaching (Condie & Livingston, 2007). The teacher's role, professional supports, and collaboration with peers are variables associated with a teacher's change in practices (Price & Oliver, 2007).

Student outcomes. The focus of collaboration between co-teachers is on improving communication, classroom environment, and content mastery. SWDs face challenges in the co-taught classroom because of miscommunications between general education and special education co-teachers and an increased focus on content mastery over skill-based instruction (Hanover Research, 2012). However, Friend et al. (2010) stated there are improved outcomes, less stigma, and more individualized attention for SWDs in a collaborative co-teaching classroom. Ploessl et al. (2010) noted an engaging learning environment is one in which co-teachers identify their specific roles for planning and instructional delivery. Productive collaboration between general education and special education co-teachers can result in improved instructional practices to target the

deficits and strengths of low-performing students (Crawford, Freeman, Huscroft-D'Angelo, Quebec Fuentes, & Higgins, 2019; Ochsendorf, 2016). Co-teachers engaging in a partnership aids in the instructional decision making surrounding strategies that will influence student achievement (Da Fonte & Barton-Arwood, 2017; Ronfeldt et al., 2015; Scruggs & Mastropieri, 2017).

Teacher Perceptions, Attitudes, and Practices of Co-Teaching

Each teacher has a unique preservice training and teaching background, which influences their discernment of roles in co-teaching. Special education students placed in a co-teaching classroom are required to receive SDI (IDEIA, 2004). The method in which students receive this service and the impact is dependent on the collaborative planning between general and special education co-teachers (Tzivinikou, 2015). This section of the literature review presents (a) the definition of SDI; (b) the roles and responsibilities of planning, implementing, and monitoring; and (c) technology for collaborative planning.

Defining Specially Designed Instruction

According to IDEA 34 CFR §300.39 (b)(3), all SWDs are entitled to SDI, defined as adapting the content, instructional delivery, or methodology to meet the unique, individual needs of an eligible student in the LRE so they can access the curriculum. Delivery of SDI occurs in two parts: instruction and accommodations. Instruction targets a student's deficits and enhances their strengths, whereas accommodations increase access to the curriculum and independence. Teachers in the co-teaching environment should identify clear roles and collaboratively plan to provide SDI appropriately.

Roles and Responsibilities of Co-Teaching

Established roles and shared responsibilities, or ownership of student success, creates an environment of success in the co-teaching model. SWDs in the co-teaching setting are required to receive SDI (DeMartino & Specht, 2018; IDEIA, 2004). SDI is broken down into three core areas of focus: (a) planning, (b) implementing, and (c) monitoring. The literature provides insight into a co-teacher's specific role in SDI and methods to share the equal responsibility of ensuring the success of SWDs.

Successful co-teaching develops from the equal and equitable sharing of duties for planning meaningful instruction, implementing plans, and monitoring student growth (Keeley & Brown, 2014). Magiera et al. (2006) pointed out resistance to co-teaching stems from a misunderstanding of how to share teaching roles in the model. The argument stands that collaboration between co-teachers is a must for clarification of SDI responsibilities in the co-taught classroom (DeMartino & Specht, 2018). Clear roles and responsibilities for the co-teachers helps students understand what support they can expect from each co-teacher (Van Heck, 2017). Campbell and Jeter-Iles (2017) established that co-teachers understand their role and the role of their partner by engaging in dialogue about the curriculum and students' academic needs. Collaboration builds a partnership of trust, understanding, and co-teacher purpose to address student needs (Friend, 2007). A concrete understanding of the co-teaching roles and "sustained collaboration may help teachers raise their aspirational goals for planning powerful instruction" (Callahan, Saye, & Brush, 2016, p. 227).

Clear roles for providing SDI by co-teachers help support students in the co-teaching setting. Co-teachers function in one of two separate areas: content, or general

education, and content adaptation and delivery, or special education (Trent, 1998). The special education co-teacher has the task of ensuring appropriate strategies are in place to support SWDs' mastery of the content provided by the general education co-teacher (DeMartino & Specht, 2018). Employing specific roles help co-teachers identify various challenges in the classroom setting through progress monitoring and reflection (L. McDonnell, 2014). McKenna et al. (2015) further explained co-teachers with established roles can share responsibilities to provide meaningful praise and monitor student data to guide tailored instruction.

Data are an important tool for co-teachers to use in making instructional decisions for SWDs (Espin, Wayman, Deno, McMaster, & de Rooij, 2017; Vaughn & Linan-Thompson, 2003). Data inform and support the level of support and interventions teachers use when providing SDI (L. B. Davis, Fuchs, & Fuchs, 1995; Safer & Fleischman, 2005). Online tools offer an additional means to collect data on students' progress toward meeting learning objectives and IEP development (V. Park & Datnow, 2017; Routh, 2020). The best practice for special education co-teachers is to work with general education co-teachers to use data in planning and making data-driven decisions for instruction (Friend et al., 2010; Wexler, 2021). When data are consistently collected and applied to planning and instruction, co-teachers can make adjustments to teaching (Brownell, Adams, Sindelar, Waldron, & Vanhover, 2006; Brownell et al., 2009). Co-teachers are responsible for developing professional relationships with their co-teachers, students, and stakeholders to share and discuss data (Cramer, 2006).

The target for a co-teaching classroom is for both co-teachers to provide instruction for all students at the appropriate level, resulting in students developing the

skills they need to master the curriculum. However, it has been argued that general education co-teachers do not receive training for planning and implementing SDI or special education services (Stewart, 2005). Another challenge within the model is that special education co-teachers will take on the role of a helper rather than a co-teacher because of their lack of content knowledge (Friend et al., 2010). Therefore, general education and special education co-teachers need to draw on each other's strengths to plan appropriate learning targets and instruction for students based on their individual learning needs (Bauml, 2016; Scruggs & Mastropieri, 2017). Assigned planning roles that draw from the co-teachers' strengths produce aligned learning targets for students (Swanson & Bianchini, 2015).

Technology for Collaborative Planning and Teaching

The literature supports the importance of collaborative planning and teacher development for the co-teaching model. However, several barriers hinder meaningful collaboration among co-teachers. The literature synthesis in this section contains a focus on how teachers use technology for collaboration and teachers' attitudes toward using technology for collaborative planning.

There are a variety of web-based tools that provide an avenue for work efficiency, increased productivity, and the sharing of ideas (Bsharat & Behak, 2021; Charles & Dickens, 2012). Technology can be used to build and maintain working relationships between co-teachers and students (Payne, Tanner, & Hughes, 2020; Rose & Adams, 2014). Teachers who have limited time and busy schedules can use digital communication platforms and schedule tools for meetings (Brendle et al., 2017). Charles and Dickens (2012) provided a discussion of available Web 2.0 tools that provide

privacy, file sharing, and areas for communication. Research has shown the use of Web 2.0 tools for discussion forums encourages participants to build on the ideas of other users (Mahmood, 2018). Soto-Acosta, Popa, and Palacios-Marques (2017) explained Web 2.0 tools offer a low-cost option for collaborative knowledge sharing. Cravens (2014) acknowledged the benefits of an online tool but asserted it is the underlying objectives or needs, not the individual software, leaders should explore. They must identify the requirement before selecting the device. Online tools can facilitate student learning through increased access and engagement (McBrien, Cheng, & Jones, 2009).

A gap exists in the literature surrounding the methods co-teachers adopt for using technology as a collaborative planning tool. There is a discussion of the use of email to share ideas and improve communication between professionals (Blumenfeld, Marx, Soloway, & Krajcik, 1996). Additionally, research has identified positive outcomes for employees in corporations using Web 2.0 tools to support communication and working groups (Iglesias-Pradas, Hernández-García, & Fernández-Cardador, 2017; Soto-Acosta et al., 2017; Raeth, Urbach, Smolnik, Butler, & Königs, 2010). Teachers are using technology in the classroom to encourage collaboration among students (McKinney & Sen, 2016; Nussbaum et al., 2009; Solomon, 2017). Existing technology is available to teachers and students to facilitate group learning and remove communication barriers (Wardlow & Harm, 2015). McKinney and Sen (2016) asserted a digital collaboration space can lack engagement without the appropriate scaffolding and expectation.

It is a common focus in the literature to examine the attitudes of teachers toward employing technology as a collaborative and learning tool. Teachers are comfortable with traditional practices and are hesitant to change their current routines (Harrell & Bynum,

2018). The educator's readiness is a factor for adding technology to current practices (Inan & Lowther, 2010; Lowther, Inan, Ross, & Strahl, 2012; Lowther, Strahl, Inan, & Ross, 2008). Additionally, a teacher's prior knowledge and experience with technology can influence their mindset for using technology as a communication and planning tool (F. Liu et al., 2017). Ertmer and Ottenbreit-Leftwich (2010) asserted that before the integration of technology can take place, professional development must support the teachers' mindset for the purpose and use. S. H. Liu (2011) affirmed professional development and administrative support are factors in creating positive attitudes toward technology integration.

Technology and COVID-19

The use of technology by teachers for instructional purposes has been documented in previous research. First- and second-order barriers influence technology integration in school districts and businesses (Ertmer, 1999). Research on the impact of the COVID-19 pandemic on technology and teacher practices is limited (Tremmel, Myers, Brunow, & Hott, 2020; R. Williams, 2020). In this section, literature is presented related to (a) teachers' experience with technology, and (b) the impact of COVID-19 on teachers' practices in planning and teaching.

Teacher's Experience With Technology

Teachers have varied experiences using technology in practice (Ertmer, 1999; Halili, Razak, & Zainuddin, 2015). Previous research revealed there are first- and second-order barriers to technology integration (An & Reigeluth, 2011; Durff, 2017; Ertmer, 1999). The following sections focus on barriers to technology integration in three areas:

(a) first-order barriers, (b) second-order barriers, and (c) practices for technology integration.

First-order barriers. First-order barriers are external obstacles such as insufficient time, culture, inadequate systems, lack of access to resources, and lack of administrative support (An & Reigeluth, 2011; Ertmer, 1999). A lack of resources or unreliable equipment can affect a teacher's integration of technology (García-Martínez, Tadeu, Montenegro-Rueda, & Fernández-Batanero, 2020; Pittman & Gaines, 2015; Walsh & Farren, 2018). Hur, Shannon, and Wolf (2016) explained teachers can see the value in technology but may lack the confidence to use it in practice. A lack of access to training, or inadequate training, to develop the knowledge and skills of technology prevents teachers from correctly using technology to facilitate learning (Carver, 2016; Tondeur, van Braak, Ertmer, & Ottenbreit-Leftwich, 2017). School district leaders and building administration can provide unique learning opportunities for teachers through professional development or technology specialists (Burggraaf, 2020; Ertmer & Ottenbreit-Leftwich, 2010; Hur et al., 2016). Leaders need to be mindful of the time it takes to learn and integrate new practices (Harrell & Bynum, 2018).

Second-order barriers. Second-order barriers are internal obstacles such as internal beliefs, attitude, comfort, and anxiety toward technology (Ertmer, 1999; Makki, O'Neal, Cotton, & Rikard, 2018). A teacher's attitude or beliefs about technology integration can develop from prior experiences with technology (Tondeur et al., 2017; Vongkulluksn, Xie, & Bowman, 2018). Durff (2017) stated teachers can become overwhelmed and anxious with the integration and expectations of new technology. A teacher's beliefs of technology integration (Makki et al., 2018; Tondeur et al., 2017) and

perception of technical, administrative, and peer support are factors that influence technology use (O'Neal, Gibson, & Cotten, 2017; Vongkulluksn et al., 2018). Even with leadership support, the integration of new technology can be frustrating (Ottenbreit-Leftwich et al., 2020). The lack of human connection can affect teacher and student beliefs of the viability of the technology and create anxiety related to integrating technology into planning and instructional practices (Bsharat & Behak, 2021; Hillier, 2018; Luo, Deng, & Zhang, 2020; Martin, 2020).

Practices for technology integration. Leaders need to have a technology integration plan in place that contains a focus on supporting teachers and soliciting feedback (Hunzicker, 2011; Thoma et al., 2017). A plan that includes teachers' voices will help leaders create a community and culture around technology integration (Heath, 2017; Hunzicker, 2011; McCrae, 2016). Teachers who know there is a plan in place with clear direction and expectations are more comfortable integrating new technology (Burggraaf, 2020; Gülbahar, 2007). Teachers who receive support prior to the implementation and throughout the process will have a more positive experience with integration (Bauml, 2016; Trust & Whalen, 2021).

The Impact of COVID-19 on Teacher Practices in Planning and Teaching

Teaching during a pandemic is a unique and new experience for educators and there is currently limited research on the topic. Prior to the pandemic, most teachers had limited experience planning and teaching in a virtual setting (Trust & Whalen, 2021). The pandemic placed more demands on teachers and has led to increased teacher burnout (Tremmel et al., 2020). Teachers' traditional classroom practices have been difficult to move to a virtual learning setting during COVID-19 (Turchi, Bondar, & Aguilar, 2020).

Teachers have used diverse methods and modalities to support learning and student responses using low- and high-tech opportunities (Brady, Seli, & Rosenthal, 2013; Huang, 2021; Schulz, Cividini-Motta, Blair, & MacNaul, 2020).

Chapter Summary

Education for SWDs has become a school system emphasis in recent years due to the focused legislation and an improved understanding of SWDs' needs (Farris, 2011; Harrison et al., 2019; Stone, 2019; Yell, 1998, 2019). Teachers are required to provide intentional instruction to SWDs in the form of SDI (DeMartino & Specht, 2018; IDEIA, 2004). Providing this level of instruction requires teachers to collaborate, share ideas, and teach one another (Mackey, 2014; Neutzling et al., 2019; Obiakor et al., 2012; Ploessl et al., 2010). Through social interactions, teachers have the opportunity to improve their practice and positively affect student achievement (Hunter, 2015; Pritchard & Woollard, 2010). Co-teaching is one model implemented to ensure SWDs are receiving FAPE in the LRE (Brown et al., 2013; Stone, 2019; Yell, 2019). In this model, SWDs learn alongside their peers in a classroom environment led by both general education and special education co-teachers. For this model to be successful, the co-teachers will demonstrate a level of collaboration to include planning, implementing, and monitoring of instruction. First- and second-order barriers present challenges to teacher collaboration (Guise et al., 2017; Ideber et al., 1998; L. McDonnell, 2014). Though obstacles are present, the literature provides evidence of impactful practices when teachers collaborate (Brown et al., 2013; Da Fonte & Barton-Arwood, 2017; Ideber et al., 1998; Tremblay, 2013).

Teachers in the co-teaching environment use SDI to develop SWDs' skills and curriculum knowledge. It is the responsibility of both co-teachers to foster student growth

(Siry, 2011). Each co-teacher has a unique role centered on their content or expertise (Brendle et al., 2017; Ploessl et al., 2010; Romm, 2014). School leaders can support teacher collaboration with a digital platform. However, it is essential to cultivate a teacher's growth mindset in the use of technology with administrative supports and professional development (Charles & Dickens, 2012; Wardlow & Harm, 2015).

CHAPTER 3

METHOD

I designed this study to address the problem of the lack of collaboration among co-teachers that leads to an inability to provide the appropriate instruction to SWDs in the co-teaching setting at three Atlanta area schools. The lack of collaborative planning among these teachers affects their preparedness and practices in the classroom. The purpose of this action research was to evaluate the impact of using MS Teams as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use. The research questions that guided this study were: (a) How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting? (b) How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting? (c) What are general and special education co-teachers' perceptions toward using the online planning tool?

Research Design

Action research is a continuous cycle used to identify a problem and produce a solution through action, observation, and reflection (Kemmis & Wilkinson, 2008; Manfra & Bullock, 2014). This continuous cycle enables a researcher to develop a plan, collect

data, reflect, and repeat to recognize a problem and suggest a change. A proposed shift to reality in either education or society is the purpose of action research (Kemmis & Wilkinson, 2008; Manfra & Bullock, 2014; Reeves, Herrington, & Oliver, 2005). Action research in education is conducted in an attempt to solve a problem and bring about a positive change.

Action research is focused and deliberate. It can be accomplished by a single researcher or teachers collaboratively working together to solve a specific problem in education (Kemmis & Wilkinson, 2008; Mertler, 2017). This collaboration provides the advantage of multiple perspectives and helps keep the research narrow. After the researcher has identified the theme of the problem, they are then able to recommend or continue further research (Kemmis & Wilkinson, 2008; Manfra & Bullock, 2014; Mertler, 2017). This continuous cycle leads to foundational and effective vetted results. Action research is about solving a real problem in a real environment (Kemmis & Wilkinson, 2008; Mertler, 2017).

The action research approach involves the use of qualitative and quantitative data instruments to collect data for answering the research questions. The evaluation of the teaching environment includes collecting data, identifying the problem, and providing a recommendation for action. As the researcher, I worked with stakeholders and educators to improve practices in the educational environment. The continuous cycle of action research supported the purpose of the study, which was to evaluate a teaching environment to lead to enhanced methods and reality for the participants (Manfra & Bullock, 2014; Mertler, 2017; Reeves et al., 2005).

The model I chose for this research was the convergent parallel mixed methods design. Creswell (2104) defined mixed methods as an "approach to an inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks" (p. 32). Using the mixed methods design enables a researcher to draw from both quantitative and qualitative data and mitigates the limitations of both (Creswell, 2014; Johnson, Onwuegbuzie, & Turner, 2007; Newman & Ridenour, 1998; Tashakkori & Creswell, 2007a). The mixed methods design is an accepted emerging method in the research community (Creswell, 2014; Tashakkori & Creswell, 2007b; Teddlie & Tashakkori, 2006). Mixed methods researchers not only draw data from both quantitative and qualitative perspectives, they use the tools of both to provide a complete understanding of the research problem (Creswell, 2014; Johnson et al., 2007; Tashakkori & Creswell, 2007a; Tashakkori & Teddlie, 2010).

The use of a convergent parallel mixed methods design for this research benefited the study by enabling me to collect both quantitative and qualitative elements in the same phase of the research, weigh the methods equally, conduct analysis of the two methods individually, and interpret the results together (Creswell, 2014). The quantitative tools I used for collecting data were closed-ended question surveys and checklist observations. The qualitative tool I used for collecting data was individual interviews with open-ended questions. The merging of data from these tools enabled me to conduct a side-by-side comparison to identify emerging themes within the research environment (Creswell, 2014). The side-by-side comparison of quantitative and qualitative data shortened the time I needed to dedicate to the analysis (Creswell, 2014). Data are collected and

analyzed in a condensed timeline compared to other sequential designs within mixed methods.

Setting and Participants

Setting

I conducted this action research study at two Atlanta area public high schools and one Atlanta area public middle school, which are among the 15 high schools and 19 middle schools in the school district. The schools are in the northeast area of the county, which is organized by zones that each have their own zone superintendent. The following statistical demographics for the schools are from the Governor's Office of Student Achievement, Georgia Department of Education. For HS1, in the 2018–2019 school year, a total of 2,142 students were enrolled at the school. Approximately 172 of the students had a disability and an IEP. For HS2, in the 2018–2019 school year, a total of 1,930 students were enrolled at the school. Approximately 212 of the students had a disability and an IEP. For MS1, in the 2018–2019 school year, a total of 1,032 students were enrolled at the school. Approximately 134 of the students had a disability and an IEP.

All three schools use a 50-minute, six-period schedule. Instructional classes occur online and consist of synchronous and asynchronous instruction. Teachers typically teach five periods and use the sixth period as a planning period. Course level offerings at the schools include the International Baccalaureate Diploma Program (IB), advanced placement (AP), honors, on-level, on-level support, and special education outside of general education. My focus in this convergent mixed methods study was on the teachers working in the on-level support classes as part of the co-teaching environment. The co-teaching environment is an academic course (literature, science, math, and social studies)

that serves special education students with documented disabilities, with an IEP, in the LRE general education setting (Lamport et al., 2012; Rivera, 2017). The inclusion model used within the high schools and middle school for on-level support courses is co-teaching.

Co-teaching involves two teachers in a single classroom, one being a content teacher and the other a special education teacher (Murawski, 2009; Rimpola, 2014). L. Cook and Friend (1995) established the six co-teaching models for teachers. In each of these models, the general and special education co-teachers serve a specific role with unique responsibilities. However, both teachers have a shared responsibility for every student's success (Friend, 2015; Georgia Department of Education, 2019b). The general and special education co-teachers work as a team to provide an equitable learning environment that meets the academic needs of all students while providing necessary accommodations and SDI to SWDs (Carty & Farrell, 2018; Friend et al., 2010; Pratt, Imbody, Wolf, & Patterson, 2017).

Participants

I used a purposeful sample based on the participant criteria (Creswell, 2014). Participants in the study were not randomly paired but observed as existing co-teaching pairs. Currently, 26 out of the 29 special education teachers for these schools co-teach with a general education teacher. Additionally, there are more than 50 general education teachers co-teaching with special education teachers. The participants for the study were from the schools discussed in the setting section above. Participants consisted of three co-teaching pairs, three general education teachers and three special education teachers. I chose the participants from a pool of volunteers for the study as co-teaching pairs.

Criteria for participation were as follows: the teacher participants needed to willingly participate, the teacher participants needed to have a Georgia teaching certificate, the teacher participants needed to have taught in a co-teaching classroom for one semester within the last calendar school year, and the co-teaching pairs needed to teach at least one period together.

Participants had experience using word processing tools and platforms for file uploading and sharing, as well as with using email to discuss lesson plans. Participants had varied experience using MS Teams as a file sharing and collaborative resource but not for communication, collaborative planning, or online teaching. The only participant who had extended experience and practice with MS Teams features was Ruth because she was part of the district's technology innovation team. The six participants in the study were paired as co-teachers, with half of the participants teaching general education and half teaching special education. Table 3.1 displays the co-teaching pairs and their demographic characteristics.

Table 3.1 *Participants*

Participant pseudonyms (CoT pair)	Years with CoT	Role	Age	Gender	Years teaching	Years co-teaching
Wally (A)	2	SPED	33	Male	5	5
Ron (A)	2	Gen Ed	60	Male	25	6
Echo (B)	.5	Gen Ed	43	Female	16	3
Elena (B)	.5	SPED	45	Female	6	2
Ruth (C)	2	Gen Ed	52	Female	27.5	2
Olivia (C)	2	SPED	48	Female	21	8

Note. SPED = special education teacher, Gen Ed = general education teacher, CoT = co-teaching.

Table 3.1 shows 33.33% of the sample was male and 66.33% was female. Teachers were, on average, 46.83 years of age (*SD* = 8.27) and had a mean of 16.75 years of teaching experience (*SD* = 8.72). With regard to co-teaching experience, the sample had an average of 4.33 years of experience (*SD* = 2.21) and had spent an average of 1.50 years (*SD* = .71) in their current co-teaching pairs.

Historically, the participants' standard practice for planning was to meet once a week for 30 minutes with minimal oversight from leadership. General and special education teachers do not have enough time during these meetings to plan lessons. Additionally, communication about lessons occurs at the beginning of class during a warm-up or attendance. Participants have used the phrase "shooting from the hip" to describe their before-class planning and teaching practices. The lack of communication has created friction in the co-teacher relationships and leaves both members feeling unprepared for the lesson. Additionally, the lack of collaboration and planning leaves them unprepared to provide SDI and accommodations to SWDs.

