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UNIVERSITY OF CALIFORNIA SAN DIEGO

CALIFORNIA STATE UNIVERSITY SAN MARCOS

COLLABORATIVE NETWORKS OF GENERAL AND SPECIAL EDUCATION TEACHERS AT
AN INCLUSIVE SCHOOL SITE

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Education

in

Educational Leadership

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2022

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University of California San Diego
California State University San Marcos

2022

Dedication

To all my neurodivergent rebels: Your brain is beautiful, and the world needs your perspective.

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List of Abbreviations

CoP	Community of Practice
CPT	Common Planning Team
GENED	General Education
IEP	Individualized Education Program
PD	Professional Development
PLC	Professional Learning Community
SNT	Social Network Theory
SPED	Special Education
SWD	Students with Disabilities
SWSN	Students with Special Needs
UDL	Universal Design for Learning

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Preface

This study was conducted during the COVID-19 pandemic. The study had been proposed and approved by the IRB before the pandemic. The study's original design included in-person interviews. However, due to a statewide mandate to stay at home, all interviews were shifted to a video calling platform. Ego network data was gathered digitally using an interactive digital document shared with the participants and reviewed using the share screen feature of the video calling platform. Further discussion of data collection is presented in chapter 3, methodology.

Acknowledgements

I would like to express my deepest appreciation and gratitude to all in my life. Without you, this dissertation would have never happened. I am blessed to have so many people who have provided unwavering support, encouragement, and the motivation to make it through each step. Because of each person in my life, I have achieved my greatest dream.

First, I need to thank my parents, who have been my unrelenting champions. They have encouraged me to persevere, no matter how difficult the challenge may be. Who have been cheering me on no matter how many times I fall and get back up? Who has inspired me to go beyond what I thought I was capable of?

The deepest thank you to my husband, who has been my partner through every adventure. His support has enabled me to keep reaching my goals. His love has been the scaffolding that supports me as I extend to new heights.

To my sons, thank you for being the inspiration to improve education. I hope that my work improves education for you and your future children.

Lastly, I would like to thank my teachers and professors who have encouraged me to become the educational leader I am today.

Vita

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Abstract of the Dissertation

Collaborative Networks of General and Special Education Teachers at an Inclusive School Site

by

Kelly Velazquez

Doctor of Education in Educational Leadership

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Inclusive education is when all students, regardless of any challenge or neurological differences, are in the general education classroom and receive high-quality instruction, interventions, and support to succeed in the core curriculum. With 62.5% of students receiving most, if not all, special education services in the general education classroom (Snyder et al., 2019), general and special education teachers must work together to meet their students' needs. The case study investigated the collaborative networks of eight general and special education teachers and learned how general and special education teachers collaborate to support inclusion at a public middle school. Through interviews, teachers mapped and described their ego-networks and discussed how they collaborate to support students with special needs in their classrooms. The study identified a network dense with special educators which provided multiple sources of accessible education experience and expertise. Proximity and structured partnerships were found to be the main drivers for network development.

Working together, teachers differentiated and scaffolded the curriculum and provided an individualized education. The study provides further understanding of collaborative networks within a school site and situates this knowledge within the lens of educational leadership through distributed leadership practices and supports equitable educational practices that celebrate and honor neurodiversity within classrooms.

Keywords: Inclusion, Special Education, General Education, Teacher Collaboration, Ego-Network Analysis

Chapter 1: Introduction

With an increased understanding of neuro differences and identification procedures, student populations are becoming more neurodiverse. Recent data has shown an increase in children identified with autism spectrum disorder (ASD) (Maenner et al., 2021). Currently, 1 in 44 children are identified with ASD in the US. This number is even higher in California, where 1 in 26 children are identified with ASD. Attention-Deficit / Hyperactivity Disorder (ADHD) is even more prevalent, with 9.4% of children being identified, approximately 1 in every 10.6 children (Danielson et al., 2018). Furthermore, 1 in 20 children is identified with learning disabilities such as dyslexia, dysgraphia, dyscalculia, or dyspraxia (Cortiella & Horowitz, 2014). ASD, ADHD, dyslexia, dysgraphia, dyscalculia, and dyspraxia are recognized as neurological differences (Armstrong, 2017; Rentenbach et al., 2017; Silberman, 2015; Singer, 2017; Walker, 2021). These neurological differences impact how students learn, and teachers must be knowledgeable and prepared to support these differences.

With this increase in neurological diversity, teachers need to be prepared to meet the needs of their neurodiverse student population. Neurodiverse students are commonly supported through special education (SPED) (Brown et al., 2013; Gee et al., 2020; Hallahan et al., 2012; Kauffman et al., 2018; King-Sears, 2008; Kirk et al., 2014; Murphy, 1996). The data shows that 11.6% of the student population ages 6-11 are students with disabilities (SWD) eligible for an Individual Education Plan (IEP) (US Department of Education, 2018). Within that population, 62.5% of students with IEPs are in general education (GENED) classes 80% or more of the day (Snyder et al., 2019). The data shows that SPED students are commonly supported through an inclusive education model where they receive the majority of their education and accessible educational support in GENED classes. Therefore, GENED teachers must rely on the expertise of their GENED and SPED colleagues to create and implement effective lessons designed to meet the needs of their neurodiverse students. This study examines the collaborative relationships between GENED and SPED teachers to support their neurodiverse student

population. Additionally, it explores collaboration for inclusive education practices from the teacher perspective.

Background of Study

Within the classroom, there is a mosaic of students. They come from diverse backgrounds, cultures, languages, strengths, and talents. As we learn more about our students, we learn about the neurodiversity in our classrooms. Walker (2021), states that neurodiversity is “the diversity of human minds, the infinite variation in neurocognitive functioning within our species” (p. 44). The neurodiverse paradigm shifts away from the medical model of disability, where challenges are considered deficits and require extensive therapies to remediate. Instead, it considers variations in the human brain regarding learning, mood, attention, sociability, and other mental functions and understands these differences to work with them.

Increased identification and understanding of neurodiversity have shifted pedagogical approaches. A neurodiverse approach to supporting these differences utilizes strengths to develop an understanding of concepts and skills and helps students minimize the impact of their challenges (Armstrong, 2015; 2017; Rentenbach et al., 2017). This approach is fundamentally different from the medical model, which focuses on students’ deficits. Students receive instruction in areas of weakness, often taught in separate SPED classrooms to remediate these weaknesses (Baker & Wang, 1994; Education, 1996; King-Sears, 2008; Rea et al., 2002; US Department of Education, 2018; Villa & Thousand, 2005, 2017).

Instruction in separate classrooms can be a disservice to SWD. Separate classrooms regularly have less rigorous standards-based curricula and do not challenge students to their potential (Ferri et al., 2016). Students in separate classrooms spend less time engaged in instruction, and instruction is often passive and not individualized to the student (Kurth et al., 2016). Students in separate classrooms make less progress than in inclusive classrooms in communication, literacy, and numeracy (Gee et al., 2020). The enhanced understanding of the

negative impact of separate classrooms calls for SWD to be included in GENED classrooms with the appropriate support.

Research has indicated the benefits of inclusive classrooms, making them potentially a better setting for SWD. Inclusive education is the practice of supporting SWD in the GENED environment with appropriate support and supplementary aids (DaFonte & Barton-Arwood, 2017; Forlin, 2010; Fuchs et al., 2015; Jones, 2012; Lawrence-Brown & Muschaweck, 2004; Murphy, 1996; National Center for Education Statistics, 2019; US Department of Education, 2018). Research revealed that SWD who were educated in GENED classes academically outperformed their peers who had been educated in segregated settings (California Charter Schools Association, 2016). SWD in inclusive classrooms earned higher grades, achieved higher or comparable scores on standardized tests, committed no more behavioral infractions, and attended more days of school than students served in the pullout program (Rea et al., 2002). The research supports the practice of inclusive education for SWD.

Effective inclusion requires appropriate support for SWD. Teachers need to collaborate to ensure the supports are suitable for the individual SWD and create access to the GENED curriculum (DaFonte & Barton-Arwood, 2017; Jones, 2012; Lawrence-Brown & Muschaweck, 2004; Villa & Thousand, 2005). As a result, teachers must understand both the GENED content and the appropriate support for SWD. GENED teachers receive pre-service training and professional development in content areas and pedagogy for diverse student populations. However, GENED teachers do not necessarily have the expertise to support SWD appropriately and ensure an accessible education (DaFonte & Barton-Arwood, 2017; Fiziellie et al., 2016; Villa et al., 2013; Villa & Thousand, 2005, 2017). Education specialists or SPED teachers are trained and skilled in accessible education and appropriate support for SWD (Brown et al., 2013; Fish & Stephenes, 2010; Florian, 2019; Kirk et al., 2014). Therefore, it is essential for both GENED and SPED teachers to collaborate to support their neurodiverse student population.

Statement of the Problem

Teacher collaboration has been heavily researched. In a systematic review conducted by Vangrieken et al. (2015), collaboration was defined as a continuum ranging from aggregates of individuals to strong team collaboration. The review also discussed the range within the purpose of collaboration: preserving individual teacher autonomy, coordinating responsibilities and tasks, cooperation through the joint enterprise of content, and sharing, which directs the way the teaching and learning activities are structured. Furthermore, the review identified the benefits of collaboration, such as improved instruction, increased teaching effectiveness, improved student performance, and the extension of teaching tools and activities.

A subsection of teacher collaboration research focuses on collaboration between GENED and SPED teachers. Research has shown that the benefits of teacher collaboration can be applied to collaboration between GENED and SPED teachers; these benefits include an increase in instruction, teaching effectiveness, and student performance (DaFonte & Barton-Arwood, 2017; Rea et al., 2002; Shea et al., 1999). GENED and SPED teachers collaborating and working together provides the ultimate team to support SWD in an inclusive classroom (Nevin et al., 2009; Villa et al., 2013; Villa & Thousand, 2017).

A recent shift in teacher collaboration research involves investigating the relationships between collaborative teachers. This perspective focuses on the patterns of social relationships among teachers that result from their interactions in practice (Coburn et al., 2012; Daly & Finnigan, 2010; Hunter & Hall, 2018; Moolenaar, 2012). Studies about teacher collaborative networks are categorized by perspective: within an organization, district or school (Atteberry & Bryk, 2010; Coburn et al., 2010; Moolenaar & Daly, 2012; Moolenaar et al., 2020; Moolenaar & Daly, 2014) and beyond a single organization or school (Hunter & Hall, 2018; Lieberman, 2000; Lieberman & McLaughlin, 1992). Whole network analysis is ideal for studies regarding a specific organization, district, or school. Whole network analysis limits the network to the organization or

school. Ego network analysis allows the teacher to define their network, providing a more authentic perspective of collaborative networks.

Only a few studies have explored collaborative teacher networks of SPED teachers within that body of research. DePaula (2003), studied and created computer supported social network for SPED teachers. Wong (2016), investigated the impact of collaborative teacher networks on SPED teacher practice. Hopkins et al. (2019), explored the effect of social networks on SPED teacher turnover. Tuomainen et al. (2012), examined networking roles and practices that SPED teachers have in the social networks of their teacher communities. Each of these studies has used a whole network approach to understanding and examining the collaborative networks of SPED teachers. Exploring collaborative networks using an ego-network methodology is a significant gap in this body of research.

There are two approaches to understanding collaborative teacher networks: whole network and ego network. Whole network provides a broad understanding of collaborative teacher networks within a bounded system such as a district or school (Borgatti et al., 2009; Carolan, 2014; Liu et al., 2017; Mamas, 2019). This perspective can provide insight into the positionality of different teachers within a system and understand the flow of information. Social network theory recognizes that relationships are messy and do not follow organizational rules (Borgatti et al., 2009; Crossley et al., 2018; Mamas et al., 2019; Moolenaar, 2012).

Understanding that teachers are not isolated within a district or school setting, ego-network analysis allows for the examination of collaborative teacher network at the individual level and allows the teacher to define their network (Borgatti et al., 2009; Borgatti & Ofem, 2010; Crossley et al., 2018; Crossley et al., 2015; Mamas et al., 2019). This study contributes to the understanding of teacher collaboration by examining the ego-networks of both GENED and SPED teachers. It furthers the ideas noted by Tuomainen et al. (2012), recognizing that SPED teachers had central roles in their social networks as knowledge sources and mediators but are commonly outsiders due to their multidimensional roles and responsibilities. It expands upon

them by investigating both GENED and SPED teachers' networking roles and practices within the social networks of their teacher communities as defined by the teachers themselves. This study expands upon the current understanding of collaborative teacher networks. The teacher perspective provides a unique view of collaborative networks from the inside out. This view is necessary when informing educational social network theory; it builds upon the original ideas of educational social networks and enhances the understanding from an insider's perspective.

Furthermore, this study benefits the organization by informing the school site and district of the collaborative network. It indicates key collaborators who have influential power within the network. In line with social network theory, these essential collaborators can be conduits of information and during educational reforms and new policies and practices they should have priority to receive information. Moreover, the key collaborators are ideal mentors, and their experience and knowledge can perpetuate the collaborative practices they have developed. The study can explain how teachers work together to support their neurodiverse student population. The school site and district can leverage these networks to support equitable educational practices and ensure social justice for the neurodiverse student population.

Purpose

The study's main objective was to examine how GENED, and SPED teachers collaborate to support the inclusion of SWD at an inclusive school site. Recognizing the limited research about understanding teacher collaboration between GENED and SPED teachers from a social network perspective, this study aimed to contribute to that body of research. In particular, it examined the ego networks of eight GENED and SPED teachers and analyzed how these teachers work collaboratively to support the inclusion of SWD. It also provided further understanding of how the various roles of SPED teachers influenced collaboration. Specifically, the study aimed to address the following research questions.

Research Questions

1. What do the collaborative networks of general and special education teachers look like at an inclusive school site? And why?
2. How do general and special education teachers collaborate to support inclusion?

Theoretical Framework

Social Network Theory (SNT) has reshaped the research and understanding of collaboration as a theoretical framework. The theory reveals and makes sense of social structure patterns and examines its social capital outcomes (Daly et al., 2010; Liu et al., 2017; Moolenaar, 2012). SNT explains that within an organization or system, the relationships between members can influence the system's behavior (Borgatti et al., 2009; Borgatti & Ofem, 2010; Daly, 2010; Liu et al., 2017). Therefore, SNT can offer a unique collaboration perspective among GENED and SPED teachers.

There has been a shift towards research using SNT as a lens to understand teacher collaboration. SNT allows for understanding how teachers connect and collaborate with other teachers within a school site and beyond intuitional boundaries (Moolenaar, 2012). This theoretical framework is unique because it recognizes the non-linear aspect of collaboration between teachers and identifies patterns within collaborative structures.

Social networks have shown to be a powerful vehicle for social justice and equity. SNT recognizes that information flows from person to person within a network (Borgatti & Ofem, 2010; Fleming & Juda, 2004; Liu et al., 2017). The theory identifies what information flows through a network which is critical when making organizational decisions (Daly et al., 2010; Daly & Finnigan, 2010). Research has shown that networks with educators who practice social justice and equity positively influenced their colleagues (Ritchie, 2012). Further research using SNT to study GENED and SPED teacher collaboration can be critical in advancing social justice and equitable education practice. This study is unique because it employs SNT to understand the relationship patterns of collaboration between GENED and SPED teachers, an understudied

area within teacher collaboration research in particular, egonet analysis is utilized to define a teacher's collaborative network and understand collaborative networks from the individual teacher's perspective.

Review of Methods

A case study of an inclusive school site with a sizeable neurodiverse student population, when compared to national, state and district average, located in Southern California was conducted to understand GENED and SPED teachers' networking roles and practices within the social networks of their teacher communities as defined by the teachers themselves. Eight teachers, five GENED and three SPED volunteered to participate in the study from the school site. The study used egonet analysis and follow-up semi-structured interviews to understand the networking roles and practices of both GENED and SPED teachers. Using specific prompts, teachers used a concentric circle diagram to map their collaborative networks. The concentric circle diagram provided a visual organizational tool to generate names of people that each ego/individual teacher whom they sought the advice on how to support SPED/ SWD students in their classroom and then organize them by frequency of their collaboration (Crossley et al., 2018; Crossley et al., 2015; Mamas. et al., 2019).

After mapping the collaborative networks, teachers participated in follow-up semi-structured interviews in which they were asked to describe their collaborative networks and explain how their collaborative networks were developed and formed. Teachers were asked to describe the following for each person listed on their network map: length of a collaborative relationship, frequency of collaboration, method of collaboration, the rationale for a collaborative relationship, focus of collaboration, a product of collaboration, and the impact of the collaboration. Furthermore, GENED and SPED teachers were asked to describe the collaboration with SWD in mind and illustrate its impact on their SWD. After discussing each network member, the teachers explained why they go to the people listed on their map and not others. They were also asked to describe what supports and undermines their collaboration

ability with other teachers. These follow-up questions provided a greater context for their social networks and a deeper understanding of their collaboration.

After collecting data about the collaborative networks, ego-network analysis was conducted. First, teachers' ego nets were visualized using E-Net (Borgatti, 2006). The ego net visualizations explained how the collaborative network of each teacher was dispersed among teacher types (GENED and SPED), gender, and frequency of collaboration. Additionally, egonet measures were calculated, including central tendency, tie dispersion and alter tie tendency. These measures established the teacher's connectedness, the distribution of ties based on teacher type and gender (Borgatti et al., 2009; Crossley et al., 2015; Froehlich et al., 2020; Mamas et al., 2019). The teachers' interview transcripts provided a rich description of collaboration and insights into the collaborative ego networks of teachers.

Summary

GENED and SPED teachers must team together to support the neurodiversity within the classroom, particularly their SWD. Teachers' best and most available resources are typically the teachers around them and their collective knowledge and experience. When GENED and SPED teachers work together at inclusive school sites, they can best support neurodiverse student needs.

The collaboration between GENED and SPED is unique. It requires specialists in their content to team up with specialists in accessible education to support the array of student needs in the classroom. Previous research on teacher collaboration, specifically collaboration between GENED and SPED teachers, has limited information about the collaborative relationships between these teachers. This study aids in understanding these collaborative relationships and provides a unique contribution by examining the ego networks as defined by the teachers. The study applied an SNT lens and examined the non-linear flows of information among teachers. Doing so provided a unique relational understanding of their collaboration and revealed important collaborative mechanisms useful in similar settings. This study built upon the current

knowledge of teacher collaboration at inclusive school sites and provided implications for practice, research, policy, and leadership.

Chapter 2: Literature Review

The following review of literature provides the background of inclusive education practices for a neurodiverse student population. It focuses on how teachers can collaborate to best support their students. It is centered towards social network theory which concentrates on the relationships between teachers and how they utilize each other to collaborate to employ best practices for meaningful education for all students.

History of Special Education and Inclusive Education

Before diving into inclusive education for a neurodiverse student population, one must understand the history of education for SWD. At the start of it is P.L. 94-142, the Education for All Handicapped Children Act which passed in 1975, guaranteeing a free and appropriate education of SWD (Fuchs et al., 2015; Murphy, 1996; US Department of Education, 2018; Villa & Thousand, 2005, 2017; Wade, 2000). P.L. 94–142 outlined that SWD should be appropriately placed in the least restrictive environment. The least restrictive environment as defined by P.L. 94–142,

To the maximum extent appropriate, handicapped children, including those children in public and private institutions or other care facilities, are educated with children who are not handicapped, and that special classes, separate schooling, or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. (P.L. 94–142, § 1412 [5] [B])

Within the definition of least restrictive environment, it highlighted that SWD can and should be in regular classes with use of supplementary aids and services. This definition has been a leading force in the design and implementation of inclusion.

Inclusion is the practice of supporting SWD in the GENED setting with appropriate supports and supplementary aids (DaFonte & Barton-Arwood, 2017; Forlin, 2010; Fuchs et al., 2015; Jones, 2012; Lawrence-Brown & Muschaweck, 2004; Murphy, 1996; National Center for

Education Statistics, 2019; US Department of Education, 2018). Waitoller and Artiles (2013) describe inclusive education to include 1) redistributed access to quality learning opportunities, 2) valuing and recognizing all student differences, and 3) creation of more opportunities. Wade (2000) states that inclusion represents a shift from a continuum of educational placements to educational services. They are shifting from preparing students to be ready for a GENED setting to changing the GENED curriculum and pedagogy to align with the students' strengths and areas of need.

The shift towards an inclusive education requires a shift in educational approach. To meet the needs of SWD in the GENED classroom, teachers need to shift towards an individualized educational approach (Lindner & Schwab, 2020; Wade, 2000; Federico R. Waitoller & Artiles, 2013). A systematic review conducted by Lindner and Schwab, (2020) found that implementation of inclusion requires differentiation and individualization in organizational practice, instructional practice, and social/emotional/behavioral practice. The review found that teachers individualize the setting by modifying the learning environment for proper support of students and strategically placing the staff, students, and designing the classroom environment to meet the needs of each student. Furthermore, individualizing instruction to the various learning styles, strengths, and areas of need for each student. This includes individualizing to each student's social, emotional, and behavioral need. In order to implement differentiation and individualization for inclusion, teachers need to collaborate cooperatively with other professionals. The review found that planned cooperation between teachers improved teacher's ability to work with heterogeneous student groups allowing for a fruitful context for inclusive education.

Inclusion utilizes differentiated instruction and meaningful teacher collaboration. In order to successfully implement differentiated instruction, collaboration between teachers is essential (Bray, 2005; DaFonte & Barton-Arwood, 2017; Dever & Lash, 2013; Jones, 2012; Lawrence-

Brown & Muschaweck, 2004; Moolenaar, 2012; Shea et al., 1999; Thousand et al., 2015; Villa & Thousand, 2005, 2017). Utilizing other teachers' expertise, experience, and perspective can help inform instruction that builds upon the student's current understanding and mastery of skills and employs strategies that increase student engagement, develop strengths and weaknesses, and foster a sense of belonging mastery independence (Barrocas & Cramer, 2014).

Co-teaching is a common service delivery model to implement inclusive education (Cook & Friend, 2017; Falvey & Givener, 2005; Nevin et al., 2009; Poon-McBrayer & Wong, 2013; Villa et al., 2013; Villa & Thousand, 2005). Within this model, students with neurodiverse needs are supported to learn within GENED settings involving two professionals with distinct expertise jointly delivering instruction in a shared space (Cook & Friend, 2017; Villa et al., 2013; Villa & Thousand, 2005). Co-teaching has become increasingly widespread as a means of facilitating students' access to a standard curriculum, regardless of ability or disability (Barrocas & Cramer, 2014). Villa et al. (2013) describe co-teaching as the marriage between a master in content and master in accessibility, sharing responsibilities of instruction to improve outcomes for all students. Co-teaching is not limited to GENED and SPED teachers but can include a variety of professionals, for example, a teacher and speech pathologist (Archibald, 2017), or a teacher and a paraprofessional (Nevin et al., 2009; Villa & Thousand, 2017).

In the literature, four methods of co-teaching are typically discussed; supportive, parallel, complementary and team teaching (Bacharach et al., 2008; Brown et al., 2013; Nevin et al., 2009; Villa et al., 2013). Supportive co-teaching is when one teacher designs and delivers a lesson and the other teacher provides individualized support to specific SWD (Nevin et al., 2009; Pancsofar & Petroff, 2016; Villa et al., 2013). Pancsofar and Petroff (2016) found that supportive co-teaching is the most frequent method of co-teaching. Parallel teaching is when teachers divide the instructional responsibilities, and both facilitate learning experiences but to separate groups of students within the classroom (Nevin et al., 2009; Villa et al., 2013). Complementary teaching is where one teacher delivers content and the other teacher

complements, enhances, clarifies, expands, supplements, illustrate, provides examples, restates, and paraphrases the content (Nevin et al., 2009; Villa et al., 2013). Team teaching is best described as an exquisite dance between two teachers where both teachers equitably share the responsibilities and teaching duties, from the student perspective both teachers are the lead teachers (Villa et al., 2013). Villa et al (2013) recommends being intentional in the co-teaching methodology to maximize instructional activities to meet needs of all students.

A focus within inclusive education research has been the impact of co-teaching. Austin (2001), in his semi-structured interviews of 12 New Jersey co-teachers in K–12, agreed with many other researchers in his finding that GENED teachers considered co-teaching to have contributed positively to their professional development: SPED co-teachers cited an increase in content knowledge, and GENED co-teachers noted the benefits to their skill in classroom management and curriculum adaptation. (p. 250). Scruggs et al. (2007) meta synthesis of qualitative research on co-teaching found multiple studies that identified the positive influence of co-teachers on teacher's abilities to differentiate, scaffold, support, and facilitate lessons that met the needs of their diverse populations.

The impact of co-teaching on students has been researched but statistically significant quantifiable gains are difficult to find (Iacono et al., 2021; Scruggs et al., 2007). Hover et al. (2012) found that effective techniques employed by co-teachers include activation of prior knowledge, processing activities, strategy instruction, scaffolding, providing a structured environment with clear routines, and asking students to draw connections between topics to emphasize big picture learning. These instructional strategies have shown to improve student outcomes. Solis et al. (2014) found small gains to student outcomes with effective co-teaching implementation. While the research is limited on benefits of co-teaching, studies have verified that co-teaching does not have significant differences between separate classrooms (Barrocas & Cramer, 2014; Iacono et al., 2021; Scruggs et al., 2007). This data combined with the

understanding of least restrictive environment justifies the importance of implementation of co-teaching.

Co-teaching must be effectively implemented to observe the positive effects for both students and teachers. Multiple authors stress the importance of accurate and effective implementation of co-teaching and highlight that when co-teaching is hastily implemented it is a disservice to students and wastes resources (Iacono et al., 2021; Nevin et al., 2009; Scruggs et al., 2007; Villa et al., 2013). Co-teaching requires significant organizational resources and time, which are inherently scarce in education, leaders in co-teaching caution the hastily implementation of co-teaching and describe the investment in co-teaching to be an investment for both students and teachers. Keefe and Moore (2004) identified the challenges of co-teaching at the secondary level from interviews of GENED and SPED teachers who co-taught in inclusive classrooms at a large suburban high school in the southwestern United State. The teachers identified critical issues clustered around three major areas: the nature of collaboration, roles and responsibilities, and outcome. Frizell et al. (2016) recognized the importance of collaboration and provided a guidebook to support collaboration for the purpose of inclusion.

Effective collaboration is essential in effective co-teaching. Villa et al. (2013) highlights the importance of ample planning time, trust, communication, and coordination to facilitate effective co-teaching. Since co-teachers are equally responsible for planning, instruction of content, facilitating learning opportunities, assessing and progress monitoring, and providing student feedback; continuous and regular collaboration is critical for successful co-teaching (Bacharach et al., 2008; Barrocas & Cramer, 2014; Brown et al., 2013; Collins et al., 2017; Iacono et al., 2021; Lindner & Schwab, 2020; Nevin et al., 2009; Scruggs et al., 2007; Wilson, 2016). Therefore, it is important to understand how teachers collaborate to support students.

Teacher Collaboration

Two minds are better than one when solving problems and specifically when centered towards supporting neurodiverse students. Teachers have a variety of collaborative structures

and methods. The purpose of this collaboration is to work as a team to better understand their students, student needs, and best practices.

Early teacher collaboration was necessity as teachers sought out help from fellow educators to learn and strategize how to best support their students. A community of teachers were developed from the teachers' need for collaboration to support students. These communities are known as Communities of Practice (CoP) (Blackmore, 2008; Hargreaves, 2019; Vangrieken et al., 2015; Wenger, 1999), collaborating between practitioners of similar areas of interest. These communities were developed as a source of belonging, practice, and meaning (Niesz, 2012; Wenger, 1999). It is essential to note that CoPs do not replace formal structures but are created within them and proliferate beyond them (Blackmore, 2008; Wenger, 1999). Although informal CoP provided support initially, the complexity of education and being an educator required more formalized support.

School districts recognized the need for formalized teacher collaboration and have taken on the responsibility to create and facilitate collaboration through a variety of available collaboration programs. Teacher support programs such as internships, induction, or beginning teacher support programs have supported novice teachers (Brannan & Bleistein, 2012; Collins et al., 2017; Sutton & Shouse, 2016; Westling et al., 2006). The district-provided coaches and mentorships have been used as a formalized structure to support experienced teachers with a new policy and curriculum implementation (Coburn et al., 2012, 2013). In addition to teacher support programs, professional learning communities provide formalized opportunities to collaborate with other educators (Knapp et al., 2003; Poekert, 2012; F. R. Waitoller & Artiles, 2013).

Professional learning communities (PLC) are an integral part of teacher collaboration. Teachers in grade level or content area teams meet regularly to discuss student learning (Dever & Lash, 2013; Dufour, 2004; Poekert, 2012; Teague & Anfara, 2012). The purpose of PLC is to monitor and ensure students are learning and not just exposed to the curriculum (Dufour, 2004).

Assessments are used to monitor, and the results are analyzed and used to drive instruction (Dever & Lash, 2013; Dufour, 2004). Teachers use PLCs to examine what students are expected to know, how do teachers know if students have learned the information or concept and what are next steps if students have met the learning goals and what are next steps if they have not met the learning goals (Dever & Lash, 2013; Dufour, 2004). PLCs are beneficial for teacher collaboration provided that they adhere to specific practices.

For PLCs to benefit both teachers and students, it is necessary to have the following qualities. First, the structure of an organization must allow for shared governance where teachers influence policy and practice (Dufour, 2004; Kennedy et al., 2011; Sutton & Shouse, 2016; Teague & Anfara, 2012). By facilitating opportunities for teachers to impact student learning in their lesson design, teachers can place value into PLC, which is a large and time-consuming task that becomes meaningful to all. Secondly, interdependence and autonomy are required for effective PLC collaboration, ensuring teachers are not overly monitored and allowed the freedom and flexibility to make decisions that are best for students (Dufour, 2004; Kennedy et al., 2011; Teague & Anfara, 2012). Teachers will need to develop a set of goals, norms, protocols, roles, and expectations, but the ability to individually create them depending on group dynamics and student population is essential to effective PLC (Dufour, 2004; Sutton & Shouse, 2016). Additionally, teachers need to be equipped with tools to design, implement and monitor student learning effectively (Dever & Lash, 2013; Dufour, 2004, 2011; Teague & Anfara, 2012). The professional developments provide teachers with best practices, new curriculum, and professional learning.

Professional developments (PDs) have been a long-standing method to provide teachers with information, tools, and resources. Traditionally, the topics for PD are selected by administrators to best effectively support their staff (Dever & Lash, 2013). Conversely, this does not align with a culture of collaboration in which teachers have input on the knowledge, resources, and tools they believe will best support them (Coburn & Russell, 2008; Dever &

Lash, 2013; Dufour, 2004, 2011; Sutton & Shouse, 2016; Teague & Anfara, 2012). As a result, the PD can be misaligned with teacher needs and potentially ineffective.

PD can be described as ineffective, a waste of teacher time, and misuse of school funds (Dever & Lash, 2013). It is common to observe a PD and notice teachers answer emails on their computers, complete grading, or do other tasks. The passive style of teacher learning (Dever & Lash, 2013) often results in inadequate training. An expert leads a presentation of information as teachers sit idly by. It is common for the expert to be marginally trained on the topic, therefore not exactly an expert (Coburn & Russell, 2008). Typically, the presentation is in lecture form in which teachers passively learn the information. Rarely are teachers given opportunities to interact with the material or collaborate with their colleagues (Coburn & Russell, 2008; Dever & Lash, 2013; Teague & Anfara, 2012). Often at the end of the PD, teachers collect the resources, frequently in the form of handouts and copies of the PowerPoint presentation, return to school, and do not revisit the information (Dever & Lash, 2013; Teague & Anfara, 2012). PDs can benefit teacher learning when designed appropriately to align with teacher selected topics. In addition, PDs are effective when the information provides a teaching tool or strategy that can be revisited through collaborative teacher teams.

Similar to PLCs, another formal method of teacher collaboration is Common Planning Teams (CPTs). CPTs are analogous to PLCs by consisting of grade level or content teacher teams. Like PLCs, CPTs met regularly, at least once a week, if not more. PLCs and CPTs use data to identify problem areas within instruction and collaborate on academic issues (Dever & Lash, 2013). However, CPT is dissimilar by focusing on student action versus teacher action. For example, CPTs regularly included discussions of student behavior and its impact on student work (Dever & Lash, 2013). Often CPTs were reactive to student behavior and rarely did not include plans to prevent behavior concerns in the future (Dever & Lash, 2013). Additionally, conversations frequently deviate from academic issues to include more housekeeping agenda

items, including school/team events, non-academic discussions, and parent involvement (Dever & Lash, 2013). Both PLCs and CPTs provide formalized structures for teacher collaboration.

The team nature of PLCs and CPTs facilitates effective collaboration, which builds a support network of teachers. Teachers can leverage these networks to gain resources, generate innovative ideas, problem-solve, and improve instruction. The use of a social network has shown to be beneficial for teachers to enhance their teaching practices (Atteberry & Bryk, 2010; Coburn et al., 2013; Daly & Finnigan, 2010).

