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Opportunities for Collaboration and Training and Their Relationship to Collective Teacher Efficacy When Educating Students with Disabilities

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Opportunities for Collaboration and Training and Their Relationship to Collective Teacher Efficacy When Educating Students with Disabilities

by

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Abstract

As school leaders and educators strive for success and equitable opportunities with improved outcomes for students with disabilities, it is essential to consider practices and perceptions that are known to impact student achievement, access, and support. Exploring teacher ratings of collective efficacy when serving students with disabilities and gaining feedback on practices administrators can incorporate into the professional workday may reveal where schools may improve their practices. While several research studies exist on the concept of collective teacher efficacy, collaboration, and training, in reviewing the literature, there were limitations found in the research reviewed regarding current perceptions of collective efficacy specific to serving students with disabilities and their relationship to teacher opportunities for collaboration between general and special education teachers as well as teacher opportunities for training and professional development.

This quantitative study surveyed general and special education teachers in participating K-12 Minnesota Public Schools to gain insight into these concepts. It provides school leaders with information regarding practices that teachers have identified as most important to building their capacity for educating students with disabilities, as well as practices that may result in higher collective efficacy scores when educating students with disabilities.

Keywords: special education, inclusion, disabilities, collaboration, collective teacher efficacy, universal design, high-leverage practices in special education

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Dedication

This dissertation is dedicated to my family, who have supported me unconditionally. To my parents, who have taught me to work hard, be resilient, and find joy in all experiences: your support of me when I decided to take on yet another adventure has lifted me throughout this process and throughout life. I also want to thank my children, who have encouraged me with a kind of support that a mother could only dream of. All four of my daughters are a constant reminder that those who follow us are watching what we do, and that realization pushes me to model that kindness can be strong and obstacles along the way can help to make us who we are and may be there by design to prepare us for the next step. My two stepsons, who accepted me from the beginning, have been an addition to my life that I will be forever grateful for. I specifically want to call out a special dedication to my youngest daughter, Maria, who consistently inspires me to push forward even in the face of challenges and persist in the work toward better outcomes for students with disabilities. Her ability to be joyful amidst all the challenges her disabilities present demonstrates an innocence and strength that we should all strive for. A front-row seat to her life speaks deeply to my heart as a reminder that everyone has value and to never place limits on someone based on their circumstances. Last but not least, my husband Mark has been the ultimate support to me. As my best friend, he has believed in me unconditionally and encouraged me to move forward in this journey, making me feel like I am capable of anything. He always puts me first, is willing to sacrifice to support me, and his love never wavers. He keeps me steady throughout any storm and celebrates beside me in any accomplishment. I am forever grateful!

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Chapter 1: Introduction

Background

According to the Minnesota Department of Education child count report, as of December 1, 2023, 17.6% of students in Minnesota educational systems are identified and receiving services in special education. This number has increased from 14.0% in December 2013 (Data reports and analytics, n.d.). With higher rates of students being identified, another notable trend is an increase in the percentage of students with disabilities receiving services in the general education setting (McLeskey et al., 2010). Unfortunately, data indicates concerns as it relates to results. The National Center for Education Statistics (2019) reports poorer outcomes for students with a disability than peers who have not been identified as having a disability.

Concerns with outcomes of students with disabilities have been present in literature for years. Students with significant disabilities have experienced increased isolation, low levels of employment, and low wages (Ryndak et al., 2010). Consistently, findings of the National Longitudinal Transition Study of 2012 found that when compared with other students, “youth with an IEP are more likely than their peers to be socioeconomically disadvantaged and to face problems with health, communication, and completing typical tasks independently” (Lipscomb et al., 2012, p. i).

Considering evidence-based practices and teacher perceptions may be a gateway to improved outcomes. One such concept with solid evidence is collective teacher efficacy. Collective teacher efficacy is an area of increased research and emphasis for improving student achievement. Researcher John Hattie (2023) has studied factors that positively influence student learning. When Hattie initially synthesized influences on student achievement according to effect

size, he ranked 138 influences on student achievement. In 2018, he expanded this work to include 252 influences (Hattie effect size list - 256 influences related to achievement, n.d.). In doing so, he identified collective efficacy as having the highest impact on student achievement (Hoogsteen, 2020).