Innovation

The innovation of integrating an online planning tool to influence the planning and implementation practices of co-teachers was the focus of my action research. The innovation was 10 weeks. The first 2 weeks were designed for training with the participants. Participants received two 30-minute sessions with the researcher to discuss the roles and responsibilities of co-teaching and the use of MS Teams for planning and online teaching. The following 8 weeks were designed for data collection. In the first 6 weeks, the participants used MS Teams while the researcher collected data through

checklist observations of online planning. In the final 2 weeks, the participants completed a survey and semi-structured interviews with the researcher.

Co-teachers face several challenges to providing appropriate instruction to students in the co-teaching classroom. Co-teachers consider the course curriculum, students' level of knowledge, differentiating instruction, and SDI for SWDs. Teachers lack the time, schedule, and resources to plan for the required instruction and accommodations to meet the varying levels of student needs in a co-teaching class. An online planning tool can provide a common space for co-teachers to collaborate, share, and plan for instruction without being constrained by traditional face-to-face planning meetings.

Additionally, the COVID-19 pandemic influenced school district leaders to move all instruction and planning to an online environment. The school district leaders chose MS Teams as the platform for online planning and online instruction. MS Teams provides opportunities for meeting communication and collaboration. MS Teams provides multiple functions for peers to use to communicate and share ideas. Each co-teacher had an MS Teams account that allowed them access to MS Teams, Outlook, and all Microsoft applications. Co-teachers used their specific MS Teams accounts as the entry point for planning and collaboration. The functions co-teachers used included file sharing, calendar, chat, channels, breakout groups, and video conferencing. Co-teachers shared files and had the ability to make comments, additions, and changes based on their specific roles and responsibilities. These features enabled co-teachers to communicate and plan synchronously or asynchronously based on their individual availability and schedule.

Based on the social constructivism theory, teachers learn from their social environment. This online collaborative tool provides a forum for co-teacher communication and offers the opportunity to learn from each other's unique roles. The co-teachers can improve in their professional responsibilities through discussion, peer support, and feedback facilitated via MS Teams.

The increased communication and the relationship among co-teaching pairs can help support their pedagogy and improve lesson planning to address the academic deficits and strengths of students (Prizeman, 2015). A tailored lesson plan can help SWDs improve in the cognitive and academic areas highlighted within their IEP goals. Additionally, planning is used to outline co-teachers' specific responsibilities during the lesson, which can lead to more time focused on the students, improved differentiation, and improved student access to a greater range of skills (Murawski & Lochner, 2011).

At the beginning of the research period, I selected three co-teaching pairs based on a specific criteria discussed in the settings and participants section. Co-teaching pairs are one general education teacher and one special education teacher who teach together in a general education classroom setting.

Pre-Innovation

The literature shows teachers need clear expectations to perform planning and implementation roles in the co-teaching environment (W. Carter, 2007; Josephson, 2014; Mackey, 2014; Shogren, McCart, Lyon, & Sailor, 2015). Therefore, I provided participants a 2-week pre-innovation training that included two sessions to present and model the use of MS Teams and its features for planning and online teaching. Additionally, the training included three of the district preferred co-teaching models and

the roles and responsibilities of co-teachers in planning and implementation. Also, the sessions covered how to use MS Teams as an online planning tool (Table 3.2).

Table 3.2 *Two-Week Pre-Innovation Outline*

Training	Purpose
Roles and responsibilities for planning and teaching in online co-teaching (30 minutes)	Co-teachers were able to identify the three district preferred co-teaching models. Co-teachers were able to describe and apply the roles and responsibilities for planning for a co-teaching class and SWDs.
MS Teams (30 minutes)	Co-teachers were able to demonstrate the features and functionalities of MS Teams.

Note. Pre-innovation began 2 weeks prior to week one of data collection.

I provided the pre-innovation training to establish and teach the roles and responsibilities expectations of district leaders. The school district leaders outlined the roles and responsibilities of general education and special education teachers as a co-teaching pair in the pre-planning modules at the beginning of the 2020–2021 school year. Roles are outlined as general and special education co-teachers in planning and implementing. Each role has specific tasks referenced as responsibilities. Both teachers have a shared responsibility for all students, whether they do or do not have a diagnosed disability or IEP. However, because the district had not published expectations regarding roles and responsibilities at the time of the study, the participants and I used the information from the district virtual modules. The training also included an introduction to and modeling of MS Teams features for planning and online teaching. The pre-innovation training was in addition to online teaching and co-teaching modules created by district leaders. General and special education co-teachers completed nine district-created modules before the beginning of the 2020–2021 school year. The modules and their descriptions can be found in Table 3.3.

Table 3.3 *District Pre-Planning Modules for Online Teaching*

Module	Description
URL Module 1–Communication Protocols	Designed to give teachers strategies and tips for effectively communicating with students and parents during Universal Remote Learning.
URL Module 2–Building Culture and Collaboration	Designed to assist teachers in establishing rules, routines, and classroom norms befitting for the virtual setting. Teachers learned strategies to create a classroom culture of respectful dialogue and inform students of how to participate in a classroom community.
URL Module 3–Effective Synchronous/Asynchronous Learning Through Selected Platforms	Teachers learned best practices for effective synchronous and asynchronous learning and teaching through approved the school district's application. Teachers learned how to incorporate district digital content and other available tools and resources seamlessly into lessons to lead to student engagement and standards mastery.
URL Module 4–Planning for Synchronous and Asynchronous Lessons Using Standards Mastery Framework	Gain access to a framework for planning powerful synchronous and asynchronous lessons. Learn the essential components of online lesson. Awareness of the instructional design considerations when planning for online learning and how to use district Standards Mastery Framework and district learning recovery documents to plan instructional units.
URL Module 5–Assessment and Feedback in MS Teams	This session provided best practices for assessment during remote learning, guidance for providing effective feedback, and suggestions for integrating assessments into MS Teams.
URL Module 8–Student Engagement in Remote World	Learn strategies for engaging students in synchronous and asynchronous learning. Explore active vs. passive learning and explore virtual tools for engagement.
URL Module 9–Personalization of Learning through MS Teams	This module supported teachers in using data to personalize learning for students. Teachers explored online tools to create an environment for differentiation.

Module	Description
URL Module 10–Specialized Instruction in a Synchronous/Asynchronous World for IRR Special Education Teachers	Teachers learned how to create a consistent schedule and routine for addressing and progress monitoring IEP goals and objectives. A sample schedule that included time for addressing the individual needs of students was shared.
URL Module 11–Co-teaching Virtually	During this session, general and special education co-teachers learned methods for effectively co-teaching in a remote learning environment. Teachers learned the importance of co-planning, how to use two teachers during synchronous and asynchronous learning, and how to ensure the individual needs of students are met virtually.

Note. URL = Universal Remote Learning. Pre-innovation began 2 weeks prior to week one.

I also offered supportive coaching feedback to co-teachers during the innovation with a focus on the information provided in the pre-innovation training and the technical skills of using MS Teams. The feedback supported the use of MS Teams by providing a common understanding of its design, features, and functionalities. I monitored the communication, collaboration, and use of MS Teams by the co-teaching pairs and providing feedback in the MS Teams. This mostly consisted of me acknowledging participants' use of MS Teams and providing minor feedback through the chat feature in MS Teams. For example, I would reinforce the participants' use of MS Teams by giving a comment a thumbs up or specifically recognizing a correct use of a MS Teams feature for collaboration. However, most of the challenges participants encountered with the use of MS Teams were addressed by their co-teacher partners. After each of my planned observations of the online teaching, I provided feedback to the co-teaching pairs in MS Teams. Co-teachers could contact me to meet through MS Teams during the weeks to address any questions or concerns.

MS Team Integration

After the pre-intervention training, co-teachers used MS Teams for planning and online teaching for a period of 6 weeks. I collected data as the teachers used MS Teams as well as after the 6-week period to determine overall impact and perceptions. I designed the innovation to be used in one class that each co-teaching pair taught together. The pairs used MS Teams to collaboratively plan and implement their daily lesson plans based on the specific roles and responsibilities of their positions. It is important for co-teachers to collaboratively plan for lessons to outline the task of each teacher in the lesson and ensure SDI and accommodations are included in the plan (Abbye-Taylor, 2013; Friend, 2015; Georgia Department of Education, 2019b; Hurd & Weilbacher, 2017). Planning weeks were considered 5 days, with each day being identified by a number (i.e., Day 1, Day 2, and so on). This practice gave teachers the autonomy to choose their planning days and avoid the rigid structure of a Monday through Friday workweek. Each day of the week had specific milestones for the teachers to accomplish based on their roles and responsibilities of lesson planning. Teachers demonstrated their roles and responsibilities in MS Teams through video chat, discussion board, resource sharing, and comments in the documents. I provided coaching support to the co-teachers by using the platform to fulfill their roles and responsibilities.

Week one of the innovation was for the planning of week two's instruction. During week two, each co-teaching pair implemented the plan from week one. This process continued until week six. The schedule for the study is outlined in Table 3.4.

Table 3.4 *Study Outline*

Week	Purpose
Two Week Pre-innovation	Training on co-teacher roles and responsibility Training for MS Teams
One	Planning week two
Two	Planning week three and implementing the plan from week one
Three	Planning week four and implementing the plan from week two
Four	Planning week five and implementing the plan from week three
Five	Planning week six and implementing the plan from week four
Six	Planning week seven and implementing the plan from week five
Seven and eight	Survey and interviews

Note. Pre-innovation began 2 weeks prior to week one.

During planning weeks, each co-teaching pair used MS Teams to accomplish the requirements for completing the lesson plan template (Appendix A). Planning roles and responsibilities are outlined in Table 3.5. The following is a discussion of the district's co-teaching planning and instruction expectations for MS Teams based on the district's training modules. On day one of the week, the general education teacher uploaded a pacing chart for next week's instruction that outlined each day's standard and learning targets aligned with the standard. On day two, the co-teaching pair shared implied skills students would need as well as potential misconceptions for students and teachers based on the learning targets. The special education co-teacher used the class learning plan (Appendix B) to make instructional decisions for SWDs. A class learning plan is a tool that highlights SWDs' strengths, deficits, and learning objectives based on their IEP. On day three, the co-teaching pair shared suggested activities, materials, and lesson structure. On day four, the co-teaching pair made decisions on day three's suggestions and discussions. Additionally, the special education teacher aligned the SDI strategies and accommodations based on the team's decisions. On day five, both co-teachers chose a co-

teaching model and finalized the plan for the next week's instructional lessons. During the planning week, I observed the co-teachers' communication within MS Teams to determine the impact of the online planning tool on the co-teachers' practices of their roles and responsibilities. I used the observation data to identify areas in which I needed to provide coaching on using the tool to fulfill their roles and responsibilities.

Table 3.5 *Weekly Planning Requirements*

Day	Role and responsibility
I -7 days	GED: Content planning–provide upcoming week pacing guide, standards, and learning targets
I -6 days	GED: Standards/learning targets–identify student skills for the lesson based on standards and learning targets. Identify potential student misconceptions for lesson
	SPED: SWDs academic needs–identify what content area skills align with SWDs strengths and deficits using the class learning plan
I -5 days	GED: Differentiation–suggest and discuss activities, materials, lesson structure in order to meet students' needs
	SPED: SDI and accommodations–share SDI strategies and accommodations for activities aligned with students' needs
	GED/SPED: Collaboratively design pre-teach, reteach, and enrichment activities
I -4 days	GED: Differentiation–finalize the selection of activities for instruction
	SPED: SDI and accommodations–finalize SDI strategies and accommodations to bridge the gap to meet students' needs
I -3 days	GED/SPED: Select appropriate co-teaching models for each lesson
	GED/SPED: Submit finalized plan

Note. GED represents the general education teacher. SPED represents the special education teacher. *I* represents the day of implementation.

During instruction weeks, each co-teaching pair implemented daily plans. The co-teaching pairs used MS Teams to guide their instructional lessons. The co-teaching pairs used the collaborative features during lessons to make necessary adjustments to the plan.

Data Collection Methods

I used three methods of data collection to explore the research questions. The data collection instruments best suited for this mixed methods study were a survey, observations (participant), and semi-structured interviews. Table 3.6 presents the methods used to address the research questions.

Table 3.6 *Research Question and Data Source*

Research question	Data collection methods
RQ1: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for planning during a pandemic in the online co-teaching setting?	Observation Interviews
RQ2: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for online teaching during a pandemic in the co-teaching setting?	Interviews
RQ3: What are general and special education co-teachers' perceptions toward using the online planning tool?	Interviews Survey

Survey

The purpose of the survey was to investigate the perceptions of co-teachers at three Atlanta area schools regarding the use of an online planning tool to prepare lessons together. Surveys are an appropriate tool to acquire information from participants situationally (Mertens, 2014; Mertler, 2017). The survey questions aligned with the objective of Research Question 3.

The survey tool I used in this study was the Teacher Perception of an Online Planning Tool Survey (Appendix C). The tool is based on the Measurement Scale for Perceived Usefulness and Perceived Ease of Use developed and validated by F. D. Davis (1989). The scale was based on the constructs of the technology acceptance model

(TAM; F. D. Davis, 1989; Weng, Yang, Ho, & Su, 2018), which is used to assess an individual's acceptance or rejection of technology based on perceptions of ease of use and usefulness of the technology (Mohd Latip, Omar, Jing, & Shahrom, 2017; S. Y. Park, 2009). F. D. Davis (1989) explained that usefulness and ease of use influence perceptions toward technology. All items on F. D. Davis's survey tool had a reliability score above .50, indicating good reliability (Doll, Hendrickson, & Deng, 1998). The survey included two subscales: (a) perceived usefulness for co-planning, and (b) ease of use.

The surveys were used for triangulation with the other qualitative data of the mixed methods design (Mertens, 2014; Yin, 2017). I administered the surveys to the participants during the seventh week of the study. Participants completed the surveys digitally using a Microsoft Form. I collected names and demographics for sample description purposes.

I used the data from the surveys to determine teachers' perceptions toward the use of MS Teams in collaborative planning. A Likert scale was applied to each statement to determine the level of response with a 7-point scale with the following anchors: 1 (*Extremely Unlikely*), 2 (*Quite Unlikely*), 3 (*Slightly Unlikely*), 4 (*Neither*), 5 (*Slightly Likely*), 6 (*Quite Likely*), and 7 (*Extremely Likely*). All six participants in the study completed the survey.

F. D. Davis's (1989) survey statements and scales to measure perceived usefulness and ease of use were developed and refined in a multi-step process. F. D. Davis began with 14 candidate statements and paired them down to the final scale (F. D. Davis, Bagozzi, & Warshaw, 1989). "Scales were found to have strong psychometric properties and to exhibit significant empirical relationships with self-reported measures

of usage behavior" (F. D. Davis, 1989, p. 333). The survey has been highly cited and has received empirical support for assessing perceptions and acceptance of a technology tool (Jeong & Kim, 2017). The modifications I made to the survey included the name of the tool, changes to terms in the questions to match this study, and the addition of a question to address co-teachers planning together using an online tool (Appendix C). For example, the statement "Using <application name> in my job would increase my productivity" was modified to state "Using the online planning tool in my job increased my planning production."

Observation Checklist

Quantitative observations helped me determine the planning practices of co-teachers in MS Teams (Creswell, 2014). I used an observation checklist for the quantitative observations (Mertler, 2017). I followed the observation protocol using a checklist for observations during planning in MS Teams for online co-teaching (Appendix D).

Observations took place in the co-teachers' shared MS Teams environment. I conducted observations in MS Teams for each co-teaching pair once a week starting in week one and ending in week six. Additionally, I asked co-teachers to include me in any video conferencing. During these observations, I used a checklist to record the co-teachers' practices of daily requirements for planning. This included looking for the use of the class learning plan, discussion of SDI, discussion of the co-teaching model, planning of each teacher's responsibilities for the lesson, and a complete lesson plan.

Semi-Structured Interview

The interview is an important part of the qualitative method to collect data on the experiences, perspectives, and opinions of participants (Creswell, 2014; Mertler, 2017). Interviews gave me the ability to directly collect these opinions and identify whether there were any commonalities among the participants (Groth, 2017; Mertens, 2014).

The interviews were semi-structured in nature using an interview protocol (Appendix E). I interviewed each co-teacher. Semi-structured interviews allowed for a variety of questioning and open dialogue, such as probing questions (Stanley, 2013). Interviews lasted approximately 45–60 minutes and took place during the participants' planning period at the school. Each interview was video and audio recorded to help identify nonverbal and verbal responses that may have been missed during the interview. Interviewees may have felt uncomfortable with this recording, so I ensured them that the information would only be used for research purposes and a pseudonym would be used when transcribed (Mertler, 2017). The questions aligned with the research questions as well as the theoretical framework (Table 3.7).

Table 3.7 *Research Question and Interview Question Alignment*

Research question	Interview question
RQ1: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for planning during a pandemic in the online co-teaching setting?	1. How did COVID-19 change your responsibilities in planning? 2. How would you define your responsibilities for planning? 3. Did using the online planning tool change your definition or view of your responsibilities in planning? 4. How did it change? 5. Can you tell me a time when your planning practices were impacted by using the online planning tool?

Research question	Interview question
	6. Were there any changes in your execution of responsibilities in planning when you used the online planning tool?
	7. Can you tell me a time when the online planning tool influenced your understanding of your responsibilities in planning?
	8. Were there any changes in your practices of your responsibilities for planning once you started using the online planning tool?
	9. What overall changes have you noticed in your planning practices since using the online planning tool?
RQ2: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for online teaching during a pandemic in the co-teaching setting?	10. How did COVID-19 change your responsibilities in implementing a co-teaching plan?
	11. How would you define your responsibilities for implementing?
	12. Did using the online planning tool change your definition or view of your responsibilities in online co-teaching?
	13. How did it change?
	14. Can you tell me a time when your online co-teaching practices were impacted by using the online planning tool?
	15. Were there any changes in your execution of responsibilities in online co-teaching when you used the online planning tool?
	16. Can you tell me a time when the online planning tool influenced your understanding of your responsibilities in online co-teaching?
	17. Were there any changes in your practices of your responsibilities for online co-teaching once you started using the online planning tool?
	18. What overall changes have you noticed in your co-teaching practices since using the online planning tool?
RQ3: What are general and special education co-teachers' perceptions toward using the online planning tool?	19. Have you ever used an online tool for planning and instruction before?
	20. What did you like most about using the online planning tool?

Research question	Interview question
	21. What did you like least about using the online planning tool?
	22. Did your communication and collaboration with your co-teacher change during the pandemic?
	23. How does the use of the online planning tool impact your communication and collaboration with your co-teacher?
	24. Tell me about challenges you had using the online planning tool.
	25. Tell me about successes you had using the online planning tool.
	26. What benefits have you experienced in using the online planning tool?
	27. Will you continue using the online planning tool for planning and instruction? Explain why.
	28. Would you suggest using the online planning tool to colleagues? Explain why.
	29. What would you like to see change or stay the same with practices using the online planning tool?

Data Analysis

I analyzed and interpreted the qualitative and quantitative data simultaneously to answer the research questions. Mertler (2017) explained this triangulation mixed methods design involves an informal comparison of data to answer a research question. Instruments for data collection included a survey, checklist observations, and individual semi-structured interviews. Table 3.8 presents the research questions with the aligned methods of data collection and analysis.

Table 3.8 *Research Question and Data Analysis*

Research question	Data collection methods	Data analysis methods
RQ1: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for planning during a pandemic in the online co-teaching setting?	Observation checklist Individual interview	Descriptive statistics Inductive analysis
RQ2: How does the use of an online planning tool affect the practices of general and special education co-teachers' responsibilities for online teaching during a pandemic in the co-teaching setting?	Individual interview	Inductive analysis
RQ3: What are general and special education co-teachers' perceptions toward using the online planning tool?	Survey Individual interview	Descriptive statistics Inductive analysis

Quantitative Data Analysis

I collected quantitative data using a survey and an observation checklist and analyzed these data using descriptive statistics (Creswell, 2014; Mertler, 2017). Descriptive statistics were the most effective for providing a numerical value to the attitudes and perceptions of the participants based on the small sample size (Buss & Zambo, 2014; Mertler, 2017). I entered the collected survey and observation checklist data into Microsoft Excel and the computer software program JASP. I used this software to analyze the measures of central tendency and dispersion. I used scores from the survey data to identify participants' acceptance of the online planning tool based on usefulness and ease of use. I used scores from the observation checklist data to identify the impact of MS Teams on participants' practices of responsibilities for planning.

Qualitative Data Analysis

I collected qualitative data using semi-structured individual interviews. Like the quantitative data analysis, I used inductive analysis of systematically generating theory through empirical evidence to identify patterns of the data collected. The phases of analysis for the qualitative data included (a) the organization and reading of the transcripts, recorded notes, and memos; (b) group data using a coding scheme; (c) merging similar codes to develop categories; (d) creating themes; (e) relating themes; and (f) constructing a narrative and linking themes to findings (Bernard, Wutich, & Ryan, 2017; Creswell, 2017). I used visual data to supplement the discussion of concepts and alignment (Creswell, 2017).

I organized and labeled the transcripts of the individual interviews using a numerical coding system to protect the participants. I used the following techniques to identify themes in the transcripts: (a) repetitions, (b) indigenous typologies, and (c) similarities and differences (Bernard et al., 2017).

Using the same processes as mentioned before, I compared and analyzed the themes from the interviews to identify commonalties that addressed the research questions. A table with assertions and a descriptive narrative is included in Chapter 4.

Procedures and Timeline

The procedures for this research occurred in three phases: participant identification and pre-innovation training, innovation and data collection, and data analysis. Each phase is described in detail below. Table 3.9 provides a detailed timeline of the procedures.

Table 3.9 *Procedure Timeline*

Phase and part	Expectations	Time frame
Phase 1: Participant identification and pre-innovation training	Identify participant based on criteria and co-teaching schedule	Two weeks
	Contact participants, explain the research, and explain confidentiality	
	Gain consent from participants	
	Training: Roles and responsibilities for planning and teaching online	
	Training: Online planning tool	
Phase 2: Innovation and data collection	Observation of participant roles and responsibilities in online planning tool (once per week)	10 weeks
	Teacher perception survey (week seven)	
	Individual interviews	
	(weeks seven and eight)	
	Limited coaching support for participants on pre-innovation information	
Phase 3: Data analysis	Data analysis of observations, individual interviews using inductive analysis	11 weeks
	Analysis of teacher perspective survey and checklist observations inductive analysis and descriptive statistics	

Phase 1: Participant Identification and Pre-Innovation Training

I began the process to identify participants in October of the Fall 2020 semester. Using the selection criteria previously discussed, I selected participants from the pool of co-teaching pairs at three Atlanta area schools. I notified the selected participants via email. Once they agreed to participate, I requested their consent to participate in the study by providing a Microsoft Form. Participants had 1 week to complete the Microsoft Form.

Next, the selected participants engaged in a 2-week pre-innovation training that included two 30-minute learning sessions. I led the training through explicit instruction of co-teaching roles and responsibilities for planning and implementation. The sessions also

included training on using MS Teams for co-teaching roles and responsibilities. Additionally, during this phase, I addressed any concerns or questions about the roles and responsibilities and the use of MS Teams.

