A Case Study of an Online Teacher Study Group as a Digital Professional Development Tool

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A CASE STUDY OF AN ONLINE TEACHER STUDY GROUP AS A DIGITAL PROFESSIONAL DEVELOPMENT TOOL

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for the degree of Doctor of Education

By

Jessica Martin

December 2019
A CASE STUDY OF AN ONLINE TEACHER STUDY GROUP AS A
DIGITAL PROFESSIONAL DEVELOPMENT TOOL

By

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ABSTRACT

A CASE STUDY OF AN ONLINE TEACHER STUDY GROUP AS A DIGITAL PROFESSIONAL DEVELOPMENT TOOL

By
Jessica Martin
December 2019

Dissertation supervised by Christopher Meidl

In recent years, there appears to have been a shift in professional development approaches for teachers from short-term workshops to teacher communities of professional practice, which extend over a while and focus on the expert knowledge teachers need to use in their setting (Goya, 2014). A supportive approach to teacher learning communities is a teacher study group. An even more promising and flexible approach to teacher learning communities in a global aspect is an online teacher study group. An online teacher study group provided a universal and flexible venue to engage in collaborative discussion between general education and special education teachers about inclusion practices in a general education classroom for students diagnosed with autism. Therefore, the purpose of this case study was to provide a more in-depth look into the collaboration of general education and special education teachers through an
online study group to learn and demonstrate best practices in the inclusive model of teaching.

Positive learning on members of this study group was satisfactory, yet the participation was not highly interactive. This study was significant in that the online teacher study group fostered the teachers’ professional growth, however; their engagement was neither highly interactive nor superior to other online professional development models, even though their anecdotal evidence supported the claim that participants enjoyed and valued the online teacher study group (Yang & Liu, 2004).
DEDICATION

There are a few people that I would like to dedicate this dissertation too. I think of those family and friends who have always supported and believed in me that are no longer with us. To my great-grandmother Hughes, who lived in Iowa. I will forever cherish the visit to the farm and letters you would send to me. Your words always reminded me to work hard and kept my love of animals alive. To my grandfather, Roger Hughes, you made me laugh and find joy in life. I will continue to find joy in everyday things and never lose sight of what is truly important. To my Nonni, Mary LoNigro, you showed me the importance of Faith. You taught me always to stay humble and kind. To my grandfather, Pete Martin, you were quiet but loved to watch all your grandkids at Christmas time. You made sure we acknowledge who every present was from. That taught me to be grateful for everything in my life. Lastly, my certainly not the least, my grandmother Peggy Hughes, I always admired your artistic talent. Thank you for letting me dance in the rain, always having tasty snacks at your house, and telling me I could be anything I wanted as long as it made me happy.
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I would also like to acknowledge my parents, Pete, and Paula Martin, for supporting and encouraging me throughout this process. You have never doubted my abilities in anything I have set out to accomplish. Thank you for listening to my ideas, letting me cry in joys and sorrows, and never letting me give up! Melissa and Christina, my sisters, thank you also for always telling me I could do it and cheering me on.

To my fiancé’ Aaron, you never doubted I would finish this dissertation. Thanks for putting up with dirty dishes in the sink, dusty windows, and the relentless pounding of my fists at the computer all those late nights!

To my “weasels” in Cohort 6, there is no doubt I was able to accomplish this because of you all. We worked through it together and stood by each other’s side through the good and the bad. Each of you will forever hold a special place in my heart.
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LIST OF ABBREVIATIONS

Autism Spectrum Disorder (ASD)
British Columbia (BC)
Community of Practice (CoP)
Computer-Assistive Technologies (CAT)
Free Appropriate Public Education (FAPE)
Individualized Education Plan (IEP)
Individualized Education Program (IEP)
Individuals with Disabilities Education Act (IDEA)
Least Restrictive Environment (LRE)
No Child Left Behind (NCLB)
Online Professional Development (OPD)
Professional Learning Community (PLC)
Teacher Study Group (TSG)
Online Teacher Study Group (OTSG)
Chapter I

Introduction

Professional development models continue to change as new models of teacher learning emerge (Goya, 2014). Research has shown more and more that models for continued professional development have moved away from one-day workshops to innovative professional development methods that are grounded in the idea of learning to teach as a lifelong undertaking planned around a continuum of teacher learning (Borko, Jacobs, & Koellner, 2010; Goya, 2014). Stein, Smith, and Silver (1999) identified structures of this shift in teacher learning. These structures seek to transform teachers’ beliefs, knowledge, and habits of practice over an extended period. These features include various frameworks for teacher development such as teacher assistance focused on teachers’ training and the growth of teacher communities of professional practice. Such features also encourage collegiality among teachers and the development of teachers’ capacities to explain, challenge, and critique the work of peers (Stein et al., 1999; Goya, 2014).

Borko et al. (2010) summarized that present models of teacher professional development should focus on “providing a long-term, inquiry or learner-centered structure that supports teachers as they collaboratively develop the professional knowledge they need to use in their own context” (p.548). Borko et al. (2010) also placed a renewed emphasis on this paradigm and stated that for teacher professional development to be effective, the content and design of such efforts should be placed in classroom practice and focused on students’ learning. It should also engage teachers in
inquiry-based learning activities and building a learning community for professional development.

Professional development could also be thought of as communities of practice. Wenger et al. (2002) define communities of practice as “groups of people who share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p.4). According to Wenger, McDermott, and Snyder (2002), communities of such practice support collaborative inquiry and share three structural elements inherent to all communities of practice: (2) domain, which is a shared sense of identity, (b) community, which make up the people who care about their domain, and (c) practice, which involves the specific knowledge a community develops, shares, and maintains.

Goya (2014), discusses the idea of a teacher study group (TSG) model as a promising form of professional development. A TSG is a teacher inquiry group in which teachers meet regularly for collaborative inquiry about their practical experiences to achieve their collective goal of group learning in a systematic and interactive way (Lambson, 2010; Wenger et al., 2002). Teacher study groups are sustained opportunities for teachers to work in a collaborative environment on issues and challenges that directly influence their teaching (Clair, 1998).

Problem Statement

Historically, American schools have consistently examined ways to enact school reform. Typically, this reform impetus involves the issues of “dwindling funds, concerns about the quality of education” and improving the learner outcomes (Gable & Manning, 1997, p. 219). However, more recently, it is believed that by
involving teachers in school change efforts, such as accountability measures, critics believe that there is an increased likelihood of successful reform. Such critics contend that increased collaboration amongst all educators is a key to successful reform. Scholars further state that collaboration ultimately has not been fully realized in both K-12 settings and in teacher education (Danforth, 2014; Bradwell, 2013; Blandton & Pugach 2007).

In addition to school reform, teaching has been often categorized as a “lonely” profession, and much of the work of teachers has been performed in isolation from their professional colleagues (Gaikward & Brantly, 1992). According to Blanton and colleagues (1991), “this isolation can be seen as beginning with a perpetuated by parallel, noncollaborative teacher education programs” (p. 1). Special educators, unlike their general educator counterparts, have most likely faced even greater isolation due to the traditional model in school separating and alienating them physically and socially (Powell, 2004). Thus, general education classroom teachers came to perceive special educators as having a unique capacity for their work with students of special needs and were a “breed apart…it was inappropriate to expect teachers lacking in such preparations and inclinations to participate in educating students in wheelchairs or students who have difficulty learning academics” (Stainback & Stainback, 1996, p. 19). In other words, special educators chose to serve these children; thus, it should be left to them. Unfortunately, this separation and specialization perpetuated the notion that other educators could opt out of the responsibility of teaching children with special needs. Currently, the overwhelming majority of programs in teacher preparation simultaneously prepare teachers for
either general education or special education in universities separate from one another (Blanton, Florian, & Pugach, 2012; Darling-Hammond et al., 2017).

As inclusive educational practices have spread since the passage of IDEA, culturally and linguistically diverse children, in addition to students with special needs, have entered into general education classrooms enabling the special educator to be included in the core professional life of the school. General and special education teachers are having to sort out new roles and terms of engagement. Essentially teachers have to develop interactional skills to participate effectively in the joint planning, problem-solving and instructional delivery needed to promote the success of diverse learners. Advocates and researchers contend the need for collaboration has never been greater.

Collaboration is a deceptively simple concept with wide-ranging implications for the education of all children and the effectiveness of all educators. The word collaboration is often used generically, implying that collaboration happens when individuals are merely working together; however, this quickly gives the impression that collaboration is an easy and natural process when the opposite is true (Friend & Cook, 2000). According to Robinson and Buly (2007), collaboration “takes effort, diligence, and training. It is not simply working together, liking each other, or spending time engaged in a joint activity” (p. 84). Instead, collaboration is an interactive process that enables people with diverse expertise to generate creative solutions to mutually defined problems (Blanton & Pugach, 2007).

**Theoretical Framework**

**Community of Practice.** The initial concept of Community of Practice (CoP)
originated in Wenger’s partnership with Jean Lave in their 1991 publication, “Situated learning: Legitimate peripheral publication.” In this work, Lave and Wenger used an anthropological perspective to argue that learning is not just receiving or absorbing information. Rather, in their view, learning is “increasing participation in communities of practice” (Lave & Wenger, 1991, p. 49). In Wenger’s 1998 book, “Communities of practice: Learning, meaning, and identity,” focusing on workplace learning, he expands upon this idea of CoP, articulating how social resources shape people’s learning trajectories and their professional identity. Following this publication, Wenger developed the concept of CoP further by presenting it as an approach to knowing and learning that applies to various contexts, including business, organizational design, government, education, and civic life.

More recently, Wenger, Trayner, and de Laat (2011) defined CoP as a “learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other’s experience of practice as a learning resource” (p. 9). According to Wegner (2004), neighborhoods can sometimes be referred to as a community, but they are not a community of practice. This theory has three crucial elements that distinguish a community of practice below:

- **The Domain:** For Wenger (2004), the domain of a CoP constitutes “the area of knowledge that brings the community together, gives it its identity, and defines the key issues that members need to address” (para. 13). The domain, therefore, is what gives a group its identity and distinguishes it from a club of friends or a network of connections between people.
• **The Community:** For Wenger (2004), the community constitutes “the group of people for whom the domain is relevant, the quality of the relationships among members, and the definition of the boundary between the inside and the outside” (para. 14). For a group of people to constitute a CoP, its members must come together around ideas or topics of interest (the domain) and interact with each other to learn together.

• **The Practice:** Wenger (2004) defines the practice as “the body of knowledge, methods, tools, stories, cases, documents, which members share and develop together” to address recurring problems in their specific contexts (para. 15).

The concept of a community of practice has found several practical applications in business, organizational design, government, education, professional associations, development projects, and civic life. Schools and districts are organizations in their own right, and they too face increasing knowledge challenges. The first applications of communities of practice have been in teacher training and in providing isolated administrators with access to colleagues. There is a wave of interest in these peer-to-peer professional-development activities. But in the education sector, learning is not only a means to an end: it the end product. The perspective of communities of practice is therefore also relevant at this level.

**Purpose**

Therefore, the purpose of this case study was to provide a more in-depth look into the collaboration of general education and special education teachers through an online study group to learn and demonstrate best practices in the inclusive model of teaching. Specifically, looking at teachers’ perceptions an online teacher study group as a digital
form of professional development and the use, motivation, and perception of benefits for instructing students diagnosed with mild to moderate autism in an inclusion setting (Ballard, 2018). The online teacher study group was compiled by observing a group of general education and special education teachers through a series of online learning modules with discussion posts, journal entries, and individual interviews on their experience. Data was collected using the multiple variables aforementioned via the triangulation method and analyzed through coding.

The need to investigate the collaboration between general education and special education teachers came about based on continued research on the inclusion model and its suggestion that teachers can be reluctant to teach in an inclusion setting. Also, research has shown that the attitude educators hold toward the practice of inclusion is an essential determinant of the success of inclusive education for students with disabilities (Burack et al., 1997; Segall, 2007). Therefore, the primary purpose of this case study answered the following questions:

1. What are general education and special education teachers’ perceptions of an online teacher study group to be a digital professional development tool in supporting the needs of students with autism in the general education classroom?

2. In what ways does an online study group support the needs of teachers of students with autism in the general education classroom?

3. What are some barriers to implementing online study groups as a professional development tool?
Chapter II

Literature Review

Advances in information technology, along with the changes in our society, are creating new paradigms for education (Franklin & Van Harmelen, 2007; Goya, 2014). The literature review discusses the significance of the shift of special education through the inclusion model. A brief background on defining inclusion and its history will explain this paradigm shift, followed by the need for increased training on the inclusion model for general education teachers. The discussion continues with the importance of general education and special education collaboration for a useful inclusion model to take place. Such emphasis is further addressed in the following subsections providing insight into autism in the general education classroom and teachers’ attitudes (particularly general education teachers) towards inclusion.

The following sections review research on professional development in education. This section examines what research has found in defining professional learning communities. Also discussed is the significance of professional development, what effective professional development looks like, online professional development models, and creating informal online communities for professional development.

Next, the researcher discusses what teacher study groups are and how they can be used as a form of professional development using the idea of informal online learning communities in the previous section. The literature is brought full circle, providing evidence of the relevance to conducting a case study on teachers’ perceptions of an online teacher study group as a digital professional development tool.
Inclusion

**Background Information.** Before Public Law 92-142, the needs of students with disabilities were met through self-contained special-education classes. Public Law 94-142, enacted in 1975, specified that all disabled children between the ages of 3 and 18 must have a free and appropriate public education. The Individuals with Disabilities Education Act (IDEA) came next in 1990 and was reauthorized in 1997 and 2004. The main purpose of the IDEA is to ensure students with disabilities are given a free appropriate public education (FAPE), regardless of ability (National Research Center for ADHD. 2013). According to recent statistics from the National Center for Education Statistics (2009), “95 percent of 6- to 21-year-old students with disabilities were served in regular schools; 3 percent were served in a separate school for students with disabilities; 1 percent were placed in regular private schools by their parents, and less than 1 percent were served in one of the following environments: in a separate residential facility, homebound or a hospital, or a correctional facility.”(U.S. Department of Education, National Center for Education Statistics (2012). These statistics clearly state the need for continued training and collaboration among general education and special education teachers on best practices for students with disabilities in an inclusive setting.

**History of Inclusion.** With the impact of IDEA, came the increase of the inclusion classroom model. The inclusion classroom setting involves students with disabilities being serviced in the general education classroom with the primary teacher being the general education teacher. There is no pullout or alternative class (Osgood, 2005). The implementation of these practices varies by school. Students with special needs are being put in the ‘least restrictive environment’ (LRE) (Osgood, 2005).
According to Osgood (2005), there are two basic types of inclusion: push in or full inclusion. The "Push-In" model has the special education teacher come into the regular classroom to provide instruction and support to children. The push-in teacher will bring materials into the classroom. The special education teacher in this model mostly offers instructional support to the general education teacher and students with disabilities. "Full Inclusion" places a special education teacher as a full partner in a classroom with a general education teacher.

The general education teacher is the teacher of record, and is responsible for the child, even though the child may have an IEP (Osgood, 2005). An Individualized Education Program (IEP) is the document that spells out the student’s needs and how they will be met (Yell, 1998). The IEP describes a child’s strengths and weaknesses, sets measurable goals and objectives and provides details about the supports and accommodations that will be used to meet them. Inclusion is becoming increasingly more common in public education (Yell, 1998). Inclusion does not mean that a child with special needs should be placed into a general education setting just like a typical learner; a variety of special education supports should be provided to create a thriving environment and positive experience for everyone involved.

**Inclusion and Teacher Training.** Research has shown special education teachers and school psychologists have a higher knowledge of strategies and methods used to teach students with disabilities (Davis Florian, &Ainscow, 2004). Such knowledge is due in large part to literature that suggests many general educators would not be able to successfully state what an efficient inclusion classroom looks like (Kilanowski, Foote, & Rinaldo, 2010). Teachers, especially general education teachers,
need to be aware of the fast-growing numbers of students with disabilities many schools face today. Other research further indicates the support by federal law for inclusion settings with all special needs students. Dr. Cavanaugh at the University of Florida (2013) suggests that all teachers at some point are likely to encounter students with disabilities throughout their careers. Such research indicates a lack of pre-service and in-service training among general education teachers set to work in an inclusion setting. Pre-service and in-service teachers, therefore, need to be introduced to the idea of an inclusion setting and what, if any, types of services are offered to general education teachers already working in an inclusion setting.