The changing roles of educators may impact a sense of collective efficacy. The special educator's role has expanded as IDEA 2004 shifted to increased accountability of student mastery of standards (Shepherd et al., 2016). In addition, in support of Federal requirements that students with disabilities be educated in the least restrictive environment to the maximum extent appropriate (Individuals with Disabilities Education Improvement Act, 2004), students with disabilities are often educated in the general education setting for most of their school days. This increase of students with disabilities served in the general education setting has also shifted the role of the general education teacher. To operate within these new complexities, educators seek increased opportunities for meaningful collaboration (Sutton & Shouse, 2016).

To successfully include students with disabilities in the general education setting, collaborative and supportive partnerships are necessary (Carpenter & Dyal, 2007). Creating practices and contexts for these partnerships may better support teachers in feeling equipped to serve students inclusively. Specifically, successful, and meaningful inclusion requires time for collaboration between general and special education teachers (Carpenter & Dyal, 2007). Special education teachers must collaborate with various professionals to ensure student needs are met and plans are appropriately implemented.

In addition to opportunities for collaboration, "A critical imperative for the development of inclusive school systems is the capacity to nurture and develop teachers who have the

understandings, skills, critical sensibilities, and contextual awareness to provide quality educational access, participation, and outcomes for all students" (Waitoller & Artiles, 2013, p. 320). Unfortunately, current research identifies that personnel in general education do not feel prepared with training or expertise in serving students with disabilities in inclusive settings (Buell et al., 1999).

One framework in which teachers could receive training is Universal Design for Learning (UDL). When teachers are trained in UDL and intentionally use it in their practice, it maximizes access to content for all learners (Foxworth et al., 2021). It is essential for educators to see examples of universal design and intentionally plan lessons while using this lens to create universal access to effective instruction (Foxworth et al., 2021).

The practices that administrators incorporate into their building's routines may be an important factor in more successfully serving students with disabilities. For example, administrators have "significant indirect leadership effects on student achievement through their influence on teachers' self-efficacy, commitments, and beliefs" (Ross & Gray, 2006, as cited in Sider et al., 2017, p. 7). Administrators can impact student outcomes by promoting teacher learning and development (Hattie, 2023). By offering training to teachers, administrators have the potential to improve personal and group feelings of competence (Zambo & Zambo, 2008). School leadership also influences the degree to which collaboration occurs (Goddard et al., 2015). Designing opportunities for collaboration has the potential for increased collective efficacy. For example, a recent study of teachers who perceived themselves to have a high-functioning professional learning community (PLC) indicated a likelihood of an improved perception of collective efficacy (Loughland & Nguyen, 2020). In addition, Bandura (1997) as

cited in Goddard and Goddard (2001) has suggested that a strong leader who can ‘‘unite the community for common cause’’ (Goddard & Goddard, 2001, p. 501) and empowers the faculty may be successful in increasing the collective efficacy of a school.

Statement of the Problem

While several research studies exist on the concept of collective teacher efficacy, collaboration, and training, in reviewing the literature, there were limitations found in the research reviewed regarding current perceptions of collective efficacy specific to serving students with disabilities and their relationship to specific experiences with collaboration between general and special education teachers as well as specific opportunities for training and professional development. Although building leadership influences the degree to which opportunities are available for collaboration and training, the literature reviewed did not link these topics to the collective efficacy of staff serving students with disabilities. In addition, none of the studies reviewed identified the practices around collaboration and training that administrators provide as opportunities to teachers when educating students with disabilities.

Purpose of the Study

The study aims to examine general and special education teachers’ sense of collective efficacy when educating students with disabilities. It will explore school leaders' practices of creating opportunities for collaboration and training in individual buildings. In addition to gathering this information, this study seeks to ascertain if there is a relationship between these practices and higher collective teacher efficacy scores when educating students with disabilities.