Phase 2: Innovation and Data Collection

The time frame for Phase 2 was 8 weeks. The first 6 weeks were for teachers using MS Teams and the final 2 weeks were to finish surveys and interviews. During this phase of data collection, I provided limited coaching to the participants on their roles and responsibilities and technical use of MS Teams. The coaching was limited to reviewing the information provided during the pre-innovation training.

Observations of the participants took place in MS Teams. The planning observations took place once a week for all 6 weeks of the innovation. I provided a survey to participants to measure their perceptions of using MS Teams for collaboration in a co-teaching setting at the beginning of week six of the innovation via Microsoft Forms. The participants had 2 weeks to complete and submit the survey.

I conducted semi-structured individual interviews with all participants using the MS Teams platform. The interviews took place after the innovation, during weeks seven and eight, and lasted 45–60 minutes. During the interviews, I audio recorded, video recorded, and took notes for accurate record keeping. I provided transcriptions of the audio recordings to the participants for a member check to ensure accuracy.

Phase 3: Data Analysis

The data analysis of the MS Teams planning observations, the individual interviews, and the teacher survey took place in the weeks after the end of the innovation. Analysis of the observations and the individual interviews began after they were

completed. I used the time after the data were collected to finalize the data analysis and prepare the results.

After the individual interviews were complete, I transcribed the recordings and provided the transcriptions to participants for a member check. The analysis process for the individual semi-structured interview notes and transcripts included a constant comparative process to develop themes. I used inductive analysis and descriptive statistics to record the findings from the analysis. I used Microsoft Excel and JASP software to provide descriptive data.

I analyzed the planning observation checklist and responses to the teacher survey once they were submitted. Descriptive statistics presented the data from the participants' perceptions of using a collaboration tool.

Rigor and Trustworthiness

Rigor is the strength of the research design and how well the study addresses the research questions (Mertler, 2017). In action research, rigor is an important step to ensure the bias of the researcher is not present in the process and results. (Mertler, 2017; Shenton, 2004). Furthermore, trustworthiness ensures multiple sources are used to verify the facts of the study and avoid biases (Mertler, 2017). To ensure rigor and trustworthiness in this mixed methods study, I used the following methods: (a) member checking; (b) triangulation; (c) audit trail; (d) peer debriefing; and (e) thick, rich descriptions.

Member Checks

Verification of the data by participants is essential to ensure the accuracy of the interpretation of the collected data (Creswell, 2017; Shenton, 2004). During this process,

members review the data collected from their participation. The process enables the participants to verify the interpretation of the information is accurate and provide validity to the qualitative method (Creswell, 2014; Koelsch, 2013; Shenton, 2004). Member checks were performed on the interpretation of the interview data. Participants received a word processor transcript of the interview via email to review the accuracy of the transcribed information and interpretation. Participants had an opportunity to comment on the document for me to review and adjust as needed. Participants did not check the final findings of the study due to the time constraints of the school year and their work schedules.

Triangulation

Triangulation, or using multiple forms of data, ensures the findings are meaningful, credible, and accurate (Manfra & Bullock, 2014). The use of triangulation in a mixed methods design combines data from a varied collection instrument and sources to equally employ the strength of each (Mertler, 2017; Shenton, 2004). I used the data collection methods of surveys, observations, and semi-structured interviews to address the research questions. Overlapping of the points of the collection clarified my interpretation and understanding of what was seen or heard. Additionally, I compared the practices and perceptions of the participants to provide a complete picture of the data.

Audit Trail

The audit trail represents the step-by-step process the researcher followed during the study (Buss & Zambo, 2014; Creswell, 2017; Shenton, 2004). This provides a detailed account of what happened during the study, interpretations of the data, and

decisions made (Carcary, 2009). During the study, I maintained a journal to record thoughts, notes, procedures, and the development of codes and categories.

Peer Debriefing

Peer debriefing is the act of professionals reviewing and critiquing a study to establish credibility and trustworthiness (Creswell, 2014; Kawulich, 2005; Mertler, 2017; Stanley, 2013; Thomas, 2006). During this process, peers and colleagues discuss consistencies and discrepancies in the study (Seo et al., 2008). I participated in peer debriefings with my dissertation chair, Dr. Arslan-Ari. The peer debriefings took place at different times. I met with her online as I was collecting data and afterward. Additionally, I met with her to discuss the data analysis. This series of meetings ensured accuracy throughout the course of the study. Our discussions provided feedback that challenged my original assumptions and provided an opportunity for reflection (Creswell, 2014; Shenton, 2004).

Thick, Rich Descriptions

I used thick, rich description in this study to provide the reader with details of the participants, setting, and nature of the study (Creswell, 2014). This write-up provides quotations from the participants in the study. Additionally, the details of the context and nature are provided in the study's notes and write-up (Shenton, 2004). I used this practice to enable the stakeholders and reviewers to fully understand and evaluate the conclusions of the study (Creswell, 2014; Kawulich, 2005; Mertens & Ginsberg, 2008).

Plan for Sharing and Communicating Findings

The purpose of this action research was to evaluate the impact of using MS Teams as an online planning tool on the practices and responsibilities of general and special

education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use. To protect the participants, I used pseudonyms and redacted research site specifics. I shared the intended use of the findings from this study with the participants and collaborators at the schools. The findings are presented in a final report and available to the participants and collaborators. The data shared with the stakeholders and the participants and collaborators of the study will remain confidential, and the identities of participants and collaborators will be protected.

First, I will share the findings with the participants and faculty of the three schools during faculty meetings. I will discuss the purpose and background of the study, methods, results, and implications for the schools. I will ask participants to provide feedback for the study and discussion.

Next, I will share the findings with district leadership in two ways. First, I will provide a presentation to a small group of leadership personnel who serve as SDI coaches and my direct supervisors. Second, I will make an electronic presentation available for district leadership.

I will work with my SDI coaching peers and other district personnel and leadership to develop an action plan based on my findings. The action plan will involve general and special education teachers, district coordinators, and instructional coaches. Additionally, I will ask members of the district's professional learning team to assist in developing training to support the use of MS Teams and roles and responsibilities training for co-teachers. Upon completion of the research and dissertation, I will also present my findings at district, state, and national conferences.

CHAPTER 4

ANALYSIS AND FINDINGS

The purpose of this action research was to evaluate the impact of using MS Teams as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use. Three research question guided this research:

1. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting?
2. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting?
3. What are the general and special education co-teachers' perceptions toward using the online planning tool?

I used a convergent parallel mixed methods design to analyze and interpret both quantitative and qualitative data. To establish a clear understanding of the impact of MS Teams on co-teachers' practices and their perceptions of using an online planning tool during a pandemic, I used planning observation checklists, surveys, and participant interviews. This chapter includes (a) quantitative results, (b) qualitative results, and (c) a chapter summary.

Quantitative Results

The quantitative measures in this study included observations recorded on the Teacher Perception of an Online Planning Tool Survey (Appendix C) and the Planning Observation Checklist (Appendix D). This section provides the data analysis method and overall results from the planning observation checklist and survey.

Planning Observation Checklist

I used the planning observation checklist to record the needed elements of effective co-planning between co-teachers using MS Teams. I conducted six observations of each co-teaching pair on Friday afternoons during weeks one through six of the study. These observations mainly focused on communication, lesson plans, data, and document/resource sharing by recording co-teachers' use of MS Teams in alignment with planning responsibilities. Co-teachers were observed as pairs: Pair 1–Ron (Gen Ed) and Wally (SPED); Pair 2–Echo (Gen Ed) and Elena (SPED); and Pair 3–Ruth (Gen Ed) and Olivia (SPED).

Pairs received 1 point if there was evidence of the planning element in MS Teams for that week of the observation. The highest number of points per week was 6 and the highest number total was 36. Percentages show the rate at which teachers used elements over the 6-week observation period. The percentages helped me compare the elements, pairs, and overall usage. During the study, two of the co-teaching pairs had one co-teacher out for 10 days for reasons relating to COVID-19. In Pair 1, Wally was away from work during weeks four and five. In Pair 2, Echo was away from work during weeks three and four. During this time, co-teachers were not allowed to work. Therefore, co-teaching pairs did not use MS Teams for planning purposes. Additionally, all teachers

were out of the building for digital learning days on October 29–30 (Week 2) and November 3 (Week 3). Co-teachers were not physically at school but could still communicate and plan during these days. During these circumstances, I still recorded planning checklist observations for the use of MS Teams.

The checklist included six elements of effective co-planning between general and special education co-teachers. Specific elements of the checklist included (a) discussion about the standards, objectives, and learning targets for the lesson; (b) data from class learning plan discussed and used in planning; (c) planning and discussion of SWDs' skill deficits and strengths as they align with the lesson content; (d) plans for lesson resources, accommodations, and SDI; (e) co-teaching models for the lesson; and (f) co-teachers' specific responsibilities for the lesson. Discussion about the standards, objectives, and learning targets for the lesson was the most observed element of planning with a mean of 83.33% (*SD* = .37). The lowest observed element across all observations was planning and discussion of SWDs' skill deficits and strengths as they align with the lesson content with a mean of 33.33% (*SD* = .47). Ron and Wally (Pair 1) showed the lowest overall mean of 47.22% (*SD* = .50) for the use of planning elements in MS Teams, whereas Ruth and Olivia (Pair 3) showed the highest overall mean of 86.11% (*SD* = .35). The outcomes of the observation checklist are presented in Table 4.1.

Table 4.1 *Planning Checklist Results*

Element of planning	Pair 1 (Ron & Wally)	Pair 2 (Echo & Elena)	Pair 3 (Ruth & Olivia)	All Pairs
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Discussion about the standards, objectives, and learning targets for the lesson	83.33% (0.37)	66.67% (0.47)	100.00% (0.00)	83.33% (0.37)
Data from class learning plan discussed and used in planning	16.67% (0.37)	66.67% (0.47)	66.67% (0.47)	50.00% (0.50)
planning and discussion of SWDs skill deficits and strengths as they align with the lesson content	0.00% (0.00)	33.33% (0.47)	66.67% (0.47)	33.33% (0.47)
Plans for lesson resources, accommodations, and SDI	66.67% (0.47)	66.67% (0.47)	100.00% (0.00)	77.78% (0.42)
Co-teaching models for the lesson	33.33% (0.47)	16.67% (0.47)	100.00% (0.00)	50.00% (0.50)
Co-teachers' specific responsibilities for the lesson	83.33% (0.37)	66.67% (0.47)	83.33% (0.37)	77.78% (0.42)
Total	47.22% (0.50)	52.78% (0.50)	86.11% (0.35)	62.04% (0.49)

Teacher Perception of an Online Planning Tool Survey

The survey used in the study was adapted from the Measurement Scales for Perceived Usefulness and Perceived Ease of Use (F. D. Davis, 1989). The adapted version of the Teacher Perception of an Online Planning Tool Survey can be found in Appendix C. I used the survey to evaluate the teachers' perceptions of using MS Teams in co-planning through its two subscales: (a) usefulness, and (b) ease of use. Each subcategory had six questions. Participants were asked to rate 12 statements using a 7-point Likert-type scale with the following anchors: 1 (*Extremely Unlikely*), 2 (*Quite Unlikely*), 3 (*Slightly Unlikely*), 4 (*Neither*), 5 (*Slightly Likely*), 6 (*Quite Likely*), and 7 (*Extremely Likely*). The participants completed the survey using a Microsoft Form that

was sent via email after the intervention. Participants completed the survey at their own pace during week seven. I entered the data into Microsoft Excel and calculated the means and standard deviations for each subscale and whole survey. Due to the small number of participants, I did not calculate the internal reliability of the survey.

I used the survey to measure the participants' perceptions of using MS Teams as an online planning tool among general and special education co-teachers. This section presents the results of the survey from all six participants on a Likert-type scale of 1 (*Extremely Unlikely*) through 7 (*Extremely Likely*). The overall mean was 5.49 with a standard deviation of 1.44. Statements one through six of the survey align with the Usefulness subscale and questions seven through 12 align with the Ease of Use subscale. The mean for the Usefulness scale was 5.47 with a standard deviation of 1.48. The Ease of Use subscale's mean was 5.50 with a standard deviation of 1.40. Table 4.2 presents the results for the whole survey and subscales.

Table 4.2 *Survey Response Results*

	M	*SD*
Survey	5.49	1.44
Subscale: Usefulness	5.47	1.48
Subscale: Ease of Use	5.50	1.40

Co-teaching pairs are made up of one general education teacher and one special education teacher. This section presents the results for the whole survey and each subcategory from participants in subgroups of general and special education teachers on a Likert-type scale of 1 through 7. General education teachers' mean and standard deviation results are as follows: the whole survey mean was 6.08 (*SD* = 1.01), subcategory usefulness mean was 6.06 (*SD* = 1.18), and subcategory ease of use mean

was 6.11 (*SD* = 0.81). Special education teachers' rating mean and standard deviation results are as follows: the whole survey mean was 4.89 (*SD* = 1.56), subcategory usefulness mean was 4.89 (*SD* = 1.52), and subcategory ease of use mean was 4.89 (*SD* = 1.59). Table 4.3 presents the results for the teacher groups.

Table 4.3 *Survey Results for General and Special Education Teachers*

Teacher group	Survey	Usefulness	Ease of Use
	M (*SD*)	*M* (*SD*)	*M* (*SD*)
General education teachers	6.08 (1.01)	6.06 (1.18)	6.11 (0.81)
Special education teachers	4.89 (1.56)	4.89 (1.52)	4.89 (1.59)

Summary

I used descriptive statistics, including mean percentages, mean ratings, and standard deviations, to summarize the data collected and determine commonalities and patterns of the impact of MS Teams. For the purpose of this study, I calculated the frequency of planning elements using descriptive statistical analysis as percentages to determine the amount of time teachers engaged in MS Teams to fulfill their responsibilities. To determine teachers' perceptions of MS Teams as a whole, I conducted descriptive statistical analysis of the Usefulness and Ease of Use subscales.

Qualitative Analysis, Findings, and Interpretations

The qualitative data source used in this study was semi-structured interviews using an interview protocol (Appendix E) with the six participants. I conducted each interview virtually using MS Teams, each lasted approximately 45 minutes, and each took place during week seven of the study. I recorded the interviews using the meeting recording feature in MS Teams, which captured both audio and video. I transcribed the

interviews verbatim in the participants' own words using the online transcription software, Happy Scribe. I reviewed the interview transcripts using the original MS Teams recording and shared them with participants to confirm accuracy. I organized and coded the interview transcripts in Delve software, a web-based qualitative data analysis tool. A summary of the codes from the qualitative data sources is presented in Table 4.4.

Table 4.4 *Summary of Qualitative Data Sources*

Types of qualitative data sources	Number	Total number of codes applied
Semi-structured participant interview	6	262
Totals	6	262

I analyzed the qualitative data using inductive analysis, which consisted of a systematic process of classifying patterns to identify themes within the data (Creswell, 2014; Mertler, 2017). No codes were generated prior to analysis. I used three cycles of coding. In the first cycle, I conducted various rounds of coding using structural coding, descriptive coding, and in vivo coding methods. The second cycle included grouping codes to identify categories. The third cycle involved identifying themes and assertions to make interpretations of research findings (Saldana, 2016). I first read through each participant's interview using the structural coding method, which is the process of identifying relevant segments of text by each research question (Saldana, 2016). This yielded three codes: RQ1, RQ2, and RQ3. Figure 4.1 provides an example from Olivia's interview transcript coding a response as RQ1 in Delve because it is relevant to Research Question 1.

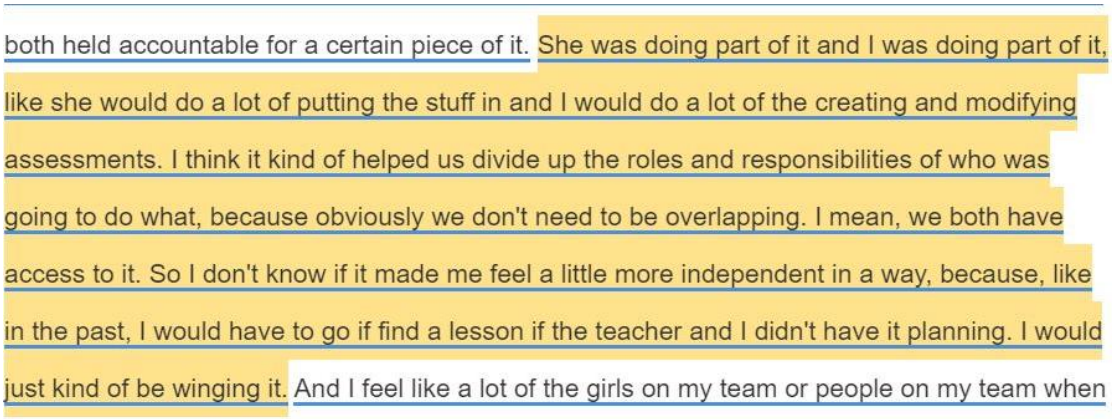

Figure 4.1. Structural coding in Delve.

During the first cycle of detailed analysis, I highlighted and coded the interview transcripts on an individual sentence level. I used a process of in vivo coding (Mertler, 2017; Saldana, 2016) to identify segments of text using the language and terminology used by participants. This cycle yielded 89 codes. For example, the highlighted statements in Ron's interview received codes using his own language (Figure 4.2).

Figure 4.2. In vivo coding in Delve.

I continued reading the qualitative data line-by-line and applied descriptive codes to the text to summarize the content of the text into a description (Given, 2008; Saldana, 2016; Seale, Gobo, Gubrium, & Silverman, 2004). This cycle yielded 186 codes. For example, a highlighted section of text from Elena's interview received two codes: "Hands on training" and "Want for continued training and practice of new tool" (Figure 4.3).

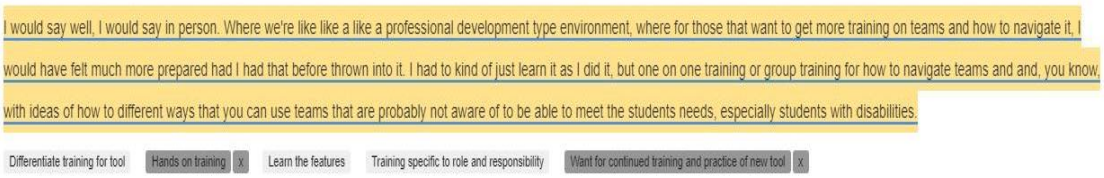

Figure 4.3. Descriptive coding in Delve.

First-cycle coding involved the method of simultaneous coding, or applying more than one code to data. Figure 4.4 provides an example from Wally's interview transcript coding one statement with three codes "another tool for communication," "easy to find communication/resources," and "email" in Delve.

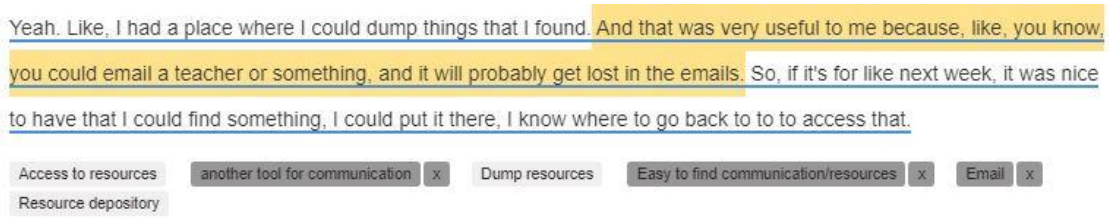

Figure 4.4. Sample of simultaneous coding.

After the first cycle of coding was complete, I created a codebook in Delve to organize the codes (Figure 4.5). I exported the codebook to Microsoft Excel to print and cut each code into individual code strips and maneuvered the strips into categories (Figure 4.6). I began my second cycle of coding by rearranging and organizing the code strips into 21 categories and recorded the category names in a Microsoft Word document (Figure 4.7). Examples of categories included worry about the unknown, training, skill vs. will, technology barriers, student communication, frustration with MS Teams, and technology knowledge. As I manipulated the code strips, I discarded 12 codes for being repetitive or for not accurately describing the participants' experiences. Examples of this are "teacher confidence" was coded the same as "training for teacher confidence," and "features" was coded the same as "Teams features." The code "it felt good" was only coded once and did not accurately describe the experience of the participants.

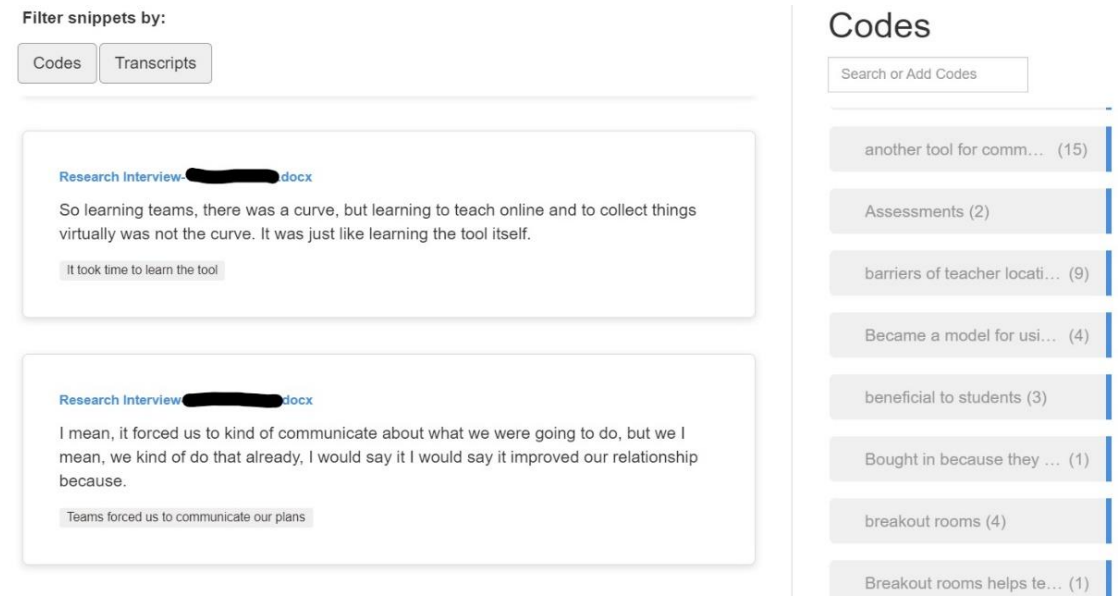

Figure 4.5. Sample screenshot of codes and codebook to the right in Delve.