Other authors have focused on the importance of assistive technologies in working with students with disabilities. One particular study discusses how computer-assistive technologies (CAT) can help improve the social, communicative, and language skills of students with autism (Ploog et al., 2013). One of the most common aspects of the autism spectrum disorder has to do with poor social and communication skills. Sam Carlson (2012), Executive Director of World Links, states in his research how important it is for teachers to become adequately trained in using educational technologies to students to receive the most beneficial instruction from using such tools. World Links program suggests that at least eighty (80) hours of professional development are required before teachers can begin to integrate technology into their teaching.

**General Education and Special Education Collaboration.** Collaboration is a process that permeates society. Most significant achievements of the 20th century would not have been possible without collaborative efforts in the workplace (Friend, 2000). Special education teachers have a long history of working with professionals, including
teachers, administration, paraprofessionals, and district partners and are tasked with working collaboratively with general education teachers to meet the needs of students with special needs (Lamar-Dukes & Dukes, 2005). It is important to note that collaboration is more than just a conversation or discussion between teachers; it is an ongoing process where the student is at the center, and the teachers are sharing responsibility for student learning (Lamar-Dukes & Dukes, 2005).

The special education teacher brings to the collaborative process an understanding of the student’s areas of strength and weakness, knowledge of necessary adaptations and modifications that enable access to the curriculum, as well as strategies to ensure student success. This teacher also brings an awareness of services that can be accessed and possible funding sources (Paulsen, 2008, Richards et al., 2016).

The general educator brings knowledge of the curriculum, resources available, an understanding of classroom dynamics, as well as teaching style to the collaboration. This collaboration allows general and special educators to share complementary skill sets and knowledge to support students. In collaboration, there is not an expert who is teaching others how to plan, deliver instruction, and assess, but instead, all parties involved in the process have valuable expertise to share, and this expertise is beneficial (Paulsen, 2008, Richards et al., 2016).

With the move to inclusive education, which is a guiding principle of education in British Columbia (BC) (British Columbia Ministry of Education, 2013a), students with special needs are in the general education classroom for the majority of the school day. According to the Ministry of Education, collaboration is a means of supporting students identified with special needs. The Ministry of Education also refers to collaborative
consultation as a way to address concerns or solve problems. This idea allows students with special needs to receive their education with their chronological peer group. Their general education teacher and special education teacher are supposed to work together to support their needs as well as meet the goals outlined in the student’s Individual Education Plan (IEP).

In Kritikos and Birnbaum’s (2003) study, more than half of the respondents identified working together as a role for both special and general education teachers in collaboration. With this process, both the special educator and the general educator can bring along their knowledge of student needs, curriculum, instructional strategies, and assessment practices to ensure that the student is receiving an education in the least restrictive environment possible.

Special education teachers have specific duties and responsibilities that must be completed every school year. They are responsible for ensuring that all required documentation, including the IEP, is current and satisfy BC Ministry of Education standards and guidelines for all students on his/her caseload as well as having students with new diagnoses obtain special education designations (BC Ministry of Education, 2013a). Currently, there is no limit to the number of designated students that may be on a special education teacher’s caseload. As a result, special education teachers have large workloads and special education teachers have noted that with their increased workloads, they have less time to meet with classroom teachers (Allen, 2003).

These caseloads, the students with Ministry of Education designations that are entitled to support from special education teachers, are increasing and continue to grow as a result of the BC government removing special education teacher caseload limits from
contact language (Naylor, 2011). While special education teachers do not teach a full class of students, they still have teaching responsibilities and deliver instruction to small groups of students and are responsible for planning, providing instruction, and assessing students who are receiving learning assistance (BC Ministry of Education, 2013a). Furthermore, in most elementary schools there will be one special education teacher that is potentially supporting students in all classrooms and is also attempting to find the time to meet with classroom teachers to help those students (Friend, 2000). As the demands on the special education teacher increase, the process of collaboration is negatively impacted.

The responsibilities of a general education teacher are varied and many and, at times, can be overwhelming. The Learning Assistance Teachers’ Association (2013) provides the following description:

Picture a “typical” class in any BC school. You can expect that 10% of students have low or high incidence special needs Ministry designations (i.e., autism, chronic health, mental illness, learning disability, intellectual disability, gifted, etc.). Expect to find 20% of students in the “grey area.” These students do not have a Ministry tag but are not yet meeting expectations in school. On average, 40% of students are not fully meeting learning outcomes. ESL students can be expected to make up 10% of the class. The remaining 20% of students are fully meeting or exceeding expectations. Therefore, 80% of students in our inclusive classroom have learning differences that affect success in school. (Guiding Principles section, pg. 2).
It is becoming increasingly more difficult for teachers to meet the many needs of all students in the general education classroom. By engaging in collaboration, teachers could share the responsibility of the planning, providing resources, determining instructional strategies, and assessing for students with special needs (Hindin, Morocco, Mott & Aguilar, 2007; Voltz, Raymond, & Cobb, 1994).

Collaboration is moving teachers away from solitary, isolating teaching where they are solely responsible for all learning in their classroom. All teachers have the knowledge to share, and by working with special education teachers, general education teachers can learn new strategies and teaching styles to support students (Eisenma et al., 2011). In another study by Ronfeldt et al. (2015), about 85% of teachers involved, identified as being a part of “a team or group of colleagues that work together on instruction” and report that collaboration in these teams is quite extensive and helpful.

Because both the special and general education teacher are jointly responsible for the student with special needs, they can experience together the satisfaction and pride when that student is successful in the general education classroom as a result of their successful and effective collaborative efforts.

The education system has shifted away from having students with special needs in standalone classes serviced by a special education teacher towards an inclusive model with students integrated into the general education classroom. With this shift, the importance of effective collaboration between general and special education teachers has increased. The move towards inclusion and integration sees students with special needs in the classroom, with their peers, receiving whatever adaptations and supports are necessary to achieve success (BC Ministry of Education, 2013a). For this to happen,
classroom teachers may require the knowledge and skills of the special education teacher as he/she has specific training to share with the classroom teacher that makes inclusion a positive experience for all.

Conderman and Johnston-Rodriguez (2009) put forward the idea that collaboration advances inclusion. Initially, having a student with special needs in a general education classroom may potentially be overwhelming, but knowing there is a special education teacher to work with to create an environment that is conducive to learning for all can be reassuring and alleviate any anxious or nervous feelings.

In recent years, controversy has increased concerning inclusion and mainstreaming of students with special needs in public education settings. Laws are being updated or developed regarding the inclusion of students with disabilities in the regular education environment. The special education legislations of Pennsylvania—Chapter 14—and the Federal Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004) do not specifically use the word inclusion. However, these laws refer to educating a student with disabilities in the "least restrictive environment" or LRE, which usually refers to the general education classroom. References to LRE by legislative measures are referring to the concept of inclusion without using the word (Wright & Wright, 2006). However, for every proponent of inclusion, there is an opponent who believes that inclusion has a detrimental impact on general education teachers and students without disabilities.

Additionally, another trend significantly affecting the education of students with disabilities compounds the issue of inclusion. Over the last 30 years, a highly publicized significant rise in the diagnosis of autism or autistic spectrum disorders (ASD) has
occurred. Before 1980, the incidence rates of autism were below 5 per 10,000 children; currently, they are reported at 1 in 110 children (Baird et al., 2006; Lord & Bishop, 2010), a vast and concerning increase from the numbers noted in 1980.

**Autism in the General Education Classroom.** General education teachers, who are not trained in the complex disability of autism, are quite likely at some point in their teaching career to have autistic students included in their general education classrooms. This scenario can elicit many different beliefs, attitudes, and emotions (Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008). These teachers may also have strong beliefs that a student with autism should not be included in the general education environment.

As the educational diagnosis of autism continues to increase and inclusionary practices become the norm; it is crucial to recognize general education teachers' beliefs concerning the inclusion of students with the educational disability of autism. Therefore, administrators and other school district personnel must realize that, while the current trend is to educate students with autism in the general education classroom, some teachers adamantly disagree. Before workable solutions and compromises can be reached, a look at the beliefs and backgrounds of general education teachers concerning the inclusion of elementary autistic students must be explored thoroughly. Little published research exists on general education teachers' views regarding the inclusion of students with disabilities, specifically elementary students with an educational disability category of autism.

**Teachers’ Attitudes Towards Inclusion.** A review of 26 studies regarding teacher attitudes toward inclusive education was conducted by Boer et al. (2010) throughout literature published in 10 years (1998 to 2008). This review was focused
around three themes of investigation: (1) the attitudes of teachers towards inclusive education according to the three components of attitude (cognitive, affective, and behavioral) (Eagly and Chiaken, 1993; Triadis, 1971), (2) related variables, and (3) the effects of teachers’ attitudes on the social participation of pupils with special needs. These studies concluded that most teachers have a neutral or negative attitude towards the inclusion of students with special needs in a regular education classroom (Boer et al., 2010). The review also revealed that training, experience with inclusive education, and the type of disability had a relation to the attitude of regular education teachers’.

Teachers’ attitudes also differ according to the type of disability. Avramidis et al. (2000) show that students with emotional and behavioral difficulties are significantly more concern to teachers that students with other types of disabilities. Similarly, Soodak et al. (1998), reported that teachers hold the most negative attitudes towards the inclusion of students with mild or moderate disabilities and emotional disturbances.

Alghazo and Naggar Gaad (2004) examined attitudes of regular education teachers towards inclusion (n = 160). A questionnaire was used to collect data and included statements to indicate whether teachers ‘agreed’ or ‘disagreed’ with the philosophy of inclusion. The questionnaire used a five-point Likert scale that ranged from 1 to 5 (1 = strong agreement and 5 = strong disagreement). The overall mean of 3.2 (standard deviation (SD) = 0.34) indicated that teachers held a neutral attitude towards the inclusion of pupils with special needs in general education.

Avramidis and Kalyva (2007) assessed teacher beliefs (n = 155) using the ‘My Thinking About Inclusion’ questionnaire (developed by Stoiber, Gettinger, and Goetz 1998). This study consisted of three subscales, namely: core perspectives, expected
outcomes and classroom practices. Teachers were asked to indicate the extent of their agreement on items of the three subscales according to the response choices 1 = strongly agree to 5 = strongly disagree (low scores indicated positive attitudes). The subscale ‘core perspectives’ reflects the cognitive component as it illustrates teachers’ beliefs about inclusive education. The subscale includes items such as ‘Children with special educational needs have the right to be educated in the same classroom as typically developing students.’ The other two subscales did not reflect one of the components and were therefore exempt from further analysis. The mean item score of 2.86 (SD = 0.37) on the subscale ‘core perspectives’ indicated that teachers held an undecided/neutral attitude towards inclusive education. However, the authors of the study concluded that teachers held favorable positions regarding the philosophy of inclusive education.

Kalyva et al. (2007) attitudes of Serbian primary schoolteachers were also examined by the MTAI (Stoiber, Gettinger, and Goetz 1998) (n = 72). The authors reported that teachers held slightly negative attitudes towards core perspectives.

Batsiou et al. (2008) investigated the attitudes and intentions of Greek and Cypriot teachers towards the education of pupils with special needs in regular classrooms (n = 179) utilizing a questionnaire. The data included seven variables (intention, attitudes, subjective norms, self-identity, attitude strength, knowledge, information, and experience) and consisted of items such as ‘For me teaching in a class with regular and special educational needs students next year is …’. Responses were rated on a seven-point scale using five opposing adjectives (such as good-bad, useful–not useful or strongly agree to strongly disagree), in which a lower score indicated more positive attitudes. The mean score on the variables ‘attitudes’ (mean = 4.7, SD = 1.2), ‘self-
identity’ (mean = 3.8, SD = 1.5), ‘attitude strength’ (mean = 3.7, SD = 1.3) indicated neutral attitudes of teachers.

Parasuram (2006) reported a mean item score of 3.3 on the ‘Attitude Towards Inclusive Education Scale’ (developed by Wilczenski 1992). Through a six-point Likert scale, teachers (n = 300) indicated their extent of agreement (ranging from 6 (‘strongly agree’) to 1 (‘strongly disagree’), in which a high score indicated more favorable attitudes towards inclusive education. The mean item score of 3.3 indicated that teachers’ attitudes leaned towards Response number 3, namely ‘disagree somewhat.’

Using the ‘Mainstream Attitude Survey’ (MAS, developed by Bender, Vail, and Scott 1995) deBettencourt (1999) surveyed teachers’ beliefs about inclusion (n = 71). The five-point Likert scale included items such as ‘I support mainstreaming …’, in which a higher score indicates a more positive belief. The results of the study showed that 29.9% held negative views towards inclusion (Response numbers 1 and 2), whereas 40.8% held positive views (Response numbers 4 and 5). The other 29.5% of the teachers showed neutral attitudes.

Hammond and Lawrence (2003) investigated teachers’ attitudes towards inclusion using the ‘Prevailing Attitudes about Inclusion’ questionnaire (n = 343). This five-point Likert scale included statements such as ‘Inclusion benefits all special education students.’ The scores on the items showed that 49.7% of the teachers agreed with the statements and 30.2% disagreed. According to the rule of thumb, the results of the study indicated that teachers held neutral attitudes.

In a study of Kim, Park, and Snell (2005), teachers’ attitudes (n = 30) towards inclusion were examined by the ‘Teachers’ Attitudes Scale on Inclusion’ (TASI)
(developed by Green and Stoneman 1989). This questionnaire consisted of 32 items, in which teachers indicated their level of agreement using a five-point Likert scale. The possible score range was between 32 and 160, with higher scores reflecting more positive attitudes. The mean score of 107.50 (SD = 11.37) showed that teachers held neutral attitudes.

Opdal, Wormæs, and Habayeb (2001) found supportive attitudes among teachers. By means of a questionnaire, teachers were invited to share their opinions about inclusion (n = 90). The study showed that 60% of the participating teachers thought that pupils with special educational needs should have the chance to attend regular schools. According to the rule of thumb, this percentage indicates that teachers held neutral attitudes.

Pearson et al. (2003) used interviews to examine teachers’ attitudes towards inclusive education (n = 224). Many teachers agreed with the two positive values of inclusion, namely ‘realization of equal opportunity’ (75.9%) and ‘a good chance for students to interact’ (75.5%), whereas 61.8% responded positively to the item that ‘inclusion is an educational value to other students.’ But almost half of the teachers (48.1%) responded that integrated education was ‘a painful struggle for special needs students,’ and 60% indicated that integrated education was ‘a burden to the school and teachers.’ According to the rule of thumb, we interpreted the results as neutral outcomes.

Results of Mushoriwa (2001), however, showed that the majority of teachers were against inclusive education for visually impaired children. The study evaluated teachers’ attitudes towards the inclusion of blind children in regular classes based on their responses to several statements on inclusive education. Of the total sample (n = 400),
86% of the teachers reported they were not in favor of inclusive education. Concerning the inclusion of pupils with a hearing disability, Freire and César (2003) reported that two of the five teachers interviewed agreed with the inclusion of deaf pupils. Ghanizadeh, Bahredar, and Moeini (2006) examined teachers’ attitudes towards the inclusion of children with AD/HD (n = 169) and reported hardly any positive attitudes. The study showed that 152 out of 196 teachers’ (77.5%) agreed that AD/HD pupils should attend special education settings instead of regular education.

Rheams and Bain (2005) used the ‘Attitude Toward Inclusion Scale’ (ATIS) (developed by Larrivee and Cook 1979), which measured teachers’ attitudes towards the inclusion of pupils with special needs in regular classrooms (n = 79). The ATIS consisted of 30 items in which teachers indicated their degree of agreement using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The mean score of 84.65 (SD = 15.75) on the whole scale indicated the neutral attitudes of teachers.