Social Network Theory

Social Network Theory (SNT) framework can help understand teacher collaboration. SNT within education is defined as a set of actors, educators in which interactions support flows of information, tools, and practices that strengthen teaching (Borgatti & Ofem, 2010). In order to understand the application of SNT to educators, one must first be familiar with the history as well as the various theories it builds on.

SNT can be traced back to the work of Jacob Moreno in 1930, who studied the graphical mapping of people's subjective feelings (Borgatti & Ofem, 2010). Moreno researched the social links between girls who ran away from home and discovered a flow of ideas between girls' channels (Borgatti & Ofem, 2010). His work revealed that positions in a social structure are impacted by the people occupying within the structure (Borgatti & Ofem, 2010). The insight from this understanding of social structure provided the basis for social network theory.

SNT has evolved since Moreno's work in 1930 to be an established theory within social sciences. SNT today studies the set of nodes or actors within a system, network, or organization (Borgatti et al., 2009; Borgatti & Ofem, 2010; Daly, 2010; Liu et al., 2017). The nodes can consist of individuals, teams, or organizations. Information is passed from one node to another, creating channels or flows of information (Borgatti et al., 2009; Borgatti & Ofem, 2010; Daly, 2010; Liu et al., 2017). The flow of information from nodes is mapped to demonstrate how information is passed within a specific network, organization, or structure. Within SNT, the

success of a network is not solely dependent on the actor's talents but on how the actors are connected (Borgatti & Ofem, 2010). Therefore, to understand SNT, one must understand the importance of relationships best described by social capital theory.

Social capital theory provides the foundations for SNT. Social capital is networking with shared norms, values, and understanding to facilitate cooperation within or among groups (Adler & Kwon, 2002; Cho et al., 2005; Lee, 2014; Tierney, 2006). "Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relationships. Its effects flow from the information, influence, and solidarity it makes available to the actors" (Adler & Kwon, 2002, pg 23). The benefits of social capital includes the transferring of information one individual to another, the solidarity it brings to groups, and the overall power in numbers (Adler & Kwon, 2002). However, social capital cannot function without a set of shared norms (Lee, 2014). The shared norms are based upon mutual understanding and contribution to the social network, creating a sense of enforced trust.

Furthermore, the motivation to contribute to the social network is based upon the notion of a shared destiny in which all the actors benefit from being part of the network (Adler & Kwon, 2002; Lee, 2014). The social capital theory captures how social networks operate but fails to explain why actors are fundamental to the structure of social networks. Human capital theory can ill describe the value actors have within a social network.

Social networks are based upon the shared understanding in which each actor within the network has value and can contribute to the betterment of the network. The value each actor has cannot be quantified but is determined by the quality of the network (Tierney, 2006). Moreover, it is understood that investing in actors provides an immense benefit versus investing in materials (Sweetland, 1996). These concepts are the framework for human capital theory. Social capital theory and social network both rely on human capital theory.

The foundations for human capital theory were laid by Adam Smith, John Stuart, and Alfred Marshall's work in the late 1700s through the 1800s (Sweetland, 1996). Through their

work in observing the laborers of the industrial revolution, they discovered the best assets are not the machines themselves but the people who worked them. Additionally, Irving Fisher noticed that an individual's quality is more than the market value of a person (Sweetland, 1996). Specifically noting investing in people, their training, and overall wellbeing is unmeasurable and provides an indirect return on investment (Sweetland, 1996). Teachers play a critical role in education and an investment in teachers' benefits students. The investment in teachers is lost when they are unable to share ideas and collaborate, thusly placing significance on social networks within education.

Teachers learn through their social networks. Social networks are designed to share information from one individual to another (Adler & Kwon, 2002; Blackmore, 2008; Borgatti & Ofem, 2010; Daly et al., 2005; Lee, 2014). Engagement in social practice is the fundamental process in which we learn (Wenger, 1999). Therefore, it is necessary to understand the formation of social networks between teachers.

Social networks can be informally created through relationships between teachers (Tuomainen et al., 2012). However, they can also be formally created through district policy to support teachers (Borgatti & Ofem, 2010; Brannan & Bleistein, 2012; Coburn et al., 2012, 2013; Coburn & Russell, 2008). Districts or school sites create social networks to support teachers. For example, Brannan and Bleistein (2012) evaluated the perceptions of social support networks for novice English as a Second Language (ESOL) teachers. At the beginning of the study, the ESOL teachers stated they relied on their family and friends as support networks. But as a result of this formalized social network, novice teachers were able to receive support from mostly co-workers either daily or weekly basis (Brannan & Bleistein, 2012). Co-workers provided both pragmatic supports providing novice teachers with solutions, and affective supports, which allowed novice teachers to continue through the most challenging part of teaching; the beginning years (Brannan & Bleistein, 2012). The results of their research support

social network formation through formal structures. However, not all formalized social networks are beneficial to teachers.

District coaching is a formalized social network structure. Research has shown that coaching may not provide sufficient support for teachers. The impact of policy interventions on teachers' professional relations was first studied by Coburn, Russell, Kaufman, and Stein (2012). Their study examined two districts implementing math curricula, requiring teachers to collaborate in afterschool professional developments, and providing time during the instructional day for teachers to meet. A district coach was provided to the teacher, starting with intense support at the beginning of the curricula implementation and then faded support over time. This strategy is common in district policy to provide support for teachers while implementing a new initiative collaboration, policy, or curriculum (Coburn et al., 2012). The results of this study showed that teachers often rely on their colleagues and not coaches for support. It was determined that access to coaches did not increase teacher access to expertise. Often coaches are unequipped and unqualified to support teachers with the new initiative, policy, or curriculum leaving teachers to seek out expertise within their social networks (Coburn et al., 2012). Formal social networks can be both beneficial and disadvantageous for teachers.

Teachers rely on their social networks for support, resources, and information. It is important to note that because teachers utilize social networks to share information, often teachers gravitate towards homophilic social networks (Coburn et al., 2013). Teachers of the same content area or grade level will naturally gravitate together (Coburn et al., 2013). However, when allowed to learn about other teachers' expertise through collaborative work and teacher observations, social networks typically expand beyond grade level or content area (Coburn et al., 2013). Recognizing how teacher social networks are formed is fundamental in understanding how social networks support teacher collaboration.

Teachers utilize social networks as a source of collaboration and distribution of knowledge (Cho et al., 2005; Coburn et al., 2012, 2013; Hunter & Hall, 2018; Tuomainen et al.,

2012). Teachers build relationships through their collaborative partnerships. As a result, social networks are created and established for effective communication and collaboration between teachers.

Teacher Collaboration Within Special Education

SNT focuses on the relationship aspect of collaborative networks. Teachers can leverage their social networks to problem solve, improve instructional practices, and support their diverse student population (Atteberry & Bryk, 2010; Coburn et al., 2012; Moolenaar, 2012; Ritchie, 2012). However, there is limited research focused on SPED teachers and collaborative relationships.

DePaula (2003) studied and created computer supported social networks for SPED teachers. The study identified a pitfall in creation and implementation of a web-based network, that the online special educator community was missing the culture sharing. Participants of the study used the network to gain resources but did not utilize the collaborative elements. The study identified areas to improve this element and identified areas to improve the website and promote collaboration among it.

A study by Wong (2016) investigated the impact of collaborative teacher networks on SPED teacher practice. The study learned that mild/moderate SPED teachers viewed themselves in support roles rather than as true co-teachers. Although special education teachers shared more connections formally with general education teachers, they had informal connections through co-teaching and social gatherings on campus, and by proximity of class location.

Hopkins et al. (2019) explored the effect of social networks on SPED teacher turnover. They found that the quality of teachers' relationships mattered more than the quantity of their social ties. Specifically, teachers reporting higher levels of relational trust were significantly less likely to leave or move, while social network closeness did not significantly predict leaving or

moving. The findings indicated that special education teachers were particularly susceptible to leaving or moving compared to their general education colleagues.

Tuomainen et al. (2012) examined networking roles and practices that SPED teachers have in the social networks of their teacher communities. The results of the study revealed that although the special educators had central positions in the formal teacher communities as knowledge sources and collaborators, they were at the periphery of the informal teacher communities. Their networking practices involved activating various outside professional relationships that provided expert resources needed in their profession. The study concluded that the special educators may be characterized as relational experts who work in the boundary zones between school communities and other organizations and have hybridized special education-related professional networks.

The research about SPED social networks provide an understanding to challenges within SPED. SPED has the highest turnover rate of any teacher type, with an annual attrition rate of 20% (Boe et al., 1997). Each year 20% of new teacher credentials issued in California are education specialists, SPED teachers, to fill this gap 3,306 new SPED teachers in California in 2016-2017 (Suckow & Lau, 2017). Additionally, 9% of SPED teachers leave within their first year of teaching (Boyer & Gillespie, 2000). The rapid turnover may be an influence on the lack of density in social networks of SPED teachers. The amount of time to build enough rapport to enter into a social network and be an active actor may be impacted by the turnover rate of SPED teachers. However, to confirm this belief more research on SPED teachers in educator social networks is necessary.

The turnover rate of SPED teachers is astounding, and the amount of new educational specialists has long-term effects on the quality and development of social networks of educators. As the research has shown, time is a significant barrier to effective collaboration and communication in which impacts the development of social networks (Bray, 2005; Lawrence-Brown & Muschawek, 2004; Moolenaar, 2012; Sutton & Shouse, 2016; Teague & Anpara,

2012; Westling et al., 2006). New teachers require substantial time to learn classroom management, skills to assess students, design, implement and monitor individualized educational programs for students with disabilities, and the organizational systems necessary to be an effective SPED teacher. Teacher support programs for SPED teachers are necessary to assist teacher retention (Boe, 2006; Boe et al., 1997; Westling et al., 2006). Suppose the time required to learn the basics of SPED is reduced through intentional planning within teacher support programs. In that case, districts must be providing this support immediately to SPED teachers. The teacher support programs need to allocate time to allow beginning teachers to effectively collaborate with SPED teachers.

Moreover, teacher support programs must be knowledgeable in how social networks develop and flourish among teachers. Understanding teacher support programs can help new SPED teachers enter into pre-existing social networks and become central actors. Future research on the impact of teacher support programs for SPED teachers in developing and maintaining social networks can shed light on the significance of support programs.

Time constraints are not limited to beginning SPED teachers. Even seasoned SPED teachers encounter difficulty with master schedules to effectively communicate and collaborate with other teachers (Bray, 2005; DaFonte & Barton-Arwood, 2017; Dever & Lash, 2013; Poekert, 2012; Sutton & Shouse, 2016). Teachers need to meet weekly during teaching hours (Bray, 2005). Therefore, educational organizations need to ensure this time is allocated to SPED teachers to meet and collaborate. Additionally, SPED teachers need to be included in PLC and CPTs to collaborate with GENED and SPED. As Tuominen et al. (2012) mentioned, SPED teachers often are isolated from social networks due to the divergence of SPED from GENED teacher collaboration activities. The provision of this time to work with both SPED and GENED teachers reduces the isolation of teachers. In creating a culture of inclusive collaboration with both GENED and SPED, it can be speculated that a reduction of SPED teacher attrition is possible. Fish and Stephenes (2010) highlighted the notion SPED is a career

of choice. Suppose SPED teachers feel included with the educator population and are given the time necessary to SPED effectively. In that case, teachers will be more inclined to stay in the profession.

Time provided to collaborate will not be the magic solution to supporting the social networks of SPED teachers. Coburn & Russell (2008) noted that district policy could not ensure meaningful conversations and collaboration to strengthen social networks. Social networks are based on trust in which actors within the social networks have valuable roles within the network (Adler & Kwon, 2002; Coburn et al., 2010, 2013; Coburn & Russell, 2008; Sutton & Shouse, 2016; Wenger, 1999). Trust cannot be built if there is a misunderstanding of GENED and SPED teachers' roles and responsibilities (DaFonte & Barton-Arwood, 2017; Keefe & Moore, 2004; Lawrence-Brown & Muschaweck). Therefore, organizations need to provide teachers with more straightforward outlines of the roles and responsibilities of both SPED and GENED teachers. Well-defined roles and responsibilities of both GENED and SPED can support the building of trust within the social networks of educators. Additionally, it can potentially improve the co-teaching of SPED within inclusive GENED classrooms (Keefe & Moore, 2004). However, more research is necessary to understand how more explicit roles and responsibilities of teachers impact teachers' social networks.

To meet the needs of a diverse classroom that includes SWD, the collaboration between GENED and SPED teachers is necessary. Since there are known barriers to collaboration between GENED and SPED teachers, it is crucial to understand how teachers can overcome these barriers and effectively collaborate to meet their students' needs. Understanding that collaboration occurs through relationships and connections among teachers, social network theory can provide a background to understanding collaboration. However, currently there are significant research gaps about the collaborative relationships between GENED and SPED teachers from an egonet perspective. This study was able to contribute to

those gaps in knowledge by examining the collaborative relationships between GENED and SPED teachers and using the teacher perspective to understand this dynamic.

Chapter 3: Methodology

This chapter provides the methodological account and rationale for this study which utilized a case study design (Creswell & Plano Clark, 2017; Yin, 2018) to understand the collaboration relationship between GENED and SPED teachers. This study furthers our understanding of the collaborative relationships between GENED and SPED teachers at an inclusive school site by exploring the ego-networks of teachers and conducting social network analysis. This study provided an in-depth insight into teacher collaboration between GENED and SPED teachers within Reeve Middle School.

Context

The case study was conducted at Reeve Middle School. The school was selected as the focus of a case study for several reasons. The unique demographics of the school provided a fascinating case study. The school's participation and recognition in several strategies supporting a diverse student population made the school site a spectacular place to focus on. The school received recognition as a National Demonstration School for schoolwide AVID implementation. The school was part of the Lighthouse project within the district, which served as a model school to implement co-teaching as a strategy to support inclusion. As a model school for school wide AVID implementation and inclusive education, the school provided as an excellent case study.

Reeve middle was a small school located in Southern California with 488 students enrolled. It consisted of 68.9% socio-economically disadvantaged students, 6.7% English Language Learning students, and 0.2% Foster Youth. There were 94 students (19%) with identified SWD and had an IEP. An additional 24 students (4.9%) were identified as having a disability requiring accommodations through a 504. In all, there were 118 students with identified as SWD requiring supports through a 504 or an IEP, a total of 23.9%. 67.7% of the students were from active military families. Twenty-four full-time teachers, including four mild-

moderate SPED teachers and one moderate-severe SPED teacher, support the diverse student population. In addition to teachers, the administrative team included a principal, vice-principal, two counselors (one full time and one 80% of the time), and one nurse. There was also a related service staff who provided services designated on IEPs. The staff included a full-time speech and language pathologist, school psychologist 60% of the time, mental health clinician 40% of the time, and an occupational therapist, physical therapist, and adaptive physical education teacher once a week. Additionally, six paraprofessionals supported students in the GENED classrooms.

The unique demographics of the school made it an ideal candidate for a case study. The number of SWD was higher than the national average of 14% (National Center for Education Statistics, 2019), state average of 11.3%, and district average of 12.9% (California Department of Education, 2020). The school had 16.4% of students with IEPs (California Department of Education, 2020). As a result, the teachers at the school site needed to collaborate to meet the needs of their diverse student population.

Additionally, the high percentage of students from active military resulted in a different approach to students' academic, social, and emotional needs. Students have a diverse educational background, as most of the students move every 2-3 years worldwide due to military orders. As an example, a student may have started their educational career with Common Core instruction, then moved to a school that does not have common core and then moved to a location with different adaptations of the Common Core standards. In addition to the difference in educational background, students from active military families have unique social and emotional needs. Experiencing the trauma of the deployment of a parent can impact a student. The processing of this trauma can range from academic impairment to an impact on emotional health. The continuous movement in schools' impacts students socially, and some students are more adapted to making peer relationships. The educational challenges that are unique to military students require teachers to be supportive and provide an individualized

education to meet every student's academic, social, emotional, and behavioral need. The school site provided a fascinating case study to learn about how teachers collaborate given their unique student population,

As well to the unique demographics, Reeve Middle was a remarkable school to study because it participated in two programs aimed at supporting a diverse student population. Both programs were at the core of the school's culture. The school implemented AVID school wide, where AVID strategies and pedagogy was implemented in every classroom to ensure all students are ready for college and can be successful in a variety of careers. The second program was the Lighthouse Pilot school program. The recognition as a Lighthouse School indicated that the school was successfully able to implement co-taught classrooms to support their SWD and could be used a model for co-teaching within the district.

AVID, the Advancement via Individual Determination, was a program to ensure the success of all students. The mission of AVID is to close the achievement gap by preparing all students for college readiness and success in a global society. Instructional strategies are used to provide rigorous instruction that fosters collaboration, organization, and critical thinking in all classes. The school must undergo a rigorous validation process and are required to be revalidated every few years to ensure high levels of implementation, with quality and fidelity to AVID strategies schoolwide in order to receive the designation of demonstration school (Avid.org, 2020). The recognition of school-wide use of AVID strategies demonstrates the school's approach to ensuring the success of all students, including students with disabilities.

The school's mission statement was the following:

At Reeve Middle School, we are dedicated to using AVID strategies and methodologies schoolwide in order for ALL students to:
Succeed in a rigorous curriculum; be prepared to complete a rigorous college preparatory path in high school; become educated and responsible participants and leaders in a democratic society.

This statement aligns with educational best practices to facilitate inclusive education. The school leveraged the educational approaches outlined by AVID to support a diverse student population.

The school was part of a districtwide initiative for inclusive education, the Lighthouse Pilot Project. It was selected as a Lighthouse school due to its prominent level of implementation of inclusive education practices. The school had been implementing co-teaching to provide accessible education for over 10 years, setting the school apart from others within the district. The Lighthouse project provided the staff with instruction and coaching on inclusive educational practices focusing on co-teaching. After completing an instructional coaching cycle, it served as the Lighthouse model for other schools to reference from and observe.

The findings from the case study are informative to understanding how teachers at a school that supports SWD in an inclusive environment collaborate to support their diverse student population. The school's unique demographics that include a higher-than-average SWD population and a high population of active military students require teachers to provide an individualized education. The school's participation and recognition as a model school in programs such as AVID school wide and Lighthouse program to support a diverse student population aid in the school's uniqueness ripe for a case study.

Participants

All teachers at Reeve middle were invited to participate in the study. A recruitment email describing the case study was sent to every teacher, including both GENED and SPED teachers. Included in the email were copies of the consent form (appendix A), audio consent form (appendix B) and interview protocol (appendix C). All teachers were welcomed to participate, and eight teachers volunteered to be part of the case study.

Participants in the study included five GENED and three SPED teachers. The teachers' demographics included grade levels 6-8th. The content areas included English, Social Studies,

Math, Science, Physical Education, and electives. The SPED teachers had the role of IEP case managers, co-teachers, service providers and classroom teachers.

Research Questions

This study examined the collaborative relationship between GENED and SPED teachers by addressing the following research questions:

1. What do the collaborative networks of general and special education teachers look like at an inclusive school site? And why?
2. How do general and special education teachers collaborate to support inclusion?

Research Design and Data Collection

The study utilized a case study design (Creswell & Plano Clark, 2017) which allowed for an in-depth understanding of teacher collaboration between GENED and SPED teachers at an inclusive school site. The study consisted of five semi-structured interviews with GENED and SPED teachers. Due to COVID-19 and state ordered stay at home orders, all interviews were held via Zoom. The interview consisted of two parts; mapping the teacher's collaborative network and then follow up questions which described the network and how teachers utilize their collaborative network to support a neurodiverse student population.

The study focused on collaborative relationships of GENED and SPED teachers by identifying a teacher's ego-net. Crossley et al. (2015, p. 2) defined an ego net as "simply a list of alters with whom a target individual (ego) enjoys a particular type of relation". An ego-centric social network research design allowed the teachers to identify and describe collaboration between teachers from their perspective. It provided an opportunity for teachers to identify collaborators in various contexts that included non-teachers, teachers not at the school site, or online communities (Mamas, 2019). This approach allowed for the broadest net to capture collaborators that would not necessarily be identified prior to the study by the researcher. The study design was advantageous because it allowed for teachers to define their network outside the boundaries of the school (Mamas, 2019).

To obtain the ego-network data, each teacher was asked to list names of people who they sought advice about instruction. Focusing on people whom they sought the advice specifically on how to support special education students in their classroom. As the teacher identified people whom they sought the advice from, the researcher captured the names on the digital document shared during the virtual interview. Three concentric circles (see Figure 1) were pre-drawn, and participants were asked to list the names of the important alters or people. Within the three circles, the teachers sorted their collaborators based upon frequency, with the most frequent collaborators on the inner circle and the least frequent on the outer circle. The concentric circles were advantageous as they can provide insights into the strength or quality of ties by asking teachers to place contacts within the three different rings, with those closest to them at the center (Mamas, 2019).

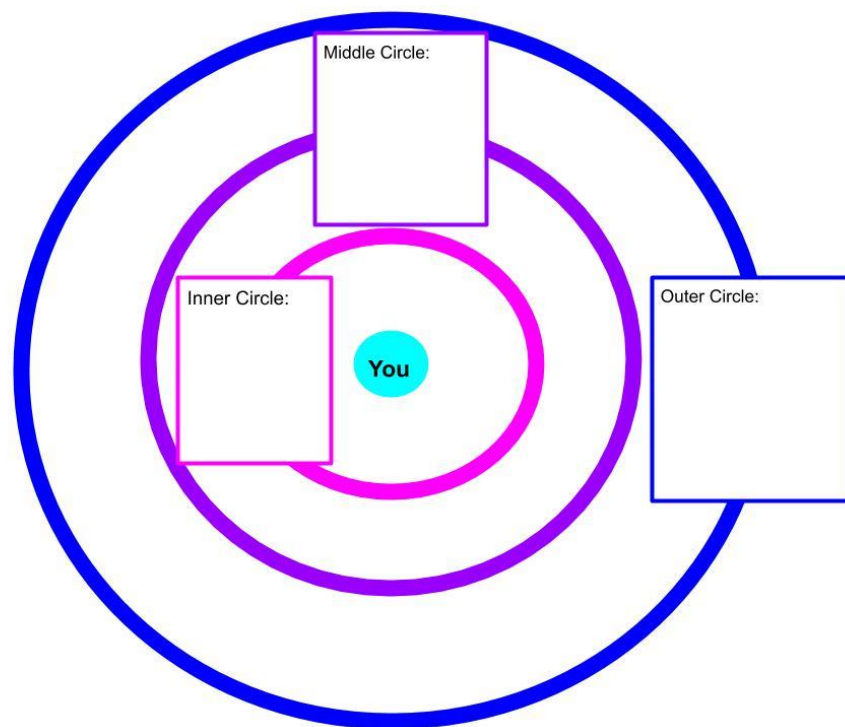


Figure 1. Concentric Circle Diagram

After completing the concentric circle diagram, the teachers were asked a series of follow up questions to learn more about their collaborative networks, the relationships within that

network and insider perspective of teacher collaboration. Interviews provide insight into individuals constructed social worlds and how they convey those constructions in the particular interactional setting of the interview (Freebody, 2011). The interview provided personalized view of a collaborative network and rich description teacher collaboration. Teachers were asked to describe each person listed in their network. Questions included length of collaborative relationship, collaboration style and methods, frequency of collaboration, description, and history of collaborative relationship. It also included a rationale for collaborative relationship, product, and impact of collaborative relationship.

After completing interview questions about each person listed within the ego-network, the teachers were asked to describe collaboration from their perspective. They answered questions about why they listed the individuals on their network and not others. They described elements that supported and undermined their ability to collaborate. And provided time and space for the teacher to contribute further insight about teacher collaboration. A full list of the interview questions can be viewed on the interview protocol in appendix C.

A case study approach was ideal for understanding how collaborative networks exist and are utilized within an inclusive school site. Collaborative networks are formed for a variety of reasons, some known and some unknown. A case study of a single school site was used to limit outside factors such as a difference in school culture or difference in school administration and leadership. Utilizing a heuristic approach provided the opportunity to extend the researcher's knowledge of a specific case and extend the educational community knowledge of teacher collaboration (Hamilton & Corbett-Whittier, 2014a).

Data Analysis

The interviews' assisted in understanding what the collaborative networks of SPED and GENED teachers look like at an inclusive school site and how teachers collaborate with each other. The teachers mapped their collaborative networks, and ego-network analysis provided an

understanding of their network. The interview transcripts were analyzed to provide rich and thick descriptions of teacher collaboration.

The ego-network of each teacher was visualized using ego-net via Ucinet (Borgatti et al., 2018) to understand the collaborative networks at Reeve Middle School. Figure 2 provides an example visualization of each ego network. The visualization of the ego network provided an understanding of the complexities within the network, highlighting the variation between frequency, teacher type, and gender.

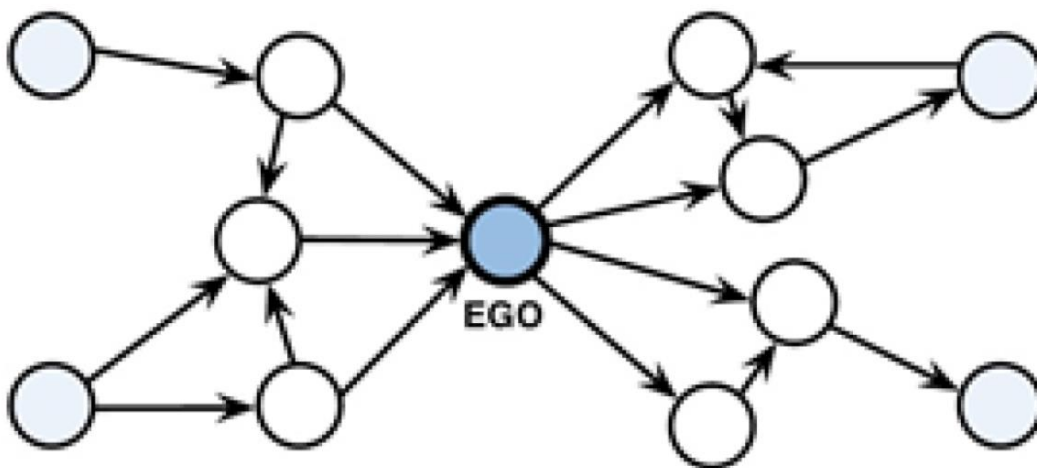


Figure 2. Ego-Net Visualization (Mamas, 2019, pg 4)

In addition, the following ego network metrics were calculated. First central tendency was calculated, which is a measure of the size of the network. Then tie dispersion measures how the participant's ties are distributed among educator types (Borgatti et al., 2018; Crossley et al., 2018; Mamas et al., 2019). An H value of 5 or greater indicates an even distribution across teacher types. Lastly, alter tie tendency measured alters based on specific attributes, focusing on gender (Borgatti et al., 2018; Crossley et al., 2018; Mamas et al., 2019). These metrics provided an understanding of the network and enabled the researcher to compare and contrast the teachers' ego networks.

The ego network provided a visualization of each participant's network and subsequent analysis to understand the individual network. To understand how those networks intertwine, a

meta-network technique was applied. A meta-network is a series of individual ego-networks juxtaposed to highlight the common connections in those networks (McCulloh et al., 2013). This technique can be useful in identifying key collaborators, people who were collaborators in multiple ego-networks. Additionally, it provided an opportunity to visualize and understand the greater network without additional whole network methodology.

The interview data provided a rich and thorough description of collaborative teacher networks. Transcripts from the semi-structured interviews were hand-coded to determine themes and descriptions within teachers' descriptions of teacher collaboration (Creswell, 2012). A preliminary review of the interview transcripts used open coding. With each subsequent review of the transcripts, axial coding organized codes into categories and eventually themes. The interview data was able to provide a complex description of the themes identified.

The data collected during the study allowed for the understanding of the collaborative relationships of GENED and SPED teachers at an inclusive school site. The teachers were able to describe their own network and provide an understanding of how those networks were created and leveraged to support a neurodiverse student population. Additionally, teachers provided rich and detailed description of collaboration.

Ethical Considerations and Positionality

The research design was selected in careful consideration to protect both the researcher and the participants. It was also selected as a result of positionality, limiting potential harm for both researcher and participants. In addition, several protective measures were included in the data collection to minimize risks.

The researcher was in a leadership position at the school site at the time of the study. To limit potential risks for both the researcher and participants, an ego-centric social network design was carefully selected. Ego network design limited the data collected at the school site. By collecting data of only a few teachers versus the entire school site, it limited the confidential

data that could be exposed if there was a data breach. If the data was breached, it would only be focused on several teachers instead of the entire school site.

The study was designed with multiple measures to protect participants and their identity. Prior to participating in the study, all participants received an invitation email that outlined the study and included the consent forms and interview protocol (see appendix A, B and C). The consent form described the study and all potential benefits and risks of participation (Brooks et al., 2014). Participants gave consent before participating in the study. Consent was provided to enable recording of the interview (see appendix B). Due to COVID-19 and statewide stay at home orders, interviews were conducted virtually, and the audio only was recorded for the purpose of transcription. After the interview was completed, the audio recordings were transcribed, and the recorded file was deleted. Transcriptions were edited to remove identifying information and replaced with pseudonyms. Participants were given an opportunity to review transcripts to check for accuracy and to ensure it captured their experience correctly. All of the above-mentioned measures, along with common sense and good confidential record keeping, minimized the risks of breach in confidentiality throughout the study.

The researcher's leadership position was taken into careful consideration during the study and safeguards were put in place to prevent harm to the participants. The study used the suggestions provided by Brooks et al. (2014) to limit potential emotional, social or psychological harm. Participants were given clear expectations for volunteering in the study and the purpose of study was clearly explained. Participants were reassured that their participation in the research was optional, confidential, and non-evaluative. At each phase of the study, participants were offered the ability to decline, stop the interview or recording, or edit any of the data. Participants were assured that the research originates from a place of genuine curiosity. Moreover, results of the study were shared only after names have been retracted and pseudonyms were used. Transparency through the data collection helped protect participants as they were vulnerable in sharing honestly and openly during participation in the study.

The researcher had an ethical responsibility to stop participation when any subject presents any sign of distress. The health and safety of participants took precedent over the collection of data. Data collection occurred only after ethical approval was granted by the Internal Review Board (IRB) at the University of California, San Diego, and the school district.

Summary

A case study design was used to understand the collaborative relationships between teachers at an inclusive school site in Southern California. The school's high average of SWD and the student population requiring individualized education practices presented itself to be a fascinating case study. The teachers identified their collaborative network using an ego-network approach, was able to describe each collaborative relationship and the impact it has had on their teaching and instruction of a neurodiverse student population in an inclusive setting.

Chapter 4: Findings

The study's objective was to examine the collaborative relationships between teachers at an inclusive school site and learn how these collaborative relationships develop and support teachers. A case study (Yin, 2018) was conducted at an inclusive middle school to learn more about collaboration. The study aimed to answer the following research questions: What do the collaborative networks of GENED, and SPED teachers look like at an inclusive school site? And why? How do GENED teachers and SPED teachers collaborate to support a neurodiverse student body?

Teachers from Reeve Middle school, an inclusive school site, participated in an interview. The study interviewed eight teachers, three SPED and five GENED teachers. At the beginning of the interview teachers identified their collaborative network using a concentric circle diagram (Mamas, Schaelli, & Daly, 2019), sorting collaborators by frequency. After completing the visual representation, the teacher described each collaborative relationship and the impact of that relationship on their teaching.

Data processing included a two-step method. First, social network analysis was completed. Each teacher's ego-network was visualized using E-Network Software (Borgatti, 2006) and network analysis techniques (Crossley et al., 2015) provided numerical data about the networks which aided in the ability to compare and contrast networks. The ego-networks were compiled into a meta network which provided a holistic view of the network and identified key collaborators (McCulloh et al., 2013). The second step of the process included immersing in interview transcripts and coding, using both in-vivo and axial coding techniques to identify themes within the data (Creswell, 2012; Rossman & Rallis, 2017). Finally, using selective coding techniques to divide the data into categories, themes, and details (Mills et al., 2010).

This section will address the research question: What do the collaborative networks of GENED, and SPED teachers look like at an inclusive school site? And why? The section will first describe and analyze the meta-network, a combination of all eight ego networks. Then it will

describe and analyze several ego networks that represent the range from the participant sample. Lastly, it will review the descriptive statistics about the variety of collaborative networks at the school site.

Collaborative Networks

Meta Network

It is essential to look at the broad network to understand SPED and GENED collaboration networks at an inclusive school. The meta-network is the collection of ego-networks to obtain a representation of the whole network. Eight teachers volunteered to participate in the study. The sample size included five GENED and three SPED teachers. Together they identified 59 people, alters within their networks, whom they collaborated with. Included in that population were teachers who participate in the study, teachers who did not participate in the study, site-based teachers, teachers at other school sites within and outside the school district, non-classroom educators including administrative staff such as principal, vice principal, office staff, counselors, school staff such as librarians and custodial staff and non-educators.

Although an incomplete network, it did provide insightful information. It did show that even though the student population was 19% SWSN, SPED accounted for 34% of the network. It indicates that an inclusive school site has a ratio of more specially trained teachers than students. Also, the meta-network identified three key collaborators, a GENED teacher, a non-classroom educator, and a SPED teacher. The roles and the expertise of these collaborators facilitated collaboration. Additionally, these collaborators welcomed collaboration and fostered a

culture of collaboration.