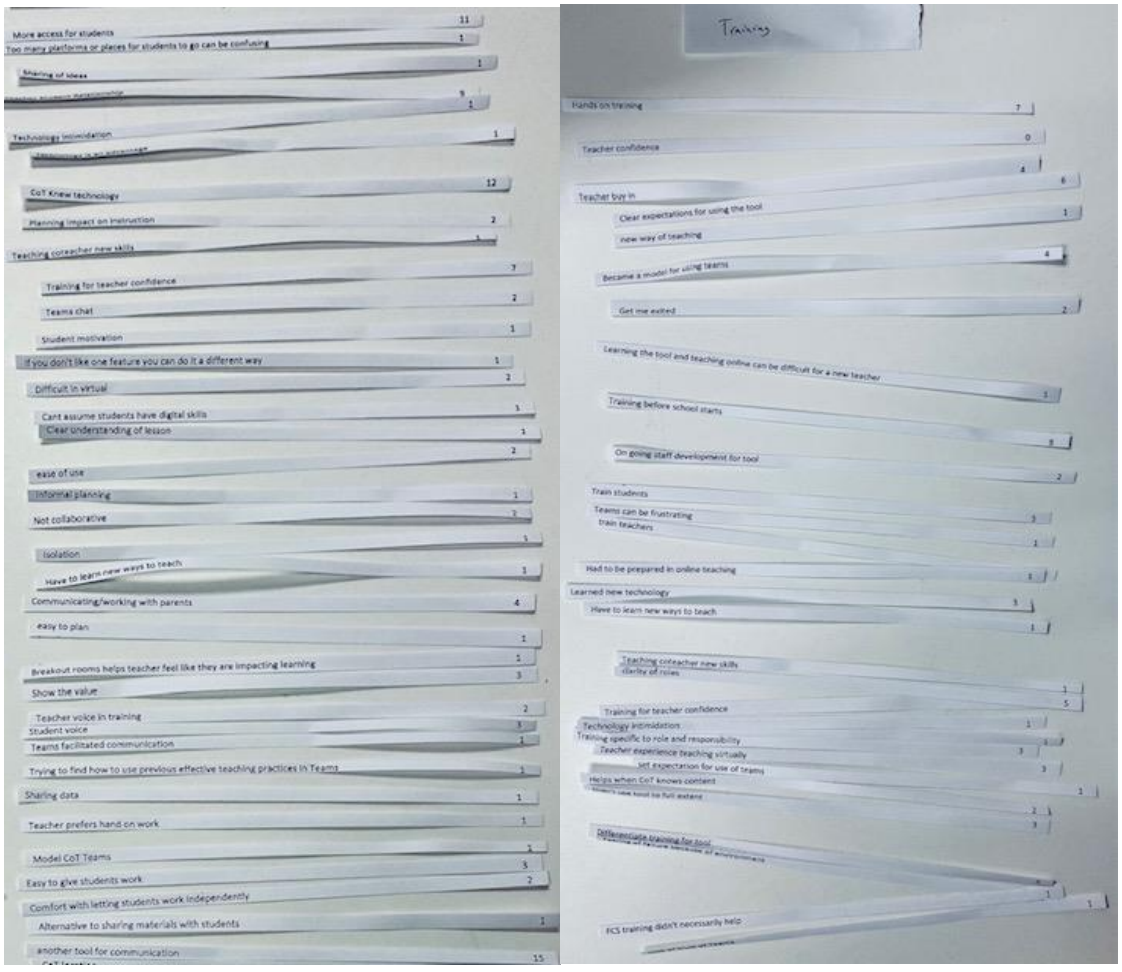

Figure 4.6. Samples of code strips and categories of codes.

Training	Worry about the unknown	Feeling of failure
Relationships	Frustration with Teams	CoT collaboration
Change in planning	Teacher independence/autonomy	Using Teams features
Change in instruction	Professionalism	Technology barriers
Communication	Pandemic impact	Student engagement barriers
Feeling of purpose	Student communication	Technology skills
Skill vs will	Teacher voice	Technology knowledge

Figure 4.7. Recording of initial 21 categories of codes.

Upon completion of the second cycle of coding participants' interviews, I engaged in peer debriefing with my dissertation chair, Dr. Arslan-Ari. Peer debriefing is used to review the accuracy of the analysis of data by asking probing questions about the analysis and clarifying the findings of the qualitative data (Creswell, 2014). Dr. Arslan-Ari noted I coded some text based on my perception of the intended meaning of a participant's response. Additionally, she noted several codes did not align with the category because I was making assumptions. For example, one category was training, but codes that did not mention training were organized under this category. I returned to the interview transcripts to be more purposeful and methodical in my coding. I used the previously mentioned coding methods for the first cycle of coding. I reset my codes to accurately code the text and identify categories.

After the first cycle of coding, I identified 278 codes from the six participants' transcripts. Examples of codes included access to resources, another tool for communication, MS Teams features, co-teacher collaborate, co-teacher relationship, want for continued training and practice, planning ahead, pandemic changes practices, co-teacher responsibilities, clarity of roles, and communication is important.

For the second cycle of coding, I used pattern coding to condense the codes into categories. Pattern coding is a process of grouping codes into units of overarching meaning to describe a pattern (Saldana, 2016). Additionally, I implemented the practice

of maintaining an audit trail using a journal for memo writing (Figure 4.8). Memo writing is defined as "the narrated records of a theorist's analytical conversations with him/herself about the research data" (Lempert, 2007, p. 247). The memo writing technique helped me record notes of what I observed as patterns, my thinking, and assertions during grouping. Again, I discarded codes for being repetitive or not accurately describing the participants' experiences. A total of 15 codes were discarded. Examples of this are "not enough data" was coded the same as "lack of data" and "not sharing ideas" was coded the same as "not collaborative." The codes "too much grace" and "testing if resources are working" were only coded once and did not accurately describe the experience of the participants.

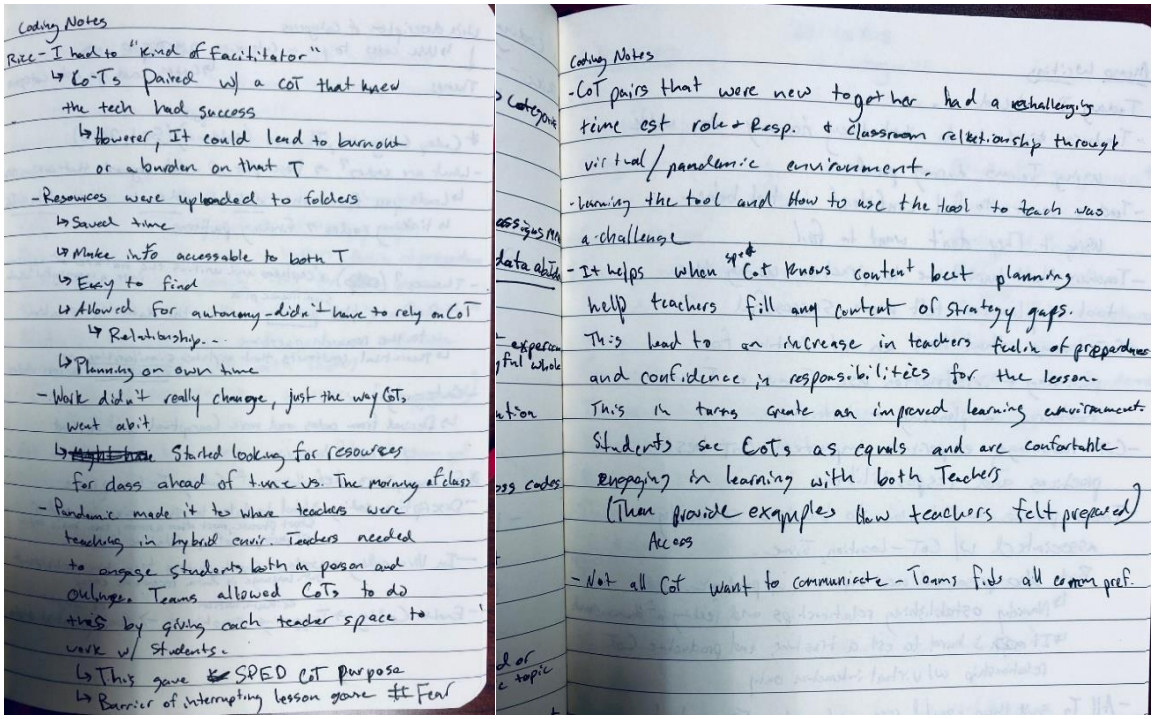

Figure 4.8. Sample screenshot of audit trail journal for memo writing.

Using the redefined codes after the peer debriefing and pattern coding, I began to identify categories. For example, in reviewing participants' comments, there was a pattern of changes in planning and changes in instruction after using MS Teams.

Participants' comments also related to their perceptions of MS Teams and MS Teams features. The category of communication also emerged from codes identifying participants' comments about communication and communication practices during the study. Figure 4.9 illustrates my use of Microsoft Excel to organize codes and record categories. Codes were grouped into the category "impact of pandemic" to highlight responses related to the impact of the pandemic on teaching practices.

Code Name	Category 1
Grace and Understanding	Impact of pandemic
New experience	Impact of pandemic
New responsibilities bc of pandemic impacted instruction responsibilities	Impact of pandemic
Pandemic changes practices	Impact of pandemic
Pandemic forced teacher to overcompensate in student support	Impact of pandemic
Pandemic forced to use technology	Impact of pandemic
pandemic impact on content	Impact of pandemic
Pandemic impact on responsibilities	Impact of pandemic
Pandemic kids suffer	Impact of pandemic
Pandemic meant more of a demand to plan	Impact of pandemic
Pandemic taught there is always something new to learn in teaching	Impact of pandemic
Students falling behind	Impact of pandemic
Teaching in pandemic is unpredictable	Impact of pandemic

Figure 4.9. Codes organized into the category impact of pandemic in Microsoft Excel.

I engaged in a second round of peer debriefing to probe my first and second cycle coding to examine the codes and categories. Dr. Arslan-Ari ensured assumptions were not made about the participants' comments or my pattern coding. Through this practice, 24 categories emerged, as identified in Figure 4.10.

Teachers' different levels of technology knowledge	Relationships
Barriers related to technology use	Communication
Implementation barriers	Student connection in MS Teams
Student connection barriers	Co-teacher collaboration
Online teaching barriers	Training needs
Co-teacher collaboration barriers	Teacher voice in use of MS Teams
Mindset barriers	Teachers' want for direction
Teacher independence in planning and instruction	Frustration with MS Teams
Change in planning	Not using MS Teams
Change in instruction	Perception of MS Teams features and using MS Teams
Roles and responsibilities	Impact of pandemic
MS Teams impact on students	Using MS Teams features

Figure 4.10. Categories created after peer debriefing.

As I reviewed the categories, I identified several categories aligned with an assertion that participants experienced a variety of experiences with MS Teams in addition to mixed feelings and attitudes toward MS Teams while co-teaching during a pandemic (e.g., frustration with MS Teams, not using Teams, perception of Teams features and using Teams-positive and negative, and impact of pandemic). I used the assertion and categories to identify the theme of "MS Teams resulted in mixed attitudes and perceptions of the tool" for the study. I repeated this method to identify the additional themes within the qualitative data. From the 24 categories, I identified five distinct themes: (a) co-teachers' experiences using MS Teams for collaboration caused mixed perceptions of the tool, (b) MS Teams provided possible avenues for collaboration with multiple stakeholders, (c) MS Teams provided avenues for planning and instructional practices in an online co-teaching setting, (d) MS Teams as an online planning tool presented barriers in the online co-teaching setting, and (e) the integration of MS Teams requires supportive action steps to improve its usefulness and ease of use. Table 4.5 shows the relationship of categories to themes and the assertions.

Table 4.5 *Themes, Assertions, and Categories in Qualitative Data*

Themes	Assertions	Categories
1. Co-teachers' experiences using MS Teams for collaboration caused mixed perceptions of the tool	Participants experienced a variety of experiences with MS Teams in addition to mixed feelings and attitudes toward MS Teams while co-teaching during a pandemic.	• Perception of MS Teams features and using MS Teams • Not using MS Teams • Impact of pandemic • Frustration with MS Teams
2. MS Teams provided possible avenues for collaboration with multiple stakeholders	Participants cited the impact of MS Teams on their relationships and communication with co-teacher, students, parents.	• Communication • Co-teacher collaboration • Relationships • MS Teams impact on students

Themes	Assertions	Categories
		• Student connection in MS Teams
3. MS Teams provided avenues for planning and instructional practices in an online co-teaching setting	Participants cited multiple changes in their practices to include planning, instruction, and their role and responsibilities of co-teaching.	• Change in planning • Change in instruction • Roles and responsibilities • Using MS Teams features • Teacher independence in planning and instruction
4. MS Teams as an online planning tool presented barriers in the online co-teaching setting	Participants identified several barriers in using MS Teams that affected their full integration of the tool into their practices and their confidence in using the tool for planning and instruction in the co-teaching environment.	• Barriers related to technology use • Online teaching barriers • Implementation barriers • Mindset barriers • Teachers' different levels of technology knowledge • Student connection barriers • Co-teacher collaboration barriers
5. The integration of MS Teams requires supportive action steps to improve its usefulness and ease of use	Participants suggested several needs and next steps for leaders that decide to integrate an online planning tool into teacher planning and instructional practices.	• Teacher voice in use of MS Teams • Teachers' want for direction • Training needs

Qualitative Themes and Interpretation

In this section, I describe the qualitative findings through the identified themes. I use pseudonyms to refer to the participants for the purpose of confidentiality. Quotations are taken verbatim from participants' interview responses. Co-teacher pairs included: Pair 1–Ron (Gen Ed) and Wally (SPED); Pair 2–Echo (Gen Ed) and Elena (SPED); and Pair 3–Ruth (Gen Ed) and Olivia (SPED).

Co-teachers' experiences using MS Teams for collaboration caused mixed perceptions of the tool. In this study, the district had to quickly switch to online learning in response to the COVID-19 pandemic. The need to find an online platform to facilitate learning and communication was important. Prior to the COVID-19 pandemic, many educators had little to no experience teaching online (Trust & Whalen, 2021). For this study, experiences refer to the events that took place while using MS Teams and the results of MS Teams integration during a pandemic. Participants self-reported a variety of experiences with MS Teams in addition to mixed feelings toward MS Teams while co-teaching during a pandemic. The theme addresses teachers' positive and negative reflections of the use of MS Teams as an online tool for planning and teaching during the pandemic. Categories related to this theme included (a) perception of MS Teams features and using MS Teams, (b) not using MS Teams, (c) impact of pandemic, and (d) frustration with MS Teams.

Perception of MS Teams features and using MS Teams. Participants provided their perceptions of MS Teams and using the features of MS Teams based on their experiences. Participants described the benefits of using MS Teams as well as their dissatisfaction with the tool. Previous research indicated participants have varied experiences when using a new technology tool (Ertmer, 1999; Halili et al., 2015). Two participants commented about how MS Teams was a helpful tool to meet the different needs and accommodations of students. Elena reported:

> It gives me that multisensory ability to be able to meet the needs of all students . . . If I feel like I'm losing them, I can pull them and work with them individually without being in front of the whole class.

Echo discussed using MS Teams for read-aloud accommodations, “We were pulling kids off to the side for read aloud, using the Teams virtual breakout rooms.”

Three participants commented about MS Teams features in physical and digital learning environments. Wally explained, “The flexibility of being able to assist in a class. I can write comments off in the chat and monitor the chat so I can help the students out.” Echo stated, “And whether or not they were learning virtually or physically, we continue to use teams pretty much the same way.” Ruth commented:

> And the thing I like about the OneNote notebook is it uses tabs, and we try to get the kids to use tabs in their AVID notebook, so kind of correlates well, you know. So it’s just a kind of a digital form.

All teachers expressed positive perceptions toward the use of MS Teams. Elena discussed using MS Teams to meet her data collection responsibilities in co-teaching, “There are just so many ways you can use it to take data and eliminate so much paper. That’s been helpful, which has been different for me.” Olivia expressed her satisfaction when discussing the features, “What else was good about it? Everything.” Ruth explained MS Teams would be beneficial for school committees and clubs:

> I wish that we had it for RTI [Response to Intervention] because I have the responsibility of monitoring the RTI students for reading and all the ones that I teach and I wish that our RTI person would set up a Team’s page.

All of the participants stated they would recommend using MS Teams in some capacity to a colleague.

Participants also expressed negative perceptions of MS Teams. Echo reported the difficulty students experienced when learning to use MS Teams, “I don’t know that I love

Teams as a tool, honestly, like, and I know that it's been frustrating for a lot of my students and especially students who were digitally familiar with Google." She continued explaining her feeling about MS Teams not being user-friendly, "I've watched folks work on stuff and have it gone. My mantra is don't trust Teams." Olivia provided a perspective about students' maturity factoring into their use of MS Teams, "I don't feel like the kids were mature enough, some of them, to handle it without having someone there at home." Elena described her perception of the tool for students with different technology skills:

> I mean, for the students that are techy. It works perfect for them. But for my students that are not, that's a weak area for them or they have a different learning style and they need more hands-on, they need more interaction, I feel like that it is not as effective with those students.

The participants' perceptions of the tool ranged based on their different knowledge of MS Teams and the features of the platform.

Not using Teams. The appropriateness and use of new technology tools depend on the needs of the collaborative team (Cravens, 2014). Some users may choose not to use a tool because they do not see the need or value in an online tool. Participants (n = 4) described their experience with MS Teams and discussed their reasons for not using MS Teams. For example, Olivia and Ruth did not find a need to use MS Teams to plan and collaborate because they were already in the same room or in close proximity. Olivia explained, "I mean, because we are so close and have the same schedule, we're able to just verbalize things to each other." Her co-teacher, Ruth, shared a similar perspective, "We didn't really need it for planning or communication because we are so close in proximity to each other." The use of the tool relied on both co-teachers wanting to use it.

Wally explained, “I tried to use the class notebook like I do for my small group fourth-period students, but [Ron] didn’t want to mess with it. So, like, I just kind of abandoned that.” Echo responded about not using MS Teams to its full capacity of planning and teaching due to challenges presented by the pandemic:

> Did we utilize the tool as much as we could have? Absolutely not. I think, though, we could have utilized the tool further. The way that we are structured at this time could not have been anticipated [pandemic] and so, honestly, like overcomplicating things would not have helped.

Olivia explained some teachers did not use the tool because of their perceptions of students’ skills, “Some teachers were convinced that their students were too low and didn’t want to use the OneNote.” Ruth discussed how co-teachers may not use MS Teams for communication because of a fear of how it could be shared:

> Which leads to another thing, if you don’t trust your co-teacher, teacher might be afraid to put something in Teams. They could be afraid like, hey, I typed a message or something in Teams and now my co-teacher is going to go run and show it to admin.

Impact of pandemic. The demands on teachers were multiplied during the COVID-19 pandemic, which can lead to higher burnout (Tremmel et al., 2020; R. Williams, 2020). Participants described the impacts of the pandemic on practices, content, expectations, the use of technology, and student learning, as well as the unpredictable nature of the pandemic. Elena reported on how the pandemic shifted her traditional way of teaching, “And I’m such a hands-on type teacher to where the COVID just kind of abruptly, you know, shifted all of that.” Olivia explained how the pandemic

affected her class structure, “So because of the pandemic, it’s kind of changed my focus. I’m not doing the small groups that I want to do. I can’t.” Ron described feelings on how the pandemic affected students’ learning and growth, “I mean, I know the kids have suffered some across the board because of COVID in education.” Wally explained the impacts on the content and content delivery:

> COVID-19 kind of boiled off some of the extra stuff. So this year it’s really just the bare bones, you know? Of what content they need to know . . . I guess I had to think more about the delivery of the content. It wasn’t really just like, oh, this is what I did last year, so I can just do that again this year.

Elena responded about how the pandemic has affected the co-teaching environment and responsibilities:

> I don’t necessarily feel the shared teaching responsibility, but more of an assist in my co-taught classes and so that looks different . . . like I said, thrown into a climate that’s uncharted and we’re all trying to figure it out.

Frustration with MS Teams. The use of MS Teams was new and challenging for the participants in this study. The task of learning and exploring new technology, even with the support of district leadership, can be frustrating (Ottenbreit-Leftwich et al., 2020). This feeling was specified by four participants in the study. Ron explicitly stated his feelings of learning and using the tool, “So, you know, it was it was definitely a new experience, but at times it was a little frustrating learning and doing everything Teams offers at the same time.” Learning the tool took time and was not an easy task. This was present in the responses of three participants: “Just like any new platform, it’s going to take some time, especially with teachers and students all learning it. We needed to do it

many, many, many times before we all got it right" (Olivia), "But that took a minute for me to learn that. It just took a lot of practice and time for me to figure out how to use the class meeting channels" (Echo), and,

> Like I said, when I look back, it's been a good thing, but it's been a struggle because I had to take a lot of my time to first learn the tool before I could start working with my kids. (Elena)

In Theme 1, MS Teams resulted in mixed attitudes and perceptions of the tool, participants provided insight into their unique experiences planning and implementing instruction in a co-teaching setting. Teachers highlighted positive and negative experiences related to teaching during a pandemic while learning and using new technology. They described factors contributing to the success, failure, satisfaction, and frustration of an online planning and teaching environment during a pandemic in the co-teaching setting.

MS Teams provided possible avenues for collaboration with multiple stakeholders. Technology can have a direct impact on a professional relationship when properly implemented and understood by users. Payne et al. (2020) explained this in their study on the impact of digital technologies on patient–professional relationships. Participants in the current study cited the impact of MS Teams on their relationships and communication with co-teachers, students, and parents. For this study, a relationship was defined as professional communication and partnership with learning and teaching stakeholders. This theme refers to the types of relationships the participants identified and how using MS Teams affected them during the study. Five categories identified for this

theme were (a) communication, (b) co-teacher collaboration, (c) relationships, (d) MS Teams impact on students, and (e) student connection in MS Teams.

Communication. Clear, professional, and respectful communication between co-teachers is an important factor for a successful co-teaching relationship (Charles & Dickens, 2012). Participants' responses during the interviews showed MS Teams affected their communication with their co-teacher. Elena highlighted the flexible communication in MS Teams with her co-teacher:

> It allowed us to share different experiences and ideas and bring those together to see what's the best way to maximize student engagement and student learning. Communication really is more flexible in Teams. We could have those important conversations at different times and in different environments. I would just say the flexibility of the tool.

Echo shared how MS Teams facilitated communication with her co-teacher and students during the challenges of the pandemic:

> The reality is that we were all the things like virtual, hybrid, face-to-face. So I think that in the times when we transition to working from home, if suddenly the building was in lockdown, it provided us with a bridge for communication that stayed open, regardless of whether or not we were able to communicate in person. So, it certainly facilitated communication for the purposes of instruction.

Ruth discussed how she and her co-teacher used MS Teams to communicate and share student information during class to make instructional decisions, "It was a good place to communicate information about students. She would message me about something a

student was doing or working on, and we could communicate there without disrupting students or the flow of the class."