Teachers’ attitudes towards inclusive education were further examined by Wilkins and Nietfeld (2004), using a questionnaire that consisted of items such as ‘There are disabilities that are inappropriate for the regular classroom’ (n = 89). The four-point response scale ranged from ‘strongly agree’ to ‘strongly disagree,’ in which lower scores indicated positive attitudes. The mean score of 2.49 (SD = 0.69) on the questionnaire revealed that teachers hold neutral attitudes towards inclusive education.

The previous results were regarded as beliefs of teachers towards inclusive education. One of the studies investigated the other aspect of the cognitive component, namely, knowledge. Sadler (2005) examined teachers’ knowledge level about educating children with speech and language difficulties (n = 89). Teachers were asked to rate their
knowledge level by means of a questionnaire, which included questions such as ‘How would you rate your present knowledge of speech and language impairments in children?’ The results of the study showed that 87.6% of the teachers reported having ‘limited’ or ‘very limited’ knowledge. None of the teachers rated themselves as having sufficient knowledge about teaching pupils with speech and language difficulties.

Studies were also reviewed that focused on teachers’ feelings towards aspects of inclusive education. Bussing et al. (2002) assessed teachers’ confidence to educate pupils with AD/HD (n = 365). Teachers rated their confidence in their ability to perform a task on a five-point Likert scale, ranging from 1 (‘no confidence’) to 5 (‘strongly confident’). Teachers indicated their degree of confidence based on ten statements such as: ‘I’m able to manage the stress caused by students with AD/HD in my classroom.’ The mean score of 3.87 (SD = 0.95) indicates that teachers were reasonably confident about their ability to educate pupils with AD/HD. However, the high standard deviation needs to be considered in interpreting the outcomes of the study. Feelings of confidence by teachers were also investigated by Sadler (2005). This study showed that none of the participating teachers (n = 89) reported being very confident in teaching children with speech and language difficulties. A majority of the teachers (63%) indicated that they felt ‘not confident at all’ or ‘not very confident.’ Moreover, negative findings were found by Snyder (1999), who reported that none of the general primary education teachers felt confident in working with students with special needs.

Everington, Steven, and Winters (1999) assessed feelings of competence among teachers by asking them to respond to 13 statements, such as ‘I feel I am competent in
managing behavior,’ using a five-point Likert scale (ranging from 0 = strongly agree to 4 = strongly disagree). A lower score indicated a higher agreement with the statement. The results of the study showed a mean score of 1.35, which means teachers ranked their feelings of competence between Response number 1 (agree) and 2 (neutral). According to our rule of thumb, the results of the study are positive.

The ‘Regular Education Initiative Questionnaire’ (Gemmel-Crosby and Hanszlik 1994) was used by Glaubman and Lifshitz (2001) to examine teachers’ willingness to include pupils with special needs in their classroom (n = 136). Teachers’ attitudes were assessed using a five-point Likert scale. However, the response choices were compressed in the analysis of the results (1 and 2 = 1, 3 = 2 and 4 and 5 = 3), in which a higher score indicated positive attitudes. The mean score of 1.96 (SD = 0.58) showed that teachers are neutral about the inclusion of pupils with special needs in regular classrooms.

Additionally, the ‘Regular Education Initiative Questionnaire’ (Gemmel-Crosby and Hanszlik 1994) was also used by Lifshitz, Glaubman, and Issawi (2004) to examine Israeli and Palestinian teachers’ attitudes towards inclusive education (n = 125). The five response choices (1, ‘strongly disagree’ to 5, ‘strongly agree’) were condensed to a three-point scale, with a higher score representing more positive attitudes towards inclusion. Regular education teachers showed a mean score of 2.02 (SD = 0.61), which indicated neutral attitudes. It is no surprise that teachers with experience in inclusive education hold more positive attitudes than those with less experience and smaller class sizes, the more positive attitudes teachers have (Boer et al., 2010).

The review of literature conducted by Boer et al. (2010), further discussed that teachers do appear to endorse inclusive education in general; however, the idea of
actually being involved in inclusion as their teaching practice concerned and their opinions varied according to the type of disabilities.

**Professional Development Practice**

Teacher professional development can be classified according to three models (Sprinthall, Reiman, & Thies-Sprinthall, 1996): the “craft” model states that teachers' professional development is a result of experience acquired from classroom experiences; the “expert” model asserts that teacher professional development is the result of training by other expert teachers; finally, the “interactive” model states that teachers' knowledge grows when external sources of information lead to new experiences in the classroom which, depending on the results, can lead to new insights, thus facilitating professional development.

In order to use professional development as a vehicle for improvement, school districts need to know how teachers learn new skills. School districts have typically assumed teacher learning is straightforward, with teachers merely needing to be presented with information about effective teaching strategies. But research suggests teachers’ learning process is more complicated than that.

General education teachers, who are not trained in the complex disability of autism, are quite likely at some point in their teaching career to have autistic students included in their general education classrooms. This scenario can elicit many different beliefs, attitudes, and emotions (Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008). These teachers may also have strong beliefs that a student with autism should not be included in the general education environment.
Most teachers only experience traditional, workshop-based professional development, even though research shows it is ineffective. Over 90 percent of teachers participate in workshop-style training sessions during a school year (Darling-Hammond et al., 2009). This style stands in stark contrast to teachers’ minimal exposure to other forms of professional development (Darling-Hammond et al., 2009). Despite its prevalence, the workshop model’s track record for changing teachers’ practice and student achievement is abysmal. In short, one-shot workshops often don’t change teacher practice and do not affect student achievement (Yoon et al., 2007; Bush, 1984).

Research suggests that professional development that engages teachers in an instructional inquiry over an extended time through collaborative professional learning communities (PLCs) is effective in improving instruction and student achievement. Still, most professional development is offered as short-duration workshops that are not effective in changing practice. Barriers to the implementation of PLCs include lack of shared meeting time and a shortage of teachers who share the same subject areas or shared goals and interests. Convening teachers from multiple districts can alleviate this problem, but teachers are reluctant to travel for meetings due to time and cost restraints. Video-conferencing software offers a solution to these barriers while serving to foster the sense of community needed for PLCs to be effective. The researchers describe the use of Virtual PLCs in which two groups of teachers met monthly for one school year to collaboratively analyze evidence collected as part of their teacher inquiry plans. With help from a facilitator, these groups developed a relationship similar to other groups meeting face-to-face.
Professional Learning Communities. Professional learning communities (PLCs) refer to groups of staff members committed to a collaborative learning effort with the explicit goal of improving practice, often with a facilitator who guides the discussion by focusing the discourse of the group on critical analysis (Hord, 1998). Researchers in the Problem-Based Learning (PBL) Project for Teachers explored the use of videoconferencing to support and facilitate professional learning communities. Two-way video technology has been used to support classroom observations (Bell and Garofalo 2006; Dyke et al. 2008), distance learning (Kincade 2004; Salinas 2005), and virtual town hall meetings (Crane and Raucci 2003; Elliott 2009), but literature on how video conferencing can be used to support learning communities for professional development is less common (Kincade 2004; Ullman 2010).

Barriers to the implementation of PLCs include lack of shared meeting time and a shortage of teachers who share the same subject areas or common goals and interests (p.267). While several models of professional learning communities have been presented, several key components must be included in the design of a PLC. (p.269)

- Supportive and shared leadership
- Shared values and vision
- Collective learning and application of learning
- Supportive conditions (physical, human capacities)
- Shared practice (Hord 1998)

“Teachers often resist attempts to enlist participants in long-term intensive PD programs (Zhang et al. 2008), especially when the commitment includes travel from school to some other site. “(p.269)
Significance of Professional Development. These groups have been shown to produce an effective approach to teacher learning (Dufour, 2004; Henderson and Gornik, 2007; Putnam and Borko, 1997). PLCs are based on a social constructivist view of learning (Vygotsky, 1978) that views interactions between learners as an essential element step in the construction of new ideas. Eaker et al. (2002) include the practice of collaborative inquiry (the framework for this study) in their social-constructivist model as a component that promotes teacher learning and revision of practice based on evidence.

 Effective Professional Development. Richard Dufour (2004), a leading proponent of PLCs as a tool for educators, emphasis three “big ideas” for professional learning communities: (1) an emphasis on learning, (2) developing a culture of collaboration, and (3) a focus on results. (p. 6-7). Darling-Hammond et al. (2017), further studied effective professional development by defining it as “structured professional learning that results in changes in teacher practices and improvements in student learning outcomes.” (p.2). These researchers reviewed 35 methodologically rigorous studies that have demonstrated a positive link between teacher professional development, teaching practices, and student outcomes and found the following shared features of effective professional development. Such professional development:

- Is content focused
- Incorporates active learning
- Supports collaboration
- Uses models of effective practice
- Provides coaching and expert support
- Offers feedback and reflection
• Is of sustained duration

Research also suggests professional development that engages teachers in an instructional inquiry over an extended time through collaborative professional learning communities (PLCs) is effective in improving instruction and student achievement (McConnell et al., 2012). Nations across the globe are pushing to improve education, and in the effort, are investing in professional development as the driving force behind reform (Borko 2004; Wei et al. 2009a, b). Most of these studies cite continued prominence of one-time, short-duration workshops and presentations mandated by school leaders, which have been shown to be inadequate strategies for bringing about change in teacher practices (Guskey 2002; Kesson and Henderson 2010; Wei et al., 2009). Leask and Younie (2001) have concluded with their research that “teachers desire professional learning opportunities that focus practical classroom strategies targeting their specific needs” (p.129). Others have added that such professional development also needs support and to continue over a sustained period (Bell and Gilbert 1996: Borko, 2004).

Online Professional Development

Online teacher professional development (OTPD) is popular due to the need for professional development that can fit teachers’ busy schedules and that provides access, as well as ongoing support, to valuable resources not otherwise affordable or even available locally (Dede et al., 2009). OTPD provides flexibility by allowing participants, irrespective of location, to manage educational pursuits with work and personal responsibilities (Stanford-Bowers, 2008). Also, with OTPD programs, Chen et. al (2009) believe teachers are able to develop their pedagogical skills and strategies and increase their use of technology. These researchers further found that an online learning
environment that fosters the development of a professional community, OTPD becomes more purposeful in meeting the personal ongoing professional development needs of teachers.

According to the findings of the Speak Up 2012 survey, "From Chalkboards to Tablets: The Digital Conversion of the K-12 Classroom" as reported in Cavanagh (2013), the percentages of teachers and principals participating in online classes, webinars, and virtual professional learning communities rose significantly during the time period of 2008-2013. Also, the number of principals who reported they support professional growth through some form of social networking more than tripled, from 8% in 2008 to 25% currently.

Ford et al. (2008) use the term virtual professional learning community (VPLC) to describe various media and software environments. These VPLCs have been implemented in many different forms, including bulletin board discussion groups, course management software, asynchronous text-based collaborations like wikis and blogs, videoconferencing software such as Skype (Carleén and Jobring 2005; Charalambos and Michalinos 2004; Dede 2004a; Duncan-Howell 2010; Howard et al. 2004; Orill 2002; Sorensen and Murchu 2004), and even Twitter (Trinkle 2009). These examples have a similar goal: using technology to support collaborative learning among participants separated by geographic or temporal barriers. Of these tools, the most relevant to this paper is the use of videoconferencing. (p.269)

**Informal Learning Communities as Professional Development.** Although courses are the most popular formula, teachers who undertake professional development activities that involve individual and collective research, peer observation and
participation in professional networks tend to implement active teaching practices involving projects, group work and the use of new technologies (OECD, 2014). It is not uncommon for teachers in search of new ideas or willing to try new methodologies to look for collaboration opportunities and support outside the school. Online networks and communities offer these teachers the opportunity to share knowledge and learn with other peers who are located far away from each other (Ravenscroft, Schmidt, Cook, & Bradley, 2012). Hence, teacher study groups can readily comply with an informal online community.

**What Are Teacher Study Groups?**

The term “teacher study group” first appeared in the literature almost 25 years ago (Sugai, 1983). Since then, the term teacher study group has referred to a slightly loose conglomerate of PD approaches (Logan & Stein, 2001; Taylor & Pearson, 2003; Tichenor & Heins, 2000) that have very little in common, except for comprising of small groups of teachers working together towards a specific goal. In 1992, Murphy identified three purposes for teacher study groups in general: (a) facilitate the implementation of curricular and instructional innovations, (b) plan school improvements, and (c) guide educators in studying research-based practices. This broad, virtually all-encompassing definition seems to fit the literature on teacher study groups reviewed.

Although teacher study groups have been used sporadically for the last two decades, very few details have emerged about their specific features and their impacts on either teaching practice or student outcomes. Findings are only suggestive of the link between these groups and improvements in teaching practice, student achievement, and
school culture (e.g., Foorman & Moats, 2004; Gersten, Baker, & Griffiths, 2003; Saunders et al., 2001; Tichnor & Heins, 2000).

For example, Foorman and Moats (2004) used a teacher study group as one of several components of their PD work in Washington, D. C. on improving the quality of reading instruction in schools and indicated that both the research team and the teachers found them to be very promising. Saunders et al. (2001) noted that teacher study groups were an essential component of their successful school-wide improvement program, which resulted in documented achievement growth in reading.

In a case study research of the Early Literacy Project (Englert & Tarrant, 1995), it was found teacher study groups to be linked to high levels of change in teacher beliefs and use of curricula, though not necessarily to shifts in the application of research-based instructional principles in reading (Gersten et al., 2003).

**Teacher Study Groups and Professional Development.** It has been well documented for some time now that approaches to teaching should emphasize active student participation and problem-solving as the center of student learning success. However, teachers are often faced with the challenge of the lack of control in their inquiry (Matlin & Short, 1991). Teacher study groups offer an opportunity to overcome such challenges and research as demonstrated that inquiry-based teacher study groups in K-12 schools are, in fact, a promising strategy for sustained, substantive school improvement (DuFour and Eaker, 1998; Lieberman, 1996). In inquiry-based study groups, educators can ask critical questions and build a collaborative framework for finding solutions (Tichenor & Heins, 2000).
Sanacore (1993) outlines several other benefits of study groups: (a) study groups focus on what educators consider to be essential; (b), study groups emphasize sharing, which usually stimulates educators to read professional literature; (c) study groups with a membership of both teachers and administrators provide unique opportunities for realizing various perspectives and concerns; (d) study group outcomes are usually discussed at grade-level, department, and whole-school faculty meetings, and (e) study groups support positive public relations.

**Research Relevance**

Researchers have found that effective student learning and engagement often hinges on a teacher’s ability to provide quality instruction (Bloom & Owens, 2013; Bryant, 2014; Duta, Tomoaica, & Panisoara, 2015; Garrett, 2015; Yildiz, 2015). In an ongoing attempt to improve student achievement, school leaders are exploring the effectiveness of online-based learning environments as a method for delivering K-12 professional development to increase quality teaching and learning (Barbour et al., 2011; Dash, de Kramer, O'Dwyer, Masters, & Russell, 2012; McConnell & Monroe, 2012; Phu, Vien, Lan, & Cepero, 2014; Shaha & Ellsworth, 2013). The problem district leaders face is not knowing the effectiveness that online professional development can have on changing teacher instructional practices within the traditional (face-to-face) classroom environment (Oncu & Cakir, 2011).

Qualitative research falls under the post-positivist or constructivist paradigm (Vogt, Gardner, & Haefele, 2012). There are varying types of research methods that the researcher should have a foundational understanding from which to make educated decisions as to the appropriate research method that best addresses the proposed research
questions (Chenail, 2011). Researchers use quantitative research methods when they want to scrutinize numerical data resulting from behavioral trends (Cozby & Bates, 2012). The goals of this research study do not include collecting or analyzing statistical data; and therefore, a quantitative approach was determined as an ineffective research method.