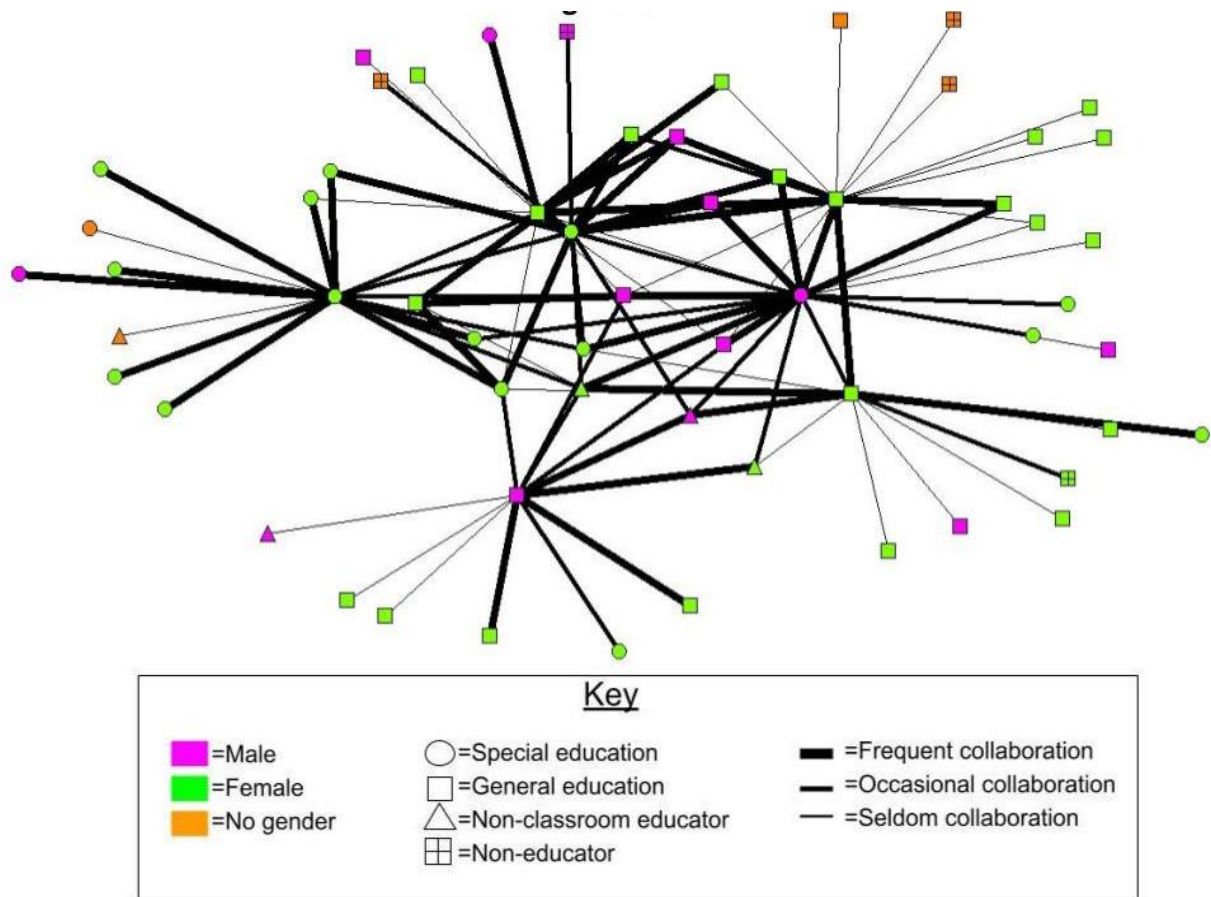


Figure 3. Meta-Network

The above picture represents a composited network at the school site from the ego networks collected. The color represents color; pink indicates male, green indicates female, and orange represents no gender. The shape represents teacher types; circles indicate SPED, squares indicate GENED, triangles indicate non-classroom educator, and squares with crosses represent non-educators. The thickness of the lines represents the frequency of collaboration; thick lines indicate frequent collaboration, medium weight lines indicate occasional collaboration, and thin lines represent seldom collaboration. The network degree was 59 people; 37 were members of that school site, 13 within the district, and nine from outside the district in different settings or professions. Within this network, 29 GENED, 20 SPED, five non-classroom educators, and five non-educators.

What was interesting about the network's makeup was the portion of GENED, non-classroom educators and non-educators to SPED. The network consisted of 29 (50%) GENED, 20 (34%) SPED, 5 (8%) non-classroom educators, and 5 (8%) non-educators. What makes this interesting is that the student population consisted of 19% of the student population. However, the portion of SPED collaborators was 34%, showing more collaborators than students. These findings support DaFonte and Barton-Arwood (2017) inclusive education practices, suggesting regular and meaningful collaboration with GENED and SPED teachers to support all students, including SWSN.

The meta-network identified key collaborators. These three people were in 6 (75%) teachers' collaborative networks. They each served distinct roles on campus; a GENED teacher, a SPED teacher, and a non-classroom educator.

The GENED teacher has many students with specific learning needs in their classroom. To support these students, SPED teachers would collaborate with the teacher. A SPED teacher discussed their collaboration with the key collaborator:

“And typically, I'd be going to them to get information about how students are doing in their class. Or to hear out their concerns because a lot of the time, kids are really great in the one setting and then not so great in another setting. They would also give me strategies on how they were dealing with those behaviors are dealing with those communication issues in the classroom. So that would be helpful to try to be consistent”.

In this example, the teachers collaborated to determine what the students have learned, how they apply it in different settings, and identify them. The back and forth collaboration between this GENED teacher and the SPED teacher supports SWSN in the GENED setting. DaFonte & Barton-Arwood (2017) and Jones (2012) discuss that collaboration is necessary to support students in an inclusive setting to ensure their success.

Teachers also collaborated with the GENED teacher because they instructed the same students. A GENED teacher stated, “They are funny, and they have had a lot of the kids that I currently have. I would ask them specifically regarding specific students' specific motivational

strategies”. This teacher discussed that collaboration was essential because the teacher's knowledge helped inform their teaching practices and provide insight to their current students. Bray (2005) supports the idea that collaborative planning between teachers is essential to fostering inclusive classrooms.

Another key collaborator was a non-classroom educator. The role that the person had directly impacted collaboration and facilitated collaboration. A SPED teacher said, “it wouldn't be wise for me to ignore their advice”. The collaborator's position was essential, and the participant understood that the information gained from the collaboration was indispensable. Another SPED teacher said, “Well, they have a lot of experience and they really do know all the kids”. The role of the collaborator provided a broad view of the students at the school. As a key collaborator, it is fundamental to have insight and knowledge of all the students to facilitate meaningful collaboration.

Additionally, how the non-classroom educator collaborated had an impact on why multiple participants collaborated with them. A GENED teacher discussed why they collaborated with them,

Well, because it is useful and not judgmental. I mean, it feels like almost any situation I run into, they have been there or at least knowing someone who has been there, and they can share what worked for that person, or at least point me to someone who would know what would work.

In this example, the teacher showed that the key collaborator welcomed and supported collaboration and provided meaningful collaboration. Sutton and Shouse (2016) shared that collaboration becomes second nature when there is a culture of collaboration and when collaboration is encouraged and in a non-threatening, non-enforced manner. This key collaborator embodied the idea of a culture of collaboration.

The final key collaborator was a SPED teacher. Multiple teachers listed expertise and role as reasons for collaborating with them. A GENED teacher stated, “Because of their expertise, experience and because I trust their opinion and they definitely know what they're

talking about”. They continued to say, “Because of their title and training. And because of their success with those kids in the class”. A SPED teacher emphasized, “Because they know what is going on. They typically have answers for me. Um, they are the lead. Plus, they have a better sense than most”. Both of these examples highlight that collaboration was due to the person’s expertise and role. Teachers must have a dependable person who has the experience and expertise to support SWSN in the classroom to make inclusion effective (Bray, 2005; Jones, 2012).

Teachers collaborated with the key collaborators because of their role on campus and their willingness and invitation to collaborate. A GENED teacher said, “We all naturally gravitated towards asking them for advice because their advice is more useful and less judgmental. “A SPED teacher mentioned”, they are a pretty friendly helpful person”. Lastly, a SPED teacher discussed, “they always made it clear that I could come to them and that being so welcoming, I really felt like I didn’t have to be afraid to ask for help or feel like I was burdening them or an inconvenience. They really made it clear right off the bat that they were willing to help”. By encouraging collaboration, providing opportunities to collaborate, and collaborating in a way that elicits trust and fosters a collaborative partnership, the key collaborators supported collaboration. The school site has created a culture of collaboration (Sutton & Shouse, 2016) in which these key collaborators have created opportunities to have meaningful collaboration.

The meta-network provided an overview of all the ego networks at Reeve Middle school. The network contained 50% GENED, 34% SPED, 8% non-classroom educators, and 8% non-educator. From this, it was notable that 34% of the network was SPED to support 19% of the student population, SWSN. The meta-network also identified key collaborators. These key collaborators were identified in 75% of the teacher’s ego network. A GENED and a SPED teacher, as well as a non-classroom educator, were frequent collaborators. The roles and the

expertise of these collaborators facilitated collaboration. Additionally, these collaborators welcomed collaboration and fostered a culture of collaboration.

Ego Networks

The ego network is the network of people with whom a person collaborates. It provides a detailed and focused perspective of the network at the personal level. The following section describes and analyses several networks representing the array of network types, including a highly connected teacher, a limited connected teacher, average connected GENED, and SPED teachers.

Highly Connected Teacher. The highly connected teacher was a SPED teacher for over ten years. They have held various roles on campus, including case manager, classroom teacher, and co-teacher. What made this teacher unique was the size of the network; the teacher had the most significant network compared to the other teachers.

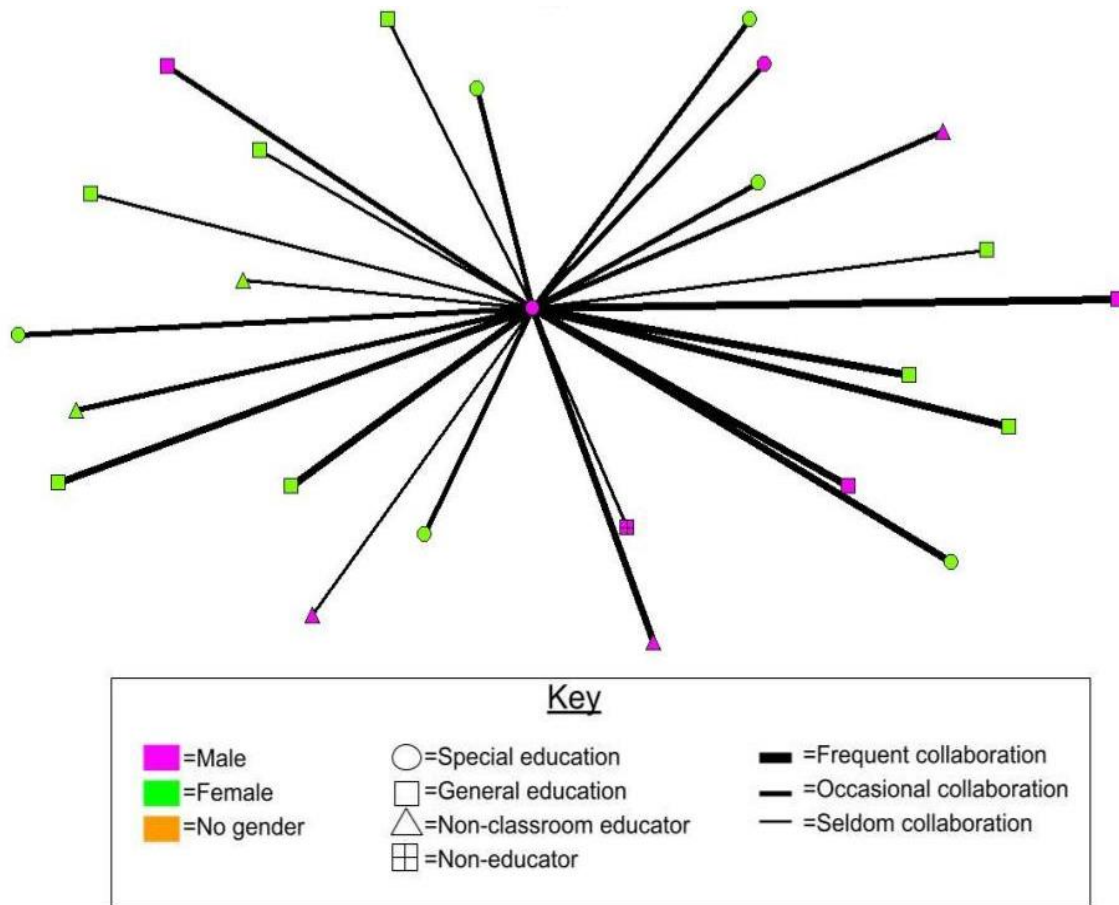


Figure 4. Highly Connected Teacher's Collaborative Network

The network had a central tendency of 24, consisting of 24 people the teacher collaborated with (Borgatti et al., 2018; Crossley et al., 2018; Mamas et al., 2019). The network had the most extensive network degree of all the teachers. The size of the network is essential to note because this indicates that this teacher has a wealth of social capital (Mamas et al., 2019). This teacher has access to social support, resources, and information. Since their network is the largest, this is a crucial collaborator at the school site and has noteworthy influence within their network.

In addition to the size of the network, the make-up of the highly connected teacher network provided insight. The collaborative network included 6 (25%) SPED, 12 (50%) GENED, 5 (21%) non-classroom educators and 1 (4%) non-educator. The tie dispersion, a measure of how the participant's ties are distributed among educator types, was $H = .643$ (Borgatti et al.,

2018; Crossley et al., 2018; Mamas et al., 2019). An H value of 5 or grader indicates an even distribution across teacher types. The teacher collaborated with SPED teachers and staff, GENED teachers, administrators, councilors, and friends. The diversity of the network is important to know since the teacher has access to a variety of diverse backgrounds and social capital to support collaboration. Having access to a diverse network is important to supporting inclusion since it requires flexible thinking, student-specific, individualized education to ensure student success (Lawrence-Brown & Muschaweck, 2004; Sovgir, 2017).

Although the diversity of the network showed that the participant collaborated with a wide range of educator types, the participant had a gender imbalanced network. The alter tie tendency measures alter based on specific attributes (Borgatti et al., 2018; Crossley et al., 2018; Mamas et al., 2019). The alter tie tendency for gender was 8 (33%) males and 16 (66%) females. The alter tie tendency showed that the participant collaborated more with females than with males. It is interesting because the school site had 41 people, 11 (27%) males and 30 (73%) females. The gender make-up of the highly connected teacher was similar to the overall gender make-up of the school site.

The teacher collaborated with a significant amount of their network for a long time. The average number of years that the participant knew the people in the network was 6.9 years, ranging from 3-9 years. The average number of years collaborated was 6.3 years, ranging from 3-9 years, indicating that the teacher collaborated with people since the beginning of their working relationship. The literature supports that collaborative partnerships should start their collaborative culture initially (DaFonte & Barton-Arwood, 2017; Moolenaar & Daly, 2012; Sovgir, 2017; Sutton & Shouse, 2016).

In the above section, we learned about the highly connected teacher's social network using ego network visualization and measures. The following section will revise the ego network using a different approach. The concentric circle visualization allowed teachers to visualize themselves within their network (Froehlich et al., 2020; Mamas et al., 2019), which facilitated the

ability to define their network beyond the school site. Additionally, this format enabled the participant to describe the strength and quality of the tie by grouping collaborators by frequency (Mamas et al., 2019).

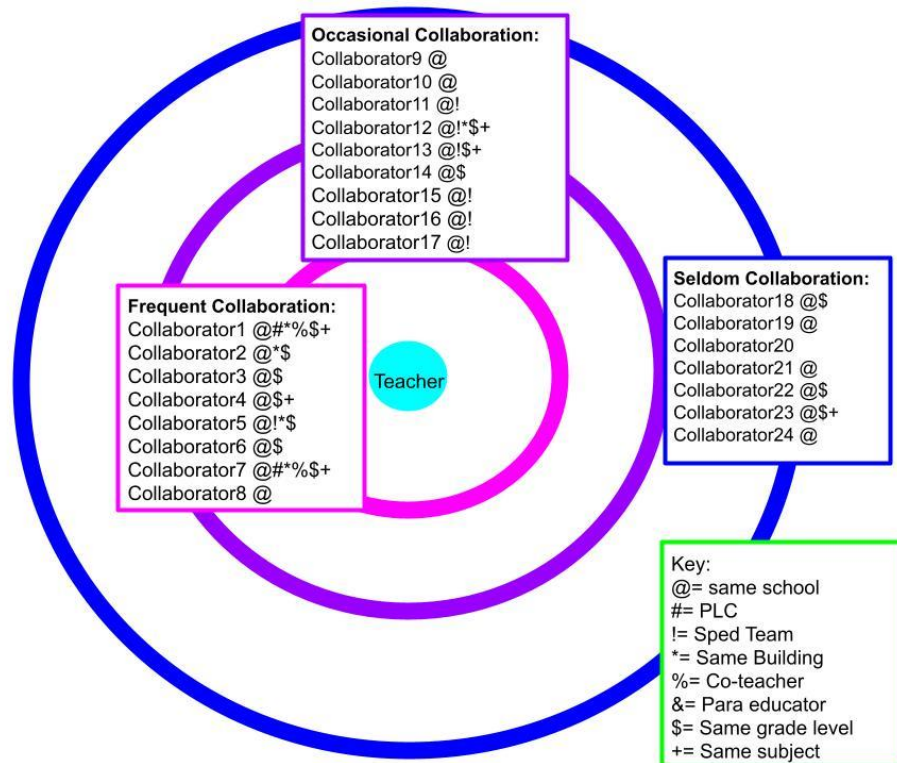


Figure 5. Concentric Circle Frequency Diagram of a Highly Connected Teacher's Collaborative Network

The concentric circle diagram, figure 5, allowed the teacher to group collaborators by frequency. At the center of the circle was the highly connected teacher. The inner circle listed the frequent collaborators, people they collaborated with daily, multiple times per week, or weekly. The highly connected teacher included 8 (33.3%) people whom they collaborated with frequently. The middle circle included occasional collaborators, people whom the highly connected teacher collaborated multiple times per month or monthly. The teacher occasionally collaborated with 9 (37.5%) people. The outer circle consisted of seldom collaborators, collaborating every other month or several times per year. The teacher seldomly collaborated with 7 (29.1%).

The make-up of the frequent collaborator group included GENED, SPED, and non-classroom educators. It included 6 (75%) GENED teachers, 1 (13%) SPED and 1 (13%) non-classroom educator. The frequent collaborator group people who were nearby or worked closely with the teacher. Of the eight people, all 8 (100%) were at the same school site. The collaborative network consisted of 6 (75%) people who were in the same department. Working in the same department facilitated frequent collaboration because departments had a common language, shared content and curriculum, and similar learning targets (Brown et al., 2013; Robinson & Riddle Buly, 2007; Shea et al., 1999). The frequent collaborators included 4 (50%) who were in the same building. Proximity was one of the common reasons for a frequent collaborator. The teacher said that it was easy to collaborate with someone who was nearby. They were easily accessible, could collaborate quickly, and frequently passed through their classroom or in the halls. Social networks and collaboration often occur when people frequently interact (Cho et al., 2005; Coburn et al., 2013; Moolenaar, 2012; Wong, 2016).

The teacher described their frequent collaborators as people with whom they had a relationship and could trust. When asked to elaborate, they stated, "I do have a habit of once I build a relationship with somebody be really open to them, but I gotta go out and build relationships type of person". The teacher frequently collaborated with people with whom they had developed relationships and trust. The literature supports that relationships and trust facilitate collaboration and, in many cases, more frequent collaboration (Jones, 2012; Moolenaar, 2012).

With relationship-building comes building trust. The teacher discussed trust with a frequent collaborator, "If I have a real concern. I can talk to him about it, and he is going to give me either good advice or he's just going to be there too, he's even one who I can vent a little bit with, I don't have to be concerned about it". The ability to have someone they can talk to, share information, and rely on is trustworthy. This sense of trust builds relationships and encourages regular collaboration (Jones, 2012; Moolenaar, 2012; Sutton & Shouse, 2016).

The teacher occasionally collaborated with more people in SPED compared to their frequent collaboration group. 5 (63%) were SPED compared to the 13% in the frequent collaborator group. The teacher occasionally collaborated with SPED teachers and related service providers. Related services are defined as:

Related services means transportation and such developmental, corrective, and other supportive services as are required to assist a child with a disability to benefit from special education, and includes speech-language pathology and audiology services, interpreting services, psychological services, physical and occupational therapy, recreation, including therapeutic recreation, early identification, and assessment of disabilities in children, counseling services, including rehabilitation counseling, orientation and mobility services, and medical services for diagnostic or evaluation purposes. (*Assembly Bill No. 114, 2011*)

The increase of SPED teachers in the occasional group was due to the purpose of collaboration. The teacher discussed collaborating with a SPED teacher near IEP deadlines.

The teacher stated,

Usually when IEP is due, I reach out, and we figure out what we need to support to as much of a, or they'll reach out to me when progress reports are due. So it is really as needed in a very specific to whatever the student is. Not a whole lot of talk between them and I; they probably should be more.

Showing that collaboration could have occurred based upon student need and or SPED compliance due dates. Collaboration with other SPED educators can be challenging due to the workloads, caseloads, and site scheduling (Friziellie et al., 2016; Jones, 2012; Robinson & Riddle Buly, 2007). Many of the related services are not on-site, full time, which makes frequent collaboration a challenge.

The teacher occasionally collaborated with non-classroom educators about student-specific questions. In particular, the teacher occasionally collaborated with a non-classroom educator about behavior. They stated that the frequency “Depends on how often my kids are getting in trouble”. In this example, the teacher needed to collaborate only when the student’s behavior escalated and required additional support from the non-classroom educator.

The seldom collaborator group was smaller compared to the frequent and occasional collaborator groups. It had seven people compared to the eight in the frequent and occasional

collaboration group. A unique feature of this group is the inclusion of a non-educator, 1 (14%). A distinguishing trait was the increase of non-classroom educators, 3 (43%) non-classroom educators compared to 13% in the frequent collaborators and 22% in the occasional collaborators. These non-classroom educators provided social-emotional support for the participant. The participant described the collaboration with one person as, "I can just say, hey, man, it was a tough day today. And sometimes they will say something that it was just like very supportive". Having supportive people within a collaborative network, even periodically throughout the year, can help teachers cope with the stress (Collins et al., 2017; Kim et al., 2017).

The role of SPED teacher for ten years assisted this teacher in becoming a highly connected teacher. As a SPED teacher, collaborate with multiple teachers, related service providers, and non-classroom educators to monitor SPED students. In addition, the participant had been working at the school site for over ten years. Since the participant listed relationships as a critical factor in who and how frequently they collaborated; time to initiate and develop the relationships created a highly connected, collaborative network.

Limited Connection Teacher. The following section describes and analyzes the collaboration network of a teacher with limited connections. It is essential to identify, describe, and analyze the network of a highly connected teacher and do the same for the network of a limited connected teacher. Doing so provides an opportunity to investigate and learn the differences and understand how a teacher can be highly or limited connected.

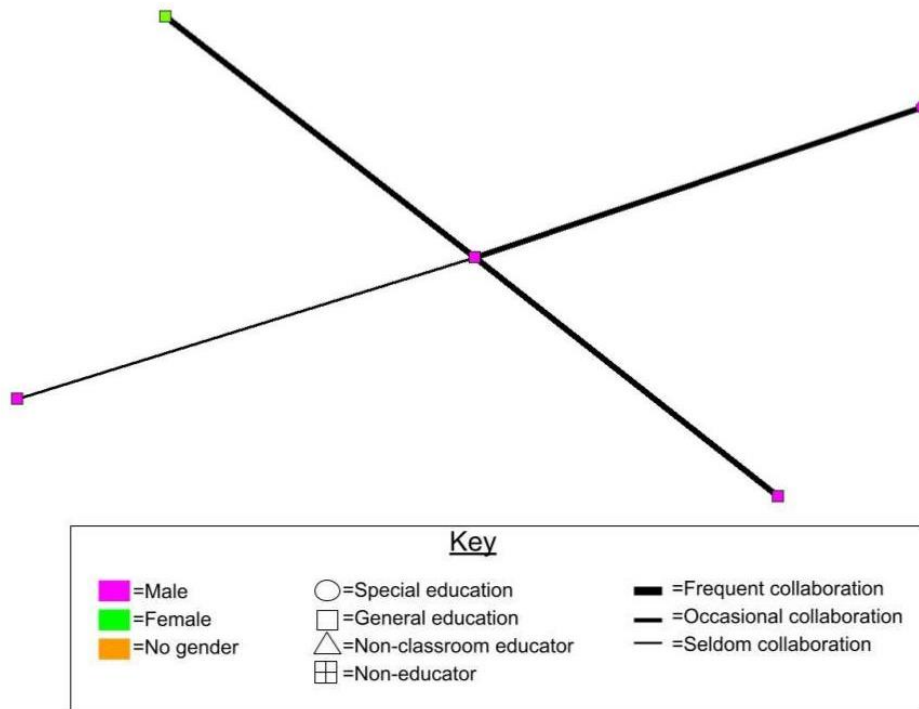


Figure 6. Limited Connected Teacher's Collaborative Network

Figure 6 shows the collaborative network of a GENED teacher with limited connections. The network degree or central tendency was 4. Included in that network were two GENED teachers, a SPED teacher, and a non-classroom educator. The network degree was the smallest of all the teachers. The network consisted of 1 (25%) SPED teacher, 2 (50%) GENED and 1 (25%) non-classroom educator. The tie dispersion was $H=.625$. The H value indicated that the participant collaborated evenly among the different educator types (Borgatti et al., 2018; Froehlich et al., 2020; Mamas et al., 2019). Additionally, the network's alter tie tendency among gender was 3 (75%) females and 1 (25%) male. The average number of years of knowing the people in the network was 2. Similarly, the average number of years collaborating with those people was 2, showing that the participant had a brief time to build relationships and collaborative partnerships at the school site but those quickly formed at the beginning.

Interestingly, figure 6 shows that the network consisted of 3 (75%) frequent collaborators and 1 (25%) seldom collaborator. Although the network is limited, it is limited to those with whom the teacher collaborated frequently. The teacher's rationale for the network was, "It's who

I work the most closely with, who I feel the most comfortable and whom I feel like have the same type of students and in their classroom”. The teacher describes that collaboration occurred mostly and frequently with people they trusted and had similar student populations.

Figure 6 shows that there was one seldom collaborator. The reason the frequency of the collaboration was role specific. The person was a non-classroom educator. The teacher described the rationale as the person’s role included providing leadership and guidance.

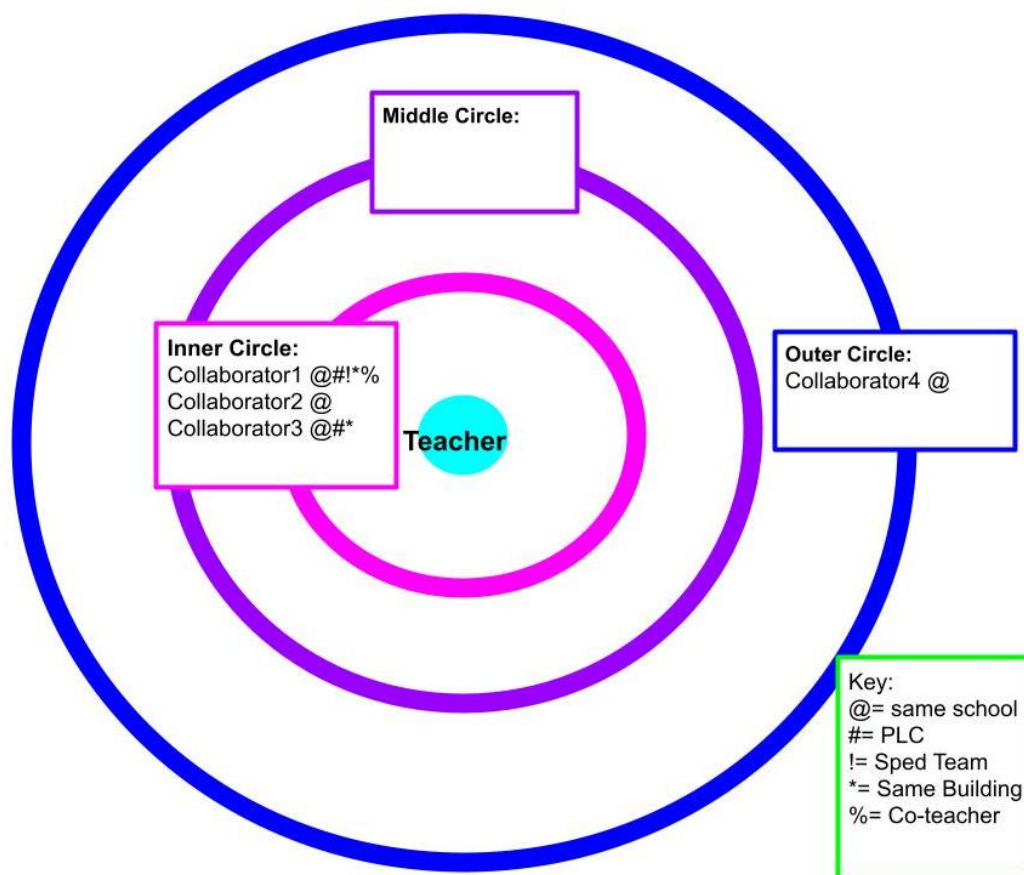


Figure 7. Concentric Circle Frequency Diagram of a Limited Connected Teacher's Collaborative Network

Figure 7 describes the collaborative network of a limited-connected teacher using concentric circles. There were 3 (75%) frequent collaborators in the network. All of these collaborators were at the same school. 2 (50%) of the collaborators were in the same PLC and

building. Additionally, 1 (25%) of the frequent collaborators were part of the SPED team and co-teacher. A seldom collaborator, 1 (25%) made up the rest of the network.

What can be seen from figure 7 is the dominance of collaboration with people who are in the same building and the same PLC. 2 (67%) of the frequent collaborators were in the same building and a structured collaborative group. The high percentage of people in the same building and a structured collaborative group indicates that frequent collaboration was due to the ease of collaboration due to proximity. Since the teacher shared the building with these people, they frequently saw each other and talked. Social networks and collaboration often occur when people frequently interact (Cho et al., 2005; Coburn et al., 2013; Moolenaar, 2012; Wong, 2016). Since the teachers frequently saw and talked to each other and collaborated with each other in a PLC, it is understandable that they would frequently collaborate.

Proximity and structured collaboration explained two of the three frequent collaborators. The other frequent collaborator from figure 7 was a teacher that shared students with the participant. The teacher described why they collaborate with that person, stating, "Because we share students". Having common students was the main reason for collaboration. The participant further explained that they would collaborate with that teacher to learn more about their students. They would ask the following questions: "what type of like teaching strategies? What are students like? Do you see that person, the special ed kids interacting best within class or not getting along with in class? Where do you have that person sitting? what behaviors are you seeing in your classroom?" The collaboration enabled the teacher to understand their students in a different light. They would be able to compare the students in different environments and different content areas, allowing for a deeper understanding. It also facilitated an opportunity to get a different perspective of the same students. Bray (2005b) and Jones (2012) support collaboration between teachers as a shared responsibility of student learning, requiring frequent collaboration.

Figure 7 also showed that seldom collaboration occurred with someone at the school site. The teacher described that collaboration with that person was due to their role as a non-classroom educator. They would collaborate with that person when stuck and needed guidance—also looking to that person for leadership and direction.

Collaborative networks can range from large to small or highly connected to limited connections. What stands out when comparing the networks is the diversity of the networks. The highly connected network included GENED teachers, SPED teachers, non-classroom educators, and a non-educator. The limited connection network only included two GENED teachers, a SPED education teacher and a non-classroom educator.

The difference in the size of the networks is related to the length of time developing the network. The highly connected and the limited connection teachers collaborated with people they trusted and developed relationships. Nevertheless, since the highly connected teacher was at the school site for ten years, the teacher could develop multiple relationships. The average number of years known was 6.9, and the average years collaborated was 6.3. As a result, the participant was able to build trust within their partnerships and relationships. In contrast, the limited connection participant was at the school site for two years. The average number of years known and collaborated with was 2. The highly connected teacher had a 3.5 times larger network. As a result of being newer to the school site, the participant had a smaller collaborative network. The literature supports this conclusion since relationship and trust are essential components in effective frequent collaboration (Cho et al., 2005; Coburn et al., 2013; Moolenaar, 2012; Wong, 2016). Therefore, it takes time to build trust and relationships to foster frequent collaborative discussions.