Participants used or viewed MS Teams as another tool to help facilitate communication with co-teachers and students. For example, five participants discussed communication among co-teachers and students in MS Teams:

> I think Teams works well for the gen ed and special ed teachers if they were on different schedules. Some special ed teachers can have like three different classes, and I think just keeping them informed through Teams is helpful. You know, "What's going on?" "Hey, this is a copy of this test and the answer key." (Ruth)
>
> So, it [MS Teams] just gave us another tool to use to communicate. I would say would be the best thing. I know a lot of teachers don't have the same schedule. So, it makes it more difficult. I wouldn't want to run across the school to talk to; I'd rather communicate through Teams.
>
> One thing I liked about the communication in teams was communicating with the students. I was able to see who's communicating with who and look in the chat. I could see what kids had concerns and questions. That part made it nice. We could each respond to the kids. It was kind of a nice way to communicate with the students as well. (Olivia)
>
> The main the thing that changed was I didn't have to email anything to Ron. The emailing back and forth can get too complicated sometimes. (Wally)
>
> We could use Teams to figure things out. We were in together, and we could bounce off each other and communicate with each other. At the same time, we

were communicating with kids that were face-to-face and kids that were online. (Ron)

I could use teams to communicate with student at critical times. (Elena)

Co-teacher collaboration. The co-teacher relationship requires the pair to have a collaborative relationship (W. Carter, 2007; Friend et al., 2010). The collaboration between co-teachers supports the practices in planning and instruction (N. Carter et al., 2009). Participants provided interview responses that referenced how MS Teams affected their collaboration. Echo explained how the tools in MS Teams drove collaborative work with her co-teacher, "So having the data collection tools on Teams supported our planning discussion to modifying what the work looked like and the strategies we would use in class." Ron discussed his collaboration in MS Teams with video chat and planning resources:

> But Teams was a very practical, useful thing that teachers be on the same page and be able to work side by side, even if it's through video. You know? And it was really good to use Teams to have the planning and resources we needed to teach.

Olivia shared how MS Teams affected her planning and co-teacher collaboration, "And this tool [MS Teams] enabled me to plan out ahead of time and collaborate with my co-teacher. That's what makes teaching fun for me." Ruth discussed the use of Teams for IEP collaboration:

> Teams would be a great place for case managers and teachers to collaborate for IEPs and meetings. You know, how is their current level? How are they doing?

> For the teacher to give information or input about the accommodations. Are they working, or are they not working? What else do you think would work?

Ruth explained how MS Teams could help co-teachers who have different planning periods, “Sometimes it’s just that some co-teachers don’t have the opportunity to sit down. They have different planning times. Teams could help remove that collaboration barrier.”

Relationships. Co-teachers develop and cultivate multiple relationships with stakeholders when supporting the co-teaching setting (Cramer, 2006). Participants (n = 5) discussed the impact of using MS Teams on the multiple relationships they maintained as educators. Ruth pointed out that co-teachers’ relationships can be challenging, but MS Teams enables communication to continue:

> Yeah, because some people are like, I don’t like that person, I don’t want them to have my phone number. OK, but you can go into a Teams, and you can say, hey, heads up about this kid or, you know, we have an IEP coming up.

Teachers reported professional relationships with co-teachers and students were supported when using MS Teams. For example, four participants discussed the impact of MS Teams on co-teacher relationships:

> With us [co-teachers] having Teams to video meet each week to keep that open communication has been helpful. It’s helped to build a relationship where my co-teacher is very receptive to those shared ideas. (Elena)
>
> However, as someone without a special education background, I feel like my co-teacher is incredibly supportive and helping me to understand specifically what

> that supposed to look like for our students . . . We then can have those discussions in the Team or during our Teams meeting. (Echo)
>
> She's a teacher, you know, as much as I am. My thing is she's in this classroom, and we're both in this classroom, and the kids see us talking to each other. They know that we talk to each other. (Ruth)
>
> I really like Ruth. She taught me all about the class notebook. That has really made my teaching experience virtually a lot better, using the Teams' features, and that that's because of my co-teacher all the way. (Olivia)

Four participants discussed the impact of MS Teams on teacher–student relationships: "I do pull the students out into breakout rooms. It also helped me build relationships with the kids" (Elena), "I had a very good relationship with [students] because I was calling them on separate channels" (Olivia), "It [MS Teams] provided me with opportunities to connect students to get to know my students and to get to know their learning styles" (Echo), and "I feel way more important than I did last year. Teams has helped me connected with more students and be available for more students" (Wally).

MS Teams impact on students. The use of MS Teams affected students' access to the curriculum and resources and their ability to have a voice in class. Students having access to an online learning platform can support student engagement, access, and learning (McBrien et al., 2009). Students had access to class materials, class recordings, and the co-teachers to support their learning. For example, three participants shared how MS Teams provided access to resources for the students: "But if it is something they are struggling with, they can go back and review the class recordings or if they missed class so they can watch them and stay caught up" (Echo), "Of all the inconsistencies this

semester, it's one thing that's been consistent for both teachers and students, everybody kind of has that commonplace, and everybody has access" (Elena), and,

> They [students] don't have to listen to the same voice all the time, and they pick up real quick, who's more helpful with content, who's more helpful with technology, who's more helpful with writing, and they can to that teacher in the chat. (Ron)

Olivia discussed the use of MS Teams to facilitate peer collaboration among students during virtual learning, "What I liked about the breakout channels is they can work together. I think kids need to work together, like the whole elbow body."

Student connection in MS Teams. Teachers can connect with learners and exercise core elements of relationships in an online teaching environment (Rose & Adams, 2014). MS Teams provided a unique opportunity for teachers to connect with students during the pandemic in a virtual learning environment. The responses (n = 3) reflected using Teams to contact and connect with students who were not in the building but learning from home. Echo described connecting with students with MS Teams to collect data and make instructional decisions:

> We used our data from what we had in Teams and made these literature circles, right. So, we were able to upload these books into their folder, and they actually got into four circles because we were providing them with high-interest books for the circle. So, they super got into the books, and they were accessible based on the data that we were able to collect because we could actually connect with them.

Olivia reported on MS Teams helping her connect with students and form relationships:

> The kids who I did connect with, I felt like I developed a deep relationship through Teams in our channels. I made a separate channel for everybody on my caseload and a couple of Ruth's who were on the edge.

Ruth discussed using MS Teams to get students into class who were virtual learners at home, "We could either call the kid in through Teams or we would call home and wake them up. Like you got to come to school today if they're home."

Theme 2 reflected how the participants described the impact of MS Teams on their relationships in teaching. Participants viewed relationships with their co-teachers and students as an important factor in successful co-teaching and student learning. The theme indicates how the use of MS Teams during a pandemic supported the development of relationships when co-teachers and students were not able to meet in person. Additionally, participants shared how MS Teams enabled communication and collaboration with their co-teachers, students, and parents with unique methods to overcome the challenges of online co-teaching during a pandemic.

MS Teams provided avenues for planning and instructional practices in an online co-teaching setting. The implementation of online tools can lead to changes in teachers' practices when supported through professional learning and support (Richardson et al., 2020). The implementation of MS Teams during the study led to a shift in participants' practices while applying the features of the new technology. Participants cited multiple changes in their practices to include planning, instruction, and their roles and responsibilities of co-teaching. For this study, practices were defined as the roles and responsibilities co-teachers execute during planning and teaching. The participants experienced changes in the co-teaching practices of planning and teaching

while using MS Teams during a pandemic. For example, one participant's thoughts shifted to co-teachers needing to be more prepared for a lesson to address the different learning needs in a virtual learning environment. The teacher's change in practices is necessary for successfully implementing new technology (Condie & Livingston, 2007). Factors such as teacher roles, policy, professional supports, and collaborative planning are associated with changes in practice (Price & Oliver, 2007). Participants were asked directly in the interviews to discuss and describe any change in their practices while using MS Teams during a pandemic. The five categories were (a) change in planning, (b) change in instruction, (c) roles and responsibilities, (d) use of MS Teams features, and (e) teacher independence in planning and instruction.

Change in planning. One change in practice related to how participants planned lessons as co-teachers as a result of using MS Teams. Collaborative planning is time spent by special and general education co-teachers working together to plan content and instructional delivery (Graziano & Navarrete, 2012). Co-teachers collaboratively planning provides each teacher with a clear understanding of their responsibilities for the lesson (Ploessl et al., 2010). This clear understanding supports co-teachers' practices in meeting learning objectives and required SDI for students during the lesson (Friend, 2015). Elena reported the use of MS Teams for planning helped prepare her for the lesson and built her understanding of the content of the lesson:

> Being thrown back into that content area and familiarizing myself with those standards in the curriculum in addition to doing it online was a challenge. So, the changes in planning, which is basically me planning with my co-teacher, I relied heavily on that because that's what's kept me in the lessons.

Olivia described using MS Teams to plan for SDI:

> Teams really gave me time to get a good graphic organizer, get my supports in place, decide who didn't need me, who did need me. It really helped our differentiating our groups because we were thinking of it so far in advance.

MS Teams enabled teachers to have a plan in place to engage learners. The co-teacher participants (n = 3) noted this as a change in their planning practice: "It leaned me forward a little bit in making our plans and finding resources" (Wally), "I loved it because it forced us to have the plans in there a couple of weeks ahead of time" (Olivia), and,

> I'll never do anything different now because the old ways of making lesson plans and stuff, teachers have notoriously hated them; they've been difficult to do. One person talking, and everybody's, you know, not paying attention or yeah, yeah. But with this, Wally and I were able to really set in and go through a lesson and then say, you've got this part, I've got this part. I think that has helped us reach our kids in person and virtually. (Ron)

Co-teachers finding the time and space for planning can be a barrier (Abbye-Taylor, 2013). Participants (n = 2) explained how MS Teams changed their planning to eliminate the time and location restrictions of co-teacher planning:

> It [MS Teams] allowed us, as far as scheduling, to find a time because I'm just so busy doing other things. So, the online platform allows the flexibility of me still being able to meet with my teacher and come up with ways that we're going to present information. We can still meet if we're not able to physically meet in person. (Elena)

> It [planning] did change. I guess that collaboration space kind of made it a little more free flowing. Like I could just plan whenever I wanted to instead of having a set time for me and Ron to sit down and looked at stuff together. We could now do it all on our own time. (Wally)

Change in instruction. Traditional teaching practices are difficult to transfer to online instruction while using online tools (Turchi et al., 2020). Participants (n = 3) reported changes to their traditional classroom practices to facilitate instruction using MS Teams. Their responses to interview questions about the impact of MS Teams on co-teaching instruction demonstrated a change in strategies, use of data, and addressing students' needs. Wally discussed the difference in his ability to provide SDI to students in MS Teams:

> It's like I have my own little channel on the teams where I can provide different strategies for each student. My students know that all the extra resources that they need are there too. I'll put extra supplemental videos I find or notes or study guides. It's their own little corner of the team. So, a lot of the same practices, just in a different way.

Olivia reported on changing strategies, "This has made us rethink what strategies we were going to use if we are reading a passage. We had to kind of revise some of our checklists and things that we were doing when we annotate." Ruth discussed using the MS Teams notebook and reading support tool, "One thing that we have really used with Teams is the notebook. I have really liked using it because of the organization, and we have immersive reader right there."

Roles and responsibilities. The roles and responsibilities of co-teachers are defined by district leaders and supported through training and feedback at the school level. The roles and responsibilities of co-teachers promote efficient and effective teaching practices and clarify what students can expect from their co-teachers (Van Heck, 2017). Participants discussed in the interviews the impact of MS Teams on their outlined roles and responsibilities of co-teaching in planning and instruction. Four participants noted the roles and responsibilities outlined by the district did not change. Rather, the way they operated and accomplished them looked different because of the environment and their knowledge or skills in the area of technology. The following quotes provide examples of the impact on participants' roles and responsibilities: "I would help the face-to-face kids, and Wally would deal with the online kids. And some days, we would flip it over just so it wasn't the same voice every day" (Ron), "I feel like the changes in responsibilities fell really heavy on me to know how to use the platform without being prepared" (Elena), "I mean, it [roles and responsibilities] really wasn't much different, honestly" (Ruth), and,

> The responsibilities didn't really change. I had to do the same thing, except it was just kind of a facilitator or it tried to be a facilitator of that . . . But my role changed because I was more of like, you know, I was like seen more as an equal in the eyes of the students. Like, I had a lot of students coming to me for a lot of gen ed students who are not on my roster, coming to me for makeups and trying to trying to turn stuff in late and asking about their grades because I was more active on Teams . . . I was just more tech-savvy, I guess. And I was just there as an easier person to get a hold of. (Wally)

Use of MS Teams features. All six participants discussed during their interviews the use of MS Teams features to support their practices. MS Teams features can support the facilitation of learning when moving to an online learning environment (Bsharat & Behak, 2021). The participants discussed how they implemented the features of MS Teams to share information with co-teachers, address students' learning needs, and facilitate learning. For example, participants noted the class notebook, shared folders, MS Teams app accessibility, channel chat, and breakout rooms: "It's definitely been a benefit and advantage in communication with my co-teacher. I mean, you can have it on your phone, on your computer. You can access teams anywhere" (Elena); "I think, like some of the shyer more vulnerable ones [students], wouldn't raise their hand, and they wouldn't want to speak, but they would type things in the chat" (Olivia); "We would tell the kids, look, you have a question that doesn't involve necessarily the whole class. You can type that in the chat, and we'll respond to you immediately" (Ron); "I would also use breakout rooms to help students who may have been confused during the lesson. I could reteach or extend the learning to make sure that they don't miss out" (Wally); and,

> I recommend using the class notebook for collaborating again, if nothing else, the organization. It's just it's a tool, you know, and even with me and Olivia, we may not talk about everything. You can use it in some capacity. (Ruth)
>
> It [MS Teams] also provided me opportunities to put things into buckets. We utilize the file folders, and the students know to go there if they needed something for the Odyssey. Well, there was an Odyssey folder. If they needed something for literature circles, there's a literature circles folder. (Echo)

Teacher independence in planning and instruction. Co-teachers have expressed a reliance on their co-teaching partner's schedule for time to lesson plan and access to resources in the co-teaching setting (Walther-Thomas, 1997). MS Teams provides an opportunity for teachers to plan asynchronously and access resources in a digital environment. Three participants noted not having to rely on their co-teachers for access to class teaching resources. Wally provided an example:

> Like, I didn't need to ask him for the documents or if he wanted something from me. I would just dump them on Teams or pull what he had on there. I would say that I got some stuff on teams, and he could go in on his own time.

Olivia also shared her experience with access to resources, "If I ever needed the materials, I wouldn't have to keep bothering her like, hey, can you give me another copy of the teacher's edition for the lesson plan? But now it was in there in the Teams notebook." Ruth shared her experience with planning on her time and access to resources for both co-teachers:

> I guess I liked having a place where you could go to talk about things or where you could, you know, upload things. It's like gone are the days of we have to meet right now. Now we can just put everything in one place and access it when we need to. That's how we had our lesson plans. We didn't need to be like, here's this worksheet that I have. You send me a copy of that. Can you send me a PDF of that? It is good, too. If I was absent, yeah, like I was once, but I uploaded an assignment from home, and you know it was shared with Olivia. And it was kind of like, oh, nice. So, she didn't have to find it and scan it in, and you know, it's just extra work for her.

Theme 3 conveyed how the participants described how the use of MS Teams affected their practices. Participants found the use of MS Teams did not change the expectation of their roles and responsibilities but did provide new avenues to fulfill them. MS Teams encourages more co-teacher independence and opportunities to execute the responsibilities of planning and teaching. Furthermore, participants found the use of MS Teams provided new opportunities for planning and implementing lessons during a pandemic in the co-teaching setting.

MS Teams as an online planning tool presented barriers in the online co-teaching setting. Participants identified several barriers to using MS Teams that affected their full integration of the tool into their practices and their confidence in using the tool for planning and instruction in the co-teaching environment. This theme reflects the barriers that affected participants' use of MS Teams and the barriers presented while using MS Teams. Previous studies indicated participants can experience first- and second-order barriers when implementing a new technology tool (An & Reigeluth, 2011; Durff, 2017). The participants in the current study did comment on a mix of first- and second-order barriers to using MS Teams. They shared their thoughts and feelings on the challenges they faced while learning and implementing MS Teams as an online planning tool and online co-teaching during the pandemic. This section covers the following sample categories: (a) barriers related to technology use, (b) online teaching barriers, (c) implementation barriers, (d) mindset barriers, (e) teachers' different levels of technology knowledge, (f) student connection barriers, and (g) co-teacher collaboration barriers.

Barriers related to technology use. Participants (n = 4) reported the barriers to using MS Teams came from challenges in the use of technology. Lack of access to

resources or unreliable technology can be a barrier for teachers using technology (García-Martínez et al., 2020; Pittman & Gaines, 2015; Walsh & Farren, 2018). Elena identified internet connectivity as a barrier, “But I don’t really have a negative outside of not having the access with Internet connection sometimes.” Teachers can see a value in new technology but may lack the skills or confidence to successfully integrate (Carver, 2016; Hur et al., 2016). Echo explained her knowledge of the tool was her gap, “So learning Teams, there was a curve, but learning to teach online and to collect things virtually was not the curve.” Elena stated her knowledge of MS Teams and technology was a weakness for her, “I think it’s a great platform for online learning or virtual learning. It’s just me not being knowledgeable about how to use it the best as I can to maximize that learning on the platform.” Olivia discussed how a user’s comfort with technology could lead to being overwhelmed or intimidated by the task, “People get intimidated by it [MS Teams].” Wally reported his thoughts on the challenge and intimidation of new technology like MS Teams, “I think some teachers never really learned or wanted to use Teams because from the beginning they didn’t know how to use it and it was too overwhelming. So, they just kind of gave up on it.” Echo reported on students’ ability to use the tool:

> But to assume students from a certain age group have all the virtual tools and know how available to them, that they’re somehow like digital citizens is faulty. Not all our kids could immediately work and learn digitally on teams.

Online teaching barriers. Online teaching requires a unique set of pedagogical practices, skills, and experiences to facilitate learning effectively. School leaders, administrators, and instructional coaches need to provide unique learning and training

opportunities to support teachers during online learning (Burggraaf, 2020; Ertmer & Ottenbreit-Leftwich, 2010; Hur et al., 2016). In this study, one of the six participants had previous experience teaching online and using an online platform for planning and instruction. The other participants (n = 5) noted challenges to their traditional classroom experiences related to collecting data, engaging students, and feeling connected to the learning environment. Olivia described student participation and data:

> The ones [students] who weren't participating, I had no relationship with. I had no present levels. I had to rely on past data when I came to an IEP. I just didn't have enough information to make an informed decision. I would look through my data binder, incomplete, incomplete, incomplete. And so that was frustrating, not having the data I needed to make an informed decision for my reading goals.

Echo reported on student engagement, "So just engagement looks so much different to the point that what I'm hearing around the building and around the district, and around the country really, is that students are struggling to engage during this time." Ruth discussed her experience with parents being online in class with their students:

> The parents online, the parents talking when I'm teaching, all the kids can hear what the parents are saying. That's been kind of like a, you know, uncomfortable zone for me because this is my 28th year teaching that never happened.

Elena commented on the instructional delivery and assessments, "I think your delivery and the assessment portion was a little difficult because it's that extra hurdle of a computer screen instead of a body in a room." Wally reviewed content challenges:

> You have to be efficient about what you're teaching, and you've got to be purposeful about what you're teaching. COVID-19 kind of boiled off some of the

> extra stuff, so this year, it's really just the bare bones, you know? Of what content they [students] need to know.

Implementation barriers. Four participants discussed barriers that inhibited the successful implementation of MS Teams in their planning and teaching. Implementation barriers can arise from perceptions and attitudes of the technology brought on by prior experiences (Tondeur et al., 2017; Vongkulluksn et al., 2018). Olivia noted she was not comfortable letting students work independently on the MS Teams platform:

> If I'm running the group, I'm comfortable with it because I don't trust the kids at this age. I don't want anyone to get their feelings hurt or get intentionally bullied or upset if they're trying to do something in a group and they're putting themselves out there, and then their friend doesn't support what they say or something. I like to have control of the breakout group.

Ron discussed previous experiences with new technology, "Like in the past. They [school leadership] present these things to you, and you spend 3 hours and come out of there, and you know less after you walk out than when you walked in." Teachers feeling overwhelmed with implementation and expectations can avoid the integration of new technology (Durff, 2017). Wally explained why implementation was difficult, "It's fatigue because there's just so much being thrown our way." Olivia discussed why some teachers did not want to use MS Teams:

> Teachers do not want to be embarrassed in front of their students. I felt a lot of my building's teachers that I was trying to support didn't want to use Teams because they didn't want to go in there and not know what they were doing.

Mindset barriers. Participants (*n* = 3) commented on users' mindsets about MS Teams and new technology as a barrier for using it for planning and teaching in the co-teaching setting. Factors that create barriers are a teacher's beliefs (Makki et al., 2018; Tondeur et al., 2017) and experience with technical, administrative, and peer support (O'Neal et al., 2017; Vongkulluksn et al., 2018). Olivia discussed her experience with peer negativity:

> She [Ruth] was just like pumping it [MS Teams] up where other people were just in a downward spiral of negativity. "Like, is this one more thing? Are we going to use this, or are they going to change the platform next year?"

Ron noted past experiences with new technology:

> The apprehension that I had is two different things. One, is this going to be one of those BS programs that they [district] throw at us? And two, am I going to have to do a whole lot of extra work, you know, and in the pandemic, with all the craziness that was already going on.

Wally reported on the frustration and technical support for MS Teams:

> You know, teachers just kind of get frustrated that they there's something else they have to learn, especially this year with the learning curve being so steep, with this crash course in MS Teams that everyone had to take at the beginning of the year.

Teachers' different levels of technology knowledge. Participants in the study had different levels of knowledge in using MS Teams and technology for planning and instruction. One participant, Ruth, had prior experience working with MS Teams features because of her role in the district's technology team. Another participant, Echo, had

experience teaching a postsecondary course in an online learning setting. Wally had never used MS Teams for planning and instruction but explained he was tech-savvy and could quickly adapt to new technology. The different levels of technical knowledge or knowledge deficits can present barriers among team members (Carver, 2016; Tondeur et al., 2017). Elena shared the barriers of her knowledge deficit and the impacts on teaching, "I think because my teacher is a little bit more tech-savvy, that. That's probably why it's kind of thrown us into the one teacher, one support model." Wally provided an example of knowledge deficits creating barriers:

> Its every time I asked him to look at it [MS Teams], I had to explain how to get into it. Every time . . . And that's now, that's the fatigue. OK, I will show you how to do it again. He'd ask, "Is it a OneNote, or is it, Teams?" "No, no. It's, it's teams." "Which Teams?" It's whole rigmarole around every time.

Student connection barriers. The virtual setting can leave teachers and students disconnected with limited human connection (Hillier, 2018). Participants (n = 2) shared they felt they were unable to make the personal connections with their students that they traditionally made with in-person learning. The following quotes from participants provide an example: "For a teacher that's been in the classroom and constructing my classroom, I used a lot of stations and a lot of hands-on materials. And so, I felt that disconnect once we had to change over to virtual" (Elena); and "That's the part I love about the job, getting to know the students and knowing their interests. Starting virtual, you know, you couldn't really get to know them, but when we had been face-to-face, you could make that connection" (Olivia).

Co-teacher collaboration barriers. Co-teacher collaboration is essential for successful planning and teaching in the co-teaching setting (L. Cook & Friend, 1995; Da Fonte & Barton-Arwood, 2017; Friend et al., 2010). In this study, participants (n = 2) reported there were barriers that prevented them from working collaboratively. Elena responded to a question about collaboration:

> Human interaction, which for me, is very, very important for me to connect with my co-teacher and my students. That's just the type of person I am. That piece being taken away. I would say that would be the negative impact on how we collaborated, just not having that human interaction.