**Case Study Design Overview.** A case study approach can help researchers understand the phenomena closely associated with perceptions found in the learning transfer between online learning and traditional (face-to-face) instructional practices. Online learning presents challenges to existing learning theories rooted in conventional learning frameworks, which must be carefully considered (Bell, 2011; Cabrera-Lozoya et al., 2012). According to Truong (2016), new learning theories are frequently emerging from adaptive learning applications and continuously changing technology. Focusing on the phenomenological aspect of qualitative research allows this study to include teacher perceptions about online staff development and its influences on traditional classroom instruction.

A descriptive case study investigates and records participant actions and perceptions, which can later be identified and grouped by theme (Yin, 2018). If the phenomenon being studied is not inherently bounded, it is not a case study (Cresswell, 2009; Merriam, 2009). In this study, there was a finite time and number of participants from which data was collected, which delimitates the phenomenon. Therefore, within the framework of qualitative research, this study was most suited for a case study design because the proposed research questions were more effectively answered using an open-ended, semi-structured interview protocol (Hancock & Algozzine, 2011; Merriam, 2009).
Zaidah (2007) conveys the importance of careful design with a case study, in that interviews and journal entries must be able to solidify that:

- It is the only viable method to elicit implicit and explicit data from the subjects
- It is appropriate to the research question
- It follows the set of procedures with proper application
- The scientific conventions used in social sciences are strictly followed
- A ‘chain of evidence,’ either quantitatively or qualitatively, are systematically recorded and archived mainly when interviews and direct observations by the researcher are the primary sources of data
- The case study is linked to a theoretical framework

Zaidah (2007) also discusses the varying categories of case studies. Starting with Yin (1984), three types are noted, namely exploratory, descriptive, an explanatory case studies. First, explanatory case studies aim to explore any phenomenon in the data which serves as a point of interest to the researcher. Second, descriptive case studies set to describe the natural phenomenon which occurs within the data in question. The challenge with this particular category involves beginning with a descriptive theory to support the description of the event or story (Zaidah, 2007). Lastly, explanatory case studies examine the data carefully, both at the surface and profound level to explain the phenomenon in the data.

Other researchers have also discussed different categories of case studies. McDonough and McDonough (1997) mention interpretive and evaluative case studies in describing other categories. The goal of an interpretive case study is to interpret the data
by developing conceptual categories, supporting or challenging the assumptions made regarding them. Evaluative case studies require the researcher to go further by adding their judgment of the phenomena found in the data. Furthermore, Stake (1995) distinguishes three types: the intrinsic, the instrumental and collective. Intrinsic case studies examine cases for the researcher’s own sake. In an instrumental case study, the researcher selects a small group of subjects in order to explore a particular pattern of behavior.

An example of this may be how tertiary level students study for examination (Zaidah, 2007). Finally, a collective study leads the researcher to coordinate data from several different sources, such as schools or individuals. This particular case study took on the description of an instrumental type focusing on the patterns of behavior of the general education and special education teachers throughout and beyond the online study group.
Chapter III
Methodology

Introduction

Overview of Research. A discussion of a qualitative case study exploring the purpose of collaboration between primary level general education and special education teachers through an online teacher study group is presented in this chapter. Collaborative inquiry was selected as the conceptual framework for the design of the online teacher study group. As explained in the literature review, the cyclical model best signifies the collaborative goal of this study. Research from Easton (2008) further supports the collaborative inquiry framework as a “structure in which members of a professional learning community (PLC) come together to systematically examine their educational practices.” Teams work together to ask questions, develop theories of action, determine action steps, and gather and analyze evidence to assess the impact of their actions. Participants completed a four-week online study group focusing on how to best support students diagnosed with autism while in the general education classroom.

An explanation of how the methods from a descriptive case study design with the application of techniques from a descriptive case study methodology in the following sections: 1) Participants, provides a brief description of the participants, 2) Measures specifies a short description and overview of the technology begin used to conduct the online study group and how training and technology experiences of the participants are taken into account, 3) Data Sources, explains the design and procedures of the design of the methodology is the data collection and analysis. That is where information on how pre and post questionnaires, discussion posts, and journal entries are collected and

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analyzed by the researcher using coding techniques and the triangulation method, 4) Issues of Trustworthiness, Confirmability, and Transferability reviews how the researcher handled the credibility of the study through multiple data sources, self-reflective practices from the participants, and peer debriefing, 5) Procedures discusses the design of the study following the case study format focusing on the participants’ experiences throughout the study group and the procedures for completing the learning modules throughout the study group, and 6) Data Analysis consisted of the researcher using coding techniques and the triangulation method. Data sources were analyzed by coding at three levels using ALTAS.ti.

**Participants**

Participants for this study were elementary and special education teachers at the primary level (Kindergarten through third grade). Teachers selected for this online study group also worked with students diagnosed with mild to moderate autism that spend a minimum of 40% of their school day in the general education classroom. Gersten, R et. al (2010) studied teacher study groups and determined such study groups to be most effective with a small group in order to keep a common focus. For this reason, the number of participants in the online study group was kept at seven total. Participants within a 20-mile radius were the target of the case study for the ability to have an initial and final face-to-face meeting with participants.

Included in the participant selection were special education teachers working at the primary level (K-3). These participants were chosen for their expertise in working with autistic students in the inclusion classroom and focus on collaborating with general education teachers. Primary level general education teachers that work with students
diagnosed with mild to moderate autism in the general education classroom were included to keep the study group size small and have a common focus. The two groups were selected to bound the online study group for their common grade level and time spent with students diagnosed with autism.

Participants were recruited through email. The recruitment email was sent to all elementary principals in the Washington, Fayette, and Green county school districts in Southwestern, Pennsylvania. The principals then forwarded the email to their faculty and those faculty interested were instructed to contact the researcher through email. Out of the hundreds of emails sent, fifteen total interested participants responded to the researcher. Out of those fifteen interested, seven participants were able to participate in the online teacher study group. Four of those seven were general education teachers at the primary level, and three were special education teachers at the primary level. Six participants were female and one was male.

Measures

Canvas™. For this study, the online learning community tool chosen was Canvas™. Canvas is a cloud-based learning management system (LMS) that can be used by individual K–12 teachers, college and university instructors, community educators, or even connect with parents. The tools within this LMS are designed to be used on web browsers, mobile devices, and tablets, as to, provides participants with the flexibility to access the study group based on their schedule. Canvas™ also provides participants with the option to create videos and audio responses with the LMS. Participants also created an audio or video response to a discussion post to better articulate their experiences, ideas, or concerns than a written response might. It was the
hope of the research that this particular attribute would provide the researcher with an authentic feel of the participants’ experience throughout the study group.

**CavasTM Training.** Participants were initially trained during an initial synchronous meeting prior to the four-week online study group. As a part of this training, they learned the basic functions and tools of the website (how to post in discussion boards, following the timeline for the training, long into their private digital journals, etc.). Training resources from the website were reviewed and made available in hard copies and electronically on the Canvas™ page of the online teacher study group.

**Data Sources**

Exploring the collaboration between general education and special education teachers in working to serve students diagnosed with autism through an online study group led to using case study design. Multiple strategies and sources for data were collected using the case study and descriptive models for qualitative research (Yin, 2018.)

Data was collected using the following: (a) the online platform Canvas™ to conduct the online teacher study group, (b) pre-and-post questionnaires to measure changes in teachers’ perceptions of online teacher study groups as a form of professional development, (c) data collected from individual digital journals and observations of trends throughout the online discussion boards. The written, spoken, and experiential data (pre-and-post questionnaires, discussion posts, and journal entries) were designed for participants to describe their experiences and thoughts on what they observed throughout the online study group. Participant experiences were also conveyed by providing the
outlet to express what strategies worked, what did not work, and what part the online study group played in those roles.

**Pre-and-Post Questionnaires.** The purpose of using a pre and post questionnaire approach was to collect information about their ideas on collaborating with peer teachers, using an online platform for professional development and comparing it with other responses. The pre-questionnaire asked participants their experiences with online professional development, how comfortable they are using technology, willingness to work with a team, defining collaboration, team teaching experience with general education and special education experience, concerns with students diagnosed with autism learning in the general education classroom, and expectations after completing the online study group. The post-questionnaire follows up with similar questions from the pre-questionnaire. The intent was to collect data that measured an understanding of the teachers’ perceptions of participating in the online teacher study group and determine its role as a professional development tool. The questions for the questionnaires can be found in the Appendix section. Combining qualitative (a case study) and quantitative methods (survey questions) into the research design for the questionnaires allowed for further validity and clarity in data analysis (Carver, 2016; Fowler, 2014). The pre- and post-surveys created using Google Forms, consisted of a mix of Likert Scale questions and open-ended questions.

**Individual Interviews.** Exit interviews were conducted between the researcher and individual participants after the four week study group during a synchronous meeting. The interviews allowed the researcher to understand the participant’s experiences, feelings, and thoughts for future implantations (Hancock & Algozzine,
2011; Levy, 2013). This study applied a semi-structured interview as simply a conversation (Fylan, 2005; Yin, 2014). Therefore, the interview approach can be thought of as an opportunity for participants to respond to open-ended questions to allow respondents to include more information, including feelings, attitudes, and understanding of the subject (Patton, 1990; Yin, 2014). The interviews allowed the researcher to uncover the respondents' true perceptions on an issue. The interview questions were a useful tool for probing for in-depth responses and for guiding the discussion to cover relevant topics. The interview questions can be found in the Appendix section.

**Data from Discussion Posts and Individual Journals.** Data was collected and recorded from discussion posts, and individual journals provided the researcher with a unique opportunity to understand the practices, attitudes, and philosophies specific to the phenomenon being studied (Bowen, 2009; Hancock & Algozzine, 2011; Weinreich, Groher, & Miesbauer, 2105; Yin, 2014). Document analysis helped to determine if the implementation of the best practices discussed and agreed upon for application in the classroom accurately reflected interview and journal data (Bowen, 2009; CDC, 2009; Yin, 2014). Additional advantages of document analysis are that they are a rich source of descriptive information, they are unobtrusive, and provide an outlet to bring to the forefront issues not noted by other data collecting sources (CDC, 2009). Therefore, collecting data through the evaluation of teacher artifacts and discussion posts served as the third anticipated instrument for data collection.

Discussions throughout the Canvas™ board were coded into categories based on teacher perception: (a) attitudes towards collaboration, (b) perception of impact on students with autism, and (c) change in classroom practices. Saldaña (2017) describes
coding as, “most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and evocative attribute for a portion of language-based or visual data” (p.4). A streamlined codes-to-theory model that was used during the process of coding and data collection completed throughout this online teacher study group is illustrated in the Appendix (Saldaña, 2017). This model was used when coding the data collection of discussion posts, interviews, and the pre-and-post questionnaire responses during the online teacher study group.

**Issues of Trustworthiness, Confirmability, and Transferability.** In qualitative inquiry, the truth value is considered the essential criterion for evaluation (Krefting, 1991) and therefore is vital to protect. To enhance the trustworthiness of this work and to add to the validity of interpretations of the data, several procedures were used. Congruent with the longitudinal nature of this study and participant observation within the online study group, it was kept with the participants’ journal for the self-reflexive practice of interrogating predilections and opinions and to facilitate sense-making that interacted with the data (Etherington, 2004; Maxwell, 2012). Data was also collected through multiple sources and multiple viewpoints, which is a practice that allows “different facets of problems to be explored, increases the scope, deepens understanding, and encourages consistent (re) interpretation” (Tracy, 2010, p. 843). Finally, participant reflections were utilized through a post- questionnaire and one on one interview as an opportunity for illuminating new aspects of the data and deepening the analysis through their review and feedback.

Some special considerations relating to the participants in this study were also addressed to enrich the validity of the findings. Given that participants were at different
levels of technological experience, it was important to be conscious that their proficiency could interfere with their ability to articulate their true feelings or act as a hindrance to their understanding of the discussion posts and journal entries. The face to face meeting before the OTSG was one way to overcome such an obstacle, as well as being readily available throughout the online study to handle technical issues and questions from the participants.

Several measures were taken to counteract any personal biases from being transposed onto the data during analysis. These measures entailed the triangulation across data methods and sources, which facilitates cross-checking for multiple instances and examples of data to support a single inference. The memo function was used within ATLAS.ti to produce analytic memos that documented any discrepant or disconfirming evidence or cases (Miles & Huberman, 1994) that was searched during analysis and that would counter predilections or desire for the online study group to have a favorable impact on learning.

Finally, in instances where clarification was needed of assertions and interpretations by the researcher, peer debriefing was sought out to help determine if assumptions were evident from the data or emergent from preconceptions. This practice of investigator triangulation for confirming and disconfirming the researcher’s interpretation is recommended for case study research (Stake, 1995; Creswell, 2017). The final guideline of the transferability of research findings can be challenging to address due to the historically and culturally situated nature of the qualitative inquiry. However, recognizing that the results of this study will not be entirely generalizable to all educational contexts, attempts to provide detailed descriptions of the setting, participants,
and developing themes allow the readers to locate possible areas of overlap between this work and their situations. Using thick descriptions to help readers align their own experiences with those related in research is a celebrated method of attending to concerns of transferability (Creswell & Miller, 2000).

Research Design

**Case Study Design.** Descriptive case studies aim to analyze the sequence of interpersonal events after a certain amount of time has passed (Yin, 2018). Creswell and Poth (2017) believe, “a case study is a good approach when the inquirer has identified cases with boundaries and seeks to provide an in-depth understanding of the case” (p. 3629). The online teacher study group focused on the discussions of the participants and the implications it had on the perception of the teachers as a useful tool for instructional strategies that suited the case study design.

Another reason the descriptive case study design was used as the methodological framework suited for this particular study included: collaborative inquiry, the Vygotsky theory of social learning. The theories and framework intermittently exude into the online study group, namely through the immediate access to collaboration and dialogue that it permits between the researcher and the participants (Easton, 2008; Vygotsky 1987). Taking such an emic perspective will allow for participant experiences and stories to act as a window for the researcher to assist in making sense of their actions (Carbetree & Miller, 1999; Robottom & Hart, 1993, Willis, 2001).

The particular pool of general education and special education teachers generated as a descriptive case study due to the fact that such studies are known for facilitating an understanding of, and providing insight into, more significant issues as supported by the
cases analyzed. An intimate group coming together in hopes of coming to a consensus on solving a particular problem will ultimately lead to the discussion of future study groups (Stake, 1995). A descriptive case study was used to understand both the “bounded system” of an online community of learners who were focused on their purpose for collaboration and instructional content through weekly discussion posts, classroom implementation and observation, and reflective journal writing.

The online study group examines the collaboration and experiences of the participants and how their experiences prove either an effective online learning tool or require further research. The purpose of this research was bounded by time and place, including only those teaching at the primary level with students diagnosed with autism spending a minimum of 40% of their day in the general education classroom. This case would also comprise of a period of study for four weeks. There will an initial face to face meeting at one of the participants’ school’s that best meets their needs, allowing the researcher to gain insight into the goals and objectives participants seek within the online study group, how much the technology will affect their participation/ meeting said goals and reasons for the participants’ interest in the online study group. Likewise, this length of time allows the participants to feel as if they are gaining sufficient knowledge without having to commit to the study for an excessive period.

Employing a descriptive case study methodology was also relevant because of its robustness in using multiple data sources, which serves several functions, including enhancing data credibility (Yin, 2018), by allowing for data triangulation between participants and across data sources themselves. These sources include pre and post questionnaires, discussion posts and comments by participates, and journal entries
focusing on the experiences of the online study group. A complete understanding of the whole phenomenon of online teacher study groups can be achieved by taking each of these sources as a piece of the puzzle (Baxt & Jack, 2006).