Research Questions

1. What do teachers identify as the most important opportunities that administrators provide to increase teachers' capacity to educate students with disabilities?
2. What training and collaboration practices do teachers have the opportunity to participate in?
3. To what extent is there a relationship between practices teachers participate in and teacher ratings of collective efficacy?

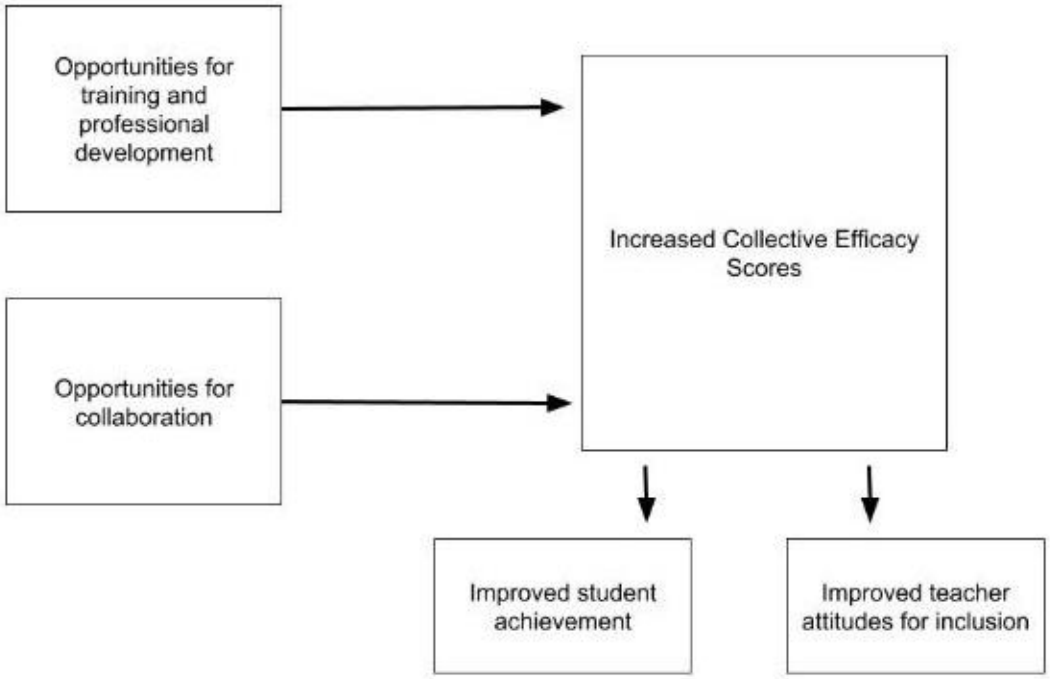
Conceptual Framework

This quantitative study is grounded in a positivist worldview, with a theory of knowledge that is objective and uses experimental design and random sampling (Petersen & Gencel, 2013). This study is developed from multiple foundational ideas; inclusion is a predictor of post-school success (Effective practices - ntact: C, n.d.), teachers continue to require training to effectively educate students with disabilities in an inclusive setting (Harvey et al., 2008), collaboration is a high- leverage practice that is necessary for effective services (McLeskey et al., 2015), and collective efficacy has a positive impact on student achievement (Hattie, 2023). This study is intended to identify what teachers report as the most important opportunities that administrators can create to increase teachers' capacity to educate students with disabilities, while also identifying the practices that teachers have the opportunity to participate in. The study will measure the collective efficacy of staff when educating students with disabilities. Finally, this study seeks to determine if any of the practices that teachers have opportunities to participate in have a relationship to a greater collective efficacy score. This study theorizes that if school leaders provide opportunities for collaboration and opportunities for training related to educating

students with disabilities in their schools, this will increase teachers' sense of collective efficacy when educating students with disabilities. By increasing teachers' sense of collective efficacy, a review of the literature identifies that this should have a positive influence on student achievement (Hattie, 2008) and increase the likelihood of positive teacher attitudes toward inclusion (Urton et al., 2014).