Wally discussed how he would share resources in MS Teams but did not feel it was a collaborative effort in planning, "There wasn't like an exchange of ideas. It was like, here's what I think, you can do what you want with it."

Theme 4 related to how participants described the barriers they encountered while using MS Teams as an online planning tool for planning and instruction during the pandemic in a co-teaching setting. The barriers to using MS Teams included seven categories. This theme supports the goal of the study as it provides the overall challenges users encounter when implementing new technology into co-teaching practices. The barriers of using MS Teams impede the progress of integration into their practices. Some of the barriers were directly related to the virtual learning environment during a pandemic. Moreover, participants discussed first- and second-order barriers related to technology use, co-teacher collaboration, and mindset.

The integration of MS Teams requires supportive action steps to improve its usefulness and ease of use. Technology integration can be challenging within schools,

but it is important for leaders to have a plan and be willing to pivot using feedback and data (Hunzicker, 2011; Thoma et al., 2017). Participants suggested several needs and next steps for leaders who decide to integrate an online planning tool into teacher planning and instructional practices. Participants were asked to discuss what they would change or do differently to affect the overall implementation and use of MS Teams. Participants reflected on their experiences using MS Teams for online planning and teaching in the co-teaching setting. Their responses focused on a teacher-centered solution to support learning and achievement for students. Three categories were (a) teacher voice in the use of MS Teams, (b) teachers' want for direction, and (c) training needs.

Teacher voice in the use of MS Teams. Teachers want choice and voice when entering a new adventure in teaching. Teachers' voices and willingness to participate in decisions help create a community to overcome implementation barriers (Heath, 2017; Hunzicker, 2011; McCrae, 2016). Participants (n = 2) wanted to be part of the decisions in using MS Teams. They reported they did not want decisions to be top-down directives without any teacher voice or autonomy. Ruth discussed teacher autonomy, "I think it would be good if the teachers had the autonomy to be able to make it [MS Teams] work for them." She continued, "I don't think you should force it on teachers either." Olivia shared her ideas on teacher voice:

> I feel like it should have been part of an ongoing staff development. On teacher workdays, we had some choice in voice about what was stressing us out. Choice is a lot of it. Don't force me to go to a training for something I already know. I want it differentiated just like they expect me to do with my students. That's how I want to be treated.

***Teachers' want for direction*.** It is important for leaders to provide a clear vision and expectations to teachers when implementing new technology (Burggraaf, 2020; Gülbahar, 2007). For example, five participants expressed a need for clear expectations, structure, and direction from school and district leaders on how to use MS Teams: "So maybe next semester we can get more clarity of what to use and one thing at a time to take it slowly, bit by bit" (Echo); and

> I mean, a culture needs to change. I guess. I mean, people have got to see that it's a powerful tool to use and buy into it. Support probably from department heads like holding you accountable for what you're doing . . . If you're going to use Teams, if you really want this to work, maybe trying to make Teams little more important. Like we always use just our emails, but maybe the main communication tool between teachers should be Teams instead of just emailing them. (Wally)
>
> I think it would have been better as a school if you [researcher] came in and trained all of the teachers. You've train all the teachers, not in a request format, but this is what and how we are doing. Maybe that's something you could do in the future because I really think it would benefit basically the older teachers like me who are usually more reluctant to do these type things. (Ron)
>
> I would want some norms about what's going to go into Teams. Are we all going to post a lesson each day? Are we going to post it each week? Are we going to have a live meeting the whole 50 minutes of class, or are we just going to meet the first 20 minutes, then let the kids work asynchronously? (Olivia)

> I think that there needs to be a structured professional learning meeting at the beginning. Then, guess what? When we come back and three months and we have another workday day, we're going to meet with that same group of people. Here are the things we talked about. Then, What did you use? What did you struggle with? Let it kind of be like a risk-free environment where it's OK because you can't just throw it out there once and not give a structure for people to come back and discuss. (Ruth)

Training needs. All six participants routinely commented on the need for more training to prepare them to properly implement MS Teams in their planning and teaching practices. Each participant was asked what training should look like for co-teachers. Responses from participants included when training occurs, the longevity of training, and how the training should be facilitated. Teachers want to feel comfortable and confident in their use of technology tools with early and continued support and training (Bauml, 2016; Trust & Whalen, 2021). Five participants noted the need for more training at a manageable pace to become comfortable using MS Teams: "I think if you had just a few days training prior to a semester prior to the school year and again, you know, at our school" (Ron); "The next step would be the training . . . Like tech support like this is how you use it, you know, the best practices of how to use a program like this. Examples of it working" (Wally); and,

> The first 2 weeks of our pre-planning should have been devoted to learning Teams and OneNote notebook because none of us realize that we are going to be virtual for so long, and people were lost when they started asking us to use Teams. (Olivia)

> Being more tech-driven as a teacher, I feel like this is an advantage. However, I would have preferred to kind of slowly moved in that direction and gotten the training that I should have had to help me better to be a more effective teacher. (Elena)

> I think training is essential and key and I think that we need to train teachers, I mean, the district has spent a lot of money with some very good product that we have, and it's a shame that more don't know how to use it or feel comfortable using it. (Ruth)

Participants noted training could help teachers understand how MS Teams and its features are best used in practice. Elena shared her experience and what could help her learn the features of Teams:

> I had to kind of just learn it as I did it, but one-on-one training or group training for how to navigate Teams and, you know, with ideas of different ways that you can use Teams that we are probably not aware of to meet the students' needs, especially students with disabilities.

Ruth reported on learning MS Teams features:

> I know that other teachers aren't using it [MS Teams], but it's not their fault . . . I think that, maybe in retrospect, the district should have given more opportunity for training on Microsoft Teams and all the things that it can do.

Olivia discussed teacher confidence and training, "People didn't have the confidence to use Teams because they weren't properly trained on it and couldn't see the value of it and how easy it is to get something in there." Echo expressed her dissatisfaction with the lack of training she received:

> The trainings that I got, as far as Teams goes, were not as helpful as I would have liked. And so, a lot of it was like trial and error and then adjusting like a madwoman probably in the first month.

Olivia shared her thoughts about training continuing throughout the year, "I feel like it should have been part of an ongoing staff development thing where on teacher [work] days we had some choice in voice about what was stressing us out."

Four participants stated teacher training needs to be hands-on, interactive, and start at the beginning of the year (M. Williams, 2017). This evidence is presented in the following quotations: "For teachers to incorporate technology more in their classrooms, we need hands-on training. So, to be able to have training and do it, that that's very helpful" (Elena); "I think this is a great program, and hopefully, [district] will stick with it, but it needs to be integrated into the pre-school year training with support from the instruction coach or admin" (Ron); and,

> More training and hands-on and expectations that you know just how to do it . . . I need to do it, and I'd like someone to show me how to do it. I don't feel like I need to read one-hundred-and-fifty-page manual if someone out there knows how to do it. Please show me the good things about this system and show me what you love about it. (Olivia)

> I wish rather than us having to have done those 12 modules at the beginning of the school year, that they would have let [technology team] members teach teachers how to use class notebook rather than to give us one day during planning to go over Teams and notebook. (Ruth)

Theme 5 conveyed how the participants described the next steps for decision makers to improve the use of MS Teams as an online planning tool in the co-teaching setting. This theme aligned with the goal of the study to understand the impact of an online planning tool on teachers' practices and perceptions of the tool. The categories were explained in the semi-structured interviews. Participants shared their vision for a supportive implementation of new technology and highlighted areas of training to ensure users can access and operate the tools of MS Teams to improve planning and teaching practices and impact student achievement. The vision described by the participants included interactive training, hands-on training, choice in training, clear expectations from district leaders, and a voice for teachers in the training decision-making process. These suggestions would improve the overall impact of MS Teams as an online planning tool on co-teachers' planning and implementation practices in a co-teaching setting.

Chapter Summary

The chapter provided a description of the analysis of data. I used both quantitative and qualitative data to develop answers to the research questions (Creswell, 2014). The analysis of the quantitative data occurred with the review of planning observation checklists and the participants' survey results. I gathered qualitative data using structural coding, in vivo coding, and descriptive coding from six participants' semi-structured interview transcripts. Five prominent themes that described the impact of using MS Teams on teachers' practices in the online co-teaching setting during a pandemic and teachers' perceptions of online planning emerged from the analysis of the qualitative data. Both quantitative and qualitative research methods produced useful information that helped answer the research questions posed in this study.

CHAPTER 5

DISCUSSION, IMPLICATIONS, AND LIMITATIONS

In this chapter, I position the findings from this study with the literature on the impact of integrating an online planning tool during a pandemic in the co-teaching setting. The purpose of this action research was to evaluate the impact of using MS Teams as an online planning tool on the practices and responsibilities of general and special education co-teachers in the online co-teaching setting along with exploring teachers' perceptions of the online planning tool during a pandemic at three Atlanta area schools to make recommendations for its future use. Six primary themes emerged from the data analysis (see Table 4.5). Results reflect participants' experiences with using MS Teams as an online planning tool, MS Teams as a planning tool, MS Teams as an instructional tool, co-teacher collaboration, need for successful integration, and perceptions of the usefulness and ease of use of MS Teams as an online planning tool. I collected and analyzed both quantitative (i.e., Teacher Perception of an Online Planning Tool Survey and observation checklist) and qualitative (i.e., semi-structured interviews) data. This chapter includes (a) a discussion, (b) implications, and (c) limitations of this research.

Discussion

To answer the research questions of this study and to fully understand the results, I combined the quantitative and qualitative data and interpreted them to understand the impact on co-teachers' practices for planning and online teaching responsibilities.

Additionally, I examined the data through the lens of usefulness and ease of use of an online planning tool. Literature on co-teacher collaboration, co-teaching practices, and technology integration also contributed to the understanding of the impact and perceptions of the online planning tool. The discussion section is organized into three sections using the three research questions:

1. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting?
2. How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting?
3. What are general and special education co-teachers' perceptions toward using the online planning tool?

Research Question 1

How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of planning during a pandemic in the online co-teaching setting?

This research question stemmed from wanting to understand how the practices of co-teachers are affected when the pairs use an online tool to accomplish their planning responsibilities. Previous practices included teachers meeting face-to-face at an agreed-upon time and location to develop lesson plans and identify their responsibilities for implementing instruction. This practice is fundamental in planning SDI for SWDs and developing learning and teaching objectives (Bryant Davis et al., 2012; DeMartino &

Specht, 2018; Swanson & Bianchini, 2015). Numerous studies have been completed to identify and understand the importance of co-planning among co-teachers (Abbye-Taylor, 2013; W. Carter, 2007; Murawski & Lochner, 2011) and the barriers present in co-teacher collaborative planning (Bell & Baecher, 2012; Da Fonte & Barton-Arwood, 2017; Keefe & Moore, 2004).

During the COVID-19 pandemic, district leaders, school leaders, and teachers had to pivot from their traditional practices to meet the needs of students. The integration of MS Teams was the district's response to providing an online tool for communication and collaboration with school personnel and students. The district provided video modules during the first week of pre-planning to train co-teachers in collaborative co-planning, IEP goal and objective planning, and using student data for planning. Web 2.0 tools, such as MS Teams and Google applications, can facilitate collaboration among peers (Charles & Dickens, 2012; Kai-Wai Chu & Kennedy, 2011; Mahmood, 2018). However, few studies exist on how MS Teams influence the practices of co-teachers in planning responsibilities.

All six participants expressed the use of MS Teams as an online planning tool was beneficial to their practices of planning responsibilities, particularly to mitigating some of the traditional barriers co-teachers encounter when attempting to plan. However, all six participants reported additional responsibilities of learning and teaching the use of MS Teams and new barriers with integrating the technology. Answering Research Question 1, MS Teams did have an impact on general and special education co-teachers' practices during a pandemic in the online co-teaching setting. The practices affected were (a) collaboration, and (b) having an instructional plan in place.

Teachers were required to be physically present in the building and classrooms during the time of this study. District leaders mandated all teachers provide a weekly lesson plan to the administration a week prior to instruction. I provided participants with a lesson plan template to use for collaborative planning (Appendix A). Additionally, the district provided co-teachers with a video module that presented best practices for co-planning in the virtual setting. One week prior to the first observation, I met with each co-teaching pair using MS Teams video meetings and modeled using MS Teams as a planning tool and the features to facilitate collaboration. Data collection for this study began in October 2020 and lasted until December 2020. I observed the co-teaching pairs' planning practices in MS Teams each week using a checklist (Appendix D). This included reviewing lesson plans, attending virtual meetings, looking at resource folders, and reading communication in the chat. I completed a total of 18 observations. Additionally, I asked participants a set of semi-structured interview questions to collect qualitative data aligned with Research Question 1. The questions related to defining planning responsibilities, practices in planning, the impact of MS Teams on planning practices, and the impact of COVID-19 on planning practices.

Overall, the general and special education co-teachers' district responsibilities for planning did not change, but they reported additional responsibilities were added as a result of the integration of MS Teams and the pandemic. Participants were responsible for knowing how to integrate MS Teams into lesson planning and for providing a weekly lesson plan to administration. Co-teachers needed to be more intentional in their planning for delivery of content and could not recycle last year's lesson plans. The traditional instructional practices they employed did not transition to the virtual setting. Wally

explained that planning needed to focus on the prioritized learning standards and "get rid of the fluff."

Previous studies noted planning time and space as a barrier for collaborative co-planning among co-teachers (McCrae, 2016; Rimpola, 2014; Trent, 1998). The literature surrounding these barriers identified administration as the responsible party to schedule common planning time for co-teachers (Campbell & Jeter-Iles, 2017). MS Teams facilitated co-planning opportunities without the need for common planning times. This alleviated the stress of manipulating teachers' and students' schedules to create common planning time. Elena reported on the impacts of MS Teams on collaboration opportunities:

> I guess when it comes to planning lessons with my co-teacher, it gives us more options. More platforms to use as to how we're going to plan out our lessons. We could post in the chat or do our weekly video calls.

Co-teachers' schedules, co-teachers' absences, and student schedules are issues related to time and space inhibiting teachers' practice of common planning (Friend et al., 2010). In this study, the pandemic was an additional challenge to teachers having common face-to-face planning time. MS Teams provided the time and space for synchronous or asynchronous co-planning without having common planning time or the need to be in the building. Echo discussed the impact of MS Teams on planning practices when the pandemic forced the school to close:

> So I think that in times when we did transition to working from home, if suddenly the building was in lockdown, it provided us with a bridge for communication that stayed open, regardless of whether or not we were able to communicate in person.

Ruth explained how MS Teams changed co-teachers' dependence on common planning times, "I guess I liked having a place where you could go to talk about things or where you could, you know, upload things. It's like gone are the days of we have to meet right now." Additionally, it was noted MS Teams provided the flexibility of communication at different times and environments. Elena noted the flexibility of MS Teams, "So, the online platform allows the flexibility of me still being able to meet with my teacher and come up with ways that we're going to present information."

Additionally, the sharing of experiences and expertise helps establish rapport and relationships between co-teachers (Ricci et al., 2019). Elena identified the impact of MS Teams on planning and co-teacher relationships, "But with us having teams to video meet each week to keep that open communication has been helpful. It's helped to build a relationship where my teacher is very receptive to those shared ideas." A lack of an established relationship can create fear and deteriorate collaboration between co-teachers. Ruth pointed out how this could occur in MS Teams, "They could be afraid like, hey, I typed a message or something in Teams, and now my co-teacher is going to go run and show it to admin." It is important that trust is established early (Abbye-Taylor, 2013).

MS Teams allowed teachers to have a plan in place for instruction. The participants planned for standards, objectives, and learning targets with a mean of 83.33% (*SD* = 0.37). Co-planning helps teachers feel confident about the lesson's content and objective and each co-teacher's responsibilities for the lesson (Tzivinikou, 2015). Olivia explained how having a plan in place helped her feel prepared about the lesson:

> It made it a lot easier to know what Ruth and I were doing that day. I wasn't worried to be surprised, and the kids see that. I was prepared for the lesson, and that gave me the confidence in our lessons.

Collaborative planning and the sharing of experiences, strengths, and ideas help co-teachers establish responsibilities for the lesson (Prizeman, 2015). Participants noted MS Teams provided an avenue for planning responsibilities for the lesson. Co-teachers planned for responsibilities in lesson plans with a mean of 77.78% (*SD* = 0.42). Furthermore, co-teachers planned for co-teaching models for the lesson with a mean of 50.00% (*SD* = 0.50). An established co-teaching model assists teachers in establishing their roles for the lesson (DeMartino & Specht, 2018; Hanover Research, 2012). Olivia explained the use of MS Teams to identify responsibilities through planning and the change from previous practices:

> I think it kind of helped us divide up the roles and responsibilities of who was going to do what, because obviously we don't need to be overlapping. I mean, we both have access to it. So, I don't know if it made me feel a little more independent in a way, because, like in the past, I would have to go if find a lesson if the teacher and I didn't have it planning. I would just kind of be winging it.

There were still barriers to collaborative planning because of teachers' knowledge of the tool resulting in not always wanting to use it (Carver, 2016; Tondeur et al., 2017). Wally explained it was not always a sharing of ideas because his co-teacher did not have the knowledge to consistently use the tool, "There wasn't like an exchange of ideas . . . I think it was because [Ron] never really learned it. I had to keep showing him how to get on and use it."

When both co-teachers are prepared for the lesson, students have confidence in the co-teachers and their own learning (Keeley & Brown, 2014). Wally stated the impact on planning responsibilities made him more accessible to students, “I think because I was more active in planning and we both knew what was needed for the lesson and what each of us was going to do, the students felt more comfortable coming to me.”

Co-teachers have the responsibility to share lesson plans and resources (Swanson & Bianchini, 2015). Participants shared instructional resources with their co-teachers in MS Teams during planning with a mean of 77.78% (*SD* = 0.42). Ruth and Olivia both discussed using their class notebook in MS Teams to share and access resources during planning or if one was absent. Ruth said:

> Yeah, the class notebook was perfect for keeping our plans and resources she shared. It was available for both of us. It’s like if I am absent and we only shared through email, it was kind of gone. Also, all the searching through email was exhausting. Instead, I can go to that Team and like go look and files, and boom, there it is.

Olivia said, “I don’t think people realize the full potential of Teams and the notebook. I can upload documents and additional help for the kids that need it, and Ruth always has the plans and her resources loaded too.” Wally reported he and his co-teacher would share resources and videos in MS Teams for upcoming lessons, “What we would do is put up resources in teams for me or Ron to look at pretty much like things we found to support the lesson.” Echo and Elena both shared the consistency of MS Teams folders to upload resources for students and upcoming lessons. Echo said, “I would say what it looked like and what the platform did was help us was use folders, so we always had

access to our resources and lesson plans." Elena said, "But us having that common platform that we use and that remaining consistent vice throughout whether we were in person or online to plan and share has been very helpful." Because the co-teaching pairs were not always able to meet face-to-face, the sharing of lesson plans and resources in MS Teams supported their preparedness for the lesson.

Co-teachers need to use data in planning to make appropriate instructional decisions for students in the co-teaching setting (Espin et al., 2017; Vaughn & Linan-Thompson, 2003). Participants' MS Teams planning included discussions about student data with a mean of 50.00% (*SD* = 0.50). Additionally, planning should include a discussion of SWDs' skills deficits and strengths alignment to the content (Georgia Department of Education, n.d., 2019b; L. McDonnell, 2014). Participants in this study planned for SWDs' skills deficits and strengths with a mean of 33.33% (*SD* = 0.47). Echo discussed using the MS Teams data collection features to drive instructional decisions, "So having the data collection tools on Teams supported our planning discussion to modifying what the work looked like and the strategies we would use in class." Olivia shared how she and her co-teacher used data of SWDs in MS Teams to plan, "We would look at our data and look at what the district wants to teach . . . We could plan off of that right there in Teams and the notebook." Ruth noted using MS Teams to discuss planning for students' IEPs to address deficits and strengths, "Teams would be a great place for case managers and teachers to collaborate for IEPs and meetings."

Teachers indicated the use of MS Teams affected their practices of planning responsibilities in the co-teaching setting. The use of the online planning tool assisted in fulfilling the requirements of collaborative planning to address the needs of students and

establish responsibilities for the lesson. The literature established the need for co-teacher collaboration in planning (Rimpola, 2014; Strogilos & Avramidis, 2016; Swanson & Bianchini, 2015; Tzivinikou, 2015) and the importance of establishing a plan that identifies the co-teachers' responsibilities (Abbye-Taylor, 2013; Bauml, 2016; Brendle et al., 2017; Keeley & Brown, 2014; Murawski, 2009) and teaching model (Carty & Farrell, 2018; L. Cook & Friend, 1995; DeMartino & Specht, 2018; McCrae, 2016). Limited studies show how a Web 2.0 tool, such as MS Teams, can affect the practices in the planning of co-teachers (Brendle et al., 2017; Charles & Dickens, 2012). Yet, there is research that demonstrates the impacts of email and Web 2.0 tools for collaboration in other settings (Blumenfeld et al., 1996; Iglesias-Pradas et al., 2017; Soto-Acosta et al., 2017; Raeth et al., 2010). Therefore, the current study provides a unique contribution to the literature, adding findings surrounding the impact of an online planning tool on the practices and responsibilities of general and special education co-teachers related to planning during a pandemic in the online setting.

Research Question 2

How does the use of an online planning tool affect general and special education co-teachers' practices related to the responsibilities of online teaching during a pandemic in the co-teaching setting?

This research question stemmed from wanting to understand how the use of MS Teams affected the teaching practices of co-teachers in an online setting during a pandemic. In previous studies, participants self-reported the impact of technology integration on their practices (Carver, 2016; O'Neal et al., 2017; Pittman & Gaines, 2015; Vongkulluksn et al., 2018). Research has been conducted into the barriers to technology

integration into teaching practices (Burggraaf, 2020; Ertmer & Ottenbreit-Leftwich, 2010; Hur et al., 2016).

Because of the pandemic, the schools in this study operated in a simultaneous learning environment. This model allowed students the option to attend school face-to-face or virtually using MS Teams. Teachers were required to provide instruction to students in the classroom and students attending class on MS Teams at the same time. The district provided a sample lesson to teachers that outlined a 50-minute lesson. Teachers were expected to provide a minimum of 20 minutes of synchronous instructions, teaching both face-to-face students and virtual students at the same time. After this, teachers were permitted to provide asynchronous instruction for the remainder of the lesson. Teachers were integrating a Web 2.0 tool into their instruction to deliver content to students in a digital learning setting. Co-teachers were required to meet the district's outlined responsibilities for providing instruction.

Through semi-structured interviews, participants identified the impacts of MS Teams on their practices of instruction. All six participants identified MS Teams had an impact on online co-teaching practices during a pandemic. However, all six participants identified barriers to integrating technology into their online teaching practices. Additionally, participants noted COVID-19's impact on teaching practices. Answering Research Question 2, MS Teams did have an impact on general and special education co-teachers' practices of responsibilities of online teaching pandemic in the online co-teaching related to (a) the equal and equitable sharing of responsibilities, (b) adjusting instruction, and (c) delivering SDI.