**Procedures**

**Case Study Procedures.** The online study group was a four-week long professional learning experience and broken into four learning modules. The time frame was chosen for two main reasons: 1) a four-week time frame deemed long enough to make a significant impact on instruction in the classroom and 2) not too long of a time frame that may lose the interest of the participants. The four weeks were divided into learning modules. The modules will follow the cyclical pattern created by the research based on the four-stage model developed by collaborative inquiry researcher Easton (2008). A four-stage model was then developed by the researcher based on the work of Easton (2008). The researcher’s model includes the following: (1) inquiry: identifying student learning needs, (2) inform: develop theoretical understanding, build additional knowledge, and gather data on best practices, (3) investigate and implement: analyze data through observation/discussion, identify patterns and themes, (4) ignite: identify additional learning needs based on observations, reflect and revise future implementations. Figure 1 shows a graphic of the four-stage model.
The four-stage model follows the cyclical process of the collaborative inquiry framework in that the process is ongoing from framing the problem, researching possible solutions through best-practice, creating a plan of action to tackle the problem, analyzing the data collecting through reflection and then repeating the process over again (Easton, 2018).

The first learning module consists of getting to fellow participants through discussion on common learning objectives specific to best engage students diagnosed with autism in the general education classroom. Provided in the first learning module will be an introductory video on teacher study groups, overall objectives for participating in the study group through the pre-questionnaire created through Google Forms™, and a discussion post on individual needs in working with students with autism in the general education classroom.

The second module implements discussion on the common focus from week 1, best practices and current research information provided from documents posted within the learning module (PowerPoint Presentation, Article) and feedback from the special
education participants. Participants will also determine which best practices (assessment, behavior, sensory processing, etc.) to implement into the classroom and observations/focal points to discuss in the third learning module through a discussion forum.

The third learning module will consist of a discussion of the successes and pitfalls of the implementation of instructional strategies determined in module three. Participants will also work together to create a plan of action based on the results of their observations of implementation of best practices agreed upon from week three for further implementation.

The fourth and final learning module will bring participants together to reflect and revise the implementation of instructional strategies determined from module three, discuss the next steps, and the possibility of future discussions. Each week participants will also reflect on conversations and observations on the collaboration through the online teacher study group. These journal entries were only seen by the individual participant and researcher.

It is also important to mention that before the four-week study group. An initial face to face meeting between the research and participants was conducted to review the overall purpose of the online study group, and any technical issues or questions participants had in using the online learning management system Canvas™. An additional face to face meeting was conducted after the completion of the four-week online study group. The goal of the meeting was to provide participants and the researcher the opportunity to discuss the overall experience of the online teacher study group and clarify any discussion posts or journal entry notes that may have been unclear.
to the researcher. Figure 2 is a graphic of the four-week online study group procedure below.

**Figure 2. Online Study Group Procedure**

The instrument used for the online learning community was Canvas™. This program was chosen for its ease in navigation and order of learning modules, provides a space for journal entry and discussion to provide participants with a sense of community, and free cost for participants. Participants in the online teacher study group were invited to join the already created study group page through email. See Appendix 1 in the appendix section for a snapshot of the home page.

The purpose of this case study was to answer the following research questions concerning an online teacher study group:

1. What are some general education and special education teachers’ perceptions of an online teacher study group as a professional development tool in
supporting the needs of students with autism in the general education classroom?

2. In what ways does an online study group support the needs of teachers with students with autism in the general education classroom?

3. What are some barriers to implementing online study groups as a professional development tool?

Data Analysis Process

For this study, analysis and interpretation were guided by Stake’s (2010) definition of analysis as “taking things apart and synthesis as “putting things together” (p.133). The investigation was carried out through coding the experiences by participants’ discussion posts and journal entries throughout the online study group. This model of analysis entailed multiple levels of researcher interaction with the data, namely coding, categorizing, network mapping, and theme generation as a means of producing findings and refining a global understanding of the various sources of data collected.

For organization and procedural purposes, Creswell’s (2012) guidelines for qualitative case study data analysis and representation (p.156-157). Creswell’s use of the case study organization was adopted from the works of Sake (1995). Sake (1995) believes, “the report needs to be organized with the reader in mind” (p.122). Table 1 below details the sequence of these overarching procedures.

Table 1 Creswell’s Protocol for Case Study Data Management and Analysis

| Data Managing: | Create and organize files for data analysis using computer software |

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Reading & Memoing: Read through text, note reflections in the margins, form initial codes using coding and memoing functions of ATLAS.ti

Describing: Describe the case and its context using conceptual mapping techniques

Classifying: Use categorical aggregation to establish themes or patterns

Interpreting: Use direct interpretation

Representing & Visualizing: Present an in-depth picture of the case (or cases) using narrative, tables, and figures

Using the constant comparative method for analysis (Strauss & Corbin, 1998, Yin, 2018), the data was examined through a cyclical and iterative process of coding that involves the repeated reading and reviewing of the data using a combination of structured an emergent coding technique (Saldaña, 2017). According to Saldaña (2017), “a code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, or evocative attribute for a portion of language-based or visual data (p.4). Data was coded in three phases: (1) initial coding, (2) focused coding, and (3) axial coding—using the qualitative data analysis software platform ATLAS.ti (version 7.0; Muhr, 1991; Friese, 2013; Wood & Silver, 2018). ATLAS.ti was explicitly selected for this methodology of its ability to support the coding of rich multimedia data sources (textual, audio, image, video files).

**Phase 1.** In the initial coding phase, the data was scrutinized through a microanalysis of the data corpus in which the data was split into discrete and identified
segments to meticulously assess and compare them for similarities and differences (Strauss & Corbin, 1998). Systematic, line-by-line transcriptions or audio sentence coding techniques are applied by the code names to individual sentences/phrases as a unit of analysis.

**Phase 2.** In the focused coding stage of analysis, the initial coding transitions to focused coding. Focused coding is where the application and refinement of process codes (gerund-based) narrow down themes and categories of the data collected. Process coding enabled the researcher to capture ongoing action/interaction/emotion taking responses to situations, or problems, often with the purpose of reaching a goal or handling a problem (Saldaña, 2009). The intention at this point in the coding process to remain rooted in the process-based nature of the inquiry to discover *how* this online teacher study group could mediate collaboration.

At this phase of analysis, code-to-code relationships were explored to collapse codes into broader categories through a variety of manual and computer-based tools available in ALTAS.ti. Specifically, code co-occurrence table, code co-occurrence explorer, and network view functions were used to both textually and visually examine code-to-code relationships and dig deeper into the underlying processes and sub-processes of collaboration and classroom practices within an online teacher study group.

**Phase 3.** In this final phase of analysis, codes, and categories emerged as broader themes identified as pertaining to participant experience, perception, and use of the online learning management system. Axial coding assisted in understanding the pattern of participant progression across coding categories. The continuum of time-shifting, using
Spradley’s (1979) taxonomy of universal semantic relationships and Strauss’s diagramming exercises for axial coding was used to map the themes.

**Summary**

To summarize, this chapter provided a detailed description of the research methodology design, including blended data collection methods, data analysis procedures, and methods for addressing the criterion of credibility, transferability, and confirmability. The research design used participant perception to explore the effectiveness of collaboration between general education and special education teachers through an online teacher study group. Canvas™ was used as an online platform to support the online teacher study group. Multiple data sources were employed in both traditional and technology-mediated formats included pre and post questionnaire interviews, discussion board posts through Canvas™, and journal entries for individual participants. The data analysis process was cyclical based on Eason’s (2008) collaborative inquired framework and consisted of initial, focused, and axial coding, categorization of analysis and the collaborative inquiry theoretical framework lens. Data analysis and interpretative procedures included building associations between the emergent themes through coding data in online professional learning communities, collaboration, and inclusion of students diagnosed with autism to consider how these findings coalesced with pre-existing theory and possible theoretical extensions.
Chapter IV

Results

Overview

This chapter presents the findings for the main research question and two sub-research questions using a series of emergent themes and thematic narratives deduced from the analysis of the data based on teachers’ perceptions of an online teacher study group as a digital professional development tool (Wolcott, 2008). Ultimately the data consist of a combination of exemplars, text samples, artifacts, and graphical figures that have been chosen to represent patterns apparent in the larger data set (Mishler, 1990). The data collected from a triangulation of pre-and-post questionnaires, discussion post responses within Canvas™, journal entries from each week of the online study group, and transcripts from exit interviews between the researcher and participants. Due to the voluminous data produced in case study research, the examples selected for data visualization and presentation are only those that provide the richest and most informative window into understanding the participants’ experiences and perceptions.

Specifically, each thematic thread describes how it corresponds to the main research question of the teachers’ perceptions of the online teacher study group as a digital professional development tool. The threads also correspond with sub-research questions inquiring on the ways the online teacher study group supports the needs of teachers with autistic students in the general education classroom and the barriers associated with implementing an online teacher study group. The narrative structure for reporting research findings will include orientation information relevant to the emergent themes, supporting quotations or graphical displays, and a minimal commentary to frame
how the themes connect to the research questions (Burnard, 2004; Creswell, 2018). The data produced the following themes: 1) learning within an online environment, 2) opportunities and challenges in collaboration and sharing resources, and 3) opportunities and challenges with self-efficacy, time management, and authentic participation.

Pseudonyms were used to identify participants throughout this study.

Within each theme, the researcher also discusses subthemes that were uncovered as a result. Within the first theme, learning within an online environment, the following subthemes are uncovered: 1) learning with discussion, 2) individual classroom needs, 3) Learning with Shared Resources, and 4) learning through reflection. The second theme revealed the following subthemes: 1) a space for inquiry, 2) a library of resources to put into practice, 3) a common focus, and 4) a collaborative effort. And lastly, the third and final theme discusses the following subthemes: 1) self-efficacy and time management, 2) accountability and 3) authenticity.

**Theme 1: Learning Within an Online Environment**

This section answers the question of what the perceptions of the online teacher study as a digital professional development tool are among general education and special education teachers. The results discuss the perceptions as learning with discussion, individual classroom needs, shared resources and reflection.
Figure 3. *ATLAS.ti Network of Participant Responses*

Analyzing data based on the participants’ perception of the online study group as a digital professional development tool revealed the first theme of providing opportunities for learning. For all participants, Canvas™ became a tool for them to discuss their individual classrooms and student behaviors (particularly those with autism.). For most participants, improving the communication skills of their students with autism became the focus due to their behavior issues in the classroom when transitioning and not being able to communicate their frustrations in the general education classroom. Particularly, behavior issues with transitioning to new activities/classrooms and not being able to understand their emotions. Canvas™ also
became a tool for sharing resources, how they used those resources, and whether they were effective or not.

The results also revealed the importance of reflection. Reflection manifested within Canvas™ through the weekly journal entries, pre- and post questionnaires and the exit interview. Not only did participants have the opportunity to view their thoughts and peer responses throughout the four-week process, but the researcher was able to read how their thoughts and experiences evolved through the various artifacts within Canvas™. Journal entries, in particular, revealed participants reflected on their individual efforts not only within this study group but with their classroom practices as well.

Journal entries and the questionnaires were a technology tool that supported reflection in that individual participants and the research good looked back at the writing and see the progression of reflective thoughts on various topics (i.e., peer participation, successful/unsuccesful implementation of strategies discussed and thoughts on the process of the online teacher study group). Participants’ discussion posts also became a tool for not only reflection but for collaboration. Shared reflections promoted individual reflection that was evaluative, which began the sequence of peer reflection from discussion responses to a more collaborative process.

James (pseudonym), a special education teacher, reflected not only on the online teacher study group as a tool to share his expertise in special education resources but also the phenomenon of educating general education teachers on what he thought they already knew about inclusive practices. He states in his exit interview, “it was interesting to see what others DIDN'T know. I'm a special educator, and I have even given presentations on evidence-based practices to staff, including this year. Moreover, I work in a building
filled with older professional staff; this makes implementing specific learning strategies easy and painless. I was shocked to hear of the lack of knowledge of some of the colleagues in the study group. Challenges included a lack of face-to-face communication.” Most participants used this tool as a space to connect with fellow participants to express their concerns with including students with autism in their classrooms.

See Figure 3 for results of the week one poll where participants voted on what particular skill their students with autism struggled with the most, particularly in the general education classroom.

![Poll Results from Week 1](image)

**Learning with Discussion.** Within the theme of learning in an online environment, one sub theme that was discovered was learning with discussion. When analyzing the pre-and-post questionnaire, the journal entries, and final discussion posts,
the results acknowledge that most participants define successful professional
development involves some open communication and active collaboration. As shown in
Figure 1, most participants used terms such as “implement,” “sustainability” and “apply”
in terms of being able to take strategies back into their classrooms when defining what
makes professional development successful. Participants discussed the value of
collaboration and the authenticity of face to face communication when learning with
other educators but did feel the online environment gave them a chance to learn from
other teachers in different districts that have different ideas that suited their needs in the
inclusion classroom. Emily said in a discussion post, “I spend a lot of time collaborating
with the special education teachers in my building; though I am a general education
teacher, I share five of my students with one of our emotional support/learning support
teachers, and we frequently need to work together to meet the needs of our students. I do
find it to be easier to collaborate in person as compared to in this online format - we are
right across the hall from one another and can easily check-in as necessary throughout the
day! I also think it can be easier to have these kinds of conversations in person, where
participants can use body language and tone of voice to engage one another; sometimes
writing and posting online can take the tone of "talking at" one another, rather than
having a more natural kind of conversation with a colleague. Still, I think that these
kinds of study groups can be valuable, particularly in connecting with others in a wider
variety of teaching environments and with diverse teaching experiences!” Data such as
this indicated participants were able to use tools in an online format such as discussion
boards, announcement tools, and journal entries allow teachers to craft such a network of
educators.
Further analysis of data collected from this online forum indicated participants also felt supported in their need to discuss their frustrations with the inclusion classroom as one of the reasons for participating in the online study group. The participants expressed feeling a sense of connection and relief knowing they had not only a common interest in helping their students with autism in the general education classroom but also, they were not the only ones searching for better strategies to include them. In an exit interview, Holly adds, “it was just nice to go online to have replies from what other teachers in the area or not even the area are doing in their classroom as far as special ed is concerned. I know that I know what other teachers in my district do, but it's also nice to find out what other teachers may have learned who are younger. Those who have learned, maybe different strategies that work in theirs, and we've never even thought of it before. I felt I could relate to others in this group, searching for better ideas to help their little kiddos.”

**Individual Classroom Needs.** In response to the main research questions, all participants were interested in participating in an online study group in hopes of meeting their individual needs with inclusive classroom practices. This became another subtheme of learning within an online environment. Specifically, each participant had some quotes in the pre-questionnaire or discussion post inquiring about new strategies with specific descriptions of the needs for their particular students with autism in their classroom. Table 2 lists code names used unveiling participants’ needs for working with autistic students in the general classroom and why they chose communication skills as the main focus.
<table>
<thead>
<tr>
<th>Code #</th>
<th>Code Name</th>
<th>Definition</th>
<th>Quotes from Participants:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Communication</td>
<td>Imparting or interchange of thoughts, opinions, or information by speech, writing, or signs.</td>
<td>“One thing in specific that my students with autism have struggled with has been communication. They have a very hard time communicating with their peers. I know that children in the regular education classroom do not have any trouble starting a conversation; however, many of my children with autism have a hard time keeping a conversation.”</td>
</tr>
<tr>
<td>2</td>
<td>Behaviors</td>
<td>The action or reaction of any material under given circumstances.</td>
<td>“My students generally struggle with controlling their impulses and expressing themselves fully within the general education classroom.” “I am a first-grade teacher with two students with autism in my classroom this year. My biggest challenge with these students is managing behaviors, particularly because they have additional diagnoses. Both of these students have difficulty transitioning from preferred activities and getting along with classmates.”</td>
</tr>
<tr>
<td>3</td>
<td>Resources</td>
<td>A source of supply, support, or aid, especially on that can be readily drawn upon when needed</td>
<td>“I want to know what others are doing in order to best support students with autism and am always on the lookout for new ideas.”</td>
</tr>
<tr>
<td>4</td>
<td>Instruction</td>
<td>Knowledge or information imparted.</td>
<td>“Our second-grade curriculum is so intense, that we only have students with special needs for 30 minutes a day and it is at the end of the day. We are usually trying to squeeze in science or social studies lessons and never have time for teaching the friendship</td>
</tr>
</tbody>
</table>
skills, which they desperately need.”

“I’ve used the Skill Streaming curriculum with my students with varying levels of intensity, but its lessons are effective and simple for students to understand- there are different kinds of social skills introduced, including a whole section on friendship skills that could be helpful!”