Although the networks were different in size, there were some commonalities. Both networks frequently collaborated with people they had a structured partnership with, such as co-teacher, PLC, or the same department. The highly connected network consisted of 50% same building and 25% plc members. Similarly, the limited connection network consisted of 50%

same building and 50% PLC members, showing that structured collaboration and proximity promoted frequent collaboration regardless of network size. This finding ties well with previous studies wherein ties within social networks develop as a result of proximity and working partnerships (Coburn et al., 2013; Jones, 2012; Moolenaar, 2012; Wong, 2016)

Another similarity between the networks was the demographics of the seldom collaborators. The seldom collaborators had a more significant percentage of non-classroom educators. In the highly connected network, the seldom collaborators were 43% non-classroom educators. The limited connection network was 100% non-classroom educators, suggesting that teachers collaborate with non-classroom educators but not frequently, only several times per year. The role on a school site and how they provide support for or interact with the students impacts the frequency of collaboration.

The two networks shared the same percentage of SPED and GENED. Both networks had 25% SPED and 50% GENED. However, the highly connected teacher had 21% non-classroom educators and 4% non-educator, whereas the limited connected teacher had 25% non-classroom educators. Interestingly, both teachers had the same percentage of GENED and SPED, suggesting that collaborative networks of either GENED or SPED teachers at an inclusive school site will have a typical make up of 25% SPED and 50% GENED. It is essential to know the makeup of collaborative networks to support GENED and SPED teachers in collaboration using best practices that Friziellie et al. (2016) and Jones suggest.

A striking difference between the two networks was the absence of occasional collaboration in the limited connection network. When asked why the teacher collaborates with the people they listed, they responded, "At grade level sharing the same students. It is who I work the most closely with who I feel the most comfortable and whom I feel like have the same type of students and in their classroom". The teacher limited their network to people who shared the same students and worked closely through a structured partnership. Since those partnerships required frequent collaboration, it explains why the people who shared students or

had a structured partnership were frequent collaborators and not occasional. It is essential to know that some teachers will collaborate with those they are partnered with because those building their network or have a limited network need to be strategically partnered (Kim et al., 2017; Lieberman & McLaughlin, 1992; Moolenaar, 2012).

In conclusion, a highly connected and a limited connected, collaborative network shared several similarities and differences. Both networks consisted of 25% d and 50% GENED teachers. Frequently collaborating with people included structured partnership through either co-teaching, PLC, same departments, and proximity. Seldom collaboration occurred with non-classroom educators, 43% of the highly connected collaborative network and 100% of the limited connection network. The networks were different in overall size. The highly connected network included 24 people, and the limited connection included 4. Lastly, the limited connection collaborative network did not include occasional collaboration.

Average Connected Collaborative Network. Even though the highly connected network and limited connection network were GENED and SPED teachers, it did not represent the average connection network. To be able to compare the different teacher types, it is crucial to review comparable networks. Therefore, the following section describes and analyzes an average connected GENED, and an average connected SPED teacher.

Understanding the collaborative networks of GENED and SPED teachers, one must examine each teacher type's typical or average network. The following section closely examines the collaborative networks representing an average network for each teacher type; a GENED and a SPED teacher. Additionally, it will compare and contrast the two collaborative networks identifying similarities and differences between the two.

Average Connected GENED Teacher Collaborative Network. The following network is of a GENED teacher with an average size collaborative network. The teacher had been teaching for ten years and at the school site for two years. Figure 8 shows the teacher's ego

network.

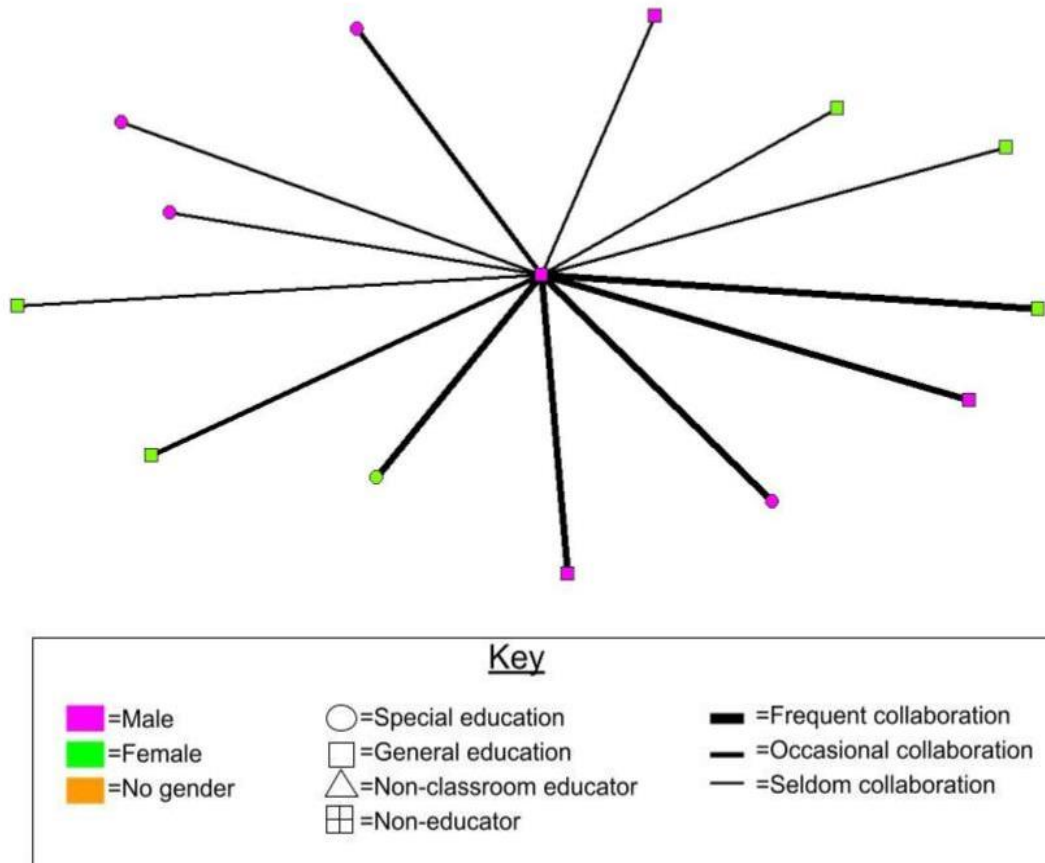


Figure 8. Average Connected General Education Teacher's Collaborative Network

Figure 8 shows the collaborative network of an average connected GENED teacher. The network had a degree or central tendency of 13. The network had 5 (39%) SPED, 8 (62%) GENED educators. The tie dispersion among teacher types was $H=.55$. An H value above .5 suggests that the network was evenly mixed between GENED and SPED teachers. Additionally, the alter dispersion based on gender is 7 (54%) female and 6 (46%) males. The average amount of time the participant knew their collaborator was three years, and the average time

collaborating was three years.

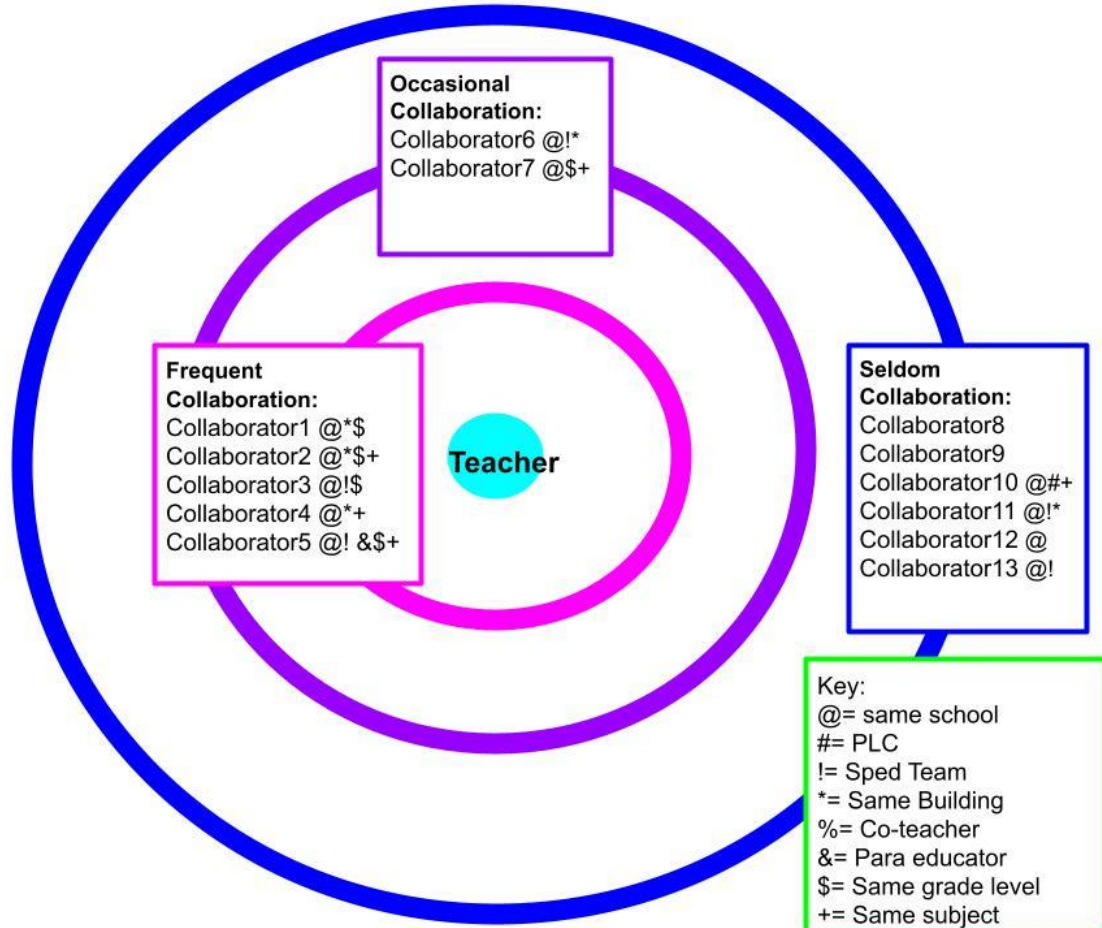


Figure 9. Concentric Circle Frequency Diagram of an Average Connected General Education Teacher

Figure 9 shows the concentric circle frequency diagram of an average connected GENED teacher. It shows that the participant frequently collaborated with 5 (39%) people, occasionally collaborated with 2 (15%) people, and seldomly collaborated with 6 (46%) people.

The frequent collaboration group consisted of people all from the school site, 5 (100%). Within that group, 3 (60%) were from the same building, with an additional person working in the building part-time. Additionally, 4 (80%) worked with the same grade level, and 3 (60%) were in the same subject area. Lastly, 2 (40%) were SPED, 1 of whom was a paraeducator.

The data showed that proximity was a significant commonality within the frequent collaboration group. Among the frequent collaborators, 60% were in the same building, and an

additional educator often worked in the same building for part of the day, making it 80% working in the same building at some point in the day. The ease of being able to talk to someone within proximity helps promote collaboration. The teacher explained why they frequently collaborated, “because they're in the building. It's easy to, you know, stop if they have no kids in and be like, hey, I had this concern about a student”. The teacher was able to quickly and frequently access teachers nearby, allowing for frequent collaboration. The teacher continued to explain why they frequently collaborated, “accessibility. The people that I talked to they are in my building. So, they're easier to communicate with it's more of a quick exchange”. The teacher discussed how frequent collaboration was due to proximity and quickly asking for opinion, advice, or discussing a student. Previous studies suggest that proximity is a reason for frequent collaboration (Coburn et al., 2013; Hurley, 2009; Moolenaar, 2012).

Frequent collaboration occurred among people in the same grade level or subject area. Of the frequent collaborators, 60% were same subject area and 80% same grade level. The teacher explained collaboration with one of the frequent collaborators as “we cross-curriculum, and we use a lot of the same, we're on the same unit. Make sure we're on the same trajectory. We do a little bit of variety in what we do. But we try to keep it aligned so that our kids are receiving the same quality education, instruction, or content”. The teacher frequently collaborated with someone in the same content area to ensure consistency across classrooms. As supporters of the grade level, members frequently collaborated to share content, strategies, progress, and co-plan. Common planning has been a suggested strategy to support students and facilitates collaboration (Dever & Lash, 2013; Frizziellie et al., 2016; Villa & Thousand, 2005).

Frequent collaboration occurred with SPED teachers. 40% of the frequent collaborators were special educators. One of the special educators was a paraprofessional who worked closely with the participant. The other special educator was part of the grade level team and often worked in the building. The ease of access and structured partnership facilitated frequent collaboration. The teacher described the frequent collaboration with a SPED teacher:

It was really easy for me to grab them and show them a test or show them an accommodation or ask for their advice on which students should I put this type of activity with because I don't have common prep with any of the special education case managers, it makes it really difficult to concentrate on specific accommodations or even design lessons with them. So having them next door, when there wasn't direct instruction, or they could take a break. They would come over and we would chat for, three-five minutes looking at something and I get their advice.

The teacher found it challenging to plan with other SPED teachers due to scheduling challenges. However, they could find stolen moments throughout the day when the teacher could get the input and perspective from the SPED teacher on lessons. The teacher's experience emphasized that collaborating with a special educator was easier when they were nearby. Quick impromptu collaboration with teachers nearby can help support SPED students in the class (Brown et al., 2013; Thousand et al., 2015). This example allowed the teacher to seek advice on scaffolding, differentiating, and accommodating SWSN to provide access to their GENED activities.

The occasional collaboration occurred either every other week or several times per month. The group consisted of 2 (100%) of the same school site. 1 (50%) was a special educator, and 1 (50%) was part of the same grade level and subject area. Additionally, 1 (50%) was in the same building.

Occasional collaboration occurred when the teacher was seeking new strategies to support SWSN. The teacher discussed how occasional collaboration with a SPED teacher supported SWSN in their class.

And it's more of like, how I could adjust my teaching practices so that students with learning difficulties are able to participate and to encourage participation because often they will be silent participants in the classroom because of the fear or stigma. So, we talked a lot about the insecurities that students had.

The teacher was able to utilize the knowledge from the SPED teacher about how to encourage specific students to participate. The literature suggests that inclusion requires collaboration when it is appropriate, and depending on the role and responsibility, this may occur occasionally (Frizellie et al., 2016; L. Fuchs et al., 2015; Shea et al., 1999).

Occasional collaboration also occurred when the teacher needed support with instructional strategies. The teacher discussed occasionally collaborating about instructional strategies.

Christian does certain things well, such as seminars or philosophical chairs; we would talk structures and like certain tasks that we wanted students to do graphic organizers note-taking. But since they are a different subject with a different grade level, it wasn't very specific to students. More instructional as far as like how to do the procedurals of a certain task.

Occasional collaborating with teachers outside their content area and grade level focused on more procedural elements such as effectively implementing specific strategies.

Transdisciplinary collaboration can center around instructional strategies beneficial to multiple subject areas (Dever & Lash, 2013); however, this collaboration occurs occasionally.

Seldom collaboration occurred several times per year. The seldom collaborators consisted of 6 people. Of that group, 4 (67%) were from the same school site, 2 (34%) were not from the same school site. Additionally, 2 (34%) were SPED.

Seldom collaboration was influenced by proximity and commonly centered around specific questions. Proximity impacted the teacher's ability to collaborate with people who were not on site. The teacher stated, "I wish we would talk more about where at different sites. So, it just is not feasible". Collaborating with teachers off-site required time after school hours, making it challenging to find time to collaborate. Being within proximity is a known supporter of collaborative networks (Cho et al., 2005; Coburn et al., 2013; Moolenaar, 2012). Therefore, it is necessary to be intentional when supporting collaborative teams that are not in proximity or share school campuses.

Seldom collaboration was centered around accessing expertise for specific questions. The teacher seldomly collaborated to resolve specific questions. For example, the teacher described why they seldomly collaborated with a specific teacher.

They are really big on the use of technology in the classroom. So whenever I have technology questions or advice on certain programs that do a certain function, I can reach out to them. They also are one of the district's avid people. So I can talk to them about avid strategies and also the same subject. So, I could talk to them about content, but mostly it's a tech integration of technology.

The teacher needed technology and instructional strategies in this instance but only needed this support several times a year. It is essential to ensure teachers know the training and skillsets within that network (Coburn et al., 2010, 2012; Farley-Ripple & Buttram, 2013).

The final reason for infrequent collaboration was the productivity of the collaboration. A teacher was paired with another teacher during school site collaboration. When asked about this collaboration, the teacher said,

A lot of times they'll come to my classroom with their computer, and we just work on our own lesson plans and then occasionally I'll ask them a question, or they'll ask me a question as far as a specific lesson. So, it's not a very productive PD. Nice to sit there was somebody else but we both agree that sometimes it's a little pointless because the crossover is just not there.

The teacher experienced a collaborative partnership that was not effective nor practical; as a result, they collaborated, when necessary, which was seldom. It is essential to know when collaboration does not work and why to support it effectively. In this case, the teacher might need some norms and expectations or a different partnership to facilitate meaningful collaboration (DaFonte & Barton-Arwood, 2017; Frizellie et al., 2016; Moolenaar, 2012).

In conclusion, the average connected GENED teacher collaborated GENED and SPED teachers with non-classroom educators and teachers at different school sites. Frequent collaboration occurred with teachers who were nearby. In addition, they frequently collaborated with people who shared the same content area or grade level, making the focus of their collaboration to support the same students or ensure similar content across the classrooms. Occasional collaboration focused on teaching strategies, including strategies to support SWSN. Lastly, seldom collaboration occurred with people who were far away or not on the campus; it also occurred when the teacher needed specific expertise to resolve an instructional or student-specific problem.

Average Connected Special Education Teacher Collaborative Network. The final network to be closely examined and analyzed is the collaborative network of an average connected SPED teacher. Figure 9 is a visualization of the network. The participant had been a

teacher for six years and at the school site for two years.

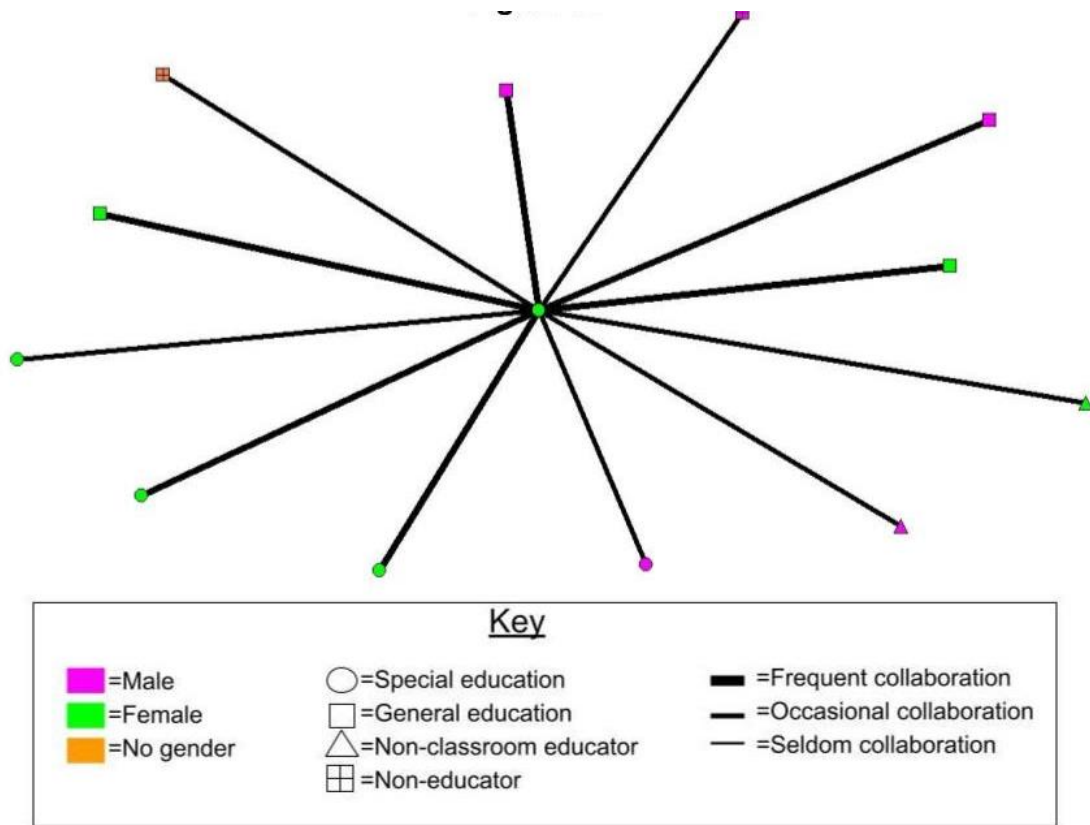


Figure 10. Average Connected Special Education Teacher Collaborative Network

Figure 10 represents an average connected SPED teacher’s collaborative network. The network’s degree was 12. The network included GENED, SPED, non-classroom educators, and non-educators. There were 4 (34%) SPED teachers, 4 (34%) GENED teachers, 2 (17%) non-classroom educators, and 2 (17%) non-educators. The tie dispersion among the educator type was $H=0.65$. An H value above .5 suggests that the network was evenly mixed between GENED and SPED teachers, non-classroom educators, and non-educators. The network included 10 (83%) people who worked at the school site, 2 (15%) who did not. Lastly, the alter central tendency based upon gender was 5 (42%) males, 6 (50%) females, and 1(8%) no-gender.

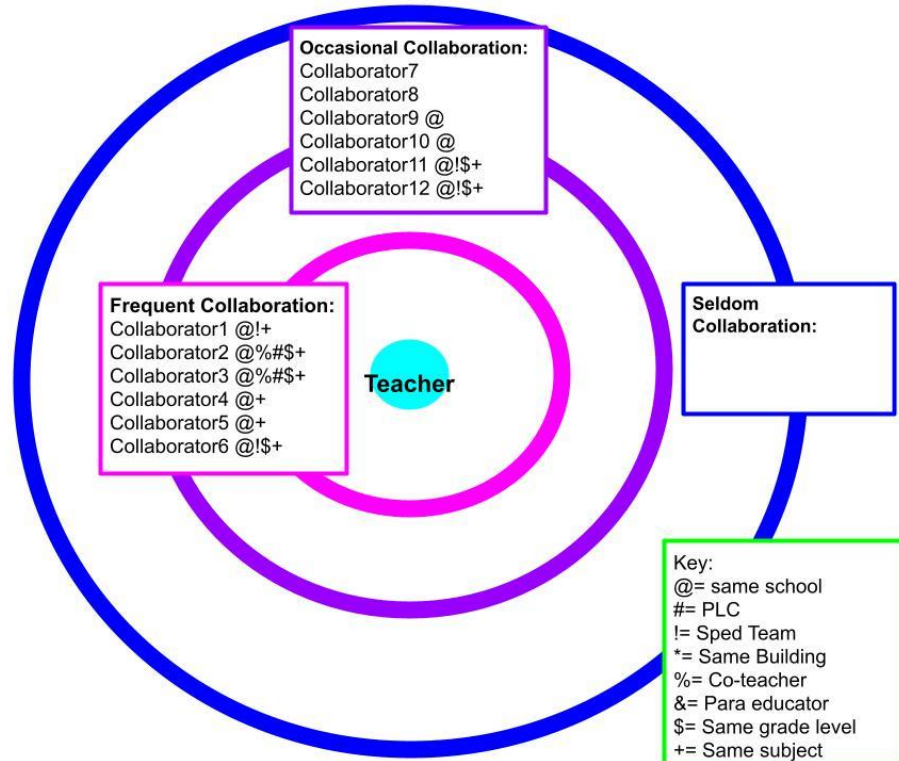


Figure 11. Concentric Circle Frequency Diagram of an Average Connected Special Education Teacher's Collaborative Network

Figure 11 is a concentric circle frequency diagram of an average connected SPED teacher's collaborative network. As shown in the diagram, the network has a degree of 12 and is divided into frequent collaboration 6 (46%), occasional collaboration 6 (46%), and seldom collaboration 0 (0%). The following section will detail each frequency group and discuss the rationale for collaborating with those people.

The frequent collaborators within the average connected SPED teacher's collaborative network consisted entirely of people at the same school site and the same subject area. It was 6 (100%) people who were at the same school site. It was also 6 (100%) people who were in the same subject area. When asked about why the teacher collaborates with this group, they said, "I think a lot of it has to do with who I'm around most of the time. So, who I work directly with who I see on a regular basis. But also, who has made me feel comfortable coming to them. Not that there are teachers that have made me feel uncomfortable, but if I just if they are not in my, you know, day to day vision, then I don't feel like it's easy to go to them". The teacher's frequency of

collaboration was related to whom the participant worked with and saw regularly. The literature identifies trust, proximity, and partnerships as factors in social networks (Cho et al., 2005; Coburn et al., 2013; Moolenaar, 2012); therefore, it aligns with the teacher's understanding of their frequent collaboration group.

Another commonality among the frequent collaborators within the network was PLC team members. There were 2 (33%) who were PLC together. The structured time of PLC facilitated an opportunity for them to collaborate frequently. This time supported collaboration. The teacher stated:

We would have a PLC once a week, during the school year, we would talk every day during class. But it would be brief, and we would have once a week, we have a sit down that was much more detailed where we would talk about each of the kids that needed support and what we were going to do individually for them.

The structured PLC allowed the participant to engage in frequent in-depth collaboration about students and instruction. Having structured and dedicated time to plan is essential to fostering collaboration and supporting diverse learning needs (Brown et al., 2013; Frizellie et al., 2016; Thousand et al., 2015).

The teacher's frequent collaborators included 2 (33%) SPED. Since the teacher was a special educator, it was vital for them to collaborate with other SPED teachers frequently. In particular, the teacher noted that they collaborated with people who understood SPED's compliance side, which includes IEP meetings, data collection, and monitoring progress. For example, they said:

When I first started, I had no idea what I was doing. I have never seen an IEP writing program before and ever written an IEP, hadn't even been through those classes in my training program yet. So, I literally knew nothing, so, just from day one they were always helping me out.

The teacher relied on their SPED colleagues to assist with the compliance side of being a special educator. The compliance side of SPED can be a reason for burnout (Brannan & Bleistein, 2012; Collins et al., 2017; M. Wong & Morton, 2017). It is crucial to foster collaborations to assist in that specific knowledge set.

In addition, the teacher collaborated with several types of special educators to get a different perspective. The teacher stated,

I think what was unique is that she's also special ed, but with different types of students. They have a different perspective on things that were really interesting. They had some ideas for things that I would never have thought of because they were not taught to me in my curriculum. That was really good insight and just being able to kind of bounce ideas off each other.

The teacher valued collaboration with other SPED teachers to get a different perspective. Niesz (2012), Robinson & Riddle Buly (2007), and Shea et al. (1999) found that people select people in their social networks with different perspectives to assist with supporting unique individual needs.

Occasional collaboration occurred with three types of people: SPED teachers, non-classroom educators, and non-educators. The teacher's occasional collaborators consisted of six people. Of that group, 2 (33%) were SPED teachers, 2 (33%) were non-classroom educators, and 2 (33%) were non-educators. Within that group, 4 (67%) were from the same school site. Each of these types provided a different support role and a different reason for collaboration.

The SPED teachers collaborated about SPED compliance procedures. The teacher described collaboration with another SPED teacher:

They have the same position that I do. They have been doing it significantly longer. I go to them a lot for writing IEPs how to word something; what box, do I check here and there. And then they also know a lot of the kids. If I have a kid on my caseload that I know they used to have or have in their class, that's when I'll go to them.

The teacher occasionally collaborates with other SPED when IEP compliance procedures and paperwork is due. Since this is not a daily task, it is understandable that collaboration would be occurring less frequently.

The teacher collaborated with non-educators for emotional support. The teacher described the nature of their collaboration:

Often when I've had like really bad days where a kid has done something that's you know, it's not just a momentary that was annoying. It's like that just ruined my whole day kind of moment. They are really good about giving me feedback. Maybe next time you could do this differently or, you did a good job.

The teacher found it beneficial to collaborate with non-educators when a significant event emotionally challenged them. Emotionally challenging days did not occur frequently and required only occasional collaboration. Teaching can be emotionally taxing, and collaborative networks house connections to provide emotional support (Kim et al., 2017).

The last group of people that that teacher collaborated with occasionally was non-classroom educators. The participant occasionally collaborated with non-classroom educators to seek advice and guidance from the leadership team to support students. The teacher described the frequency and purpose of their collaboration, "I'd say same about once a month. I definitely go to them more for behavior concerns". The teacher would turn to non-classroom educators for support with behavior and advice about specific students. It was occasional because a majority of the behavior supports are effective. However, on occasion, a student would be struggling, and the teacher would need more specific guidance on how to support them. Westling et al. (2006) identified that behavior management support is a frequent problem area where teachers support each other. When teachers cannot support each other, they will reach out to non-classroom educators, supporting this finding that behavior support is a reason for occasional collaboration.

The teacher did not list anyone as seldom collaborator. When asked about the seldom collaboration, the teacher said,

Not really. I feel like I get so much support at the school site. And I don't have a lot of people in my world who are teachers outside of this campus because I haven't worked very many places. I would say like the outer circle one so much be people would be like reading blogs or doing research, things like that where I'll, I'll seek the internet's help.

The teacher did not collaborate with anyone seldomly because their network was limited. Since the teacher was relatively new to teaching, they had not built a collaborative network outside of

the people they work with on a frequent or occasional basis. Collins et al. (2017) identified that a new SPED teacher often lacks collaborative relationships because they have not had an opportunity to build them. While building those relationships, they suggest using practitioner-friendly literature to seek answers. This teacher was able to use digital resources to make up for a small network.

Collaborative networks change over time. The teacher stated that a reason for the decrease in collaboration was a change of proximity. The teacher mentioned,

And now that I'm not in the same building with them, I don't run into them very often. So, I'd say last year, I definitely talked to them more; last year was probably more once a week. But now I just, I really don't cross paths with them very often.

The teacher discussed that collaboration is supported by proximity, and when teachers no longer are in the same vicinity of each other, it can limit frequent communication. It also supports the idea that teachers collaborate with people they have developed relationships and trust (Cho et al., 2005; Hunter & Hall, 2018). Since the frequency of collaboration decreased but not ceased when the teachers moved away, it supports the concept that collaboration occurs with people who have a relationship.

In summary, the collaborative network of an average connected SPED teacher included general educators, special educators, non-classroom educators, and non-educators. The teacher frequently collaborated with teachers at the same school site and the same grade level. The ability to quickly collaborate provided an opportunity to collaborate more often. In addition, the structured collaboration with co-teachers and subject area teams facilitated frequent collaboration. The teacher occasionally collaborated with equal numbers of SPED teachers, non-classroom educators, and non-educators. Each teacher type provided a specific role to support collaboration. The SPED teachers assisted with IEPs and SPED compliance. In comparison, the non-classroom educators provided student-specific support. Lastly, non-educators provided emotional support and an outsider's perspective.

The collaborative networks of the average connected GENED and SPED teachers share some similarities. Both networks had a more significant percentage of females than males. The GENED teacher had 54% female, and the SPED teacher had 50%. The gender makeup is primarily due to the ratio of females to male at the school site, with 10 (32%) male and 16 (62%) female.

Both networks had a similar percentage of SPED teachers. The GENED had 39% SPED, and the SPED teacher had 34%. The average networks are slightly higher than the percentage of highly connected and limited connected teachers with 25% SPED teachers. Showing that both GENED and SPED teachers collaborate with special educators similarly. Since the purpose of the collaboration was to support students and specifically SWSN within an inclusive school setting, it is understandable that collaboration with SPED would be similar with both GENED and SPED teachers. The literature suggests that GENED and SPED teachers collaborate to support SWSN in inclusive settings (Bray, 2005; Keefe & Moore, 2004; Sovgir, 2017). The teachers at this school site demonstrate this best practice, with SPED teachers representing a third of their collaborative network.

Both groups frequently collaborated with people in the same building or shared the same grade level or subject area. The GENED teacher frequently collaborated with 80% of the same grade level and 60% same subject area. The SPED teacher's frequent collaboration group was 100% teachers in the same subject area. They were showing that frequent collaboration occurred with people who shared similar subject areas or grade levels. With the purpose of collaboration to support instruction, it is understandable that frequent collaboration would occur with people who shared instructional objectives and content standards.

Proximity has been an influential factor with whom teachers collaborated frequently. The GENED teacher had 60% of their frequent collaboration with people in the same building, with an additional person often working part of the time within the building. However, the SPED teacher did not list anyone in their frequent collaborators as being in the same building. The

difference may be related to how the SPED teacher often changed classrooms to support students in GENED classes throughout the day. In contrast, the GENED teacher remained in the same building for all classes. Therefore, the SPED teacher may not be experiencing the same interactions that a teacher who has the same classroom all day. The literature suggests that proximity is a factor in social networks and collaboration (Cho et al., 2005; Coburn et al., 2012, 2013; Moolenaar, 2012), but length within proximity might be another factor.