Co-teachers in this study were providing instruction to students who were in the classroom or were attending via MS Teams. Only one (Ruth and Olivia) of the co-teaching pairs shared a classroom whereas the other two co-teaching pairs were in different rooms in their buildings. A shared classroom where all students and teachers are welcome is important to creating a learning community and promoting equality and success (Brendle et al., 2017; Obiakor et al., 2012). The environment of instruction was new and different for all participants because students and co-teaching partners were not physically in the same space. Participants had the unique task of making a virtual learning environment feel safe and inclusive to promote student achievement. One effort was to present an equal and equitable sharing of teaching responsibilities in the simultaneous classroom.

Equal and equitable sharing of responsibilities. Previous research indicated a co-teaching pair should share the responsibilities of the classroom (Keeley & Brown, 2014; McKenna et al., 2015). Clear responsibilities of instruction for each co-teacher can support the growth of students (Trent, 1998; Van Heck, 2017). Research has noted special education teachers can take a backseat when it comes to instruction, which shifts their role to assistant rather than a teacher (Friend et al., 2010). This shift can be problematic for both co-teachers trying to establish a classroom culture of learning and success. SWDs in the co-teaching setting must receive SDI (DeMartino & Specht, 2018; IDEIA, 2004). If the special education co-teacher is not involved in instruction, students are not receiving the legal and just instruction they require. Therefore, both general and special education co-teachers should establish responsibilities and draw on each other's

strengths to deliver instruction (Bauml, 2016; Scruggs & Mastropieri, 2017; Swanson & Bianchini, 2015).

Students who see co-teachers as equals have additional access to diverse teaching strategies and learning opportunities (Guise et al., 2017). Using MS Teams gave special education co-teachers more opportunities to be involved with students and share equal responsibilities for instruction. Wally discussed how he felt more involved with instruction during the study because students saw him as an equal teacher:

> I feel way more important than I did last year. Teams has helped me connected with more students and be available for more students. The students see me as an equal to step in and help. I guess. You know, I'm sure you've felt like this in the co-taught class before, like your kind of just sitting there sometimes, and you're not involved. That's gone by the wayside just because of everything going on with teams.

Teachers can connect and build relationships with students using online tools (Rose & Adams, 2014). Participants noted that when both co-teachers are active in instruction, they are viewed as equal members of the team. Elena reported on connecting with more students in MS Teams, "Because of using Teams, I've been able to find ways to connect with my students to maximize learning, whether it be through the chat or channels." Olivia described how MS Teams supported her teaching responsibilities and connection with students:

> I would do some small group stuff. The deeper connection was just that it felt like we [students and Olivia] had a chance to connect. We were in our own meeting,

> and I was able to be a teacher and make connections while Ruth continued her instruction.

Co-teachers sharing the responsibility for all students is a best practice for instruction in this setting (W. Carter, 2007). Ruth discussed how students perceive co-teachers' responsibilities. She explained how she and her co-teacher shared equal responsibilities and support for all students in MS Teams:

> They know that I'm their teacher just as much as Olivia, whether they're on her roster or not. So, we used teams to sometimes pull out some of my students on my roster that are gen ed students on different gen ed and special ed rosters to work with her in small group setting if they're struggling.

However, participants did report technology knowledge was a barrier to using MS Teams and acting as an equal instructional partner. Different levels of technology knowledge can present unequal levels of work or conflict between teammates (Carver, 2016; Tondeur et al., 2017). Elena shared that she felt more like an assistant than a collaborative teacher because of her technology knowledge, "I think because my teacher is a little bit more tech-savvy. That's probably why it's kind of thrown us into the one teacher, one support model." Ron explained how his responsibilities shifted from the primary instructor in his traditional co-teaching practices to more of an assistant with MS Teams:

> Wally, my teacher, helped me a lot from a technology standpoint. I've been going on for 25 years, and it's always been face to face. I grew up in a different era with very little technology, so I never really used technology that much, so this forced me to kind of take a lesser role in some of our instruction.

Co-teachers must practice the sharing of equal and equitable responsibilities in instruction (W. Carter, 2007; Keeley & Brown, 2014; McKenna et al., 2015). Co-teachers can draw on each other's strengths and establish a culture of student success and learning (Bauml, 2016; Scruggs & Mastropieri, 2017; Swanson & Bianchini, 2015). Co-teachers who establish and practice equal responsibilities in instruction can support student achievement (Guise et al., 2017; Trent, 1998; Van Heck, 2017). The shift from a co-teacher being a helper or observer to a more impactful model (i.e., parallel teaching, alternative teaching, station teaching, team teaching) where both co-teachers are providing instruction, developing relationships, and engaging learners supports equal responsibilities and the appropriate levels of instruction for all students in a co-teaching setting (Friend et al., 2010; Hanover Research, 2012; Keeley & Brown, 2014). MS Teams supported this shift of providing more opportunities for both co-teachers to engage learners and provide instruction.

Adjusting instruction. It is the responsibility of co-teachers to adjust the content and instructional delivery during a lesson to address the learning needs of students (Brownell et al., 2006; Lewis & Batts, 2005). Using data helps teachers make the necessary adjustments for students (Espin et al., 2017; Vaughn & Linan-Thompson, 2003). Online tools can help teachers collect data for students to inform planning and instructional practices (V. Park & Datnow, 2017; Routh, 2020). In this study, participants noted MS Teams supported the adjustment of instruction to provide differentiation and SDI to students.

Data-driven instructional adjustments in co-teaching support the growth and achievement of SWDs (Friend et al., 2010; Wexler, 2021). Co-teachers reported the need

to use MS Teams to implement the practice of collecting and using data for instruction. Echo explained how they used the MS Teams data collection features to inform instruction, “I would use Polly [Teams feature], for instance, and I would say what’s working in this class for you? And they would respond with things like, can you break things down more step by step?”

Olivia discussed using data to differentiate groups in MS Teams, “It really helped our differentiating our groups because we were thinking of it so far in advance.” Elena explained the use of MS Teams to meet her responsibility of data collection to identify SWDs’ progress and adjust instruction, “There are just so many ways you can use it to take data and eliminate so much paper. That’s been helpful, which has been different for me.” Ron shared how MS Teams provided quick support to students during instruction, “You can type that [question] in the chat, and we’ll respond to you immediately.”

Participants did note it was challenging to implement these practices as they took time to learn and integrate (Harrell & Bynum, 2018). Olivia noted it took time and effort to learn MS Teams, “Just like any new platform, it’s going to take some time, especially with teachers and students all learning it.” Wally shared the need to take time away from his instructional practices to continuously support his co-teacher’s use of the tool, “It’s every time I asked him to look at it, I had to explain how to get into it. Every time.” Olivia noted a lack of data in MS Teams, which affected her practices, “I would look through my data binder, incomplete, incomplete, incomplete. And so that was frustrating, not having the data I needed to make an informed decision for my reading goals.”

Participants identified the data collection tools and flexibility of MS Teams as factors that supported the adjustment of instruction in the online co-teaching

environment. Using data to support instructional decisions supports the progression of student achievement (Friend et al., 2010; Wexler, 2021). MS Teams affected co-teachers' practices in collecting and managing data to understand their students' unique learning needs. Additionally, data help teachers identify gaps in learning to drive the selection of appropriate strategies and interventions (L. B. Davis et al., 1995; Safer & Fleischman, 2005).

Delivering SDI. Traditional best practices can be difficult to move to an online teaching environment (Turchi et al., 2020). The use of MS Teams helped teachers execute their practices of communication and delivering SDI in the online co-teaching environment. SDI is the adaptation of content, instructional delivery, or methodology to meet the unique, individual needs of an eligible student in the LRE so they can access the curriculum (IDEIA, 2004). SDI is provided to students through explicit and systematic communication (DeMartino & Specht, 2018). Prior research identified co-teachers interrupting class instruction or the flow of the class as a barrier to the practices of implementing SDI or critical one-on-one instruction (McCrae, 2016; Seo et al., 2008; Stough & Palmer, 2003). With the use of MS Teams features like channels and chat, co-teachers were able to provide this support without disrupting instruction. Echo shared how they used MS Teams to pull small groups for students who needed additional supports and SDI accommodations, "We were pulling kids off to the side for read aloud, using the Teams virtual breakout rooms." Elena described her use of MS Teams to provide SDI, "I could use teams to communicate with a student at critical times . . . It gave me a chance to do the SDI I needed to with them." Wally identified using the chat to provide individual support without disrupting classroom instruction, "I can write

comments off in the chat and monitor the chat so I can help. I'm not interrupting the [classroom] teaching." Olivia reported on her use of channels to provide one-on-one SDI:

> I was able to set up channels for every student. So, I had like the ones who were participating. I had a very good relationship with because I was calling them on separate channels. I could check in with them, do the SDI, and provide additional resources and teaching.

Research shows the practice of providing diverse opportunities and modalities for student response, especially when anonymous, has a positive impact on students' behaviors and views of responding in digital forms (Brady et al., 2013; Huang, 2021; Schulz et al., 2020). MS Teams provided students who were shy or were intimidated to share in class an opportunity to respond to questions and checks for understanding. Olivia discussed using one-on-one MS Teams meetings to encourage student participation and vulnerability:

> They're so shy at this age when there are a lot of kids in a group. They won't participate because they're nervous. So, when I would call them one on one and have a little meeting . . . So, they were able to be more vulnerable.

Echo shared their use of MS Teams to support students submitting work and access to resources, "We would use Teams so students could turn in work and keep up with assignments. Everything was there in Teams for them to access." Wally highlighted his use of channels where he could work with students in an individual setting to provide SDI to students, "It's like I have my own little channel on the teams where I can provide different strategies for each student."

Barriers to student engagement and human connection can affect the integration of an online tool (Hillier, 2018). Participants reported limited student attendance, engagement, and connection as barriers to practices in instruction. Elena shared the challenge of working with students and her co-teacher through a screen:

> I would say only negative impact is just not having that, and I would say this would work for the schools, for my students who are just not having that human interaction, and which, for me, that's very, very important for me to connect with my teacher, my co-teacher and my student, that piece.

Olivia did note the pandemic affected student attendance and participation, which ultimately affected her instructional practices:

> The pandemic made me feel like I spent a lot of time just chasing kids down to join our breakout groups. I would start calling the parents of all the students who weren't there. So, it just took away from my SDI and working with my students and having a group.

A teacher's attitude or prior experiences with new technology can affect their integration of technology into their practices (Tondeur et al., 2017; Vongkulluksn et al., 2018). Wally explained MS Teams was not always used to support instruction:

> It's just some of the teachers that I work with just did not know how to use it nor want to know how to use it. So, in those situations, I do not think I as much of the instruction as other classes.

This limit on the special education co-teachers' instruction creates barriers to aligning SDI with the students' IEPs (L. McDonnell, 2014).

In this study, MS Teams provided co-teachers the space to have more flexibility to provide SDI to students. The specialized instruction did not interrupt class or take away from the students' learning. Participants used MS Teams to provide the students extended learning, access to specialized resources, and explicit and systematic instruction.

The sharing of equal responsibilities is essential for instruction in the co-teaching setting (Keeley & Brown, 2014; McKenna et al., 2015). When co-teachers are seen as equal teammates, students have more opportunities to access learning (Guise et al., 2017; Van Heck, 2017). In an equal relationship, special education teachers take more opportunities to connect with students and improve their practices of instruction responsibilities (Friend, 2007; Friend et al., 2010). MS Teams provided co-teachers opportunities to practice equal responsibilities and engage learners. Data are used by co-teachers to adjust instruction to meet the learning targets for students (Brownell et al., 2009; Dingle, Brownell, Leko, Boardman, & Haager, 2011; Lewis & Batts, 2005). Teachers use frequent data to monitor students' progress and identify specialized instruction and interventions for students (Espin et al., 2017; Routh, 2020). MS Teams features provided co-teachers tools to collect data and adjust their instruction. Co-teachers are responsible for providing SDI to SWDs (DeMartino & Specht, 2018; McCrae, 2016; Seo et al., 2008). SDI is intentional, explicit, and systematic instruction provided to students based on their unique skills and deficits. MS Teams meetings, channels, and chats facilitated the implementation of SDI for SWDs.

Research Question 3

What are general and special education co-teachers' perceptions toward using the online planning tool?

This research question stemmed from wanting to understand the perceptions of the usefulness and ease of use of MS Teams as an online planning and teaching tool. Previous research has indicated web-based tools can support teachers' collaboration, planning, and instruction in the online teaching environment (Bsharat & Behak, 2021; Charles & Dickens, 2012). Additionally, previous studies showed a teacher's perception of the tool affects the quality of integration (An & Reigeluth, 2011; Carver, 2016; Vongkulluksn et al., 2018). Perceived usefulness and ease of use affect the perception of the tool (F. D. Davis, 1989; F. D. Davis et al., 1989). Despite district and school leaders' efforts to support the teachers' experience through training videos and Microsoft learning consultants, participants in this study identified barriers related to the usefulness and ease of use of MS Teams (An & Reigeluth, 2011; Durff, 2017; Walsh & Farren, 2018). Turner, Adame, and Nadworny (2020) discussed the use of online tools that can support co-teachers providing services to SWDs. Yet, the teachers must see the tool as useful and easy to use in teaching in order to have a positive experience (Kan & Yel, 2019; R. Williams, 2020). I designed this research question to investigate the co-teachers' perceptions of MS Teams through their experiences integrating it into online planning and teaching during a pandemic in the online co-teaching setting. Results reflect the participants' perceived (a) usefulness of MS Teams, and (b) ease of use of MS Teams.

Usefulness of MS Teams. "Perceived usefulness refers to the degree to which an individual believes that technology will enhance his/her performance in an efficient and

productive manner" (Jeong & Kim, 2017, p. 498). In the survey responses, co-teachers did find MS Teams to be useful as an online planning tool on a scale of 1–7 with a mean of 5.47 (*SD* = 1.48). General education co-teachers found MS Teams to be more useful with a mean of 6.06 (*SD* = 1.18) compared to special education co-teachers with a mean of 4.89 (*SD* = 1.52). Wally, a special education teacher, had the lowest survey results with a mean of 3.00 (*SD* = 1.15). In the semi-structured interview, Wally described his planning collaboration as one-sided, "Collaboration, I mean, using the tool wasn't really there as it felt like it was very like one-sided." Wally later explained he felt the tool was useful, just not in his circumstance with his co-teacher, "It's weird, I'm not saying the tool wouldn't work or that it's not useful for planning and collaboration. It just doesn't work with our circumstance, with my co-teacher." Ruth and Olivia, the co-teaching pair with the highest score on the survey for usefulness with a mean of 6.08 (*SD* = 0.49), discussed how they found the features of MS Teams, particularly the class notebook, to be useful for planning, sharing, and collaborating. Ruth shared the usefulness of the notebook for access to resources and lesson plans, "Using the class notebook was just easier. It was another place we could load and access resources for the class. We had our lesson plans in there, and she would put stuff in there for her kids." Olivia shared the usefulness of scanning documents or loading web-based products during planning, "It's just really useful for loading in documents. It's just scan boom, boom. It's in. Or a lot of these websites you can just download into the notebook." Additionally, both co-teachers noted Ruth's prior experience using MS Teams and OneNote influenced their perceptions of usefulness. Olivia explained Ruth's position on the district's technology team and experience with MS Teams helped her see the usefulness of the tool, "Ruth is very good

on the computer. She's one of our [district technology team] representatives. So, I got lucky in the respect that I knew doing this would be a good tool for her because she loves the computer." Ruth discussed her experience learning MS Teams prior to the district's integration, "I did a 2-week training course to be a Microsoft trainer through [district technology team] over the summer. So, yeah, I mean, I had 2 weeks over the summer where I learned this stuff."

Previous research showed the more knowledge the teacher has about the technology, the higher their self-efficacy (Kan & Yel, 2019; R. Williams, 2020). Additionally, teachers who have positive experiences using new technology have a more positive perspective of the usefulness of the tool (Pittman & Gaines, 2015). Furthermore, comfort with technology plays a role in the teacher's attitude toward the technology (Makki et al., 2018). In this study, participants were asked their perceptions of usefulness after MS Teams had been integrated into planning and teaching. In the semi-structured interviews, participants shared their perceptions of the usefulness of MS Teams. All six participants stated they would continue using the tool after the study and they would recommend the district continue using it as an online planning and teaching tool. Ron explained the tool was useful for connecting with students no matter their learning environment, "I think that has helped us reach our kids in person and virtually." Ruth identified MS Teams as being useful for more than planning and teaching, "So, I can see Teams being used in the school for different roles and programs and clubs."

Co-teachers disrupting class to provide individualized instruction to teachers has been noted in prior research (McCrae, 2016; Seo et al., 2008; Stough & Palmer, 2003).

Wally discussed the usefulness of MS Teams in answering students' questions or providing one-on-one support without interrupting learning:

> I can write comments off in the chat and monitor the chat so I can help the students out. Like I'm not interrupting the teacher if I'm trying to talk to a student, you know? Like we can have our own little side conversation- what was your question?

Ron noted MS Teams supported both co-teachers' responsibilities for implementing instruction without interfering with whole-class instruction:

> One of the things that is a real advantage with this is a teacher can be live, and the [other] teacher can also be live but be involved just in the chat room, so you're not interfering with instruction is going on.

Prior research noted students need to feel as though they are part of the learning environment (Bsharat & Behak, 2021). A proactive and comforting teacher–student relationship can help students transition to new learning environments (Luo et al., 2020). Teachers can help overcome the screen barrier by bringing human elements into virtual learning and developing professional teacher–student relationships through continuous communication and engagement (Martin, 2020). Participants in the current study found MS Teams to be useful for connecting with students and developing relationships. When students were not attending class, Ruth used MS Teams to get them into class. This was something teachers could not do in traditional classroom teaching. She explained:

> We could either call the kid in through teams or we would call home and wake them up . . . So we do that all the time. But that's just something new we can do when our class is on Teams.

In traditional classrooms, teachers can interact with students, get to know their friends, and understand the students on a personal level (Luo et al., 2020). Olivia shared that MS Teams was useful for getting to know her students during online teaching, "One thing I liked about the communication in Teams was communicating with the students. I was able to see who's communicating with who and look in the chat." She also shared how MS Teams was useful for creating a safe space for students and protecting confidentiality, "I didn't want to call people out in front of the big group. So, setting up the channels was good because sometimes I'd have two kids on the channel if we were doing the same thing." Echo explained MS Teams was useful for connecting with students and understanding how they learn, "But also it [Polly, Teams feature] provided me with opportunities to connect students to get to know my students and to get to know their learning styles."

Collaboration and communication are imperative for successful co-teaching (Brown et al., 2013; Magiera et al., 2006; Scruggs & Mastropieri, 2017). MS Teams was useful in facilitating collaboration and communication between co-teachers. Ruth explained MS Teams was useful for keeping communication open even if the co-teachers' relationship was negative:

> Yeah, because some people are like, I don't like that person, I don't want them to have my phone number. OK, but you can go into a Teams, and you can say, hey, heads up about this kid or, you know, we have an IEP coming up.

Echo shared MS Teams was useful for co-teacher communication when the pandemic affected their ability to physically meet, "If suddenly the building was in lockdown, it provided us with a bridge for communication that stayed open, regardless of whether or

not we were able to communicate in person." Elena stated the flexibility of MS Teams made it a useful tool for weekly communication:

> Communication really is more flexible in Teams . . . I think is just important to continue to meet on that weekly basis and to be in communication with your co-teacher, you know, and reflect on what you may need to change in the classroom.

The perception of the usefulness of an online tool is a good indicator of the user's buy-in and use of it in their practices (Iglesias-Pradas et al., 2017; Weng et al., 2018). Barriers to technology integration affect teacher perceptions of a tool (Makki et al., 2018; Tondeur et al., 2017). Previous studies indicated a teacher's confidence and knowledge can affect their decisions and beliefs regarding the use of the tool (Burggraaf, 2020; Hur et al., 2016). This study demonstrates teachers' confidence and knowledge influence perceived usefulness. Though Wally found the tool useful, he and his co-teacher had limited integration of MS Teams into their practices. Wally explained his perspective as to why his co-teacher did not want to use the tool:

> You know, I like Microsoft Teams, but it hasn't been used so much because he hasn't used it before. So, he doesn't see the usefulness in it because they've been teaching for 20 years, not using it, and they're doing just fine.

Ruth noted teachers were not using MS Teams because they did not see how it could be useful, "I know that other teachers aren't using it, but it's not their fault. They don't know how to use it, so I don't think they see it how I do." Prior research has also noted experience with technology can be a barrier to integration (O'Neal et al., 2017; Vongkulluksn et al., 2018). When first being introduced to MS Teams, Ron had a negative perception of its usefulness due to prior district programs:

> The apprehension that I had is two different things. One, is this going to be one of those BS programs that they [district] throw at us? And two, am I going to have to do a whole lot of extra work, you know, and in the pandemic, with all the craziness that was already going on.

Perceived usefulness of technology affects a user's perception of technology and is an indicator of acceptance of the tool (F. D. Davis, 1989; F. D. Davis et al., 1989). The findings in this study contribute to the findings of previous studies on users' perceptions of the usefulness of an online planning tool (Charles & Dickens, 2012; García-Martínez et al., 2020). There is limited research on teachers' perceptions of the use of MS Teams as an online planning tool. Additionally, results of the current study corroborate the findings of previous research that showed users might see new technology as useful but lack the comfort and knowledge to integrate it into their practices (An & Reigeluth, 2011; Carver, 2016; Durff, 2017; Ertmer & Ottenbreit-Leftwich, 2010; Hur et al., 2016; Tondeur et al., 2017).

Ease of use of MS Teams. The school district integrated MS Teams for full instruction at the beginning of the 2019–2020 school year as a response to students attending school virtually because of the COVID-19 pandemic. With the abrupt shift in the teaching environment, teachers were required to learn new practices and technology, and took on more responsibilities (Turner et al., 2020; R. Williams, 2020). District and school leadership provided support to the rapid change in a variety of methods. Teachers had to pick where to invest their efforts (Richardson et al., 2020). Teachers viewed computer-based video modules developed by district personnel to learn how to use MS Teams for instruction. Additional supports throughout August–October came from school

leadership and Microsoft learning consultants. The training from school leadership was a document with video links providing step-by-step instructions to access and use features in MS Teams. The trainings from Microsoft learning consultants were video Teams meetings. The consultants would present information to teachers and answer questions. Additionally, I provided two training sessions 2 weeks prior to the beginning of the study. During this time, I discussed the preferred co-teaching models for simultaneous learning, roles and responsibilities of co-teaching, and MS Teams features for planning and instruction. District and admin support alone does not influence integration but can influence a teacher's confidence in the use of technology (Hur et al., 2016). Additionally, perceptions of time to learn the tool and integrate it into practices can create barriers (Burggraaf, 2020; Ertmer & Ottenbreit-Leftwich, 2010; Pittman & Gaines, 2015; Tondeur et al., 2017) that affect a teacher's perception of ease of use. This study shows the participants reported a lack of training and time that affected their perceptions of ease of use toward MS Teams.