“I wish I had enough time to in a day to touch upon the friendship skills and other important skills that they need.”

“I try to squeeze these kinds of things (social skills) in during a quick morning meeting or during our class meeting once each week (which I have during our social studies/science time); I used to worry about taking this time, but I really believe that my students need to be able to get along with one another for our classroom to function and for other students to succeed outside of the classroom as well.”

Results of the data showed the participants perceived the study group as support for individual classroom needs when participants would discuss how the shared resources worked in their classroom. James, in particular, felt he was able to specifically assist in this support with his experience in special education and autism in particular. In response to asking what a benefit would be to continue with the online teacher study group, he stated, “to continue chatting about strategies and implementations, what works and what
doesn't. I’ve been working with inclusion with kiddos with autism amongst other disorders for 10+ years. It truly helps to know what a typical classroom teacher knows and does not know.” Data such as this led fellow participants to inquiry how to use the resources, and if they thought it would work for their students based on similar behaviors.

**Learning with Shared Resources**

Figure 5. *Discussion Post from Week 4*

The third subtheme found in the results of data collected expressed the online study group provided an environment for shared resources specific to the focus of the group. In week one, the majority of the participants chose communication skills as their focus concerning the needs of their students with autism and the online format allowed them to share and discuss strategies from research-based resources specific to that focus. Sheila (pseudonym) used the emotions thermometer found from www.barabaraborosn.com, an extension of her book: *Autism Spectrum Disorder in the Inclusive Classroom: How to Reach and Teach Students with ASD, 2nd Edition.*

Canvas™ housed this resource which was provided by the researcher. Participants’
perceptions of this support could be found in their discussions during the exit interview and final discussion reflection stating they were able to successfully implement new strategies into their classroom for not only their students with autism but all of their students in their classroom. Shelia talks of success in implementing the strategy of an emotions thermometer as a way for her students with autism, as well as their peers, to communicate their needs. She even goes on to share how other teachers in her building went on to implement the strategy in their classrooms because of their observation of the positive impact on her class.
Learning through Reflection. The final subtheme discovered within the theme of learning within an online environment was learning through reflection. Megan’s quote sums up what the majority of the participants’ revealed in the data analysis of participant reflection. In her exit interview, she goes on to state, “I really reflected, I think there are some very useful resources and strategies that I will use from this. I will it at the beginning of the school year when I am doing procedures and routines though.” Other participants, when reflecting on the time of year, discussed how they now realized the progress their students had already made throughout the year and the potential to show that growth through an online study group such as this one. Emily says, “some of my students that I have, well, we’ve come a really long way from where we were in August. And so it would be interesting to see like and for me to just personally to reflect on like, what did I do that was really effective and what wasn't and to have other people's perspectives on that. So, I think like continuing it for a longer period of time could be helpful in that.” Being able to view these reflections within participants’ online journals provided the researcher rich data with true participants’ perceptions knowing no other participants could read their journal entries.

The online teacher study group also became a space for reflection not only on the strategies used for supporting their students with autism in the general classroom but their knowledge of inclusive practices. Results found that the special education teachers who participated in the study group perceived themselves as learning the importance of how to communicate with the general education teachers they collaborate with daily based on how the general education participants described their struggles with inclusion. Susan discussed her reason for focusing on communication and behavior management stating,
“I chose behavior management. I have noticed a great deal of regular education teachers unable to handle students with autism for several reasons, but one reason keeps popping up is the behavior. They are so focused on how they are disrupting the other students with are missing how when they redirect constantly, they are the ones causing the disruption.” Also, their reflections showed the phenomena of how the online study group enabled them to share how such an environment provided them the opportunity to reflect on how they included students with autism in the general education classroom and how they would approach using such strategies moving forward and into the next academic year.

An example of this was when Emily dialogs about her new strategy with the emotions thermometer that led to the collaboration with another class. Her students collaborated with a 2nd-grade class through the buddy system. Buddies would use the thermometer to discuss feelings and resources they’ve learned on calm-down strategies.

Summary of Learning Within an Online Environment

![Diagram](image)

Figure 6. ATLAS.it Network Image of Participant's Response to Future Participant in
The first thematic thread highlighted some ways teachers perceived the online teacher study group as a digital professional development tool. Megan talked of her frustration with PSSA testing and trying to implement a checklist with her students. Her journal entry during week two states, “PSSAs were this week... coupled with a four-day school week. I had trouble implementing my social stories to full fruition, though the classroom teacher was equipped with all tools and education regarding this evidence-based tool. Albeit all the tools were in place, I feel like this week was lost to just one of the problems associated with the end of the school year. Sigh. I'll try again next week.”

Collectively, participants in this study pointed to the potential of the online teacher study group to have an open and informal discussion with fellow teachers with the same learning needs.

In conjunction, words such as “kiddos,” “little guys,” and even “ugh” were often used reflecting an almost conversation language. Responses such as the latter led the researcher to notice the online space used for venting; however, venting for some may have been the initial step in problem-solving their classroom needs. In addition, the formal use of written language found within the online platform may have overridden that first step or may have been more overt as when TPD happens face-to-face.

Also, participants mentioned the notion of learning what teachers, whom they would typically not collaborate with, in other districts due to support their students with autism in the general education classroom that they would not typically collaborate. Kellie (pseudonym) states, “I loved being able to explore some resources that I may not have thought to access or search for otherwise! Experimenting with tools such as the
emotions thermometer has really enhanced my work with my students with autism; this online study group pushed me to try something that I had not considered previously, and it turned out to be beneficial for my students in a way that I had not expected!

Participating in these kinds of professional development opportunities helps me to avoid the trap of doing the same things in my classroom, year after year, just because I have always done those things in a certain way. I am happy to leave my comfort zone for the benefit of my students!”

Online professional development tools provide opportunities to learn from teachers at a distance but with similar needs.

From the data, participants perceived the online teacher study group provided a specific focus on what they felt most relevant to their classroom needs. Canvas™ was perceived to be a portal to accessing and sharing tools specific to working on communication skills with autistic students. Susan discusses the benefits, stating, “after reading all of the different replies from other teachers in the area, it was nice to see what works in their classrooms versus what does not work. It was also nice to get different ideas to use because at times we, as teachers, get so used to doing what we have always done, and are never open to trying anything new. I have to say that it is different year to year though because I am not always blessed with having students with autism or students with a learning disability in my room; however, I am hoping that some of the strategies that I have read about in this discussion, I am able to take with me in years to come. I think that this study group is nice to have because as I have said, it is always nice to bounce ideas off other teachers or nice to see what strategies they are using.”

In unification with this thought, the results of the data analysis disclosed the perception of the online teacher study group as a support for shared resources.
Finally, this thematic thread of the use of an only teacher study group as a digital professional development tool speaks to the support for reflection. This ideal not only refers to the reflection of participation in the online teacher study group but individual reflection within their classroom strategies. Kellie references the time of year, like many other participants, sharing her conflicts with testing and fitting in the required curriculum as attributes to lack of focus on implementing communication skills strategies into the classroom routine. She writes in her journal entry, “I learned that structure is so important and even a small change can be a setback. Expectations for this week are to get the train back on track with my normal schedule... I've done something like the thermometer before, so since they are familiar with it, I am going to introduce that. Be nicer to myself. When I reflect I tend to look only at 'grows' Goal... yikes. This time of year is awful.” Does this quote lead the question, could online teacher study groups become a tool for personal reflection in a way to make participants feel better for their struggles?

**Theme Two: Opportunities and Challenges in Collaborating and Shared Resources**

This next theme answers the question of teachers’ perception of how the online teacher study group supports their needs in working with students with autism in the general education classroom. The results discuss the perceptions as a space for inquiry, a library of shared resources that were readily accessible, sharing a common focus and expectations of a collaborative effort.

**Overview of Findings on the Perception of Support for Participant Needs**

Multiple data resources attributed to support for teachers of students with autism in the general education classroom. Participants shared strategies they have used in their
classrooms, such as social stories and visual transition charts that they felt were successful in previous years. One participant discussed the use of social stories for a particular student having trouble with transitions and impulse control. The teacher states, “I chose a social story for a kiddo with autism, he was transitioning down the hallways and is/was unable to inhibit his habit of touching doorknobs and/or closing/opening the door. Although teachers and paraprofessionals provided mantras and other coping skills, this little nugget was tied to his habits. The social story outlined the behavior, replacement strategy, and consequences of said behavior. I reviewed the story with this kiddo and had him chose visuals to support concepts. He is able to review it each morning and prior to long transitions. So far, so good! His prior knowledge of a mantra paired with verbal prompts is now tied with visual prompts, which appear to be benefiting my little guy thus far.” The data overwhelmingly revealed the teachers’ expectations of learning new ideas for helping their students with autism communicate their needs and behaviors in the inclusion classroom.

Results also revealed participants used the discussion board posts to collaborate with other participants on how they used the shared resources. They discussed how to help support their students, asked questions regarding what the students struggled with, and express the successful and non-successful use of such instructional strategies specific to the needs of their students with autism in the general education classroom (communication skills, behavior management). Susan shared on the discussion board how a textbook shared gave her a new idea to use a checklist not only for her but as a way to collaborate with her regular education teacher. She refers to how not all the items of the checklist will be completed, but it allows her, as a special education teacher to see
what strategies and support she could add to working with the student and the general education teacher.

Figure 7 shows a brief discussion between Emily and Kellie discussing the use of the emotion’s thermometer as a strategy not only for their students with autism but for their whole class. They add their knowledge and mutual connection of additional diagnoses with ADHD.

Emily
Apr 8, 2019

I am planning to use the emotions thermometer this week in my classroom! Not only do I have students with autism, I also have students with severe ADHD, severe emotional disturbances, specific learning disabilities, and other health impairments; many of these students have also experienced or are currently experiencing trauma. We have been working a lot on identifying our emotions so that we can regulate them, and I think having this visual will help many of my students to understand the range of feelings and how we can travel along this spectrum throughout any given day. The thermometer visual may also help my students to understand the stages of their emotions as they escalate, hopefully allowing them to recognize that they can begin to control their emotions before they get to the very top! My plan is to use this visual for the whole class; we already have name tags with alphabets and number lines as well as affirmations taped to our desks, so adding a thermometer might be a lot on our desks! However, I may experiment with the size of the thermometer for more usable desk tags, depending on how well the thermometer works for the whole group!

Reply
A Space for Inquiry. After further analysis of the theme of opportunities and challenges with collaboration and shared resources, data revealed a space for inquiry as a subtheme. Most participants (particularly the general education teachers) perceived the online teacher study group as space where they could not only ask questions specific to their needs in the classroom but further inquiry on their role as a teacher in an inclusion classroom. Holly asked the group in the first discussion post, “I guess my questions are: how do I teach my other students how to carry on a conversation with these students with autism and how do I explain why their behaviors escalate at times?” A second participants’ inquiry stated, “I want to know what others are doing in order to best support the needs of students with autism and am always up for new ideas. I am seeing sensory-seeking as well as off-task behavior that I’d like to improve upon. These are generally with accommodations, visual job lists, and routines in place. My students generally struggle with impulses and expressing themselves fully within general education settings.”

Another participant commented during the exit interview that a sense of
anonymity gave her the courage to ask questions she felt almost “embarrassed” to ask her co-teacher for fear of seeming incompetent and unaware. In her exit interview, Emily mentions, “I think it would be better whether online or in some other format helpful to be able to maybe know a little bit more about where people are coming from to understand, like, are you offering this from a perspective of a classroom teacher who’s taught 15 years or a brand new teacher. Do you teach music, or, you know, some other subject matter? So I think that it kind of made me realize a little be more about how a person’s background is really important to collaborate and understanding where people are coming from. Um, so I do like the idea of being able to connect with people who have different experiences and seeing different things that work really well.” While the anonymity of participants within this study group was a benefit in the latter example, others perceived the anonymity to inhibit their inquiry.

Along with inquiry, several participants revealed being able to answer questions from fellow participants gave them a sense of pride and accomplishment, knowing they could use their personal experiences to help others. Such expertise was evident particularly with the special education teachers in the sense of working with general education teachers on inclusive practices. James talks in his exit interview on how this study group impacted his knowledge of what general education teachers know or lack of knowledge on inclusive practices. Susan shares in her final journal entry, “I feel like I have to be more verbose and give more direction to classroom teachers following this forum. Whereas I assumed others had the same knowledge base as me, after this study group I assume I am mistaken.”
A Library of Resources to Put into Practice. A second subtheme that emerged was the perception of the online study group as a library of resources to put into practice. The term library was chosen in this analysis in regard to the assortment of resources made available through the online professional study group. The resources also were found to provide strategies for multiple behaviors and situations (i.e., transitions, communication, and social interactions). The participants, in turn, put the strategies found in the resources into practice by implementing them into their classrooms. The variety came in the form of visual cues, books, and printables that could be reused and edited, and songs to help with transitions. The research and participants provide the library of resources within the online format.

One participant’s quote demonstrates how they put strategies from the resources into actual practice in their classrooms. The participant writes in a discussion post from week 3, “Experimenting with tools such as the emotions thermometer has really enhanced my work with my students with autism; this online study group pushed me to try something that I had not considered previously, and it turned out to be beneficial for my students in a way that I had not expected!” All participants revealed they felt the online teacher study group supported their need for “ideas” and “best practices” that were research-based and specific to students with autism and inclusion. The online teacher study group provided participants a quick and varying library of knowledge and strategies matching their inquiries, saving them time from trying to search various libraries and online search engines. Being able to define a single focus led to sharing resources specific to said focus (communication skills) and their particular age group. Such commonality, in turn, led to the ability for participants to actively implement strategies
from these resources that they felt met their needs in supporting their students with autism.

Despite the wealth of resources within the study group, not all participants felt supported by the online teacher study group in this way. While all participants did use a strategy to improve communication skills and behavior management, one participant felt fellow participants lacked in communication and sharing in full fruition in terms of what was successful or unsuccessful in implementing their strategies. A participant wrote in a journal entry, “I expected that there would be more conversation within the study group about the strategies that people were using, which could have been helpful in discovering strategies that may work in my classroom; however, I really had a difficult time figuring out how I could comment or respond to any of the other posts this week.” Perhaps this is where the synchronous aspect of the online study would be beneficial in bringing all participants “together” at the same time to have conversations in real-time about their classroom observations.

**A Common Focus.** The third subtheme for opportunities and challenges with collaboration and shared resources was a common focus. Through analysis of the varied data (pre-and-post questionnaire, journal entries, and exit interviews), all participants defined successful professional development as one that meets their individual needs and can be applied somehow back into the classroom. Results also indicated the online teacher study group provided a common focus in that the online forum specifically discussing strategies for working with autistic students in the general education classroom.

Figure 8 provides quotes from participants in the pre-questionnaire, asking why
they were interested in participating. They all reveal the common goal of working with students with autism in the general education classroom. From the previous figure, (See Figure 1) on defining successful professional development participants define successful TPD as being relevant to their individual needs and something they can take back with them and implement into their classroom.

Figure 8. Pre-Questionnaire Results, Week 1

**A Collaborative Effort.** The final subtheme discovered with this theme of collaboration and shared resources was a collaborated effort. Participants unanimously described one of the main reasons for participating in the online teacher study group was to learn and talk with other teachers working with students with autism, particularly in the general education classroom. Words such as “collaboration” or “working with
“others” could be read throughout all of the varying data with the online teacher study group. It was asked of participants what their expectations were before beginning the study group, and all participants had a response to the degree of talking with other teachers working with autistic students in the classroom and wanting to hear their experiences and ideas for instructing students with autism in the general education classroom.

Figure 9. Pre- and post-questionnaire results on expectations

Interestingly though, further analysis of the patterns of discussion posts indicated that not to be the case in this study group. The total number of messages posted by teachers in each module was analyzed to elucidate patterns of computer-mediated communication in asynchronous discussion forums. Table 3 reveals that over four weeks, participants posted a total of 29 messages on the discussion boards. Of the 29 discussion posts in each module, 24 (82.76%) were associated with the weekly theme; the rest, (17.24%) were unrelated, being for example simple procedural or social posts. Procedural posts contained reminders from the researcher on which discussions were up and running each week. Social posts included other happenings in individual
participant’s school districts unrelated to the discussion theme. For example, participants shared PSSA testing requirements in their buildings and assemblies that went on that week.