Figure 1

Conceptual Framework



Overview of Research Methods

This study design was quantitative and data for this study was collected using a survey instrument provided to general and special education teachers in participating schools in Minnesota.

The survey included demographic data regarding teachers' years of experience, roles, grade levels served, and a selection from twelve types of opportunities that administrators can provide that teachers believe are most important to their increased capacity for educating students with disabilities. The survey also asked teachers to identify activities from the same list of twelve practices that they have had the opportunity to participate in thus far in the 2023-2024 school year. The teacher survey also included a six-point Likert-type scale with specific indicators of collective efficacy and asked teachers to answer the questions in relation to educating students with disabilities. The survey asked staff to respond in regard to their work with students with disabilities.

Assumptions of the Study

1. Administration distributed surveys to general and special education teachers within their district.
2. The survey was distributed to general and special education teachers across grade levels.
3. Due to the respondents' anonymity and the confidentiality of their data, all participants responded to the survey honestly.

Objectives of the Study

School leaders in Minnesota will use the study findings to determine practices that may be embedded into the professional workday based on what educators report as most important to their increased capacity for educating students with disabilities. School leaders will also use the study findings to determine any areas of focus that may increase teachers' collective efficacy when serving students with disabilities. The need to increase student outcomes has been present

in the past and will continue to be in the future. Continuing to determine areas of focus that will yield the greatest likelihood of improved results is necessary to change the longstanding narrative of adverse outcomes for students with disabilities.

Delimitations

Delimitations are boundaries in a study controlled by the researcher (Roberts & Hyatt, 2018). The researcher controls delimitations as factors that will be included or left out of the study to narrow the study scope (Roberts & Hyatt, 2018). Delimiting factors may consist of items such as the time of the study, location, sample size, and criteria (Roberts & Hyatt, 2018). The following are the delimitations of the study:

1. The survey sample includes only Minnesota school teachers. This is a delimitation selected by the researcher due to the geographic accessibility of the respondents.
2. The sample may not reflect a viewpoint representative of all Minnesota school teachers and may only be reflective of the viewpoints posed by the individuals who chose to complete the study.
3. While federal law is consistent across states, state law adds to school district requirements. Special education practices may be implemented differently across states, affecting the ability to apply these findings directly in states other than Minnesota.
4. Data will be collected through a survey instrument, with much of the analysis using descriptive statistics. Therefore, they will only apply to sample members.
5. Survey responses may be affected by the school size, or the length of time individuals have served in specific roles.

6. Collective efficacy scores by building may be limited based on the number and percentage of survey respondents in each school and may be of greater significance if a greater percentage of teachers complete the scale in each building.

Definition of Terms

Affective states. According to Goddard et al. (2004), an individual's level of arousal impacts how that individual perceives their level of competence.

Collaboration. Collaboration refers to teams who share ideas, actively listen, question, plan, problem-solve, and negotiate together (McLeskey et al., 2015).

Collective teacher efficacy. "In schools, collective efficacy can be understood as a motivational characteristic resulting from teachers' subjective perceptions of their overall level of teaching effectiveness" (Meyer et al., 2020, p. 4). These perceptions relate to the faculty believing they can engage in actions that result in a positive effect on students (Goddard & Goddard, 2001).

General Education Teacher. "A classroom teacher and any other professional employee required to hold a license from the state department" (Sec. 122A.40 MN statutes, n.d.) hired to teach general education or a specific content area.

High-leverage practices. The Council for Exceptional Children (CEC) and CEEDAR center developed a set of 22 high-leverage practices for special education teachers, identifying effective teaching practices specific to serving students with disabilities. These practices are organized into four categories: collaboration, assessment, instruction, and social/ emotional/behavioral practices (McLeskey et al., 2015).