The number of PLC members in the collaborative network was different between the teachers. The GENED teacher had one person in their network whom they PLC with and they collaborated with seldomly. In contrast, the SPED teacher had two people in their network whom they PLC with and collaborated with frequently. The GENED teacher discussed how the PLC was not a purposeful partnership and not as effective as hoped. The person they PLC with did not share students, grade levels, and the content varied between them. Therefore, they could only collaborate about procedural and instructional strategies that they utilized within their instruction. However, the SPED teacher frequently collaborated with their PLC. They would quickly collaborate daily and then weekly have a more in-depth collaboration. Although both the GENED and SPED teacher met with PLC, the difference in frequency is to effectiveness and quality of the collaboration. Both Dever and Lash (2013) and Teague and Anfara (2012) suggest that PLC collaboration will only be effective if the partnerships provide meaningful collaboration. In this case, the GENED teacher had an ineffective partnership, whereas the SPED teacher was. The difference was apparent in the quality of their PLC collaboration, resulting in seldom collaboration.

The final difference between the two networks was that the special educator collaborated with non-educators, non-classroom educators, and GENED and SPED teachers. In comparison, the GENED teacher did not. The SPED teacher occasionally collaborated with non-educators to get emotional support and outsider perspective. They had a close relationship and were able to give meaningful advice. It is interesting to note that the SPED teacher collaborated

with people outside education due to SPED being emotionally draining. They are quick to burn out (Collins et al., 2017; Wong, 2016).

In summary, the collaborative networks of average connected GENED and SPED share some similarities and notable differences. They both contain a similar ratio of SPED to GENED, with one-third of the collaborative network consisted of SPED teachers, highlighting the importance of collaborating with both teacher types. They both frequently collaborated with teachers; they shared students, content/subject, or grade level. The difference was that the GENED teacher frequently collaborated with people in the same building, but the SPED teacher did not because of their mobile nature of supporting different classrooms. Additionally, the SPED teacher collaborated frequently with their PLC members compared to the GENED teacher due to the quality of PLC and the partnering. Lastly, the SPED teacher collaborated with non-educators for emotional support and outside perspective, which is necessary to avoid burnout.

Collaboration: From Teachers' Perspective

The above section describes collaborative networks of both are GENED and SPED teachers and explains why. However, to completely understand, the study also aimed to capture how teachers describe collaboration at an inclusive school site. The description provides an understanding of how these collaborative networks functioned and what occurred due to these networks. This section will answer the second research question: How do teachers describe collaboration at their inclusive school site? The findings will present, discuss, and explain the following: the different methods of collaboration, whom they collaborated with, why they collaborated, the frequency of collaboration, and how collaboration supported SWSN in an inclusive environment. In addition, it will identify what helps and limits collaboration.

Methods of Collaboration

Teachers used four methods to collaborate. The most common type of collaboration was in person. The second most common was email. Phone calls or text messaging was another

method of collaboration. The least frequent form of collaboration was electronically through websites, forums, blogs, and social media.

The most frequent form of collaboration was in person. In-person collaboration ranged from a conversation, check-ins, venting, seeking support, one-way collaboration, meetings, teacher learning through professional developments or beginning teacher support, and committee work. In-person collaboration also varied from quick check-in to more extended discussions.

The teachers described quick and frequent collaboration to be the most common type of in-person collaboration. These provided valuable teaching information. One GENE teacher described quick collaboration, "In the class, they would stay after usually a couple of minutes to talk to me about the students that they were working with". The teacher discussed monitoring progress, seeing which students met the learning target, and determining the breakdown if they did not meet it. These quick but frequent moments of collaboration are essential and support inclusion by providing feedback about students' learning to inform instruction (Jones, 2012; Vaughn & Swanson, 2015).

The quick collaboration that teachers engaged in often provided fast progress monitoring, leading to more in-depth collaborations. A SPED teacher described the variation between swift check-ins and in-depth conversations:

We would have a PLC one so we week, during the school year. We would talk every day during class, but it would be brief, and we would have once a week, we have a sit down that was much more detailed where we would talk about each of the kids that needed support and what we were going to do individually for them.

The SPED teacher had frequent yet brief and in-depth at-length collaboration sessions with their co-teacher to inform teaching. These in-person collaborations facilitated a more individualized approach to instruction. Individualized educational strategies are necessary to help SWSN in an inclusive environment to ensure that their needs are appropriately supported and addressed (Jones, 2012; Keefe & Moore, 2004; Villa & Thousand, 2005).

There were several reasons that participants listed as to why they collaborated in person versus through other methods. The most common motive was that there was an open-door policy that encouraged and welcomed in-person collaboration. The other was that they shared space and naturally allowed for in-person collaboration. Lastly, the participants discussed the value of in-person.

Several participants discussed the open-door policy that many of their collaborators had. This policy, whether implied or explicit, encouraged participants to collaborate with them. A GENE teacher discussed in-person collaboration with open door policy as “I would stop by, and I have a quick question for and that turns into 45 minutes”. Suggesting that the open-door policy facilitated a variety of collaboration, sometimes it was quick, and others would be at length.

Another reason for in-person collaboration was sharing a space. When sharing a space, the collaborators are together and can naturally collaborate during stolen moments (Thousand et al., 2015). A GENE discussed being able to collaborate quickly with a SPED teacher during student work time. Another GENE teacher identified that being able to pop into a classroom quickly was why they could collaborate frequently.

The final reason for in-person collaboration was the ability to interact in a more meaningful way. A GENE teacher explained the benefit of in-person collaboration, “actually talk with them. And I find that they respond much better than to that, as in ways if I need something to be done with a student, that face to face, typically makes it happen much faster than an email”. The teacher found that people responded quicker to requests in person rather than by email. Another reason was that collaboration in person was more authentic and accurate. A GENE teacher discussed the following about in-person collaboration:

But in person. I know I can get the nuance about a kid that people don't feel safe committing to email if you know what I'm saying. You know, so like they'll tell me that they might tell me things that they speculate about what's going on at home, for example, that they would never commit to writing because they might be held

legally accountable for it. it's Gossip, I guess, of a sort. But it's educated guesses based on the evidence that they've seen well like the whole.

The GENED teacher discussed that in-person collaboration allows for a more open and honest conversation, which might not have occurred over email since emails are not secure. Kennedy et al. (2011) and Niesz (2012) highlighted that in-person collaboration facilitated honest and authentic collaboration.

Although collaboration occurred in person, a significant amount of collaboration occurred via email. Email provided a convenient way for teachers to collaborate. Through email, teachers shared lesson plans and resources. Another reason for the email was to follow up after an in-person conversation and document the conversation. Lastly, it was a quick and effortless way to check in with teachers and about students.

The most common reason for collaboration through email was convenience. A GENED teacher talked about the convenience of collaborating through email, "I usually email them first, just because it is right there, it is convenient. Then I'll usually talk to them during PD or after PD." The teacher found that email was easy because it did not require finding the person when they were free; they could send an email when convenient. Email is convenient for teachers because it does not require finding the time or location (Friziellie et al., 2016; Thousand et al., 2015).

Since many teaching resources are digital, collaboration via email can be an ideal way of sharing information. A SPED teacher discussed the contents of their regular email collaboration with their GENED co-teacher, "They will email me a day ahead of time, I get a daily, well not daily maybe a weekly email from them with all the plans". The teacher discussed how having the plans through email supported collaboration because when they did meet in person, they could dive into deeper conversations about the lessons. The ability to share information via email supported their collaboration and facilitated effective co-teaching collaboration (Brown et al., 2013; Keefe & Moore, 2004; Villa & Thousand, 2005, 2017).

The last reason for email collaboration is the convenience of checking in on students. Several SPED teachers work at multiple school sites, and all SPED teachers collaborate with multiple teachers, the ability to send an email to check on a student facilitated collaboration. A GENE teacher shared:

They email me occasionally if they have concerns about a particular student or they may ask me how students doing in the class.... And they split their time between several schools so they can only come out, I think they only comes out to maybe every other day. Because they are not their full time, and they are spread pretty thin".

The teachers described how email allows for collaboration even when not on site. They can check in on students and monitor progress, which is an essential aspect of collaboration at inclusive school sites (Frizellie et al., 2016; Thousand et al., 2015; Villa & Thousand, 2017). Another GENE explained collaboration via email, "They sent me some emails about specific students, but I touch base and see how they are doing. Kind of like a progress report". Again, teachers email to support students, showing that email facilitates quick check-in and progress monitoring of students, a necessary element of inclusion (Brown et al., 2013; Shea et al., 1999; Tuomainen et al., 2012).

Who Collaborated?

The participants discussed collaborating with a range of people. First, presenting whom they collaborated and in the following section will be why they collaborated. The participants collaborated with various people, including GENE and SPED teachers, paraeducators, school counselors, administrators, and SPED staff, including school psychologist, speech and language therapist, occupational therapist, mental health clinician, and paraprofessionals. In addition, they collaborated with building service support, librarian, and school nurse. They collaborated with mentors, friends, family, and classmates from graduate programs. Lastly, they collaborated with online resources such as professional associations, curriculum developers, and online communities. The following section will dive into the reasons for collaboration, including why collaborate with specific people.

Reason for Collaboration

There are many reasons to collaborate as a teacher. The teachers identified common reasons for collaboration. The most common reason was a structured collaboration between specific roles. For example, teachers collaborated with their co-teachers, department, and PLC. Another reason for collaboration was the ease of collaboration; these teachers shared space, frequently interacted, or welcomed the collaboration. A common reason for collaborating with a specific person was their expertise or perspective. Lastly, teachers often collaborated for support with classroom management or student behavior.

Collaboration was primarily due to a structured collaboration, meaning they were working together for a common purpose such as co-teachers, grade level team, same department, PLC members. Another partnership was student case managers, SPED and GENED teachers would collaborate with the SPED teachers who were student IEP case managers.

Teachers were placed with partners or on teams which created a need to collaborate. For example, co-teaching teams of SPED and GENED teachers were identified as regular collaborators. Effective co-teaching requires regular collaboration (Brown et al., 2013; Frizellie et al., 2016; Keefe & Moore, 2004; Villa & Thousand, 2005). A GENED teacher said, "We'll bounce ideas off each other for how to teach your particular lesson and how would you meet the most kids, which techniques would be the best, that sort of thing". In this example, the teacher described the collaboration between partners, sharing the workload, and determining how to instruct students best. Many teachers identified that partners needed to collaborate regularly to teach a diverse student population effectively. They aligned with inclusive strategies that utilize collaborative partnerships to monitor and adapt teaching strategies to individual needs (Jones, 2012; Lawrence-Brown & Muschaweck, 2004).

Another structured partnership was PLC, Professional Learning Community. Teachers regularly collaborated with their PLC partners. A SPED teacher discussed the focus of their

collaboration during PLC time, “Definitely a lot of content; math was not an area of strength for me. So at the beginning, it was a lot of content questions. They had to teach me the math so that I could teach the kids”. The SPED teacher had a background in making things accessible but did not have the math specialty; therefore, they needed the support of the math PLC team to support their knowledge gap. PLC is a place for teachers to collaborate, gain knowledge and perfect their craft (Dever & Lash, 2013; Poekert, 2012; Teague & Anfara, 2012). It is a structured space to facilitate collaboration between teachers.

In addition to structured collaboration, teachers collaborated when it was easy or natural for them. For example, they would share a space, and the proximity made it easy for them to ask questions, get advice, and solve problems. A GENED teacher shared their reason for collaborating, “accessibility. The people that I talked to they’re in my building. So, they are easier to communicate with; it’s more of a quick exchange.” The teacher found it easier to collaborate with nearby teachers. Suggesting that participants commonly collaborate with easy access people, typically when they share a space or are nearby. Aligning with the current literature suggests that collaboration occurs with close people (Blackmore, 2008; Coburn et al., 2013; Moolenaar, 2012). A SPED teacher confirmed this when they discussed how a collaborative relationship had shifted over time,

I think more now that I am in the same building has increased the amount we talk. Well, actually, I started out in his building. And then I moved to a different building for a while. And that's when we didn't talk as much, just being far away from each other. And but then moving back in, and we share a prep this year. So it's really easy for me to walk over on my prep period, knowing they are on their prep period and talk about students.

The teacher reiterated that they have multiple opportunities to collaborate when people are nearby, thus collaborating more often.

Although teachers found it convenient to collaborate with teachers nearby, they found it necessary to have openness and a willingness to collaborate. A SPED teacher described someone whom they collaborated with because of their openness:

Even if it's not specific advice is just great to have someone to talk to about education. They are another one who knows if I need to vent or if I need to get something off my shoulders, what was going on, I can go to and even if they don't have an answer, they are a great listener.

The teacher described a collaborative relationship that welcomed the collaboration. It supported the idea that collaboration occurs when there is a willingness to collaborate and a sense of trust. Willingness and trust support and promote collaboration (Daly et al., 2010; Farley-Ripple & Buttram, 2013; A. Wong, 2016).

While role and proximity played a significant factor in collaboration, teachers collaborated because of their expertise, experience, and perspective. The bridge between social capital theory and social network theory is that people are valuable resources because of their knowledge. People will seek out others to collaborate with because of their specific expertise and knowledge (Adler & Kwon, 2002; Cho et al., 2005; Lee, 2014). A SPED teacher described their reason for collaboration:

I came from an incredibly, incredibly conservative background. They have been a wealth of support information on understanding my own bias and dealing with particularly things like the LGBT community and stuff like that and working with those students and making sure to support them. They have been great for that as well.

This teacher needed support in effectively supporting a diverse student population and sought out collaboration with a teacher with a unique perspective and background.

While teachers collaborated to gain knowledge and to grow, they also collaborated to gain a different perspective. A GENED teacher described why they collaborated with another GENED teacher, "I talked with them about big picture concept things sometimes because I think they have a voice, a strong voice. I think they have a strong voice; people would listen to them, so I like to get their opinions of things". Suggesting that teachers collaborated because they appreciated and needed a unique perspective; they sought after different voices to ensure a well-rounded perspective. As social network theory and social capital suggest, having access to

different ideas and perspectives is a strength (Adler & Kwon, 2002; Coburn et al., 2013; Struyve et al., 2016).

Teachers collaborated to support classroom management and student behavior. A SPED teacher discussed collaborating with other teachers about behavior:

I think a lot of it's the behavior stuff. Coming from elementary school background, behaviors in middle school are so different, and they are not handled in the same way, they don't respond to the same discipline or anything like what I was used to. I came in with a really warped sense of how I could focus a class. I think a lot of it was classroom management questions: How do I help this kid? How do I get him to work? How do I get her to write? And then the more that I got comfortable with that, the more it would be more detailed like you have you met this student? Have you had this kind of experience with a student? how can I help them support them more because it can't really teach until you get your kids to listen to you?

They suggested that a significant reason for collaborating was gaining knowledge and insight into classroom management and behavior. Inclusion practices are not only supporting the academics but also the behavioral side, and teachers need to be well versed in supporting positive behavior to be supportive of a diverse classroom (Fuchs & Fuchs, 1994; Fuchs et al., 2015; Jones, 2012; Murphy, 1996).

In summary, teachers collaborated as part of a team and to gain knowledge. The most common was a structured collaboration or based by role. Being in a collaborative partnership such as co-teachers, same department, or PLC facilitated collaboration. The second most common reason for collaborating was to access someone's expertise, experience, or perspective. Lastly, teachers collaborated to support classroom management and behavior.

Reason for Different Frequency of Collaboration

In the section above, we learned about the reasons for collaboration. However, teachers collaborated with people at different frequencies than others. Some often collaborated, even daily, whereas others collaborated occasionally, and others collaborated seldomly. The following section will discuss the frequency and the reason for the frequency of collaboration.

Many teachers frequently collaborated, including multiple times a day, daily or multiple times per week. Teachers frequently collaborated to access a person's expertise or experience. They also frequently collaborated through structured partnerships. Lastly, they frequently collaborated with teachers who were nearby.

Many teachers frequently collaborate with a person because of their expertise and experience. A GENE D shared their reason for frequently collaborating,

just because I value their opinion so much about kids in general, about instruction, we agree on a lot of things. And I think they have the kid's interest, kid's achievement kids at heart. I say they are the smartest person on campus. Really cuz they see the value, plus they believe in avid.

The teacher frequently collaborated a person because of their teaching philosophy and knowledge. They support the idea that teachers would go to specific individuals frequently because they valued the collaboration, the expertise, and the experience that the person could contribute and trusted that the collaboration would support students. Bray, (2005b) and Kennedy et al., (2011) both discuss that to support a diverse student population, collaboration needs to occur with people who have the expertise and insight to support an array of learning needs effectively. By frequently collaborating with people who have the knowledge, insight, and overall expertise to support a diverse student population effectively, teachers are more equipped to include SWSN in their classrooms.

Additionally, teachers frequently collaborated within structured partnerships. Teachers who were in structured partnerships such as co-teachers or PLC collaborated frequently. A SPED teacher described the collaboration with their GENE D co-teacher, "We had that two hour block we spent a lot of time together. So really just being in the same room. And working with those same students and seeing how much they struggled. We had a lot of work to do with that group". Because the co-teachers are both responsible for student learning, they needed to collaborate frequently. They would discuss what the students learned and struggle with and develop a more individualized educational approach. This frequent collaboration is necessary to

include SWSN because they need an individualized educational approach (Barton & Smith, 2015; Jones, 2012; Villa & Thousand, 2005).

Lastly, teachers collaborated frequently when it was easy and when the teacher was nearby. A GENED described why they frequently collaborated with a non-classroom educator,

Honestly, they are with the inner circle because they are easy to find. They are in the frequent, just because I run into them a lot. So when I whenever I run into them and some things at the to. of my mind I bring it up

The teacher regularly collaborated since they were part of their everyday experience and could quickly ask for support when needed—suggesting that frequent collaboration occurs when teachers frequently see each other and conveniently easy to access. The literature further supports that social network interactions are commonplace between close people (Coburn et al., 2012, 2013; Teague & Anfara, 2012).

Frequent collaboration occurred when people felt welcomed, encouraged, and trusted. A SPED teacher frequent collaboration with a trusted colleague:

I think they always made it clear that I could come to them and that being so welcoming, I really felt like I didn't have to be afraid to ask for help or feel like I was burdening them or was an inconvenience. They really made it clear right off the bat that they were willing to help. So that was nice

The teacher described a relationship where collaboration was encouraged and welcomed—demonstrating that open invitations encouraged collaboration. Since collaboration requires an element of trust, people need to feel invited, and this welcomes frequent collaboration (Teague & Anfara, 2012; Tschannen-Moran, 2001). Another teacher described the trust needed to collaborate:

It's easy for me to go to them and asked them about something because when you are asking the question, you're all of a sudden vulnerable little bit, you know you are, you put your own weakness out there. Not weakness but your own lack of understanding or whatever it is, it's not a weakness, but it's just like you're putting yourself out there saying, I don't know how to do this.

The teacher described how collaboration requires honesty and a relationship built on trust. Showing that collaboration, particularly frequent collaboration, can make someone feel vulnerable, and encouraging collaboration requires trust.

Teachers also collaborated occasionally, meeting monthly or every other month. Teachers discussed that occasional collaboration was essential to access specific expertise to support a challenge in their instruction. They also sought out people in specific roles to support occasional support. Lastly, they acknowledged that they collaborated with people with whom they had developed a working relationship.

Teachers found themselves occasionally collaborating with people who have specific expertise. Participants were able to describe incidences when they needed specific assistance and access to a person's expertise in that situation. A SPED teacher described the occasional collaboration with a person who specialized in behavior support. "A lot of the behaviors, because we were having behavior issues, they are a great resource for that, and they have a very calm perspective on it and doesn't overreact". In this example, the SPED teacher reached out to a person for their expertise in behavior support strategies. Since behavior is supported by implementing strategies and developing them.

While some teachers occasionally collaborated to access expertise, they also reported needing to access a person in a specific role. Commonly they needed someone in an administrative role or a SPED role. One SPED teacher discussed how often they collaborated with an administrator, "Depends on how often my kids are getting in trouble". In this case, they occasionally collaborated with the administrator to support behavior. Teachers were able to solve many problems by collaborating, but there are times when an administrator is needed. As the SPED teacher described, they seek the support of the administrator when their students are struggling with behavior. Inclusive practices include supporting behavior in a tiered manner, starting with in-class strategies then progressing to more intensive support (Billingsley & Bettini, 2019; Kauffman et al., 2018). Since teachers occasionally need more intensive behavior

support, it is understandable that teachers only occasionally collaborate with administrative roles.

Teachers identified occasional collaboration with people they had developed a relationship. Participants discussed occasionally collaborating with a person because they once collaborated frequently due to a structured collaboration, but as teaching roles shifted, the collaboration frequency decreased. Collaborative relationships take time to build, and when the structured partnerships are over, teachers continue to collaborate but not at the same frequency. Hunter and Hall (2018) and Tschannen-Moran (2001) discuss the importance of trust in a collaborative relationship and identified that solid relationships built with a trust could last, supporting the idea that collaboration can occur beyond a structured partnership.

Teachers discussed how there were times when they collaborated but only a few times a year, or seldomly. The seldom collaboration often occurred with GENED teachers, SPED teachers, teachers at other sites, administrators, counselors, friends, family, and online communities. Teachers identified that seldom collaboration occurred due to proximity, not being near a person, or only collaborating during specific teacher events. Additionally, seldom does collaboration occur with people who were considered remarkably busy and only collaborated when necessary. Lastly, seldom collaboration occurred with people for a specific problem or access to a resource.

Seldom collaboration was often a result of proximity, no longer being near or at different school sites. The participants discussed collaborating with people at district professional training or meetings with other school sites. Since district meetings or training occur several times a year, participants would only collaborate during those opportunities. In other cases, participants discussed how they no longer were at the same site or in the same building, which reduced collaboration. A SPED teacher described how a change in proximity changed the frequency of collaboration:

I don't see them very often. Like we have very opposite schedules. And now that I'm not in the same building with them, I don't run into them very often. So, I'd say last year, I definitely talked to them more; last year was probably more once a week. But now I just, I really don't cross paths with them very often.

The teacher described the shift in collaboration and how they could collaborate more frequently when near the person, but they collaborated less after moving to a different building. Many teachers described a similar experience, where they were frequently collaborating when a person was close by, but then as they moved, they no longer collaborated as frequently.

Proximity is a known reason why people interact and collaborate; therefore, when people are no longer in proximity, they are not interacting and collaborating as frequently (Coburn et al., 2013; Teague & Anfara, 2012; von Mering, 2017).

Teachers also described collaborating with people who were considered remarkably busy. The teachers described people in their outer circle as being in high-up positions, making them inaccessible due to their schedule demands. Therefore, teachers reported reaching out to these people only when necessary. A SPED teacher described reaching out to people who were higher up in their department, "I really only reached out to the seniors if I was in a bind that no one else could help me with. Even though they're available, I didn't use them as often as a resource". They continued to describe why they don't reach out more often, "I think because I know that they're insanely busy and people are constantly reaching out and they have their own caseloads and a lot on their plate. So, if I could get my answer elsewhere, then I would try to do that first and then go to them". The teacher was reluctant to reach out to higher-level SPED teachers because of their schedule demands. Therefore, they would try to utilize other people before reaching out.

Teachers described collaborating with people in their outer circle to gain access to a specific resource or when they had a specific question. A GENED teacher discussed their seldom collaboration with teachers at a different school site, "We do that very rarely, I think a couple of times we've reached out to them, see if we could borrow some equipment". The

teacher collaborated with people at different school sites to access specialized equipment a few times a year. In this example, the equipment was only needed for a special event and borrowed when needed. Teachers described many occasions that occur once or twice a year where they need specific resources. Including periodic assessments, special events, curriculum themes, and SPED annual/triennial reviews.

In summary, the frequency of collaboration was related to the purpose of collaboration. Frequent collaboration occurred in structured partnerships with specific roles such as a co-teacher or PLC teammate. It also occurred to gain access to specific expertise or experience. Also, frequent collaboration occurred when it was easy to collaborate by either being nearby or having an open-door policy. Occasional collaboration occurred when teachers needed specific expertise; this was more student-specific and commonly related to behavior and classroom management support. It also occurred with people who have a specific role, such as an administrator. Additionally, it occurred with people who had built a relationship of collaboration. Seldom collaboration resulted from a change of proximity, for example, district training or with people who are no longer at the same school site. It occurred with people who were perceived as exceptionally busy, and therefore collaboration was limited to times when it was deemed necessary. Lastly, seldom collaboration occurred to access a specific resource or expertise, such as equipment for a special event.

Collaboration for Inclusion

The focus of this study was to learn about collaboration for inclusion, focusing on collaboration between teachers to support SWSN in their GENED classes. The teachers commonly discussed collaborating to address individual supports and strategies for a specific student. Additionally, collaboration occurred to support differentiation, to assist SWSN to access their curriculum. Finally, teachers collaborated to gain access to specific expertise.

Teachers commonly collaborated to support SWSN in GENED classes by addressing individual students' needs. Teachers commonly described the individualized and student-

specific nature of their collaboration. A GENED teacher described collaborating with a SPED teacher, “usually it's very specific targeted certain student more, less on lesson planning and instruction like content, but more specific accommodations for students or suggestions on what how I can accommodate general assignments versus specific assignments for them”. In this example, the teacher collaborated with a SPED teacher to identify and learn more about targeted strategies and supports to ensure that the student can access the materials.

Suggesting that collaboration at inclusive school sites often occurred to address specific student needs. Inclusion strategies suggest that instruction is individualized, and therefore collaboration is centered around individual needs (Barton & Smith, 2015; DaFonte & Barton-Arwood, 2017; Lawrence-Brown & Muschaweck, 2004).

Teachers regularly collaborated to aid in differentiation. Teachers collaborated to get ideas on how to scaffold and differentiate instruction. A GENED teacher discussed collaborating on curriculum and designing it with differentiation embedded to meet diverse learning needs:

So, it's always there because it's always about when your curriculum writing. It's always about which way can I present this lesson that's accessible to the max number of kids. Can you keep the maximum number of kids' attention? Can most kids understand it? If they can't be understood what part of is going to be problematic for students, and how can we attack that?

In this example, teachers collaborated to design the instruction to ensure everyone in their classroom was successful, including SWSN. Inclusion practices suggest being proactive in lesson design and design it to meet various learning needs (Thousand et al., 2015; Villa et al., 2013; Villa & Thousand, 2017).

Teachers also commonly collaborated to access specific expertise to support SWSN in their classrooms. Teachers discussed how they collaborated with different people to access their expertise. A GENED teacher discussed how collaborating with a specific person impacted their ability to support SWSN:

They taught me more than all the rest because their style was so diametrically different from mine. For example, they focus heavily on wonderings instead of spending a lot of time on what we know. They spend most of their time on what

do we wonder, what do we want to find out which was a cultural shift for me and has shifted my teaching quite a bit. And it's good for special education students because you need to find out where they're starting from what they know. And where their thinking is leading them. If you're going to find out what's going to be a problem for them or how to get them where you need them to go.

In this example, the teacher discussed how a person's specific teaching style helped shape their teaching practices, which supported a diverse student population. Collaboration to support inclusion should include different approaches or styles. Since teachers often teach to their preferred learning preference, it is best to collaborate with people who have different expertise to develop instructional practices inclusive of all learning styles (Thousand et al., 2015; Villa et al., 2013).

Teachers need to collaborate to support SWSN in their GENED classes. The focus of that collaboration was student-specific and had an individualized approach. Collaboration also included differentiation strategies, designing instruction to meet a diverse student population. Lastly, teachers collaborate to gain access to expertise.

Teacher → Teacher Collaboration

It is essential to understand why specific teacher types collaborate with other teacher types. In this section, we will learn why GENED teachers collaborated with GENED teachers and SPED teachers. We will also learn why SPED teachers collaborated with GENED teachers and SPED teachers.

GENED teacher → GENED teacher collaboration. GENED teachers collaborated with other GENED teachers to support their teaching practices. Teachers commonly collaborate about pedagogy. Additionally, they collaborated to gain access to a unique perspective.

GENED teachers collaborated with other GENED teachers to discuss pedagogy, the methods and practice of teaching. These collaborative sessions ranged from the curriculum used in the classroom, teaching strategies, classroom management, and more. A GENED teacher discussed what they had learned from collaborating with another GENED teacher:

Coming into teaching so late, like there's so much to it that is above and beyond what you learned in college, even when you do. I got my credential 2007 they don't teach you anything about taking roll. They don't teach you anything about administration about IEPs and everything else that goes along with teaching. They don't teach you that they just teach you basically you know, content, a little bit about classroom management, not enough, in my opinion, and then just the other stuff that you do when you're out on the field. But that's only a part of teaching, there's so much more to it that I just didn't have any idea about. They have been really invaluable in that way.

In this example, the teacher was able to collaborate to learn the ins and outs of teaching.

Suggesting that collaboration is necessary to assist teachers in learning all the dimensions of being a classroom teacher. Credential programs can only prepare a teacher to an extent, but practical on-the-job learning can occur through collaboration to help fill those gaps in knowledge (Collins et al., 2017; Lawrence-Brown & Muschaweck, 2004; Poekert, 2012).

GENED teachers collaborated with other GENED teachers to gain a unique perspective.

The teachers described how it was beneficial to get a different perspective. It led them to new teaching strategies, different approaches to the topic, engagement methods, and other things that impacted their teaching. One GENED described how this occurred:

I think about my conversations with Stephanie, to find out what she is doing, like, can you show me your interactive notebook? She shows me what kinds of things they are doing. And so that conversation helps me understand what she's doing. But also, it might roll over into what I'm doing. Oh, that's a good idea for the interactive notebook, but it's not struggling with my interactive notebook or tell me what you're doing. It's more getting the benefits of what she's doing through the conversation.

In this example, the GENED teacher used natural conversations to access different perspectives and approaches and how it can positively impact their teaching practices by utilizing that innovative approach or different take. One of the great benefits of collaboration is gaining access to different perspectives, personalities, strengths, and talents (Lee, 2014; Poekert, 2012; Wenger, 1999).

GENED teachers → SPED teachers. GENED teachers commonly collaborated with SPED teachers about differentiation. Most GENED teachers discussed the focus of

collaboration with SPED to support their SWSN in their classes. One GENED teacher described their collaboration with a SPED teacher:

We talk every other day regarding daily assignments catching students up on content. If we're doing reading, we talk about small group reading assignments. We have a quick debrief at the end of the period to discuss any challenges or potential assistance for students. I ask them if the strategies work for particular students, such as reading groups participation levels and organization. Usually, ask their advice on how the students performed with a particular task and what modifications accommodations could be provided to help students even further.

In this example, the GENED teacher discussed accommodation, differentiation, and scaffolding to support SWSN in class. Collaboration between GENED and SPED commonly focused on supporting SWSN in their classes to be successful. This type of collaboration is essential for inclusion; GENED teachers are the masters of content but need SPED teachers who specialize in making content accessible to SWSN, and the collaboration between the two ensures that all students are accessing the curriculum (Friziellie et al., 2016; Thousand et al., 2015; Villa et al., 2013).

SPED teachers → GENED teachers. SPED teachers collaborate with GENED teachers as a function of their role (i.e., co-teacher, case manager) and to access expertise. The SPED teachers described the focus of their collaboration with GENED teachers as an essential element of their role. One SPED teacher described collaboration with a GENED teacher to support case management:

In this example, the SPED Typically, I'd be going to them to get information about how students are doing in their class or to hear out their concerns because a lot of the time, kids are really great in small group and then not so great in the classroom. They would also give me strategies on how they were dealing with those behaviors are dealing with those communication issues in the classroom. So that would be helpful to try to be consistent.

teacher collaborated to monitor progress to see if students are generalizing skills and develop strategies to support the students. They also collaborated to ensure consistency of language and strategies used both in a small group setting and in the classroom. Inclusion requires GENED and SPED teachers to be in constant

communication to ensure that students are making progress on their individual goals in addition to curriculum learning targets (Friziellie et al., 2016; Lawrence-Brown & Muschaweck, 2004).

Additionally, SPED teachers collaborated with GENED teachers to access expertise. The SPED teachers discussed how they were continuously learning to be effective since SPED is individualized and every student has unique needs. To support this learning, they would reach out to different teachers who had different expertise.

One SPED teacher described why they collaborated with a particular GENED teacher:

Because they are really, really smart. They know what they are doing. And I think they are really good at differentiating the curriculum for students in a way that I've never really seen before, and most of my training has come from the classes that I've taken, I don't have enough in-person experience to feel like a professional in that, and I'm learning, but he just has it mastered. And so going to them and asking, how can I make this easier for this kid so that they can show what they know without making them fall apart. And they have so many ideas all the time.

In this example, the SPED teacher was going to the GENED teacher to learn content-specific differentiation strategies. Although the SPED teacher had been working as a SPED teacher for several years, they still needed support in a specific area which the GENED teacher provided. Teacher preparation programs cannot fully prepare teachers due to the wide range of practice; therefore, teachers rely on each other to gain the knowledge and skills necessary to support their specific teaching placement (Brannan & Bleistein, 2012; Jones, 2012; Kim et al., 2017).

SPED teacher → SPED teacher Collaboration. SPED teachers collaborated with other SPED teachers to support specific students and as a function of their role. Teachers identified the focus of their collaboration to monitor progress, collect observational data, and discuss needs and appropriate supports.

SPED teachers collaborated with other SPED teachers to support specific students. The teachers discussed how they would collaborate to develop strategies and scaffolds to help students succeed in their classes. One SPED teacher discussed collaboration with another SPED teacher, “It was usually consulting about students that we shared and how they were doing in class and What we wanted them to work on next? What would be the next step?” In this case, the teachers discussed each student’s progress, created goals, and developed an action plan to support progress. This type of collaboration is essential to making inclusion effective since students need individualized attention and support (Barton & Smith, 2015; Sovgir, 2017).