Jeong and Kim (2017) defined ease of use as, "The degree to which technology use is free of effort" (p. 199). In the survey responses, the teachers rated the ease of use of MS Teams on a scale of 1–7 with a mean of 5.50 (SD = 1.40). General education co-teachers rated the ease of use (M = 6.11; SD = 0.81) higher compared to special education co-teachers (M = 4.89; SD = 1.59). The lowest rating came from the co-teaching pair Ruth and Elena, with a mean of 4.50 (SD = 1.38). Elena rated ease of use the lowest of all participants with a mean of 3.33 (SD = 0.75). Elena's semi-structured interview qualitative data showed she wanted an early and slow-paced hands-on training to ask questions and learn how to use the tool before integrating it into her practices:

> Being more tech, tech-driven as a teacher is it's I feel like this is an advantage. However, I would have preferred to kind of slowly moved in that direction and gotten the training that I should have had to help me better to be a more effective teacher.

Research on technology integration shows authentic hand-on training supports the user's ability to use the tool (An & Reigeluth, 2011; Ottenbreit-Leftwich et al., 2020). Olivia rated the ease of use with a mean of 4.83 (*SD* = 0.37). Olivia shared similar views to Elena, wanting additional training with authentic hands-on experience, "Even though they were providing a couple hours of training here and there. It was not enough. And it we should have started that from day one of pre-planning." She later noted in her interview, "More training and hands-on and expectations that you know how to do it." Ruth, who was a member of the district's technology team and had 2 weeks of training on MS Teams, scored ease of use with a mean of 7.00 (*SD* = 0.00). This contrast between teachers who had the time and opportunity to learn and train on MS Teams to those who did not demonstrate its impact on the ease of use perceptions (Jeong & Kim, 2017). Ron and Wally had the highest rating of co-teaching pairs with a mean of 6.08 (SD = 0.76). Ron rated the ease of use with a mean of 5.67 (*SD* = 0.37). He noted the support of his co-teacher, who had technology skills, made MS Teams seem easy to use:

> I know Wally was probably more sold on it thGeoan I was at first because he understood the technology. I would say it was a huge plus having him because he made it easy to use teams for what we needed in class.

Ease of use affects a user's perception of technology and is an indicator of acceptance of the tool (F. D. Davis, 1989; F. D. Davis et al., 1989). This study links

participants' perceived ease of use of MS Teams to the amount of effort it takes to operate the system (Jeong & Kim, 2017). Ease of use can influence attitude toward the technology (F. D. Davis, 1989; Solomon, 2017). Existing research noted teachers' positive or negative attitudes toward technology affect its intended use and integration (An & Reigeluth, 2011; Tondeur et al., 2017).

Teachers are not always able to take on all of the training and new duties being thrown at them (Richardson et al., 2020). Ease and usefulness are often the deciding factors for teachers when selecting where to exert their energy. Participants viewed the online tool as useful when both co-teachers had success using it. However, teachers' confidence, time, and attitude affected their integration of the tool into their practices. Additionally, the time and effort it took to operate the online planning tool affected teachers' perceptions of ease of use.

Implications

This action research has implications for me as an instructional coach as well as for future research examining co-teacher practices using an online tool. The implications are discussed in the following sections: (a) personal implications, and (b) implications for future research.

Personal Implications

I began this program as a high school special education co-teacher but started a new role as an SDI coach by the time I began writing the proposal for this study. The implications of this study are more currently meaningful to me as the special education co-teachers I support work tirelessly to provide to best instruction and support to SWDs.

The implications are (a) approaching a problem as a scholarly practitioner, and (b) go slow to go fast.

Approaching a problem as a scholarly practitioner. It is all a learning process. Moving forward, I understand every step, every stumble, and every fall is a practice of learning. I can take away a lot from this action research, but the most impactful moment was learning to use data. Real data. The use of rigorous mixed method data to identify a process for problem analysis and solution development (Buss & Zambo, 2014; Creswell, 2014; Johnson et al., 2007). Without data, I am chasing feelings and a story I created based on my biases and perception. During my action research, I engaged with prior research to understand the process and best practices of collecting and interpreting data. Additionally, the literature review informed me of what I need to know to support co-teachers and what still needs to be discovered (Paul & Criado, 2020). The use of data and literature will assist me in supporting teachers and understanding the barriers to progress and change. By merging the use of data and literature into my practice, I can identify actual needs and develop accurate solutions linked to teacher growth and student achievement (Knight, 2015).

The findings from my study differed from what I expected. I assumed co-teachers would have more difficulties with co-teacher collaboration. However, the findings showed the primary barriers were the integration of the online planning tool. Data prevent inaccurate assumptions, mistakes, and solving the wrong problem. This is a lesson I will keep with me as I continue my scholarly practices and growth in education and military leadership. As I continue my growth, I will use scholarly practitioner approaches toward other planning and instructional problems by identifying prior research, using established

practices to design and implement interventions, and using data to determine the growth and effectiveness of my actions and make suggestions to improve established practices based on my findings.

Go slow to go fast. Prior to my research, I thought a how-to video or a professional development was enough to foster change and ensure the implementation of best practices. However, through multiple reviews of the literature and the findings from my action research, it is evident there are many more variables to brokering and maintaining meaningful change. Barriers are present in the integration of technology (An & Reigeluth, 2011; Carver, 2016; Durff, 2017; Vongkulluksn et al., 2018), the practices of instructional coaches (Burggraaf, 2020), and co-teacher best practices (Da Fonte & Barton-Arwood, 2017; Keefe & Moore, 2004; L. McDonnell, 2014; Swanson & Bianchini, 2015). With that in mind, it is important to understand every person needs to feel comfortable with the situation and wants to be heard and treated like a human (Stanier, 2020). Conducting this study during the COVID-19 pandemic was a humanizing event. Teachers were struggling to keep up with their workload and support students' needs beyond just learning. It was evident the participants in this study were doing the best they could with the time and resources they had available. It is important for me as a leader in education to respect a teacher's comfort level and facilitate their growth and use of resources at a pace that is conducive for them. Additionally, this study has shown me a teacher's practice is influenced by their skill versus their will. The participants in this study were willing to be vulnerable and use MS Teams. It came down to their knowledge and comfort using the tool affecting their execution in practices (Carver, 2016; Hur et al., 2016; Tondeur et al., 2017). This whole experience has been very humanizing.

Implications for Future Research

Findings from this study have two main implications for future research into the impact of an online planning tool on co-teaching planning and teaching practices in an online co-teaching setting: (a) devote more time to pre-innovation work on the technology with participants, and (b) devote more time to pre-innovation work on co-teaching practices with participants

Devote more time to pre-innovation work on the technology with participants. First- and second-order (Ertmer, 1999) technology integration barriers were present in the use of MS Teams as an online planning tool. These barriers affected my ability to identify the impact of an online planning tool on the practices of co-teachers related to their planning and online teaching responsibilities. Because participants encountered barriers with the technology, it was difficult to identify the overall impact of using MS Teams on their co-teaching practices. Some first-order barriers were addressed as support was provided to co-teachers through access to administrators, video modules and resources, and Microsoft learning consultants (Pittman & Gaines, 2015; Vongkulluksn et al., 2018), but it was a challenge for teachers to benefit because they were trying to learn and apply simultaneously. Additionally, teachers' past experiences with district program integration affected their acceptance of the tool (Rikala et al., 2015). Second-order barriers of teachers' anxieties and willingness to change to use the tool affected the study (Makki et al., 2018). Because teachers' time is often limited, future research should adjust pre-innovation work to meet the teachers' individual concerns. One-on-one or group interactive and hands-on training that target a specific need will provide intentional and meaningful support to the participants (Burggraaf,

2020; Ertmer, 1999; Pittman & Gaines, 2015). Time for participants to plan and use the technology should be allotted during this time. The first- and second-order barriers must be addressed prior to the study to ensure teachers are comfortable in their knowledge and abilities to use the tool.

Devote more time to pre-innovation work on co-teaching practices with participants. Providing clear expectations of co-teachers' responsibilities and best practices is an important step to ensure participants are prepared for the study (Campbell & Jeter-Iles, 2017; DeMartino & Specht, 2018). In this study, participants received two sessions, each 30 minutes in length, to discuss the district's responsibilities for co-teachers. This time included the integration of MS Teams to implement practices for planning and teaching in MS Teams. Existing research shows co-teachers' understanding and clarity of responsibilities are important variables for successful co-teaching (L. Cook & Friend, 1995; DeMartino & Specht, 2018; Friend et al., 2010). Effective co-teacher relationships and collaboration influence the clarity of responsibilities (Campbell & Jeter-Iles, 2017; Friend, 2007; L. McDonnell, 2014). Co-teachers do not receive enough training on responsibilities (Stewart, 2005), so it is important the researcher provides ample support and pre-innovation professional development to clarify responsibilities and practices. Previous researchers criticized the use of short-term professional development without ongoing support (Guskey, 1986; Knight, 2007). Researchers should provide continued support before and during the study.

Limitations

This study had limitations that could be improved upon within future studies. The limitations of the study are described in two sections: (a) methodological limitations, and (b) limitations of findings.

Methodological Limitations

Limitations are inherent in action research. The results of this action research are not generalizable to a larger population as they are specific to the context of this study's participants, setting, and situation (Mertler, 2017). First, the participants in this study were purposely picked from a pool of volunteers who met specific criteria, which limits the ability to generalize the results to a larger population. Second, the population size was small. It included six co-teacher participants who responded to a survey and a semi-structured interview. The participants and size of the group may have affected the outcome of the study, causing the inability to generalize results.

A third limitation is my work with the participants as a district instructional coach. The surveys and semi-structured interviews were not anonymous, and I did collect identifying and demographic information from the participants. Though my role is non-evaluative and I have a positive working relationship with the co-teachers I support, participants may have skewed their responses and answers to the survey and interview because of my position in the district. This may have been true because I do make recommendations to the schools' administration on action steps for teacher development. Participants may have felt obligated to participate or respond in a certain way.

A limitation of the methodology of this study was the timing and circumstances surrounding the study. Participants in the study had only used MS Teams in the

simultaneous teaching setting for a couple of weeks before the study began. Additionally, face-to-face students had just returned to the buildings. Co-teachers were still developing relationships with students, learning how to use MS Teams in a new environment, and receiving new directives for instruction from the district and schools' leadership. At this time, students were not required to complete informative assessments, which may have affected student engagement and the co-teachers' practices. School district leaders provided training modules for co-teachers to understand their roles and responsibilities for planning and co-teaching during virtual teaching. However, district leaders did not publish these roles and responsibilities. Teachers not having a published reference with clear roles and responsibilities might have affected their understanding. Additionally, by not having a reference for clear roles and responsibilities, it may have been difficult for district and school leadership to hold teachers accountable. Echo and Elena had been working with each other for 2 weeks prior to the beginning of the study. Due to COVID-19 and students returning to the building, Echo's original co-teacher moved to a different setting. Furthermore, both Echo and Elena were new to the school district. COVID-19 prevented me from interacting face-to-face with the teachers or entering the classrooms. Participants were periodically absent and not allowed to work during the time of the study as a result of quarantine for COVID-19. This affected two participants, Wally and Echo, for 10 days. During the time of the study, a hurricane closed the schools for 3 days. Prior to volunteering for the study, I had never met Echo, Ruth, or Elena. This could have affected the trust I was able to build with these participants. Participants were not able to member check the final findings of the study due to the time constraints of the school year and their work schedules.

Limitations of Findings

Elements of the findings were limited in this study. The limitations included (a) self-reporting during interviews and surveys, and (b) the removal of teaching observations.

The data collected from semi-structured interviews were self-reported. This could present inaccuracies in the data (Judson, 2006). As discussed previously, my position as a district employee and having no prior relationship with some participants could have prevented transparent responses. Prior to the semi-structured interview with each participant, I stressed anonymity through pseudonyms and the intended use for the data. The survey was conducted using district software and did identify each participant's response. Therefore, the identities of the respondents may not have been protected.

I originally designed the study to include observations of co-teachers' practices in the responsibilities of teaching. This was removed from the study because of the restrictive nature of the district on social distancing. Observations of co-teachers teaching in the simultaneous learning environment would have provided additional data on the impact of MS Teams on teaching practices.

Closing Thoughts

The relationship and collaboration of co-teachers are essential for the development and progress of SWDs being served in a co-teaching setting. In my local context, co-teaching pairs are not understanding and meeting their responsibilities in terms of planning and teaching. This limits their ability to provide explicit and systematic delivery of SDI. SWDs have the right to learn in the LRE. Not serving them in the appropriate environment is an injustice. Unfortunately, because of the barriers in co-

teaching, often the easy solution is to place SWDs in a more restrictive environment. I began my journey in the University of South Carolina program in 2018 for one reason—to learn how I can contribute to the research and literature of ending this injustice. As a special education co-teacher, I sat idly by feeling powerless while SWDs were socially promoted, did not receive services, or were underserved or overserved. My mentor, Wanda Littlejohn, recommended that I find ways to become part of the solution, not the problem. Though this study is not the solution to all the challenges administrators, parents, SWDs, general and special education teachers, and other stakeholders face, I hope it is a step in the right direction. This study shows teachers are our best chance at making a difference in a student's life. It shows teachers do more than teach and can do more with 50 minutes than Trae Young can do with a basketball (which is no small feat). But it also shows teachers need the resources and support to appropriately implement new technology and practices. The support needs to be early, tailored, consistent, and something that replaces, rather than adds, a challenge.

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APPENDIX A

LESSON PLAN TEMPLATE

Lesson Plan Template **Resources should be uploaded in OneDrive and linked in lesson plan.**					
Teacher's Name(s):		**Subject:**		**Week of:**	
Unit of Focus:					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Learning Target & Standard (Initial- Gen Ed I -7)	**Students will be able to:**	**Students will be able to:**	**Students will be able to:**	**Students will be able to:**	**Students will be able to:**
Assessments (Initial- Gen Ed I -7)					
Work Period (Initial- Gen Ed I -7)					
Specially Designed Instruction (SDI) (Initial- SPED I -6)					
Flexible Grouping (Specify Student Groups) (Finalized I -4)					
Co-teaching Models/Structure (Finalized I -3)					

Figure A.1. Lesson plan template.

APPENDIX B

CLASS LEARNING PLAN TEMPLATE

Class Learning Plan

General Ed. Teacher_____ **Special Ed. Teacher**_____ **Date** _____

Time/Period _____ **Class** _____

Student	Learning STRENGTHS from Psychological and PLOP	Learning WEAKNESSES from Psychological and PLOP	Weaknesses identified thru State/System assessments	IEP Goal/ Objective & frequency of monitoring	Recommended Accommodations/ Assistive Technology	Recommended Instructional strategies

Figure B.1. Class learning plan template.

APPENDIX C

MEASUREMENT SCALE FOR PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE ORIGINAL STATEMENTS, CHANGES MADE, AND RESEARCH QUESTION ALIGNMENT

The title of the survey will be Teacher Perception of an Online Planning Tool Survey.

Measurement Scale for Perceived Usefulness and Perceived Ease of Use Question	**Question to be added, deleted, or kept the same**	**Research question alignment**
Age		
Gender		
Current occupation (number of years)		
Number of years co-teaching		
Number of years with co-teacher		
Subscale- Perceived Usefulness: Using CHART-MASTER in my job would enable me to accomplish tasks more quickly.	Using Online planning tool in my job enabled me to communicate with my co-teacher quickly.	Research question 3
Subscale- Perceived Usefulness: Using CHART-MASTER would improve my job performance.	Using Online planning tool improved my ability to create a plan with my co-teacher based on individual students.	Research question 3
Subscale- Perceived Usefulness: Using CHART-MASTER in my job would increase my	Using Online planning tool in my job increased my planning production.	Research question 3

productivity.		
Subscale- Perceived Usefulness: Using CHART-MASTER would enhance my effectiveness on the job.	Using Online planning tool enhanced my effectiveness to plan for students with disabilities with my co-teacher.	Research question 3
Subscale- Perceived Usefulness: Using CHART-MASTER would make it easier to do my job.	Using Online planning tool made it easier to fulfill my planning responsibilities in co-teaching.	Research question 3
Subscale- Perceived Usefulness: I would find CHART-MASTER useful in my job.	I found Online planning tool useful for planning SDI and accommodations with a co-teacher.	Research question 3
Learning to operate CHART-MASTER would be easy for me.	Learning to operate Online planning tool was easy for me.	Research question 3
I would find it easy to get CHART-MASTER to do what I want it to do.	I found it easy to get Online planning tool to do what I want it to do.	Research question 3
My interaction with CHART-MASTER would be clear and understandable.	My interaction with Online planning tool to collaborate with my co-teacher was clear.	Research question 3
I would find CHART-MASTER to be flexible to interact with.	I found Online planning tool to be flexible to interact with.	Research question 3
It would be easy for me to become skillful at using CHART-MASTER.	It would be easy for me to become skillful at using Online planning tool.	Research question 3
I would find CHART-MASTER easy to use.	I found Online planning tool easy to use.	Research question 3

APPENDIX D

OBSERVATION PROTOCOL

Observations will be recorded using a checklist. I will record notes along with the checklist. The checklist specifies areas for observation in planning and online instruction. Observations of planning and online instruction in the co-teaching setting will occur in Microsoft Teams. Observation data will be collected from shared documents, chat, and video conferencing. The observation checklist is below:

Microsoft Teams Planning:

- Discussion about the standards, objectives, and learning targets for the lesson
- Data from class learning plan discussed and used in planning
- Planning and discussion of SWDs skill deficits and strengths as they align with the lesson content
- Plans for lesson resources, accommodations, and SDI
- Co-teaching models for the lesson

APPENDIX E

CO-TEACHERS' SPECIFIC RESPONSIBILITIES FOR THE LESSON

INTERVIEW PROTOCOL

Hello, and thank you for taking the time to consent and participate in this study. I would like to review the purpose of this study before we begin. The purpose of this mixed methods research is to evaluate the impact of Microsoft Teams as an online planning tool on the practices of general and special education co-teachers' responsibilities in the online co-teaching setting along with the perceptions of the online planning tool during a pandemic at three Atlanta area schools and make recommendations for future use of an online tool. A role is defined as the position a co-teacher takes in the team. The role is clearly defined and determines the task for each teacher in planning and implementation. Responsibility is the specific task or duty required to carry out the role of the co-teacher in planning or implementation. As you know, from our pre-innovation training several weeks ago and the on-going coaching I have provided, the district has outline specific roles and responsibilities for co-teachers in the areas of planning and implementation. This interview will focus on three specific research questions of the study.

This semi-structured interview should last approximately 45-60 minutes. I will ask you a series of six pre-written questions. The questions are open-ended, allowing you to discuss your response with me in an open and casual format. If at any time you need clarification or do not understand what I am asking, please let me know. I video and

audio record our interview using my smartphone, which is set up over there (point to the smartphone). Additionally, I will be taking notes to ensure the accuracy of the data collected. We are about to begin; do you have any questions before we start? (Clarify and answer any questions as needed).

First, I am going to collect some demographic information. This information will be used to help describe the sample in the study.

Demographic Question	P1	P1	P2	P2	P3	P3
Age						
Gender						
Current occupation (number of years)						
Number of years co-teaching						
Number of years with co-teacher						

Thank you for answering those questions. Now let's discuss the online planning tool, MS Teams and roles and responsibilities. These questions are meant to explore the advantages, challenges, and impacts of using an online planning tool for planning and implementing in a co-teaching environment.

1. How did COVID-19 change your responsibilities in planning?
2. How would you define your responsibilities for planning?
3. Did using the online planning tool change your definition or view of your responsibilities in planning?
4. How did it change?
5. Can you tell me a time when your planning practices were impacted by using the online planning tool?

6. Were there any changes in your execution of responsibilities in planning when you used the online planning tool?
7. Can you tell me a time when the online planning tool influenced your understanding of your responsibilities in planning?
8. Were there any changes in your practices of your responsibilities for planning once you started using the online planning tool?
9. What overall changes have you noticed in your planning practices since using the online planning tool?
10. How did COVID-19 change your responsibilities in implementing a co-teaching plan?
11. How would you define your responsibilities for implementing?
12. Did using the online planning tool change your definition or view of your responsibilities in online co-teaching?
13. How did it change?
14. Can you tell me a time when your online co-teaching practices were impacted by using the online planning tool?
15. Were there any changes in your execution of responsibilities in online co-teaching when you used the online planning tool?
16. Can you tell me a time when the online planning tool influenced your understanding of your responsibilities in online co-teaching?
17. Were there any changes in your practices of your responsibilities for online co-teaching once you started using the online planning tool?

18. What overall changes have you noticed in your co-teaching practices since using the online planning tool?
19. Have you ever used an online tool for planning and instruction before?
20. What did you like most about using the online planning tool?
21. What did you like least about using the online planning tool?
22. Did your communication and collaboration with your co-teacher change during the pandemic?
23. How does the use of the online planning tool impact your communication and collaboration with your co-teacher?
24. Tell me about challenges you had using the online planning tool.
25. Tell me about successes you had using the online planning tool.
26. What benefits have you experienced in using the online planning tool?
27. Will you continue using the online planning tool for planning and instruction? Explain why.
28. Would you suggest using the online planning tool to colleagues? Explain why.
29. What would you like to see change or stay the same with practices using the online planning tool?

APPENDIX F

INVITATION LETTER FOR EXEMPT RESEARCH

Dear _____,

My name is Jeff Harrell. I am a doctoral candidate in the Curriculum and Instruction: Educational Technology Program at the University of South Carolina. I am conducting a research study as part of the requirements of my degree, and I would like to invite you to participate.

The purpose of this action research will be to evaluate the impact of Microsoft Teams as an online planning tool on the practices of general and special education co-teachers' responsibilities in the online co-teaching setting along with the perceptions of the online planning tool during a pandemic at three Atlanta area schools. The findings of the research will be used to provide recommendations to school and district leadership.

If you decide to participate, you and your co-teacher will be asked to participate in three 60-minute training sessions and one 30-minute training session (over two weeks) for the first phase of the research. The training is meant to provide you will the roles and responsibilities of co-teaching and teach you Microsoft Teams (MS Teams).

Observations will be completed during a class period of you and your co-teacher's choosing. Additionally, I will observe you and your co-teacher's practices and communication in MS Teams. Nothing in this study will be used for evaluative purposes.

You will be asked to complete an individual interview with me. The questions within the interview are based on the usefulness of MS Teams, ease of use of MS Teams, and the impact of MS Teams on your roles and responsibilities practice. I will record the interviews and transcribe our conversations. I will ask you to review the transcript to ensure the accuracy of the script and interpretations.

A survey will be provided to you during the sixth week of using MS Teams. The survey is to understand your perception and likelihood of you using MS Teams. You may feel uncomfortable answering some of the questions. You do not

have to answer any questions that you do not wish to answer. The survey should take approximately ten minutes to complete.

Participation is confidential. Study information will be kept on a secure server at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed. In the findings and recommendations report, a pseudonym will be used to keep your identity confidential.

If you have any questions about the study, please contact me. You may contact me at 706-248-2268 or at jtharrell16@gmail.com or Dr. Arslan-Ari, my faculty advisor, at arslanai@mailbox.sc.edu.

If you would like to participate, please complete the survey at the link provided. If you agree to participate, I will provide an additional consent form in person. Thank you for your consideration and time.

Respectfully,

Jeff Harrell

706-248-2268

Jtharrell16@gmail.com