Table 3 also presents the variability in the discussion topics by the participants. Some topics were discussed more than others; a particular fall off was observed in the final two weeks (T3 = 5, T4 = 6), perhaps because the end of the study group was being approached, and by participants’ frustrations trying to balance focusing on strategies from the study group and the busy time of year (PSSA testing, Spring Break, etc.). Table 3 indicates that the number of posts by participants averaged 72.4; the number of peer responses averaged 27.76. This data indicated that few participants responded to each other. According to Moore (1989), distance education involves three styles of interaction, which are learner-learner, learner-instructor, and learner-content interaction. The results indicated mostly learner-content interaction, with minor amounts of learner-learner interaction, which means that most participants focused on the content and strategies discussed rather than discussing what others experienced with their strategy implementation. Very rarely was there a continuation of a discussion beyond a statement or one response to an inquiry.

Table 3. Discussion Board Analysis

<table>
<thead>
<tr>
<th>Weekly Theme</th>
<th>Total # of discussion posts</th>
<th>Total # of discussion posts on a theme</th>
<th>Total # of non-cognitive messages</th>
<th>Total # of peer-responses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>T2</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>T3</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Close examination of the discussion board content revealed numerous stand-alone messages, either in response to others, or weaving two or three replies; generally, however, stand-alone messages were mostly monologues. Furthermore, most replies were single replies to messages; most discussions failed to proceed beyond a question and a single response. Participants tended to post to share what they’re students needed, wanting to know what others were doing and what strategies they chose to implement into their classroom. They were mostly unresponsive to their peers, and only a few parties maintained conversations over any exchanges. In other words, participant interactions more reflected in one-way rather than two-way interactions.

**Summary of Opportunities and Challenges with Collaboration and Sharing**

**Resources.** This second thematic thread of opportunities and challenges with collaboration and shared resources highlighted the participants’ perception of the online teacher study group as a space for inquiry, a library of resources to put into practice, a common focus group and collaborative effort with peers. Participants perceived Canvas™ (particularly discussion posts) as an online forum to ask questions involving tools to be used to support the needs of students with autism in the general education classroom. Along with inquiry, results found the online teacher study group-housed a library of resources readily available that they would have previously not thought of or knew existed such as; an emotions thermometer, individualized checklist, social stories, and others added by participants.
In addition to the results above, this thematic thread involved the perception of the online teacher study group as a place of common focus. Research, along with participant discussion, demonstrated that most view successful professional development as being relevant to their classroom needs and having a common focus. The participants believed the online teacher study group did have a common focus (strategies for working with students with autism in the general education classroom). The relevance was in that all participants were currently working with students with autism in the general education classroom, whether as the general education teacher or the special education teacher.

Participants perceived the online teacher study group as a collaborative effort in meeting the needs of students with autism in the general education classroom. However, further analysis of the discussion post revealed to while the most discussion was relevant and stayed within the focus of the group, the majority of the discussion posts were stand-alone or gave one or two peer responses.

**Theme Three: Opportunities and Challenges of Self-Efficacy, Time Management, and Authentic Participation**

This section answers the question of teachers’ perception of the barriers to the online teacher study group as a digital professional development tool. The results discuss the perceptions as opportunities to improve self-efficacy and time-management skills, challenges of accountability and authenticity in their participation efforts.

**Overview of the Findings on Barriers to OTSG.** An overview of the findings on the question asking participants to describe barriers to implementing online teacher study groups a professional development would indicate the need for time management and self-efficacy skills, accountability and authenticity in their participation. Therefore,
opportunities and challenges of self-efficacy, time management, and authentic participation became the third theme of the researcher's findings. One participant’s words capture an element common to all of the participants that were present in both interview and written response data (journal entries, discussion boards, pre- and -post questionnaires). In a journal entry the participant writes, “I think that an online teacher study group can be a great tool for learning and collaboration, but I do believe that all participants need to have the same overall goals and commitment to participation for this to be effective.” This particular quote exhibits the notion of self-efficacy when participating in the online study group. This study group was completely asynchronous, except the researcher offering online chat sessions each day for an hour to answer questions specific to the management of Canvas™ itself. According to Stajkovic & Luthans (1998), individuals who have high self-efficacy will exert sufficient effort that, if well-executed, leads to successful outcomes, whereas those with low self-efficacy are likely to cease effort early and fail. While the notion of high self-efficacy can to attributed to most types of professional development, this study revealed that this particular format (online teacher study groups) unveiled participants believes that some participants had higher-self efficacy than others.
Megan writes some of her final thoughts on the last discussion board stating, “I was disappointed that I feel like I didn't help at all because I was all over the place. I was able to talk about the toolkit and other things in our CPT but - everyone was so focused on PSSAs it felt like 'in one ear and out the other.' I would definitely do another study group but earlier in the year.” These words reflect the majority of participants’ frustration with the particular time of the year the study group was conducted, not only for actively participating in the study group but time to implement the best practice strategies discussed and the reflection needed to successfully analyze such strategies.

The results of this research question also revealed a lack of authenticity within the online teacher study group. Participants’ discussed these thoughts of authenticity in terms of using genuine language “in the moment.” Additional analyzation of the notion of authenticity exhibited discussions that felt almost superficial and self-congratulatory on implementing strategies to help their students, but no real measurable data to show student growth. Figure 10 shows examples of discussion comments that reflect the final thoughts of the online teacher study group found to exemplify the notion of authenticity.
Figure 10. *Discussion board posts on final thoughts on the online teacher study group*

**Self-Efficacy and Time Management.** One of the most surprising results revealed with analyzing results from this theme was an overwhelming perception of not only the time of year the online study group took place but also the perception that four weeks seemed was not enough time to measure student progress. Megan notes, “study groups would be nice earlier in the year. That way, we could possibly see what strategies or ideas work from beginning to end and not from a later part in the year. Also, I know that some teachers are very focused on PSSAs and it makes it harder for them to concentrate on anything other than that. I know that in second grade I do not have that added stress so I cannot relate. I did enjoy hearing what works and didn’t work in everyone classroom and hope that we can continue to have group discussions.” Holly also discusses how her students were already in a sort of routine and breaking them of that routine would be difficult and almost
When asked how this online study group could be improved, she answered that seeing how someone has progressed from the beginning to the end of the year would be helpful. However, because of when the study was conducted, classroom and instructional procedures had already been in place and it made it difficult to measure a strategy's success if not seen all the way through.

In Emily’s exit interview, she talks about her student progress saying, “I think, you know, the more time that you spend with people and talk with people or having more time to maybe get to know where they’re coming from. You know, beyond just like the four weeks to give them more time to see what kinds of things were effective or not. Some of my students have come a really long way from where we were in August, and so it would be interesting to see, like for me, just to personally reflect on what did I do that was really effective and what wasn’t and to have other people’s perspectives on that. So I think continuing for a longer period of time could be helpful in that.” While all participants felt they did learn new strategies and their students were receptive to them, most perceived a semester-long or school-yearlong study group would provide more accurate and substantially measurable data on its impact on student growth.

**Accountability.** The results of analyzing the data collected regarding the third theme further revealed most participants’ felt the online environment lacked a sense of accountability in continuing discussions and overall contribution to the study group. In Susan’s final journal entry, she states, “in some ways, that need (accountability) makes in-person study groups more effective; it is much more difficult to sit passively when you have to join your colleagues face-to-face, and it is much easier to motivate others to participate when you can ask questions directly, with the expectation of an answer at that
moment, not having to wait for others to log on to a computer, read a post, and compose a written response. I also believe that people are more apt to elaborate on their responses and share ideas when "in the moment," so to speak, which can lead to a more inclusive conversation.” Most participants discussed in their journals and post-questionnaire that even though they were collaborating with other teachers from different areas and gathering new information, there was still a sense that more discussion and contribution would be more evident in a face to face environment.

When unpacking the online study group in terms of accountability, data analysis brought out both positive and negative perceptions. For reasons discussed in the quotes above, this particular study group did not appear to provide many reasons for participants to be accountable other than through their own volition. Being in a voluntary learning environment puts little to no pressure on participants to contribute regularly and in full fruition. This contribution can be referenced in Table 3 demonstrating discussion board interaction. Also, other than the incentives of gift cards, raffle, and student growth, participants had little concrete evidence of their efforts as this was voluntary. At several points in the study, the researcher felt the need to post several reminder announcements within the Canvas™ module and words of encouragement within the discussion posts in the hopes of fostering further discussion and participation. Perhaps asking participants their thoughts on a certificate or additional incentives from administration would reveal the possible positive effects on participant accountability.

On the positive side of accountability in this online environment, participants were able to focus on the true reason they agreed to be a part of the online teacher study group: supporting the needs of students with autism in the general education classroom.

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and collaborating with other teachers interacting with similar types of students. Unlike their mentions of the stress of the PSSA’s during the time of the online teacher study group, there were no deadlines in the study group or assignments other than writing in discussion posts, journals, and classroom implementation. No deadlines and the high demands of standardized testing made it easy for participants to put the online teacher study group behind them.

**Authenticity.** Authenticity in terms of communication and collaboration became another result of analyzing the barriers to the online teacher study group. Emily’s quote discusses how she felt discussions could sometimes feel more genuine when face to face, and she found herself “polishing” her posts to sound more formal. When asked to describe a drawback to participating in the online study group she said, “when you're typing something to someone you know more formal setting, and maybe this is just me, but I always feel like it has to be a little bit more professional written like different than what I would just say in a face-to-face discussion.” It is possible since online participants are unable to “see” other participants or talk “synchronously” or the fact that immediate response is far less likely than face to face discussion, that authenticity of replies to discussion posts was common (Herring, 1999).

Also, analyzing the data form participants revealed a notion of superficial communication. Early it was discussed that a substantial amount of discussion posts where stand-alone. Most participant’s comments appear to be rather vague and contained little in-depth discussion. Figure 11 shows an example with a brief interaction in the final week of the study group in Canvas™
Further data analysis found the term “face-to-face” used by several more participants when reflecting on the drawbacks or improvements that could be made to the structure of the online teacher study group. Another participant stated in the post-questionnaire, “while on advantage of using an online format is the ability to return to previous discussion threads, one member of a face-to-face study group can take notes during a meeting and distribute them to all other members so that everyone is able to refer to important points or ideas as needed.” These responses were made without the researcher using that term in any prompt or questioning. Perhaps when thinking of online professional development, participants instinctively compare that format to face-to-face professional development rather than other forms of OPD due to their experience and familiarity with the latter.
The idea of anonymity was mentioned in the previous thread when discussing the inquiry, but it was also found to be a perception when thinking of authenticity. One participant wrote in their journal, “In any study group format, though, participants have to expect active participation from one another and should encourage such participation from each other as well. Again, this can be more challenging when participants in an online study group are essentially anonymous; while that affords a measure of confidentiality, I think such anonymity also makes it more difficult to communicate directly. For example, if I were seeking more ideas for helping my students with autism in my general education classroom just within my building, I would check in with a teacher who I know has had students with autism and has been successful in helping those students to achieve their goals in the classroom; while other teachers may offer advice, I would look to a person who I respect and who I know is a strong and capable teacher. In an online format, advice can come from anywhere - everyone can be an expert on the internet!” Perhaps having more knowledge of participants’ backgrounds and experiences would provide peers a sense that their sources and ideals are credible and more authentic.

**Summary of Opportunities and Challenges of Self-Efficacy, Time Management, and Authentic Participation.** First, the results of thematic thread three revealed participants felt that time was a significant barrier in the online teacher study group. Not only did they feel measuring the student progress for a semester or entire school year might have provided more insight and measurable progress, but the time of year the study group was conducted also factored into participant contribution.
Participants believed the beginning of the years might have provided a better opportunity for new strategies in the inclusion classroom and implementation to full fruition without the distractions of testing, holidays (Spring Break) or already established routines.

Secondly, this thematic thread provided data revealing participant accountability as a barrier to using the online teacher study group format as a professional development tool. Perhaps the voluntary nature of the online study group affected how much discussion, inquiry, and reflection were involved.

Lastly, this thematic thread provided results into the barrier of authenticity in participant connection and discussion. Participants revealed that face-to-face interactions typically allow for more informal, in-depth verbal discussions that require more immediate responses and feedback as opposed to responding to written text sometimes days later. Another perception was that the anonymity of the participants was a barrier that led to them holding back sharing knowledge or truly using ideas and strategies presented from other online participants.

Summary of Results

A series of emergent themes and thematic narratives derived from the analysis of the data of a combination of exemplars, text samples, artifacts, and graphical figures that have been chosen to represent patterns apparent in the larger data set (Mishler, 1990). Themes extruded from the inquiry of teachers’ perceptions of an online teacher study group as a digital professional development tool, as support for the needs of teachers instructing students with autism in a general education classroom and barriers of an online teacher study group as a digital professional development tool. The data produced the following themes: 1) learning within an online environment, 2) opportunities and
challenges in collaboration and sharing resources, and 3) opportunities and challenges with self-efficacy, time management, and authentic participation.

The first theme emerging from the exploration of the online teacher study group was providing opportunities for learning. This theme, in turn, exhibited additional criteria in terms of support. The first of which was of support for discussion. Participants perceived the online teacher study group provided a space that supported discussion amongst themselves through the online discussion boards with Canvas™. Support for individual classroom needs was also an underlying theme in providing opportunities for learning. Participants perceived the online teacher study provided support through available resources specific to what their students needed in their classroom. The support for individual needs went hand in hand with the support for shared resources. The online teacher study group was perceived to support the strategies needed for working with their students with autism. Lastly, this theme of providing opportunities for learning revealed the notion of support for reflection. Leinonen et al. (2015) mention the background of reflection as a key part of learning dating back to Dewey (1944) denoting that sustained thinking about experiences renders them to be reflective experiences.

Upon further analysis of providing opportunities for sharing resources and collaboration, a few key elements emerged. Inquiry emerged as a theme when discussing professional development and collaboration among participants. Along with inquiry, a library of resources emerged as a part of the theme of opportunities for sharing resources. Additionally, data from the online teacher study group demonstrated learning through a common focus. Participants came together with the common focus of learning new
strategies from working with their students with autism in the general education classroom. Finally, the ability to share such resources and collaborate through expressing which resources provided support for their specific needs and what might work for other participants also revealed in the theme of opportunities for learning.

The third and final theme of the analyses refers to the perception of barriers to an online teacher study group as a digital professional development tool. The theme that emerged was providing opportunities for self-efficacy, time management, and authentic participation. Time management referred to the time frame of the online study group. The barrier was perceived as not having enough time to observe the student learning outcomes of the practices put in place to including students with autism in the general education classroom. The barrier of time was additionally referred to as the time in the school year. The four-week study group was conducted in the Spring and participants felt if the study group was conducted at the beginning of the school year, more strategies could have been not only put into place but given time to review and adjust. The issue of time also revealed self-efficacy as a potential barrier. Participants perceived the time of year the study was conducted was a very busy time (i.e., PSSAs, end of the year) and took away from the focus of the study group. Authenticity was another perceived barrier in that the voluntary nature of the online study group led to lack of in-depth discussion, response to peer inquiries and superficial posts about professional development.

Overall the results revealed teachers felt the online teacher study group provided positive learning effects on participants of this study group. Participant perceptions of the online teacher study group were satisfactory, yet the participation was not highly interactive. This study was significant in that the online teacher study group nurtured the
teachers’ professional growth, but their participation was neither highly interactive nor superior to other online professional development models, even though their anecdotal evidence supported the claim that participants enjoyed and valued the online teacher study group. Improvements in the model could be possible in future research.
Chapter V

Discussion

Overview

The core of this inquiry was to explore teachers’ perceptions of an online teacher study group as a digital professional development tool and the collaboration of general education and special education teachers working with autistic students in the inclusion classroom. Participants comprised of elementary general education and special education as they collaborated on the needs of their students with autism in the general education classroom. Drawing from Wenger-Trayner’s theory of Community of Practice, this study analyzed data from a four-week online teacher study group to reveal three major themes that answered the research questions stated in the previous chapter. These themes will be connected to the theory of the CoP in the following sections.