SPED teachers would collaborate with other SPED teachers as a part of their role. SPED teachers often hold multiple roles at a campus. They ranged from IEP case managers, classroom teachers, co-teachers, self-contained classroom teachers, and small group teachers at this school site. As a part of their role, they would collaborate with other SPED teachers. For example, one SPED teacher who was both a case manager and a co-teacher described why they collaborated with another co-teacher:

I found them to be a great person to discuss what the kids are doing quietly that might not I might not be seen. They had a great pulse of the class. They were with the students before I would be so I could come in and not have to interrupt the GENED teacher and find out exactly what the pulse of the class. I check-in and we would figure out where to go. And then, if they had a question about the co-teaching or students, they would come to my classroom and ask me questions. They were a great person for me to go to for information about students that I didn’t know much about. If they were like students on my caseload say I was trying to prepare an IEP I go to GENED teacher and also ask them because a lot of times they would give me what is really happening.

In this case, the SPED teachers collaborated because of multiple roles; as a case manager conducting data collection and as a co-teacher working with the same GENED

teacher. This collaboration enabled the participant to have a unique understanding of the students they were supporting.

In summary, GENED and SPED teachers needed to collaborate to be supportive of a diverse student population. GENED teachers collaborated with other GENED teachers to gain a different perspective and perfect pedagogical practices for their students. GENED teachers collaborated with SPED teachers to support differentiation. SPED teachers collaborated with GENED teachers as a function of their role as a case manager or co-teacher and to gain access to specific expertise. Finally, SPED teachers collaborated with other SPED teachers as a function of their role as a case manager, co-teacher, classroom teacher, or small group teacher and to individualize student support.

Supports and Barriers of Collaboration

In understanding collaboration from the teacher's perspective, it is necessary to understand what supports and limits collaboration. In the following section, we will learn what teachers think promotes and aids collaboration. We will also learn what restrains and hinders collaboration.

Supports collaboration. Teachers were able to describe what supports collaboration. All teachers identified dedicated time. Additionally, the ability to build relationships and trust was essential to support collaboration.

Every teacher described having time within their schedule as necessary to facilitate collaboration. Without dedicated time, teachers struggled to make collaboration occur consistently and with fidelity. One GENED teacher described how to support collaboration "for me opportunities for face-to-face discussion. To me, the best trainings are the ones where we sit and talk out our ideas". Suggesting that time supports the ability to collaborate and have

meaningful discussions. A SPED teacher discussed the importance of dedicated time, “time! Most of the time that I spend collaborating with teachers is either at lunch or via text on my own time. Having that time to actually sit down where it’s part of my workday makes it much more focused”. Again, showing that having time dedicated towards collaboration supported the ability to collaborate. Instead of finding the time or making time outside of school hours, teachers could truly collaborate and dive into deep discussions and exchanges of resources to improve their teaching practices and effectively support their diverse classroom. To effectively be inclusive, teachers need time to work with each other to develop instruction to meet student needs (Jones, 2012; Lawrence-Brown & Muschawick, 2004; Sovgir, 2017).

Teachers also discussed the fostering collaborative partnerships and building relationships as a supporter of collaboration. The participants discussed that they were more likely to collaborate with someone they already know and have a relationship with whom they can trust as they open up, ask questions, and solve problems. One GENED teacher described how building relationships and the culture of collaboration supported their collaboration:

I think the fact that we meet all of us meet once a week and we do those pds days, where and get to know all the teachers in a varying degree. That sort of helps because you feel as though you are you part of a community and you know everyone is really helpful and everyone’s very knowledgeable with far more experienced than me. Everybody has got their own way of doing things different teachers at different ideas and classroom management.

In this example, the teacher found regular meeting times that allowed teachers to get to know each other and learn their strengths and expertise, which supported collaboration. When the teachers were able to get to know each other, they learned who has what specialty and where to go for specific advice. They also felt comfortable taking risks, asking questions, and challenging their teaching practices when they had a relationship with the person. Social capital is useless if people do not understand what capital an individual has (Coburn & Russell, 2008; Tierney, 2006). Therefore, it is necessary to understand the capital within a collaborative community. Furthermore, collaboration occurs between people who trust each other and have

built a safe space where they are valued and encouraged to take risks and be vulnerable with each other (Dufour, 2011; Hunter & Hall, 2018; Tschannen-Moran, 2001).

Teachers agreed that time to collaborate was necessary. When teachers had the time built into their schedules, they were more willing and able to collaborate. Additionally, teachers found that trust through built relationships supported collaboration. Since collaboration is an essential part of inclusion, supporting collaboration supports the inclusion of SWSN in GENED classes.

Collaboration Barriers. Teachers were able to identify barriers to collaboration. All teachers agreed that lack of time prevented collaboration. Also, they found that heavy structures limited collaboration. Other barriers to collaboration included teachers' unwillingness to collaborate, conflicting viewpoints, and being an outlier subject or a non-core subject.

Teachers described lack of time as the most significant barrier to collaboration. They described either not having enough time or scheduling conflicts that prevented collaboration. One GENED teacher described how monthly planning sessions were insufficient and did not allow for meaningful collaboration that would impact the daily lessons:

I don't plan a month and ahead because if I planned a month and ahead find after a week that they're [students] not where I thought they were. They are ahead of where I thought they were, they're there behind or they went in a whole different tangent that I didn't predict, but it's where their interest lies, and I need to go with it. I do a student-centered classroom so planning more than a week ahead is not workable in that sort of scenario. And then just like a rough outline of what we're going to cover.

In this case, the teacher was frustrated because meeting with other teachers, including SPED, was only monthly. The infrequency of collaboration only allowed for surface-level discussion and not in-depth collaboration that identified who got the concept and who needs more support. If wanting to be more inclusive, collaboration needs to be frequent and in-depth. It needs to be practical and in real-time, where teachers can come together to use student work to determine who is understanding, what are they understanding, and at what level of mastery (Brown et al., 2013; Frizziellie et al., 2016; Lawrence-Brown & Muschaweck, 2004; Leane, 2014).

Teachers identified flexibility within collaborative time, as necessary. Teachers described the ideal collaboration as dedicated time with a focus. When the collaborative time was too structured, it became forced and inauthentic. They also described it as not meaningful collaborative time. One GENED teacher described too structured of time and how it limited collaboration:

I would like to think that the PLC time was helping but I find that that those forced times are not the most authentic times. I find a lot of collaborations come out this year in the shared trainings, particularly the lighthouse trainings [co-teaching] because it was nice to be able to focus on special ed with teachers and that the actual focus of what we were talking about because it forced them to take that perspective.

This teacher described PLC with a substantial structure to be limiting. They discussed how PLC with a specific purpose, such as identifying students to mentor or identifying failing students, not to provide authentic collaboration. Instead, they found that collaboration provided enough structure and flexibility to allow for meaningful collaboration when there was an overarching purpose to collaboration. Authentic and meaningful collaboration requires a focus to help guide conversations, but it can hinder collaboration when the focus is narrowed (Brown et al., 2013; Friziellie et al., 2016; Lawrence-Brown & Muschaweck, 2004).

Teachers agreed that insufficient time limits their ability to collaborate. In order to collaborate effectively, teachers required dedicated time. However, that time needs to have a guiding purpose. Teachers found that when collaboration time was too structured, it limited meaningful and authentic collaboration.

Teacher recommendations. The teachers were able to identify what supports and limits collaboration. They were also able to make recommendations that they felt would support collaboration. The most common recommendation was to increase structured but flexible time to collaborate. Also, they wanted to complete observations of both their students and other teachers.

Teachers recommended more structured but also flexible time to collaborate. They described the structure as setting up partnerships such as grade level or content area and designating an overarching goal. However, that goal needed to be flexible enough to be practical for all teachers. One GENED teacher described the balance of structured and flexible collaborative time with SPED teachers:

I think at least once a month, having that structured time where this is what you're focusing on because we can look at assignments that are pretty typical like I always did my notes. The same way you know we could look at how I do notes and any offers and look at samples of students work that are on caseload [SWSN] and offer specific instructional strategies. Really focusing and looking at specific student work because we never looked at special education student's bodies of work. But it was never assessed with that special education in mind. And have SPED look at their samples too and look at what I'm asking them to do versus what another student has done.

In this case, the GENED teacher recommended having the common goal of looking at SWSN notes and finding ways to scaffold and differentiate notetaking. The teachers described the importance of flexibility to allow for practical collaboration. In this case, note-taking is a flexible goal because all content areas teach notetaking. Another suggestion was to have open forum collaboration sessions with SPED teachers. The open forum would allow teachers to meet with SPED teachers to collaborate based on their needs. Including meeting with case managers about a specific student, with SPED teachers who work commonly within a particular content area and can support differentiation or access their wide range of supports and strategies.

Teachers requested time to complete observations. The teachers discussed the benefits of observing their students learn from someone else, allowing for a different perspective since they are relieved from instruction and can observe in a passive role in the classroom. Teachers also discussed the benefit of observing other teachers. One GENED teacher discussed an observational practice called walk-throughs, where they observe multiple classrooms:

We should all be doing regular walk-throughs. What we're able to see is, oh I do that too and I need to fix that. That's a great idea or I'd like to try that in my room. We see some things that shouldn't be happening. But we see that in a way that helps us inform our practice. It's not to be critical of that teacher and saying, oh

my god, I can't believe that's happening, but it's really about being reflective based on what we saw and learning from that.

The teacher described the ability to see how other teachers implement teaching strategies that can improve one's teaching practices. Observing other teachers can be informative; it helps show how the same concept or practice can be different. Some of the best lessons can be from other teachers; seeing how they put their spin and their interpretation of something and then reflecting on one own teaching practice can highlight the strengths and identify areas of improvement.

The teachers identified more dedicated time as a way to improve collaboration. They found that they could effectively collaborate when a goal was practical to every content area. They also found that observation supported collaboration because it provided a different perspective to the same subject and teaching practices. Teachers encourage these practices to support collaboration.

Summary

The case study at Reeve Middle School addressed the two questions: what SPED and GENED collaboration networks look like at an inclusive school? And why? How do teachers describe collaboration at their inclusive school site?

The meta-network provided an overview of all the ego networks at Reeve Middle school. The network contained 50% GENED, 34% SPED, 8% non-classroom educators, and 8% non-educator. From this, it was notable that 34% of the network was SPED to support 19% of the student population, SWSN. The meta-network also identified key collaborators. These key collaborators were identified in 75% of the teacher's ego network. A GENED and a SPED teacher, as well as a non-classroom educator, were frequent collaborators. The roles and the expertise of these collaborators facilitated collaboration. Additionally, these collaborators welcomed collaboration and fostered a culture of collaboration.

The ego networks of individual teachers provided an in-depth understanding of the collaborative networks. The largest network was a SPED teacher who had been working at the site for 10 years. The network consisted of 24 people and had developed relationship and trust through structured partnerships. The smallest network was a GENED teacher who had been working at the site for 2 years. The teacher collaborated with people they saw in their daily view and shared content areas or students. The average networks size was 14 people. The average number of years working at the school was 8.5 years and the average number of years collaborating was 5.5 years.

Teachers commonly collaborated with people who they frequently interacted with. Including teachers in the same building, on collaborative teams, and PLC members. They also collaborated with teachers who taught the same content area or grade level and utilized that time to support SWSN. The SPED teachers collaborated with other SPED teachers to problem solve student specific challenges and to maintain IEP compliance procedures.

The teachers were able to describe collaboration at their school. Collaboration occurred mostly in person but also via email. In person collaboration provided convenience for teachers who frequently interacted. It also allowed for deeper conversations that included sensitive information about students. Email was convenient for teachers who needed quick questions answered and did not require teachers to schedule.

The teachers identified common reasons for collaboration. The most common reason was a structured collaboration between specific roles. For example, teachers collaborated with their co-teachers, department, and PLC. Another reason for collaboration was the ease of collaboration; these teachers shared space, frequently interacted, or welcomed the collaboration. A common reason for collaborating with a specific person was their expertise or perspective. Lastly, teachers often collaborated for support with classroom management or student behavior.

Many teachers frequently collaborated, including multiple times a day, daily or multiple times per week. Teachers frequently collaborated to access a person's expertise or experience. They also frequently collaborated through structured partnerships. Lastly, they frequently collaborated with teachers who were nearby.

The focus of this study was to learn about collaboration for inclusion, focusing on collaboration between teachers to support SWSN in their GENED classes. The teachers commonly discussed collaborating to address individual supports and strategies for a specific student. Additionally, collaboration occurred to support differentiation, to assist SWSN to access their curriculum. Finally, teachers collaborated to gain access to specific expertise.

GENED and SPED teachers needed to collaborate to be supportive of a diverse student population. GENED teachers collaborated with other GENED teachers to gain a different perspective and perfect pedagogical practices for their students. GENED teachers collaborated with SPED teachers to support differentiation. SPED teachers collaborated with GENED teachers as a function of their role as a case manager or co-teacher and to gain access to specific expertise. Finally, SPED teachers collaborated with other SPED teachers as a function of their role as a case manager, co-teacher, classroom teacher, or small group teacher and to individualize student support.

The teachers identified more dedicated time as a way to improve collaboration. They found that they could effectively collaborate when a goal was practical to every content area. They also found that observation supported collaboration because it provided a different perspective to the same subject and teaching practices. Teachers encourage these practices to support collaboration.

Chapter 5: Discussion

A case study at Reeve Middle school was able to identify how teachers at this inclusive school site collaborate to support students and particularly SWSN. The study included eight teachers from Reeve Middle. Five of the teachers were GENED teachers, and three of the teachers were SPED teachers. Teachers participated in semi-structured interviews where they described their collaborative networks. The focus of the study was to specifically identify GENED and special education teachers within the collaborative networks and understand their role and responsibility within the network. The study aimed to answer the following two research questions:

- What do the collaborative networks of general and special education teachers look like at an inclusive school site?
- How do general and special education teachers collaborate to support inclusion?

The teachers mapped out their collaborative ego networks utilizing a concentric circle diagram to represent their network. The concentric circle diagram assisted with name generating, enabling teachers to think beyond the school site and include people on different campuses or even other industries. The diagram also facilitated teachers to list collaborators based on the frequency of collaboration. After completing the concentric circles, the teachers described their ego network and provided a rationale for the network. In addition, teachers provided collaboration through a teacher's lens and described how collaboration supports students.

Data processing included a two-step method. First, social network data were analyzed using ego-network analysis techniques (Crossley et al., 2015). The analysis provided a visualization of the ego network. In addition, it provided social network metrics such as the *degree or tie central tendency*, which provided the size of the network. It also provided the *tie dispersion*, which indicates the distribution of teacher types among the networks. Indicated by H, an H value of .5 indicates an even distribution of teacher types within the network (Borgatti et

al., 2018; Crossley et al., 2015; Mamas et al., 2019). The **alter central tendency** indicated the breakdown of the network by gender (Mamas et al., 2019). The second step of the process included immersing in interview transcripts and coding, using both in-vivo and axial coding techniques to identify themes within the data (Creswell, 2012; Rossman & Rallis, 2017). Finally, selective coding techniques were used to divide the data into categories, themes, and details (Mills et al., 2010). These analysis techniques provided an understanding of GENED and SPED collaborative teacher networks.

Summary of Findings

The findings from the study were organized around each research question. First understanding, what do the collaborative networks of GENED, and SPED teachers look like at an inclusive school site? And why? Subsequently, how do GENED teachers and SPED teachers collaborate to support a diverse student body?

In understanding what SPED and GENED collaboration networks look like at an inclusive school and why; a meta-network was compiled using the ego-networks of each individual teacher. The meta-network provided a broad view understanding of the collective ego-networks. The network included GENED teachers, SPED teachers, paraprofessionals, administration, counseling, support teachers, teachers from neighboring schools, friends, including those made in preparatory programs, family members, online websites, and online communities. The meta-network was able to show that even though the student population was 19% SWSN, SPED accounted for 34% of the network. The student and teacher population difference indicated that this inclusive school site had proportionally more specially trained teachers than students. Also, the meta-network identified three key collaborators, a GENED teacher, a non-classroom educator, and a SPED teacher. While teachers collaborated with them as a result of their roles and access to their expertise, they welcomed collaboration and fostered a culture of collaboration and inclusion.

After understanding the collaborative networks at the macro scale, a narrowed focus of the individual ego-networks provided a deeper understanding. The study collected eight teachers' collaborative ego networks and narrowed the focus on a highly connected teacher, a limited connected teacher, and average connected GENED and SPED teachers' ego networks.

The highly connected teacher was a SPED teacher who had been teaching at the site for ten years. The network included SPED teachers and staff, GENED teachers, administrators, councilors, and friends. They frequently collaborated with people they worked with daily or frequently saw during the day. Additionally, they collaborated with people with whom they had built a relationship and trusted. They occasionally collaborated with other special educators as a function of their case management duties. They collaborated to monitor progress, discussed IEP compliance, and co-constructed IEPs. They also occasionally collaborated with non-classroom educators to support students who exhausted typical teacher support and needed a more individualized support system. Often the individualized support was to support behavioral needs to ensure access to the GENED instruction. Seldom collaboration occurred with people who supported the teacher's social/emotional aspects. The focus of that collaboration These non-classroom educators provided social-emotional support for the participant, easing some of the emotional exhaustion that commonly occurs with special educators.

The limited connected teacher was a GENED teacher who had worked at the school site for two years. They identified having a small network of collaborators and explained how they collaborate with people in the same space, built relationships with and shared students. These teachers were nearby, shared content areas, or shared students. Frequent collaboration focused on instruction and students. The teacher would collaborate seldomly with a non-classroom educator when stuck and needed guidance—also looking to that person for leadership and direction.

While understanding the extremes within the data set, it was essential to compare averages. A GENED and SPED teacher with an average-sized collaborative network was

identified and analyzed in depth. The GENED teacher had been teaching for ten years but teaching at the school site for two. The SPED teacher had been teaching for six years and at the school site for two years. The teachers frequently collaborated with people nearby and within the same grade level. They were able find stolen moments throughout the day when teachers could get the input and perspective on lessons. The frequent collaboration provided an opportunity to align instruction and ensure consistency.

The teachers occasionally collaborated with other teachers, both SPED and GENED, to improve their teaching practice. Often the focus of the occasional collaboration was to learn or improve their instructional strategies. Also, they collaborated occasionally to gain new strategies to support the individual needs of SWSN. The SPED teacher collaborated with people who understood SPED's compliance side, which includes IEP meetings, data collection, and monitoring progress. Furthermore, they found it beneficial to collaborate with non-educators when a significant event emotionally challenged them.

After learning what do SPED and GENED collaboration networks look like at an inclusive school, and why, the study aimed to understand how teachers describe collaboration at their inclusive school site (see second research question).

Teachers collaborated to gain knowledge and to grow. They sought out the advice of others to access their expertise and knowledge. They also collaborated to gain a different perspective. Since the teachers had different backgrounds, they utilized their differences to support a diverse student population. They also collaborated to support classroom management and student behavior. They were improving their ability to have students learn in a safe and welcoming environment.

Collaboration was primarily due to a structured collaboration, meaning they were working together for a common purpose such as co-teachers, grade level team, same department, PLC members. Teachers were placed with partners or on teams which created a

need to collaborate. Another partnership was student case managers, SPED and GENED teachers would collaborate with the SPED teachers who were student IEP case managers.

In addition to structured collaboration, teachers collaborated when it was easy or natural for them. For example, they would share a space, and the proximity made it easy for them to ask questions, get advice, and solve problems. Although teachers found it convenient to collaborate with teachers nearby, they found it necessary to have openness and a willingness to collaborate. Teachers felt comfortable approaching and collaborating when there was an open invitation

The focus of this study was to learn about collaboration for inclusion, focusing on collaboration between teachers to support SWSN in their GENED classes. The teachers commonly discussed collaborating to address individual supports and strategies for a specific student. The collaboration provided opportunities to support individual needs and provide personalized and individualized education based on student needs. Additionally, collaboration occurred to support differentiation, to assist SWSN to access their curriculum. Teachers were able to include scaffolds, accommodations, and modifications to provide accessible education for SWSN. Finally, teachers collaborated to gain access to specific expertise. The school site had teachers from different backgrounds with different skillsets, understandings, and perspectives. The diversity provided an opportunity to collaborate and tap into each other as a resource.

Teachers identified reasons for seeking the advice of particular teacher types. GENED teachers collaborated with other GENED teachers to support their teaching practices. Teachers commonly collaborate about pedagogy. Additionally, they collaborated to gain access to a different perspective. GENED teachers commonly collaborated with SPED teachers about differentiation. Most GENED teachers discussed the focus of collaboration with SPED to support their SWSN in their classes. SPED teachers collaborate with GENED teachers as a function of their role (i.e., co-teacher, case manager) and to access expertise. The SPED

teachers described the focus of their collaboration with GENED teachers as an essential element of their role. SPED teachers collaborated with other SPED teachers to support specific students and as a function of their role. Teachers identified the focus of their collaboration to monitor progress, collect observational data, and discuss needs and appropriate supports

Teachers were able to describe what supports collaboration. All teachers identified dedicated time. Every teacher described having time within their schedule as necessary to facilitate collaboration. Without dedicated time, teachers struggled to make collaboration occur consistently and with fidelity. Additionally, the ability to build relationships and trust was essential to support collaboration. The teachers discussed that they were more likely to collaborate with someone they already know and have a relationship with whom they can trust as they open up, ask questions, and solve problems

Conversely, teachers were able to identify barriers that limited or prevented collaboration. All teachers agreed that lack of time prevented collaboration. They described either not having enough time or scheduling conflicts that prevented collaboration. Also, they found that heavy structures limited collaboration. Teachers identified flexibility within collaborative time, as necessary. Teachers described the ideal collaboration as dedicated time with a focus. When the collaborative time was too structured, it became forced and inauthentic. Other barriers to collaboration included teacher's unwillingness to collaborate, conflicting viewpoints, and being an outlier subject or a non-core subject.

The teachers were able to make recommendations that they felt would support collaboration. The most common recommendation was to increase structured but flexible time to collaborate. Teachers recommended more structured but also flexible time to collaborate. They described the structure as setting up partnerships such as grade level or content area and designating an overarching goal. However, that goal needed to be flexible enough to be practical for all teachers. Also, they wanted to complete observations of both their students and other teachers. Observing other teachers can be informative; it helps show how the same

concept or practice can be different. Some of the best lessons can be from other teachers; seeing how they put their spin and their interpretation of something and then reflecting on one own teaching practice can highlight the strengths and identify areas of improvement.

The teachers at Reeve Middle school were able to describe and explain their collaborative networks. They were able to provide a rationale as to why their collaborative networks looked the way they did. They were also able to provide their description of collaboration. They focused on how they utilized their collaborative network to support the inclusion of SWSN in classrooms. In addition to describing collaboration, they were able to identify what supports collaboration and what are barriers. They provided recommendations on how to improve collaboration. This information provided a thorough understanding of collaboration. The subsequent section will discuss how these findings contribute to the greater knowledge about collaboration for inclusionary purposes.

Discussion of Findings

The findings from the case study were able to inform and add to the current understanding of collaborative networks and how that supports SWSN to be successful in inclusive classrooms. Moreover, it was able to inform and add to the current understanding of teacher collaboration and how collaboration supports the inclusion of SWSN in GENED classrooms.

Collaborative Networks and Inclusion

The study was able to learn how collaborative networks form and function at an inclusive school site. Collaborative networks at Reeve Middle formed as a result of proximity. Teachers who were nearby collaborated frequently and utilized natural resources to support their teaching practices. Additionally, teachers who were in structured partnerships worked together and collaborated to improve their teaching. As an inclusive school site, the network included many SPED teachers who utilized their expertise and knowledge to provide an inclusive education

that supported the wide range of SWSN. Lastly, the networks formed and continued as a result of a relationship built on trust.

Proximity. The study was able to identify that proximity was a significant factor in whom a teacher collaborated with and how frequently a teacher collaborates. Frequent collaboration occurred between teachers who were in the same building. Teachers found that they could frequently check in, ask questions, seek advice, and get feedback when a teacher was nearby. Experts agree that connections are made and supported when a person is easily accessible, including nearby (Borgatti et al., 2009; Borgatti & Ofem, 2010; Daly et al., 2010; Liu et al., 2017). The ease of collaboration with a teacher nearby supported the teachers' ability to support a diverse student population. Teachers reported they would use these frequent collaborations to monitor student understanding and adjust instruction accordingly. They would also ask questions to understand and support the unique learning needs of their students. Likewise, they also would seek feedback from other teachers; this included reviewing a teaching tool such as a graphic organizer, generating sentence frames, and previewing texts to ensure accessibility. Proximity can support collaborative networks; experts understand that when people are nearby, they interact more frequently, which provides opportunities to collaborate (Coburn & Russell, 2008; Daly et al., 2010; Liu et al., 2017; Moolenaar & Daly, 2012). The frequent collaborations provided opportunities for teachers to work together and utilize their strengths and expertise to support a diverse student population

Teachers often collaborated with those who were easily accessible. Recognizing the challenges of scheduling and holding formal collaborative sessions, teachers utilized the resources around them. All the teachers collaborated with the teacher next door, where they could pop into the classroom, get some quick feedback, and ask questions. This quick informal collaboration was the most common type of collaboration. Social network theory recognizes that people often interact with people who are easily accessible (Borgatti & Ofem, 2010; Datnow, 2012; Liu et al., 2017; Moolenaar, 2012; Van Waes & Van den Bossche, 2020); in the education

setting, this includes the next-door teacher. This quick, frequent collaboration also applied to collaborative partnerships that shared space. Teachers collaborated multiple times a class period with their co-teachers and paraprofessionals. This real-time collaboration supported teachers to make informed decisions that supported students learning as they were learning. The benefit of co-teaching provides the opportunity for teachers to work together with the students and directly support their learning while they are learning (Brown et al., 2013; Keefe & Moore, 2004; Villa et al., 2013).

The study was able to build upon social network theory in education and understand how the proximity of teachers can support collaboration. Social network theory recognizes that people often reach out to those who are nearby and easily accessible (Borgatti & Ofem, 2010; Datnow, 2012; Liu et al., 2017; Moolenaar, 2012; Van Waes & Van den Bossche, 2020). In the education setting, this means that nearby teachers who can be accessed quickly are common collaborators. To add to current understanding, this includes SPED teachers.

At Reeve Middle, SPED teachers who were nearby and easily accessible were frequent collaborators. It is important to understand how proximity to SPED teachers impacted the social network. Since SPED teachers at inclusive school sites commonly support multiple classrooms, these teachers were in multiple collaborative networks (Brown et al., 2013; Keefe & Moore, 2004; Villa et al., 2013). Their ability to be in multiple collaborative networks identifies SPED teachers as key collaborators. As key collaborators, SPED teachers are vessels of essential information and leaders when supporting SWSN (Carolan, 2014; Coburn & Russell, 2008; Moolenaar & Daly, 2012; von Mering, 2017; Wong, 2016). Their expertise in accessible and inclusive education informs how teachers include and support SWSN in the GENED classrooms. Therefore, it is imperative that SPED teachers receive the proper training on the latest research and evidence-based practices to support the diverse learning needs of SWSN. As inclusive experts identify, the field of SWSN and SPED is ever-evolving, with a new understanding of disabilities and improved best practices to ensure SWSN can access and

thrive in the classroom (Bianco, 2005; Forlin, 2010; Jones, 2012; Kirk et al., 2014; US Department of Education, 2018). When SPED teachers have the latest understanding of disabilities and best practices to support the diverse needs, they can distribute that information across their network. As key collaborators, this will ensure that the school site has the information necessary to support SWSN appropriately and effectively in their classroom

Structured Partnerships. Structured collaborative partnerships influenced the formation of collaborative networks. Teachers who were assigned as co-teachers, department members, grade-level teams, or PLC members frequently collaborated. These partnerships influenced collaborative networks.

The culture at the school site included collaborative partnerships among teachers who shared students in the same grade level or who shared the same content area. The frequent cross-grade level collaboration provided a transdisciplinary approach. Teachers would focus on the students and how they were performing, learning, and accessing their education. They would identify when students are being successful and discuss how to support students when they are not. Dever and Lash (2013) identify the need for collaboration across grade level and content areas; this collaboration provides a whole-child perspective since students can range throughout the day and in different subject areas. This collaboration provided opportunities to gain experience what is working for a student and what is not, allowing consistency across classes. It also provided opportunities for continued themes and skills in other classes.

Learning that structured partnerships influence collaborative networks expands the current understanding of SNT in education among teachers. Social networks are informal networks and naturally arise as people interact and work (Borgatti et al., 2018; Coburn et al., 2013; Crossley et al., 2018; Daly, 2010; Datnow, 2012; Liu et al., 2017). This study was able to identify that those structured partnerships had a significant impact on collaborative networks. This information conflicts with SNT since the school site's administration structured the partnerships and did not naturally arise. However, the study also showed that not every

structured partnership or collaboration resulted in frequent and meaningful collaboration. Teachers recognized that although they were encouraged to collaborate with co-teachers, grade-level teams, content area teams, and PLC, barriers impacted their ability to collaborate. These barriers included lack of time and space to collaborate, superficial collaboration among teachers who shared the same subject area but taught different domains within the subject area, and when teachers did not value or trust the other teacher's opinion and expertise.

SPED and Collaborative Networks. The focus of this study was to understand SPED teachers' roles within collaborative networks and how this impacts inclusion. One of the key findings from the study was the portion of SPED to GENED teachers within collaborative networks. The significance of this finding helps to inform the current understanding of collaborative networks at inclusive school sites and ensure a proper ratio of experts in disabilities and effective supports for SWSN.

The findings of teacher collaborative networks at an inclusive school site at the macroscale show that SPED teachers outnumber SWSN needs. The meta-network showed that even though the student population was 19% SWSN, SPED teachers accounted for 34% of the network. The difference indicates that an inclusive school site has more specially trained teachers than SWSN. Teachers utilize SPED teachers' expertise on differentiation to support individual needs. Inclusive education requires an individualized approach where scaffolds provide the opportunity to build on every student's strengths and needs to be supported with accommodations and modifications (Barton & Smith, 2015; Forlin, 2010; Jones, 2012; Murphy, 1996).

Inclusive school sites require teachers to be knowledgeable on subject area content and make education accessible. The demands of both types of knowledge can be a challenge to have all teachers with this expertise. Therefore, schools need experts in subject area content and accessible, inclusive education to support a diverse student population. Collaboration between the two teacher types provides a multifaceted approach. Together they can provide an

education that supports individual needs. Experts agree that an essential element of inclusion is a collaboration between content experts and accessible education experts (Frizellie et al., 2016; Jones, 2012; Villa et al., 2013; Villa & Thousand, 2005, 2017). Since collaboration between the teacher types is a critical factor in inclusive education, there needs to be a ratio of teacher types. Within the case study, the ratio was 2:1, two content area teachers to one SPED teacher. The ratio provided enough SPED teachers to collaborate with GENED teachers.

The current understanding of inclusive education emphasizes the importance of SPED and GENED collaboration. Jones (2012) provides teachers with a collaborative tool to facilitate collaboration, recognizing that collaborating is easier said than done. Frizellie et al. (2016) expand on SPED and GENED collaboration by providing best practices on how SPED and GENED teachers can collaborate. Thousand et al. (2015), Villa and Thousand (2005), and Villa et al. (2013) provide research-based structures to facilitate collaboration and include a school model to support inclusion. While previous research provides tools to facilitate collaboration, they miss one of the inherent aspects, the ratio of SPED teachers to SWSN. These tools and best practices can only be used if enough SPED teachers support the SWSN population. These findings go beyond previous reports, showing that a 2:1 ratio SPED teacher to SWSN can support effective collaboration.

Collaboration and Trust. Teachers identified the importance of trust in their collaborative networks. Trust was in every collaborative network and explained why collaborative partnerships could dissolve over time.

Effective collaboration requires a relationship built on trust. To collaborate, one needs to be vulnerable and trust that the person will not negatively judge them for collaborating. One GENED teacher said, "When you are asking the question, you're all of a sudden vulnerable little bit, you put your own weakness out there not weakness but your own lack of understanding". The vulnerability is not just in exposing a lack of knowledge but also in trusting that the person giving the advice will provide expertise. Research experts agree that collaboration requires trust

(Hunter & Hall, 2018; Tschannen-Moran, 2001) and that without trust, people are resistant to collaboration.

Although collaboration is encouraged, it places teachers to feel insecure and vulnerable because they recognize they do not have all the answers in a world where traditionally teachers are viewed as all-knowing (Collins et al., 2017; Keefe & Moore, 2004; Tschannen-Moran, 2001). Therefore, teachers need to feel as though they can openly seek out the assistance of their fellow teachers and utilize the collective expertise on campus.

Teachers needed to feel encouraged and supported to collaborate at an inclusive school site. Inclusive models encourage collaborative partnerships between GENED and SPED to support the dynamic needs of SWSN (Brown et al., 2013; Jones, 2012; Keefe & Moore, 2004; Villa et al., 2013; Villa & Thousand, 2005). While teachers may be placed on collaborative teams, they will not collaborate effectively if trust is not there. Leadership can play a role in developing trust through activities that build trust among partnerships and provide avenues to repair trust when it is broken (Daly et al., 2005; Dirks & Ferrin, 2002).

Trust is essential in collaboration to support the inclusion of SWSN in GENED classrooms. Teachers identified using various forms of collaboration to safeguard confidential information. Teachers noticed that other teachers were more willing to share information and provide deeper context and understanding to a situation. Kennedy et al. (2011) and Niesz (2012) highlighted that in-person collaboration facilitated honest and authentic collaboration. In-person allows for someone to notice nuances and non-verbal communication, which holds valuable information. Additionally, teachers identified things they would discuss in person but not commit to in writing through email. The in-person collaboration provided opportunities to discuss confidential information.

Teachers identified trust as a significant factor in long-term collaborative relationships. Teachers identified long-term collaborative relationships were based on the fact that when the collaborators trusted each other, trusted their expertise, trusted the advice that would be

beneficial, and trusted that the information discussed during collaboration was confidential when appropriate. Experts understand that long-term relationships require trust; since teachers discuss confidential student information to make informed decisions and rely on the expertise of each other, teachers need to trust each other to collaborate effectively (Daly et al., 2005; Dufour, 2011; Tschannen-Moran, 2001).

The study was able to build upon the current understanding of collaborative networks and inclusion. By exploring how proximity impacts teachers' collaborative networks, the study built onto SNT. It furthered our understanding of SNT in education by reviewing the impact of structured collaboration on forming collaborative networks. The study furthered the current understanding of SNT and inclusion by identifying a vital ratio of SPED teachers to SWSN. Lastly, it built on the current applications of trust in SNT in education settings by exploring the importance of trust in developing and forming collaborative networks.

Collaboration and Inclusion

The study was able to build onto the current understanding of collaboration and inclusion. Teachers were able to describe how they utilize their collaborative networks to support inclusion. This description provides an understanding of how social networks can be utilized to support inclusive education.

Teachers described needing to collaborate to support SWSN in their GENED classes. The focus of that collaboration was student-specific and had an individualized approach. Collaboration also included differentiation strategies; designing instruction to meet a diverse student population. Lastly, teachers collaborated to gain access to expertise.

Teachers must be prepared to meet the individual needs of students to provide inclusive education effectively. Inclusion strategies advise an individualized educational approach, and therefore collaboration is centered around individual needs (Barton & Smith, 2015; DaFonte & Barton-Arwood, 2017; Lawrence-Brown & Muschaweck, 2004). Teachers were able to utilize the expertise within their collaborative networks to provide individualized instruction. SNT

recognizes the wealth of knowledge and expertise within networks (Atteberry & Bryk, 2010; Borgatti & Ofem, 2010; Carolan, 2014; Coburn et al., 2012; Liu et al., 2017; Moolenaar & Daly, 2012). Within inclusive school sites, teachers have access to a diverse network to identify and support the unique learning needs of their students. The study recognized that both GENED and SPED teachers contributed to the diversity of knowledge available to support SWSN.

Effective teaching practice to meet diverse student needs is differentiation. When the content, process of learning, and the instructional products are varied to meet a wide range of learning needs, students are provided learning opportunities that fit their individual needs (Barton & Smith, 2015; Gilger & Hynd, 2008; King-Sears, 2008; Thousand et al., 2015). The study was able to determine that teachers utilize their collaborative networks to differentiate. Teachers employed the knowledge and expertise that each teacher had, both GENED and SPED, to modify, accommodate and differentiate learning to ensure accessible and inclusive education. SNT highlights the expertise within networks (Atteberry & Bryk, 2010; Borgatti & Ofem, 2010; Carolan, 2014; Coburn et al., 2012; Liu et al., 2017; Moolenaar & Daly, 2012), and this study supplements the understanding of how collaborative networks are utilized to provide inclusive education.

Teachers recognize they could not provide an individualized education that proactively supports SWSN through differentiation without the support of their collaborative networks. Housed within the collaborative networks is the collective wealth of expertise and knowledge (Borgatti & Ofem, 2010; Coburn et al., 2012; Liu et al., 2017; Moolenaar, 2012; Tuomainen et al., 2012; von Mering, 2017). The study highlights the skillset, knowledge, and expertise that both GENED and SPED teachers bring to their collaborative network—identifying the importance of collaborative networks at inclusive school sites. Collaborative networks provide the greatest resource to support the inclusion of SWSN, a network of experts in pedagogy, differentiation, individualized education, teaching strategies, and behavior supports. Expertise in all these areas is required to provide appropriate support for SWSN (Forlin, 2010; Gilger &

Hynd, 2008; Murphy, 1996; Sovgir, 2017). Inclusion requires instruction and learning opportunities to be accessible to the diverse learning needs of students (DaFonte & Barton-Arwood, 2017; Forlin, 2010; Jones, 2012; Lawrence-Brown & Muschaweck, 2004; Sovgir, 2017); by teaming together, teachers had the collective support to make this happen. Collaborative networks ensure that teachers have access to experts in each area, which supports the teacher's ability to effectively provide inclusive education to SWSN.

Collaborative networks among teachers are one of the greatest tools to support inclusion. SNT recognizes the value of these networks and the wide array of knowledge, expertise and skills that are housed within it. Because inclusion requires teachers to be savvy in evidence-based understanding of disabilities, researched based practices to support disabilities, and the creativity and knowhow to effectively differentiate and individualize instruction to meet the diverse needs of SWSN; teachers require these collaborative networks to ensure access to the required knowledge and expertise.

Implications

The study added to the current understanding of teacher collaboration between GENED and SPED teachers at inclusive school sites. Additionally, it provided a more profound understanding that delineates GENED and SPED teachers, focusing on identifying, comparing, and contrasting the two teacher types of collaborative networks and their collaboration perspectives. This information is vital and can critically inform practice, policy, and research.

Practice

The best recommendations for practice are made by those who are directly impacted by it. The study was able to explore collaboration and collaborative networks from the teacher's perspectives. The teachers were able to make their recommendations for practice in hopes of improving collaboration. These recommendations are in line with the study's findings. The most common recommendation was to increase structured but flexible time to collaborate. Also, they wanted to complete observations of both their students and other teachers.

The teachers identified time as a significant supporter of collaboration and recognized that heavily structured collaboration time was ineffective. Therefore, they recommend that regular collaborative time be dedicated within the school day and the school week. However, this time must allow flexibility and freedom to meet the teacher's needs. For example, one teacher suggested identifying the lowest-performing students and working with the grade level teachers to learn their success and why and how to translate it into their classes. In this example, the teachers still have a goal and objective, but they also have flexibility that allows collaboration to be meaningful.

Another recommendation the teachers made was to facilitate teacher observations and provide debriefing time to discuss the observation. The teachers had discussed observing other teachers in the past, but not a regular and frequent practice. Also, these observations were not supportive if they did not include debriefing time where the teachers could ask questions and learn more about what they observed in those classrooms. Teachers recognize the value of experiencing the variety of expertise and skillsets applied in practice. Moreover, they identified the need to observe their students in a different setting. Through observations, teachers can see their students in a different context; they can observe how teachers navigate different situations and scenarios and discuss their decision-making. They can utilize their colleagues' collective expertise and knowledge to improve their instruction and create a supportive environment that meets the needs of their diverse student population.

In addition to teacher recommendations, the findings of the study can also inform teacher practice. From the study, we learned about the collaborative networks of teachers and why they are formed. Also, we learned about collaboration from the teacher's perspective. These two areas can significantly impact the practice of teacher collaboration at inclusive school sites or sites that work towards becoming more inclusive.

A significant finding from the meta-network collaborative network was the proportion of GENED to SPED teachers compared to SWSN. The meta-network showed that there were

twice as many SPED teachers as SWSN, indicating that this inclusive school site needed to have experts in accessible education to provide the opportunities for GENED teachers to collaborate. Therefore, when inclusive school sites or districts allocate staff, it will be essential to consider hiring enough trained staff in accessible education to work with GENED teachers. If that is not a possibility, it is important to provide frequent opportunities to connect with accessible education teachers outside of the school site.

The meta-network also indicated key collaborators and their identifying traits. It is essential to identify the key collaborators within a collaborative network at a school site since they are conduits of knowledge (Atteberry & Bryk, 2010; Carolan, 2014; Datnow, 2012; Hunter & Hall, 2018; Lee, 2014; Moolenaar, 2012). Information flows through them, and they have substantial reach on campus. Therefore, it is critical for these networks to be up to date in the latest research and understanding of SWSN and how to support them effectively. Districts and principals can target the key collaborators during initiatives to act as ambassadors, to receive the training and disseminate that information to their collaborative network. Additionally, they will be vital team members when piloting latest programs because they are a trusted leader on campus. They can provide real advice on these programs and provide feedback about practical use of these programs. Furthermore, they are ideal for campus leadership teams since teachers already trust their expertise and seek them out for support.

While knowing the key collaborators on campus is necessary, it is crucial to understand what makes these teachers essential. The key collaborators all were people who had open door collaboration policies. They also believed in inclusion and welcomed students of all needs in the classroom. Similarly, they had access points to facilitate the inclusion of SWSN in the GENED setting. Understanding these traits can be beneficial when mentoring and fostering new potential key collaborators.

The study was able to examine teachers' collaborative networks at the individual or ego level. The study identified traits of teachers with large, connected networks and traits of small

and limited connected networks. Teachers with longevity at the school site had more extensive networks compared to new teachers. Additionally, teachers collaborated with those with whom they had a collaborative partnership and had built a relationship. Therefore, it is essential to keep teachers at school sites and only shift them when necessary. Teacher partnerships should be kept together and fostered to encourage a relationship. Experts understand that trust and relationships take time to build and, consequently, support development (Hunter & Hall, 2018; Tschannen-Moran, 2001). Similarly, teachers who had collaborative partnerships for several years continued to collaborate even when no longer in the same role. Therefore, it is vital to keep collaborative partnerships together to foster a long-lasting collaborative relationship.

The study was able to identify that proximity was a significant factor in whom a teacher collaborated with and how frequently they collaborated. This understanding is vital when making classroom placement decisions. Administrators should keep in mind the power of placement when assigning classes and partnerships to teachers. To support inclusion, SPED teachers should be located centrally and nearby GENED teachers. When SPED teachers are in close proximity, teachers can quickly access their expertise about inclusion and accessible education practices.

The collaborative network analysis was able to identify the frequency of collaboration. Teachers occasionally collaborated when seeking new strategies to support SWSN and to improve their instruction. They seldomly collaborated when needing answers to a specific question or support with a specific student. Understanding the frequency can assist administrators in fostering dedicated time to support these areas, for example, providing teachers with occasional training that builds their repertoire of teacher tools to support a diverse student population. As teachers identified in their recommendations, they need dedicated time with a flexible structure to meet their needs. Opportunities to collaborate that align with their collaborative needs are what teachers want.

Teachers were able to give their perspectives on collaboration. The teacher's perspective is valuable when discussing practice; whom better to inform teachers' practice than the teachers themselves. Teachers were able to highlight who and how they collaborate, why they collaborate and provide advice on supporting collaboration.

Teachers identified the purpose of collaboration. Teachers utilized their collaborative partnerships to inform pedagogy, improve learning outcomes, provide individualized design support for student needs, and effectively support diverse populations. The teachers recommended that collaborative time should align with teacher needs and also provide flexibility. Understanding why they collaborate can provide a practical focus that meets teacher needs. For example, a focus of structured collaborative time would be to identify the strengths of their SWSN and design a lesson that utilizes those strengths. This focus identifies their SWSN, provides the opportunity to inform pedagogy, and can improve learning outcomes. This also provides flexibility since all teachers design lessons and have SWSN in their classes. Districts and principals should be aware of the purpose of teacher collaboration to be able to provide practical opportunities for collaboration that fits the teachers' needs for collaboration.

Teachers often relied on each other's' expertise, knowledge, and skill set to support SWSN in their GENED classes. Teaching practice can be improved by identifying all teachers' expertise, knowledge, and skill sets and sharing that information. Districts can facilitate this by creating a detailed list of their staff members with bios that include experience and expertise. Principals can facilitate this during beginning of the year teacher welcome activities, they can provide opportunities for teachers to get to know each other, know their backgrounds, training, experiences, and expertise. They can also develop a staff list with bios that include this information for teachers to access when needed. This running list can be accessible when teachers need specific advice. When teachers know their expertise within their networks, they know who can support them with a specific question or generalized help.

The findings from the study are essential not only to improve the practice of teacher collaboration but to improve policy. Understanding how teachers collaborate and practical application can inform policies to support best practices. The voice of a teacher is necessary when making decisions that directly impact their practice. Therefore, the study has a profound impact on policy decision-making.

Policy

The study aimed to understand the collaboration between teachers to support SWSN in GENED settings. The findings from this study can inform policy at the district and state level. Districts can use the knowledge gained from this study to initiate, facilitate, and promote collaboration between teachers to support the inclusion of SWSN in GENED classes. State education code policy makers can use this study to make informed decisions that support collaboration. The lessons learned from this case study show that investment in collaboration can promote teacher retention, provide teachers with the advice networks to support inclusion, and provide SWSN learning opportunities that fit their needs.

As identified in the meta-network, the ratio of SPED teachers to SWSN was almost double. Having many experts on accessible and inclusive education provides teachers with more opportunities to collaborate and support a diverse student population. Districts can use this information to inform decisions on teacher allocations. States can use this information when allocating budgets and ensuring there is a budget to support GENED and SPED teacher ratios.

Additionally, the teachers in the study identified structured, practical, and flexible time to collaborate as essential supporters of collaboration. Districts can use this information to inform instructional minutes decisions, such as providing collaborative time to teachers within the school day, ensuring that collaborative partnerships have collaborative time together built into their day. States can utilize this information when making decisions on required instructional minutes. Collaboration takes time, and teachers need time built into their day to collaborate.

Lastly, the study identified that regular, frequent collaboration occurs in collaborative partnerships that have developed over time. Knowing that teachers need time to develop rapport and trust, the district should have policies to minimize teacher movement between schools. Districts should be supportive of collaborative partnerships and welcome teams to attend professional developments together. Furthermore, districts should empower collaborative partnerships by providing opportunities to work, collaborate and grow together. State policies should be in place to promote collaborative partnerships and reduce teacher movement between schools.

Research and Theory

The study was able to understand collaborative networks of GENED and SPED teachers from the teacher's perspective. The findings from the study can inform research and theory by providing the narrowed focus on both types of teachers, GENED and SPED.

Previous studies on teacher social networks had a broad view and did not define the teacher types. Since previous studies did not delineate GENED and SPED, it leaves a gap in knowledge about how GENED teachers, masters of content, and SPED teachers, masters of accessibility and inclusion, work together to support a diverse student population. This study can inform understanding of collaboration using a social network lens and specifically target how GENED and SPED teachers collaborate to support SWSN in GENED classes.

The design of this study is unique and enabled teachers to define their ego network. Previous studies of teacher collaboration used whole social network analysis (Coburn et al., 2012; Coburn & Russell, 2008; von Mering, 2017). The challenge with whole network approaches is that the researcher defines the social network; bounding the network to what the researcher assumes (Borgatti et al., 2009; Borgatti & Ofem, 2010; Crossley et al., 2018; Crossley et al., 2015; Mamas et al., 2019). By utilizing the ego network approach, this study allows teachers to define their networks, providing a thorough understanding of teachers' collaborative networks, who are in them, how they are utilized, and why they collaborate.

The study was able to examine teacher collaboration between GENED and SPED teachers at an inclusive school site. Inclusive education research highlights the importance of teacher collaboration but is limited in its understanding (DaFonte & Barton-Arwood, 2017; Jones, 2012; Lawrence-Brown & Muschaweck, 2004). The study provided authentic experiences of teacher collaboration at an inclusive school site which furthers our understanding of teacher collaboration to meet the needs of a diverse student population.

Educational Leadership and Social Justice

The study was able to inform educational leadership by supporting the concept of distributive leadership. The data indicated a distributive leadership among the teachers. Distributive leadership is a non-traditional approach that utilizes informal, bottom-up groupings and networks instead of a top-down traditional leadership approach (Beachum & Dentith, 2004; Bennett et al., 2003; Daly & Finnigan, 2010; Kennedy et al., 2011; Thyer, 2003). This approach enables teachers to be part of the decision-making process, allowing for practical changes that benefit students.

The collaborative networks of teachers facilitated distributive leadership. The study identified the key collaborators; a GENED teacher, a special ed teacher, and a non-classroom educator. Key collaborators are educational leaders (Coburn et al., 2012; Coburn & Russell, 2008; Moolenaar, 2012; Tuomainen et al., 2012). Teachers would turn to the key collaborators to seek advice, resources, and knowledge; they become gateway points and significantly impact the campus. Moreover, these teachers have a more extensive view of the school because of their interaction with multiple teachers. Their perspective is required when making decisions that have a broad impact.

Collaborative networks are a powerful resource. Angelides, Stylianou, and Leigh (2007) identified that teachers continuously use their collaborative networks to change and improve. Therefore, identifying and understanding collaborative networks at an inclusive school site can

aid in supporting a neurodiverse campus. Teachers work together to identify their students' strengths and areas of need, and together they can support the students.

Additionally, there is a shift in the understanding of SWSN. Current research moves from the traditional deficit model of disabilities where SWSN are included, accommodated, and remediated in the GENED classrooms to a neurodiverse model where students are encouraged to maximize their strengths and minimize their weaknesses (Armstrong, 2015; 2017). A neurodiverse model recognizes neurological differences in humans and honors this diversity as we do for race, ethnicities, gender, sexual identities, language, and religion (Armstrong, 2015, 2017; Rentenbach et al., 2017; Silberman, 2015). While the inclusion model accommodates students with Autism, ADHD, and Dyslexia, the neurodiverse model moves beyond supports and designs classrooms and instruction for both neurotypical and neurodiverse students. Instead of remediating deficits, neurodiversity uses strengths to develop an understanding of concepts and skills and helps students minimize the impact of their weaknesses (Armstrong, 2015; 2017; Rentenbach et al., 2017).

The shift may seem like a subtle nuance of language. However, this is a drastic change in the classroom setting and will require educational leaders to assist in this innovative approach to understanding the diversity within our student population. Collaborative networks will be essential in welcoming and honoring neurodiversity. Key collaborators will need to understand and implement neurodiversity educational practices; teachers will use their expertise to model neurodiverse teaching practices. Collaborative networks will need leaders in neurodiversity education to facilitate this shift in understanding and practice. Moreover, teachers will utilize their collaborative networks to understand this innovative approach and work together to create a classroom that honors neurodiversity and helps students build upon their strengths to master academic concepts and skills.

The study builds upon the idea of distributed leadership through the use of collaborative networks. Leaders on campus are not the traditional top-down hierarchy but use a collaborative

network approach to solve campus challenges. The collaborative networks are essential as education shifts into a new equitable practice of neurodiversity, where neurological differences are honored, and instruction is designed with these differences in mind. Teachers will need to utilize the expertise within their collaborative networks and work together to make classrooms inclusive and embrace a neurodiverse student population.

Limitations and Recommendations for further research

Every study has limitations, including this study; then again, these limitations are opportunities for further research. Case studies have inherent limitations due to their narrowed focus; what worked for this school site may not work for others (Hamilton & Corbett-Whittier, 2014b; Yin, 2018). This case study used ego-network methodology that narrowed focus in on the individual, which prevented from capturing a holistic view of the school site's collective network. The case study used semi-structured interviews to collect teacher perspective of collaboration, interview biased with accounted for through use of interviewing best practices. As a practitioner within the school site, there are known positionality and conflicts that arise when researching with colleagues as participants. All of the limitations were acknowledged, and the study was designed to address and limit potential risks.

Case studies can provide a narrowed but thorough understanding of a particular set of individuals. However, this understanding is limited to that focused group and difficult to generalize to a larger population (Hamilton & Corbett-Whittier, 2014a, 2014b; McLeod, 2010; Yin, 2018). The next steps will be to conduct multiple case studies at different campuses to understand the collaborative teacher networks and generalize the information learned during this case study. Additionally, collaborative networks can be studied at the district level to have a broader view of collaboration.

Social network methodologies include either a whole network or ego network approach. Both approaches have value in the understanding of the network, but they each have their

limitations. The study was carefully designed to give the participants the power to identify their collaborative network using the ego network approach. This approach enabled teachers to define their network beyond the researcher's understanding (Borgatti et al., 2018, 2009; Borgatti & Ofem, 2010; Crossley et al., 2018; Crossley et al., 2015; Mamas et al., 2019). Although a powerful tool, the ego network provides a snapshot within the network and limits the understanding of the whole network. An additional study could be conducted with whole network methodologies, providing further understanding of the collaborative networks. Another limitation was interviewer bias. It is important to note that the interview questions and the interviewer's response to interviews can impact the interview data (Frey, 2018). The interview protocol was shared prior to the interview to provide transparency and limit potential for interviewer bias. Interview questions were modeled from other ego-network studies (Crossley et al., 2015, 2018; Mamas, Hartmann Schaelli, et al., 2019) to limit potential for interviewer biases in the questions (Frey, 2018). Lastly, interviewer bias was accounted for in explicit discussion of positionality and transparency of that positionality throughout the study.

Positionality impacts every aspect of the study. Coghlan and Brydon-miller, (2014) define positionality as the researcher's position in the study context. They continue to describe how positionality impacts the study's design, how participants respond to the study invitation, and how knowledge is constructed. Conscious understanding of positionality has been addressed and accounted for, but still, it is noted that it has both benefits and limitations.

The study was conducted at the researcher's site of practice. As a fellow teacher, the researcher had the opportunity to access teachers who typically might be reluctant to participate in the study. Additionally, as a colleague, the participants had built rapport and trusted the researcher. Although there is an advantage of being an insider at the school site, it is vital to recognize the researcher's positionality. Brooks et al., (2014) identify the ethical considerations one must take when an insider within researcher; carefully designing methodologies to limit possible ethical conflicts. The study was designed to minimize those conflicts by ensuring

confidentiality, providing anonymity, and conducting, analyzing, and housing the research off-campus and away from district supervision, thus allowing the participants to freely speak without worry or consequence of their positions. The study methodologies were reviewed by both the internal review board of the university and the school district to ensure the study did not provide any harm to the participants. Participants provided active consent, which identified possible negative outcomes and provided with a solution to limit these protections; participants were also informed of their right to withdraw at any point of the study and remove their information. All safeguards were provided to limit negative outcomes to the participants and provide an ethical study design.

The study utilized safeguards to monitor and accommodate the researcher's positionality during data collection and analysis. Freebody (2011) considers the implicate bias a researcher has when conducting interviews. Coghlan and Brydon-Miller (2014) discuss that a researcher's opinion can influence the analysis and understanding of the findings from a study. Recognizing potential bias and positionality during the research process is the first step in providing safeguards. Additionally, various measures, including careful construction of interview questions and continuous reflection through research memos, reduced the impact of positionality throughout the research process.

Although various supports were put into place to limit the impact of positionality, further research can include conducting similar studies using an outside researcher. By utilizing an outsider, the limitations of positionality are removed, and the findings may be different from those found in this study.

The study was able to identify areas in which further research is necessary. In addition to conducting studies that resolve the limitations of this study, additional research can support the latest understanding of SWSN. Moreover, additional studies can examine the student perspective, providing a comprehensive understanding of teacher collaboration and the impact of collaborative teacher networks on students.

There is a shift in the understanding of SWSN and how to support them appropriately. The concept of neurodiversity is new, and research is catching up on how that impacts education. Additional research on how collaborative networks play a role in the shift towards neurodiverse campuses. Ritchie (2012) recognizes the role social networks have in recruiting and supporting social justice educators. As educational practices shift, it will be imperative to understand how teachers leverage their collaborative network during this shift. It will also be essential to observe, monitor, and understand how collaborative networks are changing to facilitate this shift in educational practice.

Further research is needed to understand the impact of collaborative teacher networks from the student perspective. While the focus of this study has been at the teacher level, education is about the students. Therefore, further studies need to understand the student impact of collaborative teacher networks.

Conclusion

The study was able to provide teachers' perspectives of their collaborative networks and how they collaborate. The information gained from this study continued and furthered our understanding of trust and collaboration, teacher use of collaborative networks to support a diverse student population, and elements to improve collaborative practice. It was able to identify trust as an essential element of collaboration. Proximity, shared students, and content areas supported frequent collaboration. Collaborative partnerships require careful design to ensure maximum collaboration. Lastly, teachers utilized the extensive and diverse expertise within their collaborative networks to support a diverse student population.

Understanding collaborative networks of GENED and SPED teachers and utilizing their perspective of collaboration has significant implications on inclusive practice, policy and research, and theory. Teachers provided best practices that directly impact collaboration and provided practical application of these concepts and understanding to support collaboration further. Moreover, the findings have significant potential to improve educational leadership

through the distributive leadership model and enhance inclusive education and social justice by shifting towards a more equitable practice that honors neurodiversity. The study lends itself to aid in our understanding of collaboration and provides an opportunity for further research.

Teacher collaboration is a vital tool toward the inclusion and success of a neurodiverse student population.

References

- Adler, P. S., & Kwon, S. (2002). Social Capital : Prospects for a New Concept. *The Academy of Management Review*, 27(1), 17–40. <https://www.jstor.org/stable/4134367> Accessed:
- Angelides, P., Stylianou, T., & Leigh, J. (2007). The efficacy of collaborative networks in preparing teachers. In *European Journal of Teacher Education* (Vol. 30, Issue 2, pp. 135–149). <https://doi.org/10.1080/02619760701273953>
- Archibald, L. M. (2017). SLP-educator classroom collaboration: A review to inform reason-based practice. *Autism & Developmental Language Impairments*, 2, 239694151668036. <https://doi.org/10.1177/2396941516680369>
- Armstrong, T. (2015). Myth of the Normal Brain: Embracing Neurodiversity. *AMA Journal of Ethics*, 17(4), 348–352.
- Armstrong, T. (2017). Neurodiversity: The Future of Special Education? *Educational Leadership*, 74(7), 10–16. <https://www.ascd.org/el/articles/neurodiversity-the-future-of-special-education>
- Assembly Bill No. 114, (2011).
- Atteberry, A., & Bryk, A. (2010). Centrality, Connection, and Commitment: The Role of Social Networks in a School-Based Literacy Initiative. In A. J. Daly (Ed.), *Social Network Theory and Educational Change* (pp. 51–75). Harvard Education Press.
- Avid.org. (2020). AVID. avid.org
- Bacharach, N. L., Heck, T. W., & Dahlberg, K. R. (2008). What Makes Co-Teaching Work? Identifying The Essential Elements. *College Teaching Methods & Styles Journal (CTMS)*, 4(3), 43–48. <https://doi.org/10.19030/ctms.v4i3.5534>
- Baker, E. T., & Wang, M. C. (1994). The effects of inclusion on learning. In *Educational Leadership* (Vol. 52, Issue 4, pp. 33–35). Department of Supervision and Curriculum Development, NEA,. <http://eric.ed.gov/?id=EJ496165>
- Barrocas, L., & Cramer, E. (2014). Placement and Achievement of Urban Hispanic Middle School Students with Specific Learning Disabilities. *Journal of Urban Learning, Teaching, and Research*, 10, 3–13.
- Barton, E., & Smith, B. (2015). *The Preschool Inclusion Toolbox: How to Build and Lead a High Quality Program*. Brookes Publishing.
- Beachum, F., & Dentith, A. M. (2004). Teacher leaders creating cultures of school renewal and transformation. *Educational Forum*, 68(3), 276–286. <https://doi.org/10.1080/00131720408984639>
- Bennett, N., Wise, C., Woods, P., & Harvey, J. (2003). *Distributed leadership*. <http://oro.open.ac.uk/8534/1/bennett-distributed-leadership-full.pdf>
- Bianco, M. (2005). The effects of disability labels on special education and general education teachers' referrals for gifted programs. *Learning Disability Quarterly*, 28(4), 285–293. <https://doi.org/10.2307/4126967>
- Billingsley, B., & Bettini, E. (2019). Special Education Teacher Attrition and Retention: A Review of the Literature. *Review of Educational Research*, 89(5), 697–744.

<https://doi.org/10.3102/0034654319862495>

- Blackmore, C. (2008). *Social Learning Systems and Communities of Practice* (Vol. 39, Issue 5). Springer London.
- Boe, E. E. (2006). Long-Term Trends in the National Demand, Supply, and Shortage of Special Education Teachers. *The Journal of Special Education*, 40(3), 138–150.
<http://web.b.ebscohost.com.eres.library.manoa.hawaii.edu/ehost/detail/detail?vid=0&sid=32a9e6e3-0620-43f5-973a-02e1de156a47%40sessionmgr104&bdata=JnNpdGU9ZWVhc3QtbGl2ZQ%3D%3D#AN=22799606&db=pbh>
- Boe, E. E., Bobbitt, S., Cook, L., Whitener, S., & Weber, A. (1997). Why Didst Thou Go? Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers from a National Perspective. *The Journal of Special Education*, 30(4), 390–411.
- Borgatti, S. (2006). *E-Network Software for Ego-Network Analysis*. Analytic Technologies.
- Borgatti, S., Everett, M. G., & Johnson, J. (2018). *Analyzing Social Networks* (2nd ed.). SAGE Publications Ltd.
- Borgatti, S., Mehra, A., Brass, D., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, 323(5916), 892–895. <https://doi.org/10.1126/science.1165821>
- Borgatti, S., & Ofem, B. (2010). Social Network Theory and Analysis. In A. J. Daly (Ed.), *Social Network Theory and Educational Change* (pp. 17–29). Harvard Education Press.
- Boyer, L., & Gillespie, P. (2000). Keeping The Committed: The Importance of Induction and Support Educators for New Special Educators. *Teaching Exceptional Children*, 33(6), 10–15.
- Brannan, D., & Bleistein, T. (2012). Novice ESOL Teachers' Perceptions of Social Support Networks. *TESOL Quarterly*, 46(3), 519–541. <https://doi.org/10.1002/tesq.40>
- Bray, W. (2005). Supporting Diverse Learners: Teacher Collaboration in an Inclusive Classroom. *Teaching Children Mathematics*, 11(6), 75–93.
- Brooks, R., te Riele, K., & Maguire, M. (2014). *Ethics and Education Research*. SAGE Publications Ltd. <https://doi.org/10.4135/9781473909762>
- Brown, N. B., Howerter, C. S., & Morgan, J. J. (2013). Tools and Strategies for Making Co-teaching Work. *Intervention in School and Clinic*, 49(2), 84–91.
<https://doi.org/10.1177/1053451213493174>
- California Charter Schools Association. (2016). *Meeting the Needs of Every Student Through Inclusion: A Qualitative Study of Ten California Charter Schools*.
- California Department of Education. (2020). *California Department of Education*. Ed-Data.org
- Carolan, B. (2014). *Social Network Analysis and Education: Theory, Methods & Applications*. SAGE Publications, Inc. <https://doi.org/10.4135/9781452270104>
- Cho, H., Lee, J. S., Stefanone, M., & Gay, G. (2005). Development of Computer-Supported Collaborative Social Networks in a Distributed Learning Community. *Behaviour and Information Technology*, 24(6), 435–447. <https://doi.org/10.1080/01449290500044049>
- Coburn, C. E., Choi, L., & Mata, W. S. (2010). “I Would Go To Her Because Her Mind is Math”:

- Network Formation in the Context of a District-Based Mathematics Reform. In A. J. Daly (Ed.), *Social Network Theory and Educational Change*2 (pp. 33–50). Harvard Education Press.
- Coburn, C. E., Mata, W. S., & Choi, L. (2013). The Embeddedness of Teachers' Social Networks: Evidence from a Study of Mathematics Sociology of Education Evidence from a Study of Mathematics Reform. *Source: Sociology of Education*, 86(4), 311–342. <https://doi.org/10.1177/0038040713501>
- Coburn, C. E., & Russell, J. L. (2008). District Policy and Teachers' Social Networks. In *Educational Evaluation and Policy Analysis* (Vol. 30, Issue 3). <https://doi.org/10.3102/0162373708321829>
- Coburn, C. E., Russell, J. L., Kaufman, J. H., & Stein, M. K. (2012). Supporting Sustainability: Teachers' Advice Networks and Ambitious Instructional Reform. *American Journal of Education*, 119(1), 137–182. <https://doi.org/10.1086/667699>
- Coghlan, D., & Brydon-miller, M. (2014). Positionality. In *SAGE Encyclopedia of Action Research* (p. 628).
- Collins, L. W., Sweigart, C. A., Landrum, T. J., & Cook, B. G. (2017). Navigating Common Challenges and Pitfalls in the First Years of Special Education. *TEACHING Exceptional Children*, 49(4), 213–222. <https://doi.org/10.1177/0040059916685057>
- Cook, L., & Friend, M. (2017). *Interactions : collaboration skills for school professionals*.
- Cortiella, C., & Horowitz, S. (2014). *The State of Learning Disabilities: Facts, Trends and Emerging Issues*.
- Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. In *Educational Research* (Vol. 4). <https://doi.org/10.1017/CBO9781107415324.004>
- Creswell, J. W., & Plano Clark, V. (2017). *Designing and Conducting Mixed Methods Research* (3rd ed.). Sage Publications.
- Crossley, N., Bellotti, E., Edwards, G., Everett, G., Koskinen, J., & Tranmer, M. (2015). *Social network analysis for ego-nets: Social network analysis for actor-centred networks*. Sage.
- Crossley, N., Bellotti, E., Edwards, G., Everett, M. G., & Koskinen, J. (2018). *Social Network Analysis for Ego-Nets*. SAGE Publications Ltd. <https://doi.org/https://dx.doi.org/10.4135/9781473911871>
- DaFonte, A., & Barton-Arwood, S. . (2017). Collaboration of General and Special Education Teachers: Perspectives and Strategies. *Intervention in School and Clinic*, 53(2), 99–106. <https://doi.org/10.1177/1053451217693370>
- Daly, A. J. (2010). Mapping the Terrain. In A. J. Daly (Ed.), *Social Network Theory and Educational Change* (pp. 1–16). Harvard Education Press.
- Daly, A. J., Chrispeels, J., & Einstein, A. (2005). From Problem to Possibility: Leadership for Implementing and Deepening the Processes of Effective Schools. *Journal for Effective Schools*, 4(1), 7–25. [http://evocativecoaching.com/celebrate_schools/Problem to Possibility.pdf](http://evocativecoaching.com/celebrate_schools/Problem%20to%20Possibility.pdf)
- Daly, A. J., & Finnigan, K. S. (2010). A bridge between worlds: Understanding network structure