The primary goal of this study was to understand the teachers’ perception of the online teacher study group as a digital professional development tool. As a follow-up to the primary goal, this research indented to identify barriers to an online study group as a professional development tool. A secondary goal of the study was to uncover ways in which the online teacher study group supported the teachers’ needs in working with their students with autism in the general education classroom. Figure 12 shows the concept map connecting the theoretical framework of the community of practice with the themes that emerged from the online teacher study group, along with critical elements associated with the facilitator’s role in the process.
A Community of Practice

Wenger-Trayner (2015) explains that communities of practice “are formed by people who engage in a process of collective learning in a shared domain of human endeavor” (p.1). This study followed the theoretical framework concept of the CoP in the three phases of its design: 1) domain, 2) community, and 3) practice. The case also embodied the CoP framework’s influential concept of social learning (Wenger, 1998). Meaning, the online teacher study group used the ideals of an informal social platform to learn and develop their teaching strategies specific to their needs of improving inclusive strategies.
The Domain. The participants shared a similar domain in that they were all teachers at the primary level (K-3). They also spent time working with students with autism in the general education classroom. Another commonality expressed in the pre-questionnaire during the online study group dealt with communication and professional development. All participants shared they often collaborated with special education or general education teachers in their building regularly.

Additionally, all participants expressed they believed in the importance of continual education in the form of professional development or learning from others in a similar domain. This notation was addressed in the literature review in the article by Ronfeldt et al. (2015). Their study conducted results that showed support for policy efforts to improve student achievement by promoting teacher collaboration about instruction in teams.

The case study research indicates that the online teacher study group can be classified as a community of practice because of the participants defined their shared domain of interest: learning strategies to work with students diagnosed with autism in the general education classroom (Wegner, 2011). Choosing to participate, therefore; inferred a commitment to the domain, and therefore a shared competence that distinguishes participants from those not part of the study group. With this in mind, the researcher need consider the following when constructing the online community: 1) the development of the learning environment in terms of the instructional skill level, how participant learning outcomes would be measured, and experiences of the participants, 2) creating weekly modules that were easy to navigate so as not to lose focus on the domain
of interest, and 3) working with the participants as a facilitator without influence but able to address technology concerns and motivate low participation.

**The Community.** The group used the online learning format of Canvas™, which served as their community by providing a common space for participants to bond and form relationships over their similar domain. Canvas™ provided that shared domain to participants that otherwise may not have connected due to the ability to connected with teachers from different districts. This idea of an online learning community was mentioned in the literature review from the National Academy of Science (2007) as the academy expressed the attraction and interest for online teacher professional development has increased due to the flexibility, creativity, and the ongoing nature of its development.

Referring back again to the literature review and the discussion on web-based professional development, Chen et al., (2009) express the need of those participating in an online professional development to cultivate new skills needed to manage the varying threads of discourses created by other participants, such as replies to discussion posts. It is for such a reason the researcher felt it necessary to have an initial meeting with participants on the basic elements of navigating through the online environment itself, Canvas™ before the start of the actual online study group.

Within a community, learning is focused on advancing the knowledge of the shared domain, which is nurtured by common history of learning, shared practices and the commitment to negotiate, learn and develop ideas and resources together (Wenger et al., 2011). According to Wenger et al. (2009), “technology extends and reframes how communities organize and express boundaries and relationships, which changes the dynamics of participation, peripherally and legitimacy” (p.11). In pursuing their interest
in their domain, participants in the online teacher hoped to engage in joint activities and discussions, help each other, and share information. These notions were discussed in the previous chapter answering the question relating to teachers’ perceptions of support from the online teacher study group. While the above did occur within the online teacher study group, most participants expressed inconsistencies with such support at times throughout the study group.

The Practice. Lastly, the participants used this online interaction to discover resources that affected their practice. Meaning, they were able to identify and utilize practical strategies in their inclusive classroom specific to the needs of their students with autism. One notion the researcher gained from the facilitation the online teacher study group came from thinking of the idea of “practice” itself and what that looks like in an online learning community. An online community of practice is not merely a community of interest--people who like certain kinds of foods or music, for instance. Participants need to be practitioners. They must develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice. This takes time and sustained interaction, which participants perceived to be a barrier to learning in the online teacher study group as discussed in the previous chapter.

The research also learned the importance of the reinforcement of self-regulating skills in learning in an online environment. This was another barrier perceived by the participants of the online teacher study group. Garcia and Pintrich (1994) state that self-regulation refers “to students’ monitoring, controlling and regulating their cognitive activities and actual behavior” (p.143). The nature of online learning, in any case, calls on learners to be self-monitored and to be responsible for their learning. That is, to
assume greater control of monitoring and managing the cognitive aspects of their learning (Garrison & Cleveland-Innes, 2005). More on the idea of self-regulation is discussed in the section on limitations of the study and future research.

**Implications For Practice.** Continuing on with the theory of practice and what it looks like, in terms of an online teacher study group, several implications from this research became evident including the role of the facilitator, a clearly defined domain, training on self-regulating skills when learning in an online environment, and adding best practices specific to the domain. One notion that came about includes the idea of how to add best practices in professional development in an online environment and what that infers. Such practices include actively engaging participants, providing discipline-specific content, encouraging collaborative participation, modeling, demonstrating and providing support during implementation and continued follow up (Darling-Hammon et al, 2017). This is where the role of the facilitator comes in, especially when facilitating professional development in an online environment. Facilitators of online professional development must first teach participants how to use the tools of an online environment in order to provide such effective practices. By modeling and demonstrating effective communication in an online environment, whether, through discussion boards, chat rooms, or journal entries, facilitators can provide participants with training on the self-regulating skills mentioned in the previous section. Encouraging online participants to think critically in terms of what their inquiry is, what message they are trying to express, and keeping the conversation going beyond a one-time post or responses to such posts is one way to accomplish this.

The incentive is also a crucial piece in implicating this type of online professional
development. Teachers need to not only buy in to the idea of learning through a community of practice, but know their extra time and effort will be rewarded in some way. For instance, receiving recognition from departments of education for professional development, often fulfilling requirements for teacher licensure incentivizes online communities of practices. Observational data supporting positive learning outcomes will need to be provided in order for such incentives to be put into place by administrators or departments of education. Simply put, there needs to be solid proof within the data that this type of learning practice is effective not only for improved teacher practice, but student learning outcomes as well in order for this type of professional development to be accredited.

Lastly, when thinking of the implications of practice in an online teacher study group, it is important to consider in what ways online communities of practice become more purposeful or less purposeful. Participants who have those self-regulating skills and are able to keep the focus of the domain while engaging in discussion forums will be successful in implementing what they have learned into practice. This may require training specific to online self-regulating skills (i.e., frequent monitoring of participation in online discussions, regular interaction with fellow participants, regulation of focused conversation and problem-solving with practice) when in an online professional development or learning forum. Participants who use inquiry to problem-solve their classroom needs will also be successful in an online community of practice. Also, teachers who continue to return to the online community to seek feedback from peers in the domain, analyze their practice, revise that practice, implement changes based on analysis of their inquiry and repeat the process in order to see positive learning outcomes
will be highly successful.

Teachers who see the community as a place for one sided conversations or a focus on the problem rather than its solution will be far less impacted. Likewise, participants who unwilling to learn and demonstrate the cited self-regulated skills needed in an online environment, self-critique their practice, and fail to follow the cyclical process will find this form of professional development far less purposeful and unlikely to have a positive effect in their teaching practices. Here, is where it is crucial for facilitators of communities of practice in the online study group format ensure participants are going through the cyclical process of when implementing instructional strategies and to follow up dicussions on implications of teaching practices. Combining the solid formation of the domain and a facilitator with a strong understanding of their role will provide future participants with the elements necessary to form a successful and purposeful online study group as a relevant professional development tool.

Limitations

As in the case with most research, there are limitations that must be acknowledged. Although the main goal of the study was to uncover teachers’ perceptions of an online teacher study group as a digital professional development tool, it was difficult to translate this goal into practice due to some participants’ lack of expansion on the discussion of professional development. The multiple data sources revealed a lack of self-regulated skills as an issue for participating teachers. An example of these skills in terms of an online community could include: 1) actively initiating and responding to discussion board questions regularly, 2) sharing personal experiences that could provide
support to other participants and 3) making a conscious effort to keep the conversations focused on the goal set forth. Self-regulating learners are both active and reflective participants and assume greater control and responsibility in the learning process (Garrison & Cleveland-Innes, 2005). Such examples are items that could have been reinforced and introduced to participants at the beginning and reinforced throughout the study group. Providing training or additional resources involving successful online communication would have potentially enabled participants to be made self-aware of the skills necessary to succeed in an online community.

A second limitation of the study was the fact that participation in the online teacher study group was voluntary. Even though participants indicated though the pre-questionnaire and the opening discussion board, the everyday responsibilities they were mandated by their schools to complete (PSSAs, grading, etc.) during the time the online study group was conducted played a significant part in the decline of overall participation. While there were a few incentives such as a gift card and a chance to win an iPad mini upon completion of the study group, several participants showed little to no interaction towards the end of the four weeks. Furthermore, there was no consequence for not completing the online teacher study group. Perhaps a certification program or school/district recognition would have had an impact on participant engagement. Also, support from administration in the form of professional development credits or scheduled time to participant would increase engagement.

Finally, the third limitation discovered in this study was time. While participants felt that the online study group was a positive experience and they were able to learn new strategies, implement new classroom techniques and communicate with other teachers
with similar interests, the four-week period did not measure significant student impact. The researcher also felt more time would have provided participants the opportunity to go through the cyclical process of developing, implementing, analyzing and revising inclusion strategies multiple times. Perhaps this would have led to a richer data analysis not only for the researcher but for the participants’ self-reflection.

**Areas for Future Research**

Upon further reflection and data analysis, several areas of the study can be continued as future research. The first area discussed is a study of synchronous online teacher study groups. The second future study area mentioned is year-long or semester-long online teacher study groups. Finally, the third area of further research is the addition of parents and administrators as additional participants in an online teacher study group.

As mentioned in the previous chapter, participants discussed the importance of personal connections with one another as part of a positive online experience and insufficient communication of some participants due to the nature of the asynchronous format. Perhaps adding a virtual communal space where all participants are in one “place” at the same time would lead to a different perception of online teacher study groups.

A year-long or semester-long online teacher study group may further investigate not only teachers’ perceptions of this digital tool, but the process of establishing new strategies, more opportunities for participant communication, and the full fruition of student learning outcomes. Perhaps student outcomes would become a more prominent focus of the research with an extended time frame.
A few participants did mention the importance of parent involvement when asked about to define collaboration in the pre and post-surveys. Furthermore, participants continually expressed frustration with the disruption of PSSA testing while trying to implement inclusive strategies that were discussed within the study group and not time in the day for such implementation with various other demands. Possibly adding administration into the online study group could provide a place for open and honest discussion and allow for teachers and administrations to learn each other’s perception of the topic being addressed. The literature review found that administrative support for online professional development has significantly increased; however, it is important to be aware of the notion that online professional development should not be thought of as something that can be done on teachers’ own time (Cavanaugh, 2013; National Academy of Science, 2007). Therefore, teachers need to be motivated to participate in OTPD by providing the same opportunities to participate in OTPD as face-to-face workshops (Cavanaugh, 2013; Chen et al., 2009).

Conclusion

Given that the fabric of the professional teaching community is woven from actions and interactions of individuals, and that dialogue is viewed as one of the main methods of fostering professional development and reflective equilibrium in the teaching community, maintaining reflective dialogue to promote the professional development of teachers is of paramount importance (Yang & Li, 2004). An online teacher study group designed in the future perhaps should elicit more reflection-stimulating posts by requiring participants to read and respond to peers, thereby forcing them to think and form ideas.
Facilitating change in online communication from reactive to highly interactive is hoped to lead to participants’ seeking shared understanding, as they engage in critical thinking and analysis of solving problems that concern authentic classroom experiences.

In terms of online professional development, the transformation of this learning theory is a much deeper transformation. This will inevitably take longer. From the perspective of communities of practice in terms of how online professional development affects educational these questions should be addressed at the beginning and throughout any type of online community experience: 1) how to organize educational experiences that ground school learning in practice through participation in communities around subject matter, 2) how to connect the experience of an online teacher study group to actual practice through peripheral forms of participation in broader communities beyond the walls of their classroom or school, and 3) how to serve the lifelong learning needs of teachers by organizing communities of practice focused on topics of continuing interest to teachers beyond the initial study group (Wenger, 2011).

Reflective professional discourse must to nurtured since it does not grow simply out of professional relationships; the sustained self-development of reflection and active learning depends on time, effort, support, and initiative (Spitzer et al., 1994). The present study is only a preliminary phase on the way to provide a supportive, learning environment that provides professional development opportunities to enable teachers to engage in exploration, research-based inquiry, reflection, experimentation, and practice. Although this study answers the question of barriers to an online teacher study group, the existence of these barriers should not be construed negatively, but rather, as a guide to future professional development developers and teachers who are seeking the design...
improved activities to foster teachers’ collaboration, reflection, and dialogue. This study supports the notion of the importance of dialogue in helping teachers transform their teaching practices and the difficulty in sustaining continued interaction (for example, Elbaz, 1988; Joyce et al., 1989).

Future designs of online teacher study groups should involve a concerted effort to refine the creative network medium by providing sufficient time, training, practice, resources, feedback and follow-up support of sustained, thoughtful and reflective dialogues about teaching practices. Participants perceived there to be positive learning effects of the online teacher study group and their experiences were satisfactory, yet the participation was not highly interactive. This study was significant in that the online community nurtured the teachers’ professional growth. Teacher participation was neither highly interactive nor much beyond a one-time peer response in terms of discussion, even though their anecdotal evidence supported the claim that participants enjoyed and valued the online teacher study group. Overall this study opens the discussion of the potentials of online teacher study groups as an online professional development tool.
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Appendix

Appendix 1

Online Teacher Study Group Homepage in Canvas™
Appendix 2

Online Teacher Study Group Pre-Questionnaire

Please complete the survey in its entirety. It is also imperative that you answer truthfully and to the best of your ability in order to get the most accurate screenings. Thank you for your time and patience.

1. How important is Professional Development in the field of education? *

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   Not at all | | | | | Extremely |

2. In your opinion, how do you know if professional development is successful for you? *

   Short answer text

3. In a few words, describe what makes professional development a positive experience. *

   Short answer text

4. In a few words, describe what makes professional development a negative experience. *

   Short answer text

4. Why are you interested in participating in this online teacher study group? *

   Short answer text

5. What are your expectations for after completing this online study group? *

   Long answer text
Appendix 3

Online Teacher Study Group Post-Questionnaire

Please complete the questionnaire in its entirety. It is also imperative that you answer truthfully and to the best of your ability in order to get the most accurate screenings. Thank you for your time and patience.

1. How important is Professional Development in the field of education? *

   Not at all 1 2 3 4 5 Extremely

2. In your opinion, how do you know if professional development is successful for you?

3. In a few words, describe what makes professional development a positive experience.

   Long answer text

4. In a few words, describe what makes professional development a negative experience.

   Long answer text

5. Where your expectations you set before participating in this online study group met? Why or why not?

   Long answer text

6. Would you participate in another online teacher study group in the future? Why or why not?

   Long answer text
Appendix 4

These questions were asked at the end of the online teacher study group:

1. How have you connected to your fellow colleagues that participated in this online teacher study group? What were some challenges to connecting with colleagues?

2. How has this experience impacted your thoughts on collaboration?

3. What would be the benefit to continue this online teacher study group? What would be the drawback?

4. Describe the changes in how you include students with autism in your daily classroom practices?