- to understand change strategy. *Journal of Educational Change*, 11(2), 111–138.
<https://doi.org/10.1007/s10833-009-9102-5>
- Daly, A. J., Moolenaar, N. M., Bolivar, J. M., & Burke, P. (2010). Relationships in reform: The role of teachers' social networks. *Journal of Educational Administration*, 48(3), 359–391.
<https://doi.org/10.1108/09578231011041062>
- Danielson, M. L., Bitsko, R. H., Ghandour, R. M., Holbrook, J. R., Kogan, M. D., & Blumberg, S. J. (2018). Prevalence of Parent-Reported ADHD Diagnosis and Associated Treatment Among U.S. Children and Adolescents, 2016. *Journal of Clinical Child & Adolescent Psychology*, 47(2), 199–212. <https://doi.org/10.1080/15374416.2017.1417860>
- Datnow, A. (2012). Teacher Agency in Educational Reform: Lessons from Social Networks Research. *American Journal of Education*, 119(1), 193–201.
<https://doi.org/10.1086/667708>
- DePaula, R. (2003). Active Learning Networks: Designing for Computer Supported Social Networks in Special Education Environments. *ECSCW'03 Workshop on Social Networks, Moving From Analysis to Design: Social Networks in the CSCW Context*.
<http://www.ischool.washington.edu/mcdonald/ecscw03/papers/depaula-ecscw03-ws.pdf>
- Dever, R., & Lash, M. J. (2013). Using Common Planning Time to Foster Professional Learning. *Middle School Journal*, 45(1), 12–17. <https://doi.org/10.1080/00940771.2013.11461877>
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87(4), 611–628.
<https://doi.org/10.1037//0021-9010.87.4.611>
- Dufour, R. (2004). What Is a “ Professional Learning Community ”? *Educational Leader*, 61(8), 6–11.
- Dufour, R. (2011). Our Best Hope for High Levels of Learning: A Bandwagon, an Idea Worth Considering for or Our Best Hope for Higher Levels of Learning? *Middle School Journal*, 39, 4–8. <https://doi.org/10.1080/00940771.2007.11461607>
- Education, G. (1996). Special Settings. *Integration The Vlsi Journal*, 3–19.
- Falvey, M., & Givener, C. (2005). What is an inclusive school? In *Creating an inclusive school*. ASCD.
- Farley-Ripple, E. N., & Buttram, J. L. (2013). Harnessing the power of teacher networks. *Phi Delta Kappan*, 95(3), 12–15. <https://doi.org/10.1177/003172171309500304>
- Ferri, B., Bacon, J., & Rood, C. (2016). Promoting access through segregation: The emergence of the “prioritized curriculum” class. *Teachers College Record*, 118(14), 1–22.
- Fish, W., & Stephenes, T. (2010). Special Education: A Career of Choice. *Remedial And Special Education*, 31(5). <https://doi.org/10.1016/j.amjopharm.2010.02.004>
- Fleming, L., & Juda, A. (2004). A Network of Invention. *Harvard Business Review*, 82(4), 22.
<https://doi.org/Article>
- Florian, L. (2019). On the necessary co-existence of special and inclusive education. *International Journal of Inclusive Education*, 23(7–8), 691–704.
<https://doi.org/10.1080/13603116.2019.1622801>

- Forlin, C. (2010). *Teacher Education for Inclusion: Changing the paradigms and innovative approaches*. Routledge.
- Freebody, P. (2011). Conducting and Analysing Interviews. In *Qualitative Research in Education*. <https://doi.org/10.4135/9781849209670.n7>
- Frey, B. B. (2018). *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. <https://doi.org/10.4135/9781506326139> NV - 4
- Friziellie, H., Schmidt, J., & Spiller, J. (2016). *Yes We Can! General and Special Educators Collaborating in a Professional Learning Community*. Solution Tree Press.
- Froehlich, D. E., Rehm, M., & Rienties, B. C. (2020). *Mixed Methods Social Network Analysis: Theories and Methodologies in Learning and Education*. B/W Illustrations.
- Fuchs, D., & Fuchs, L. (1994). Inclusive Schools Movement and the Radicalization of Special Education Reform. *Exceptional Children*, 60(4), 294–309. <https://doi.org/10.1177/001440299406000402>
- Fuchs, L., Fuchs, D., Compton, D., Wehby, J., Schumacher, R., Gersten, R., & Jordan, N. (2015). Inclusion Versus Specialized Intervention for Very-Low-Performing Students: What Does Access Mean in an Era of Academic Challenge? *Exceptional Children*, 81(2), 134–157. <https://doi.org/10.1177/0014402914551743>
- Gee, K., Gonzalez, M., & Cooper, C. (2020). Outcomes of Inclusive Versus Separate Placements: A Matched Pairs Comparison Study. *Research and Practice for Persons with Severe Disabilities*, 45(4), 223–240. <https://doi.org/10.1177/1540796920943469>
- Gilger, J. W., & Hynd, G. W. (2008). Neurodevelopmental variation as a framework for thinking about the twice exceptional. *Roeper Review*, 30(4), 214–228. <https://doi.org/10.1080/02783190802363893>
- Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2012). *Exceptional Learners: An Introduction to Special Education*. Pearson Education. <https://books.google.com/books?id=klqjcQAACAAJ>
- Hamilton, L., & Corbett-Whittier, C. (2014a). Defining Case Study in Education Research. In *Using Case Study in Education Research* (pp. 3–21). <https://doi.org/10.4135/9781473913851.n1>
- Hamilton, L., & Corbett-Whittier, C. (2014b). Using Case Study in Education Research. *Using Case Study in Education Research*. <https://doi.org/10.4135/9781473913851>
- Hargreaves, A. (2019). Teacher collaboration: 30 years of research on its nature, forms, limitations and effects. *Teachers and Teaching: Theory and Practice*, 25(5), 603–621. <https://doi.org/10.1080/13540602.2019.1639499>
- Hopkins, M., Bjorklund, P., & Spillane, J. P. (2019). The social side of teacher turnover: Closeness and trust among general and special education teachers in the United States. *International Journal of Educational Research*, 98(October), 292–302. <https://doi.org/10.1016/j.ijer.2019.08.020>
- Hunter, L. J., & Hall, C. M. (2018). A Survey of K-12 Teachers' Utilization of Social Networks as a Professional Resource. *Education and Information Technologies*, 23(2), 633–658. <https://doi.org/10.1007/s10639-017-9627-9>

- Hurley, R. F. (2009). The Decision to Trust - HBR . org The Decision to Trust. *Fortune*, September, 1–6. <https://doi.org/Article>
- Iacono, T., Landry, O., Garcia-Melgar, A., Spong, J., Hyett, N., Bagley, K., & McKinstry, C. (2021). A systematized review of co-teaching efficacy in enhancing inclusive education for students with disability. *International Journal of Inclusive Education*, 0(0), 1–15. <https://doi.org/10.1080/13603116.2021.1900423>
- Jones, B. A. (2012). Fostering Collaboration in Inclusive Settings: The Special Education Students at a Glance Approach. *Intervention in School and Clinic*, 47(5), 297–306. <https://doi.org/10.1177/1053451211430113>
- Kauffman, J., Hallahan, D., Pullen, P., & Badar, J. (2018). *Special Education What it is and why we need it*. Routledge. <https://doi.org/10.1017/CBO9781107415324.004>
- Keefe, E. B., & Moore, V. (2004). The Challenge of Co-Teaching in Inclusive Classrooms at the High School Level : What the Teachers Told Us. *American Secondary Education*, 32(3), 77–88.
- Kennedy, A., Deuel, A., Nelson, T. H., & Slavit, D. (2011). Requiring Collaboration or Distributing Leadership? *Phi Delta Kappan*, 92(8), 20–24. <https://doi.org/10.1177/003172171109200805>
- Kim, J., Youngs, P., & Frank, K. (2017). Burnout contagion: Is it due to early career teachers' social networks or organizational exposure? *Teaching and Teacher Education*, 66, 250–260. <https://doi.org/10.1016/j.tate.2017.04.017>
- King-Sears, M. E. (2008). Facts and fallacies: Differentiation and the general education curriculum for students with special educational needs. *Support for Learning*, 23(2), 55–62. <https://doi.org/10.1111/j.1467-9604.2008.00371.x>
- Kirk, S. A., Gallagher, J. J., Coleman, M. R., & Anastasiow, N. J. (2014). *Educating exceptional children*.
- Knapp, M. S., Copland, M. a, & Talbert, J. E. (2003). Leading for Learning: Reflective Tools for School and District Leaders. *Center for the Study of Teaching and Policy*.
- Kurth, J. A., Born, K., & Love, H. (2016). Ecobehavioral Characteristics of Self-Contained High School Classrooms for Students With Severe Cognitive Disability. *Research and Practice for Persons with Severe Disabilities*, 41(4), 227–243. <https://doi.org/10.1177/1540796916661492>
- Lawrence-Brown, D., & Muschawek, K. (2004). Getting Started With Collaborative Teamwork for Inclusion. *Catholic Education: A Journal of Inquiry and Practice*, 8(2), 146–161. <https://doi.org/10.4135/9781446211922.n45>
- Leane, B. (2014). How I learned the value of a true PLC. *The Phi Delta Kappan*, 95(6), 44–46. <https://www.jstor.org/stable/24374512>
- Lee, M. (2014). Bringing the Best of Two Worlds Together for Social Capital Research in Education: Social Network Analysis and Symbolic Interactionism. *Educational Researcher*, 43(9), 454–464. <https://doi.org/10.3102/0013189X14557889>
- Lieberman, A. (2000). Networks as learning communities shaping the future of teacher development. *Journal of Teacher Education*, 51(3), 221–227. <https://doi.org/10.1177/0022487100051003010>

- Lieberman, A., & McLaughlin, M. W. (1992). Networks for Educational Change: Powerful and Problematic. *Phi Delta Kappan*, 73(9), 673. <http://search.proquest.com/docview/218465980>
- Lindner, K.-T., & Schwab, S. (2020). Differentiation and individualisation in inclusive education: a systematic review and narrative synthesis. *International Journal of Inclusive Education*, 0(0), 1–21. <https://doi.org/10.1080/13603116.2020.1813450>
- Liu, W., Sidhu, A., Beacom, A. M., & Valente, T. W. (2017). Social Network Theory. *The International Encyclopedia of Media Effects*, September, 1–12. <https://doi.org/10.1002/9781118783764.wbieme0092>
- Maenner, M. J., Shaw, K. A., Bakian, A. V., Bilder, D. A., Durkin, M. S., Esler, A., Furnier, S. M., Hallas, L., Hall-Lande, J., Hudson, A., Hughes, M. M., Patrick, M., Pierce, K., Poynter, J. N., Salinas, A., Shenouda, J., Vehorn, A., Warren, Z., Constantino, J. N., ... Cogswell, M. E. (2021). Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2018. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C. : 2002)*, 70(11), 1–16. <https://doi.org/10.15585/mmwr.ss7011a1>
- Mamas, C. (2019). *Learn to conduct descriptive whole social network analysis within an educational setting in ucinet with data from the inclusive education project (2015-2018)*. Sage Publications. <https://doi.org/10.4135/9781526483874>
- Mamas, C., Daly, A. J., Struyve, C., Kaimi, I., & Michail, G. (2019). Learning, friendship and social contexts: Introducing a social network analysis toolkit for socially responsive classrooms. *International Journal of Educational Management*, 33(6), 1255–1270. <https://doi.org/10.1108/IJEM-03-2018-0103>
- Mamas, C., Hartmann Schaelli, G., & Daly, A. (2019). Ego-Net Analysis in Educational Contexts. In *Ego-Net Analysis in Educational Contexts*. <https://doi.org/10.4135/9781526469526>
- McCulloh, I., Armstrong, H., & Johnson, A. (2013). *Social Network Analysis with Applications*. Wiley.
- McLeod, J. (2010). Theory-Building Case Studies. In *Case Study Research: In Counselling and Psychotherapy* (pp. 157–189). Sage Publications.
- Mills, A., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of Case Study Research*. <https://doi.org/10.4135/9781412957397> NV - 0
- Moolenaar, N. M. (2012). A Social Network Perspective on Teacher Collaboration in Schools: Theory, Methodology, and Applications. *American Journal of Education*, 119(1), 7–39. <https://doi.org/10.1086/667715>
- Moolenaar, N. M., & Daly, A. J. (2012). Social networks in education: Exploring the social side of the reform equation. *American Journal of Education*, 119(1), 1–6. <https://doi.org/10.1086/667762>
- Moolenaar, N. M. (2012). A Social Network Perspective on Teacher Collaboration in Schools : Theory , Methodology , and Applications. *American Jour*, 119(November), 7–39.
- Moolenaar, N. M., & Daly, A. J. (2014). 1. Editorial Introduction Social Networks in Education : Exploring the Social Side of the Reform Equation. 119(1), 1–6.
- Moolenaar, N. M., Daly, A. J., & Slegers, P. J. C. (2020). Occupying the Principal Position:

- Examining Relationships Between Transformational Leadership, Social Network Position, and Schools' Innovative Climate. *Educational Administration Quarterly*, 45(5), 623–670. <https://doi.org/DOI: 10.1177/0013161X10378689>
- Murphy, D. M. (1996). Implications of Inclusion for General and Special Education. *The Elementary School Journal*, 96(5), 469–493.
- National Center for Education Statistics. (2019). *Children and Youth With Disabilities*. U.S. Department of Education. Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator_cgg.asp
- Nevin, A. I., Thousand, J. S., & Villa, R. A. (2009). Collaborative teaching for teacher educators—What does the research say? *Teaching and Teacher Education*, 25(4), 569–574. <https://doi.org/10.1016/J.TATE.2009.02.009>
- Niesz, T. (2012). Why Teacher Networks (Can) Work. *The Phi Delta Kappan*, 88(8), 605–610.
- Pancsofar, N., & Petroff, J. G. (2016). Teachers' experiences with co-teaching as a model for inclusive education. *International Journal of Inclusive Education*, 20(10), 1043–1053. <https://doi.org/10.1080/13603116.2016.1145264>
- Poekert, P. E. (2012). Examining the Impact of Collaborative Professional Development on Teacher Practices. *Teacher Education Quarterly*, 39(4), 97–118. <https://doi.org/10.1016/j.aca.2004.01.013>
- Poon-McBrayer, K. F., & Wong, P. man. (2013). Inclusive education services for children and youth with disabilities: Values, roles and challenges of school leaders. *Children and Youth Services Review*, 35(9), 1520–1525. <https://doi.org/10.1016/j.childyouth.2013.06.009>
- Rea, P. J., Mclaughlin, V. L., & Walther-Thomas, C. (2002). Outcomes for students with learning disabilities in inclusive and pullout programs. *Exceptional Children*, 68(2), 203–222. <https://doi.org/10.1177/001440290206800204>
- Rentenbach, B., Prisolovsky, L., & Gabriel, R. (2017). Valuing Differences: Neurodiversity in the Classroom. *Phi Delta Kappan*, 98(8). <https://doi.org/https://doi.org/10.1177/0031721717708297>
- Ritchie, S. (2012). Incubating and sustaining: How teacher networks enable and support social justice education. *Journal of Teacher Education*, 63(2), 120–131. <https://doi.org/10.1177/0022487111428327>
- Robinson, L., & Riddle Buly, M. (2007). Educators Breaking the Language Barrier: Promoting Collaboration Between General and Special Educators. *Teacher Education Quarterly*, 34(3), 83–94.
- Rossmann, G. B., & Rallis, S. F. (2017). *An Introduction to Qualitative Research: Learning in the Field* (Fourth). SAGE Publications, Inc. <https://doi.org/10.4135/9781071802694>
- Scruggs, T. E., Mastropieri, M. A., & McDuffie, K. A. (2007). Co-teaching in inclusive classrooms: A metasynthesis of qualitative research. *Exceptional Children*, 73(4), 392–416. <https://doi.org/10.1177/001440290707300401>
- Shea, D. J. O., Williams, A. L., & Sattler, R. O. (1999). Collaboration Across Special Education and General Education: Preservice Teacher's Views. *Journal of Teacher Education*, 50(2), 147–157.

- Silberman, S. (2015). *Neurotribes*. Penguin Publishing Group.
- Singer, J. (2017). *Neurodiversity: The Birth of an Idea*.
https://books.google.com/books?id=Ox_7uQECAAJ
- Snyder, T., Brey, C., & Dillow, S. (2019). *Digest of Education Statistics 2017 (NCES 2018-070)*.
- Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. (2014). Why Intensive Interventions Matter: Longitudinal Studies of Adolescents With Reading Disabilities and Poor Reading Comprehension. *Learning Disability Quarterly*, 23(1), 1–7.
<https://doi.org/10.1177/0731948714528806>.Why
- Sovgir, N. (2017). *Inclusion Strategies for General Education Teachers: A Trifold Reference*. California State University San Marcos.
- Struyve, C., Daly, A., Vandecandelaere, M., Meredith, C., Hannes, K., & De Fraine, B. (2016). More than a mentor. *Journal of Professional Capital and Community*, 1(3), 198–218.
<https://doi.org/10.1108/jpcc-01-2016-0002>
- Suckow, M., & Lau, P. P. (2017). *Teacher Supply in California A Report to the Legislature*.
<https://www.ctc.ca.gov/>
- Sutton, P. S., & Shouse, A. W. (2016). Building a Culture of Collaboration in Schools. *The Phi Delta Kappan*, 97(7), 69–73.
- Sweetland, S. (1996). Human Capital Theory : Foundations of a Field of Inquiry. *Review of Educational Research*, 66(3), 341–359.
- Teague, G. M., & Anfara, V. A. (2012). What Research Says: Professional Learning Communities Create Sustainable Change Through Collaboration. *Middle School Journal*, 44(2), 58–64.
- Thousand, J., Villa, R., & Nevin, A. (2015). *Differentiated instruction: Planning for Universal Design and teaching for college and Career Readiness* (2nd ed.). Corwin Press.
- Thyer, G. L. (2003). *Dare to be different: transformational leadership may hold the key to reduc...: EBSCOhost*. 73–79.
<http://web.a.ebscohost.com.ezproxy.massey.ac.nz/ehost/pdfviewer/pdfviewer?vid=7&sid=b06c7a42-942c-4764-869c-45a33c1b571a@sessionmgr4003&hid=4112>
- Tierney, W. G. (2006). Framing Social Capital. In P. Lang (Ed.), *Counterpoints* (Vol. 308, Issue 2006, pp. 21–40). <http://edr.sagepub.com/cgi/doi/10.3102/0013189X14557889>
- Tschannen-Moran, M. (2001). Collaboration and the need for trust. *Journal of Educational Administration*, 39(4), 308–331. <https://doi.org/10.1108/EUM0000000005493>
- Tuomainen, J., Palonen, T., & Hakkarainen, K. (2012). Special Educators' Social Networks: A Multiple Case Study in a Finnish Part-time Special Education Context. *Scandinavian Journal of Educational Research*, 56(1), 21–38.
<https://doi.org/10.1080/00313831.2011.567394>
- US Department of Education. (2018). 40th annual report to congress on the implementation of the Individuals with Disabilities Education Act, 2018. *Individuals with Disabilities Education Act*, 1–291. https://www2.ed.gov/about/reports/annual/osep/2018/parts-b-c/40th-arc-for-idea.pdf%0Ahttp://www.pluk.org/Pubs/Fed/IDEAreport_2002_4.8M.pdf
- van Hover, S., Hicks, D., & Sayeski, K. (2012). A case study of co-teaching in an inclusive

- secondary high-stakes world history i classroom. *Theory and Research in Social Education*, 40(3), 260–291. <https://doi.org/10.1080/00933104.2012.705162>
- Van Waes, S., & Van den Bossche, P. (2020). Around and Around. In D. Froehlich, M. Rehm, & B. Rienties (Eds.), *Mixed Methods Social Network Analysis* (pp. 159–17413). Routledge.
- Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2015). Teacher collaboration: A systematic review. *Educational Research Review*, 15, 17–40. <https://doi.org/10.1016/j.edurev.2015.04.002>
- Vaughn, S., & Swanson, E. A. (2015). Special Education Research Advances Knowledge in Education. *Exceptional Children*, 82(1), 11–24. <https://doi.org/10.1177/0014402915598781>
- Villa, R., & Thousand, J. (2005). *Creating an Inclusive School* (2nd ed.). ASCD.
- Villa, R., & Thousand, J. (2017). *Leading an inclusive school: Access and success for ALL student*. ASCD.
- Villa, R., Thousand, J., & Nevin, A. I. (2013). *A Guide to Co-teaching*.
- von Mering, M. (2017). *Using Social Network Analysis to Investigate the Diffusion of Special Education Knowledge within a School District* [University of Massachusetts Amherst]. https://scholarworks.umass.edu/dissertations_2/983/
- Wade, S. (2000). *Inclusive Education: A Casebook and Readings for Prospective and Practicing Teachers*. Routledge.
- Waitoller, F. R., & Artiles, A. J. (2013). A Decade of Professional Development Research for Inclusive Education: A Critical Review and Notes for a Research Program. *Review of Educational Research*, 83(3), 319–356. <https://doi.org/10.3102/0034654313483905>
- Waitoller, Federico R., & Artiles, A. J. (2013). A Decade of Professional Development Research for Inclusive Education: A Critical Review and Notes for a Research Program. In *Review of Educational Research* (Vol. 83, Issue 3). <https://doi.org/10.3102/0034654313483905>
- Walker, N. (2021). *Neuroqueer Heresies: Notes on the Neurodiversity Paradigm, Autistic Empowerment, and Postnormal Possibilities*. Autonomous Press. <https://books.google.com/books?id=xG6izgEACAAJ>
- Wenger, E. (1999). *Communities of Practice: Learning, Meaning and Identity*. Cambridge University Press.
- Westling, D. L., Herzog, M. J., Cooper-Duffy, K., Prohn, K., & Ray, M. (2006). The Teacher Support Program: A Proposed Resource for the Special Education Profession and Initial Validation. *Remedial And Special Education*, 27(3), 136–147.
- Wilson, G. L. (2016). *Co-planning for co-teaching: Time-saving routines that work in inclusive classrooms (ASCD Arias)*. ASCD.
- Wong, A. (2016). *How the Formal and Informal Social Networks of Special Education Teachers Shape Their Practice*. 178.
- Wong, M., & Morton, M. (2017). Parents' Lived Experiences of Teachers' Construction of Giftedness. In *Inclusive Education*. https://doi.org/10.1007/978-94-6300-866-2_14
- Yin, R. (2018). *Case study research and applications*. Sage.

Appendix A Consent Form

University of California San Diego
California State University San Marcos
Consent to Act as a Research Subject
Collaborative Networks of General and Special Education Teachers at an
Inclusive School

Who is conducting the study, why you have been asked to participate, how you were selected, and what is the approximate number of participants in the study?

Kelly Velazquez, a graduate student from the Educational Leadership Joint Doctoral Program at the University of California San Diego and California State University San Marcos, is conducting a research study to find out more about teacher collaboration between general education and special education teachers to support special education students in general education settings. You have been asked to participate in this study because you are a teacher at Reeve middle school. There will be approximately 25 participants in this study.

Why is this study being done?

The purpose of this study is to examine how general education and special education teachers collaborate to support inclusion. The study aims to interview teachers who will draw their collaborative networks. The visual representation will be analyzed using social network approaches to learn more about the flow of collaboration through reciprocity, the amount of collaboration through network density, and the number of ties. In addition to creating a visual map of teachers' collaborative network, the study will gather teacher perspective of collaboration. Semi-structured interviews of teachers will explain how these collaborative networks have developed, describe the collaborative network and how these collaborative networks are used to support special education students in general education classes. The combined set of data will provide an elaborate description of teacher collaboration between general and special education teachers to include special education students in general education settings.

What will happen to you in this study and which procedures are standard of care and which are experimental?

Suppose you agree to be in this study. In that case, you will be invited to participate in a semi-structured interview. You will draw your collaborative networks and then discuss how you collaborate with teachers to support special education students in general education settings.

How much time will each study procedure take, what is your total time commitment, and how long will the study last?

Interview: Approximately 1 hour
Study to take place April-June 2020

What risks are associated with this study?

Participation in this study may involve some added risks or discomforts. These include the following:

1. A potential for the loss of confidentiality. To minimize the risk of loss of confidentiality, the visual map of the collaborative network will be redacted to remove identifying information and will be replaced with pseudonyms. Audio files will be transcribed immediately after the interview. Once transcribed, the transcription will be sent to you to check for accuracy and authenticity. Once approved, the original audio file will be destroyed. The transcription of the interview will be redacted to remove identifying information and will be replaced with pseudonyms. Once identifying information has been removed the original transcription record will be destroyed. The only documentation linking the subject to the research is the consent form. Consent records will be kept confidential to the extent allowed by law. The UCSD Institutional Review Board may review research records.

2. There is a minor risk that district employees will read the study and identify the participants for evaluative purposes. The PI will use pseudonyms for subjects in any resulting reports or publications to further minimize the risk of participant loss of anonymity. This is likely to prevent the loss of anonymity. Participation in this study is not connected to the employment status at Farb middle or at the district, and participants' identity will not be disclosed at any time.

3. There is a minor risk that those who participate in the interview may feel bored, stress or discomfort in answering questions related to how they collaborate with other teachers. During the interview, teachers have the option of not answering any question. They also have the option to discontinue at any time. This should minimize any stress or discomfort participants may have responding.

Because this is a research study, there may also be some unknown risks that are currently unforeseeable. You will be informed of any significant new findings.

What are the alternatives to participating in this study?

The alternatives to participation in this study are not to participate.

What benefits can be reasonably expected?

There may not be any direct benefit to you from participating this study. The investigator, however, may learn more about teacher collaboration, and society may benefit from this knowledge.

Can you choose to not participate or withdraw from the study without penalty or loss of benefits?

Participation in research is entirely voluntary. You may refuse to participate or withdraw or refuse to answer specific questions in an interview at any time without penalty or loss of benefits to which you are entitled. If you decide that you no longer wish to continue in this study, you will be required to notify the investigator.

You will be told if any important new information is found during the course of this study that may affect your wanting to continue.

Can you be withdrawn from the study without your consent?

The PI may remove you from the study without your consent if the PI feels it is in your best interest or the best interest of the study.

Will you be compensated for participating in this study?

No compensation will be provided for participating in this study.

Are there any costs associated with participating in this study?

There will be no cost to you for participating in this study.

What if you are injured as a direct result of being in this study?

If you are injured as a direct result of participation in this research, the University of California will provide any medical care you need to treat those injuries. The University will not provide any other form of compensation to you if you are injured. You may call the Human Research Protections Program Office at 858-246-HRPP (858-246-4777) for more information about this, to inquire about your rights as a research subject or to report research-related problems.

Who can you call if you have questions?

Kelly Velazquez has explained this study to you and answered your questions. If you have other questions or research-related problems, you may reach Kelly Velazquez at (619) 248-7159. You may call the Human Research Protections Program Office at 858-246-HRPP (858-246-4777) to inquire about your rights as a research subject or to report research-related problems.

Your Signature and Consent

You have received a copy of this consent document.

You agree to participate.

Subject's signature

Date

Appendix B Audio Record Consent Form

UNIVERSITY OF CALIFORNIA, SAN DIEGO
CALIFORNIA STATE UNIVERSITY SAN MARCOS
AUDIO RECORDING RELEASE CONSENT FORM

As part of this project, an audio recording will be made of you during your participation in this research project. Please indicate below the uses of these audio recordings to which you are willing to consent. This is completely voluntary and up to you. You may request to stop the recording at any time or to erase any portion of your recording.

1. The audio recording can be studied by the research team for use in the research project. _____
Initials

Audio recordings will be used to provide a transcription of the interview. Transcription of interview will be sent to you by email to be reviewed to check for accuracy and authenticity. Once you have verified the transcript to be correct, the audio recording will be erased.

You have the right to request that the recording be stopped or erased in full or in part at any time.

You have read the above description and give your consent for the use of audio recording as indicated above.

Signature

Date

Witness

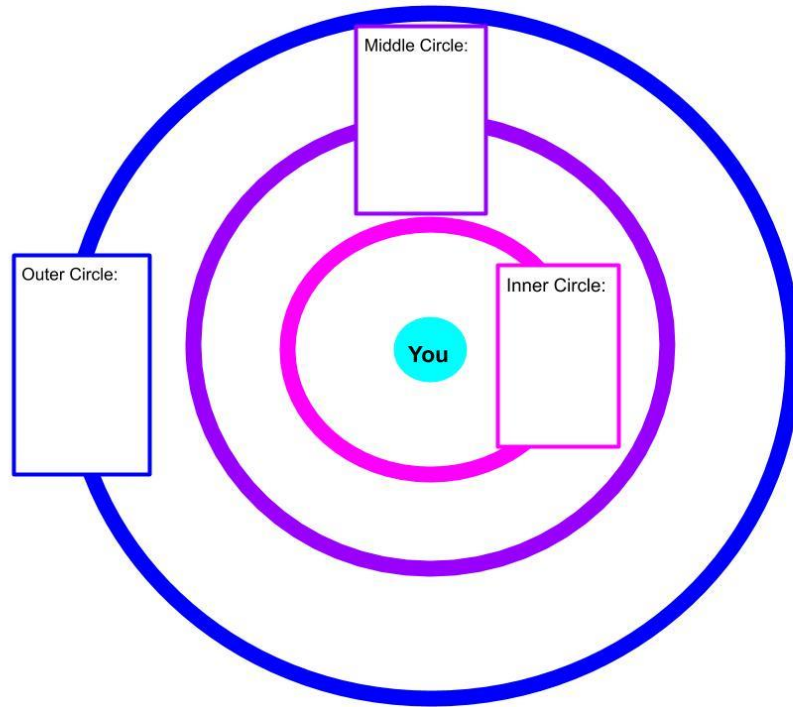
Date

Velazquez, Kelly

Project #200015

Audio Consent April 19, 2020
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Appendix C Interview Protocol



Concentric Circle Activity:

Think about the people who you seek advice about instruction, please say those names so that I may write them for you.

Look at this diagram, the central dot is you. State the names of people who have frequently sought advice on how to support special education students in your classroom on the inner circle in this school year. On the next circle, list people who in this school year you have occasionally sought advice on how to support special education students in your classroom. On the outer circle, list the seldomly sought the advice on how to support special education students in your classroom.

Now, look at these circles, is there anyone that you forgot to add? Is there anyone who needs to change position on the circle?

Semi-Structured Interview:

Tell me more about yourself

Age, gender, teaching experience, education, and background

Who do you go to for advice about your teaching practice?

For each person on your map:

How long have you known each other?

How long have you been talking about teaching?

How often do you contact this person?

How do you communicate with this person?

How would you describe your relationship?

How did this relationship develop?

Why do you seek advice from this teacher?

What do you talk about when you talk about your instructional practice?

Can you provide examples?

What do you talk about when you seek advice on supporting special education students?

Can you provide examples?

What advice, information, anecdotes, stories, or material did they offer?

Can you provide examples?

How do these interactions occur?

Were they structured? Impromptu?

Where did these interactions occur?

Online? On Campus? Off Campus?

Are these one or two directional interactions?

How, if at all, did these conversations, advice, information, anecdotes, stories, materials with this person influence your instructional practice?

Did they help your instruction practice in any way?

Can you provide examples?

If something would go wrong in your instructional practice, would you go to this person?

After discussing your network map:

Why do you go to these people on your network map and not to others to talk about your instructional practice?

What do you feel supports your ability to collaborate with other teachers?

What do you feel undermines your ability to collaborate with other teachers?

Is there anything else you wanted to add about teacher collaboration?

Is there anything else you wanted to add about collaboration between general education and special education in regard to inclusion or supporting special education students in your classroom?