*Inclusion***.** "Inclusion" means "supporting students with disabilities through individual learning goals, accommodations, and modifications so that they can access the general education curriculum (in the general education classroom) and be held to the same high expectations as their peers" (Iris, n.d., para. 5).

Least Restrictive Environment. "Least restrictive environment" means that children with disabilities are educated with children who are not disabled to the maximum extent that is appropriate for that individual student (Special Education, 34 C.F.R. § 300.39, 2006).

Mastery experience. Goddard et al. (2004) identify mastery experiences as the most significant source of efficacy. "The perception that a performance has been successful tends to raise efficacy beliefs, contributing to the expectation that performance will be proficient in the future" (Goddard et al., 2004, p. 5).

Social persuasion. Social persuasion is described as encouragement or gaining feedback from another professional about teachers' ability to impact students. The strength of persuasion depends on the persuader's perceived expertise, credibility, or trustworthiness (Bandura, 1986, as cited in Goddard et al., 2004).

Special Education. "Special education means specially designed instruction, at no cost to the parents, to meet the unique needs of a child with a disability" (Special Education, 34 C.F.R. § 300.39, 2006).

Special Education Teacher. A teacher "authorized to provide evaluation and specially designed instruction to eligible students" (8710.5400 - MN rules part, n.d.) hired as a special education teacher.

Specially Designed Instruction. IDEA (2004), defines specially designed instruction as follows.

> Adapting, as appropriate to the needs of an eligible child under this part, the content, methodology or delivery of instruction (i) to address the unique needs of the child that result from the child's disability; and (ii) to ensure access of the child to the general curriculum, so that the child can meet the educational standards within the jurisdiction of the public agency that apply to all children. (Special Education, 34 C.F.R. §300.39[b][3], 2006)

Universal Design for Learning. "Universal Design for Learning is a scientifically valid framework for guiding educational practice" (Izzo, 2012, p. 344). The framework provides flexibility for presentation and representation of material as well as flexibility for engagement with material. It also reduces barriers that interfere with students accessing instruction (Izzo, 2012).

Vicarious experience. "A vicarious experience is one in which the skill in question is modeled by someone else. When a model with whom the observer identifies performs well, the efficacy beliefs of the observer are most likely enhanced" (Goddard et al., 2004, p. 5).

Summary

As educators and school leaders strive for success and equitable opportunities with improved outcomes for students with disabilities, it is essential to consider practices and perceptions that are known to impact student achievement, access, and support. When serving learners with disabilities, their identification as a student with a disability can already be interpreted to mean that they have significant skill gaps to meet the criteria for special education.

Given that this is a barrier already present for students with disabilities, leaders and educators must continue to explore high-impact approaches to offer the greatest likelihood of a change in outcomes. Exploring teacher perceptions of their collective efficacy when serving students with disabilities and gaining feedback on leadership practices may point to insights about improving in this area.

This study is presented in five chapters. Chapter 1 provides an overview of the problem and purpose of the study by providing a brief explanation of the study's conceptual framework and relevant definitions and terms. Chapter 2 provides a review of the relevant literature and is organized into five major themes:

- Historical perspective
- Inclusion
- Collaboration
- Training and professional development
- Collective teacher efficacy.

Chapter 3 provides the details of the quantitative methodology, including the research design, participants, data collection, and data analysis. This includes the population and sample used in the study, instrument, and data collection methods, how data will be analyzed, and an outline of limitations for the data analysis. Chapter 4 presents the findings from the study, including a description of the results of the data analysis. Chapter 5 summarizes the conclusions, findings, and any relevant limitations of the study. This chapter will also present recommendations for future research and serve as a summary of the study.

Chapter 2: Review of Related Literature

Historical Perspective

Over the past several years, the role of educators has been diversified, which has led to increased challenges (Shepherd et al., 2016). The special educator's role has expanded beyond meeting the needs of individuals in the special education setting to operating within a multi-tiered system of support, offering both direct services to students and indirect consultative services to other professionals.

> Traditional special education was designed to provide specialized educational services to achieve what too often was a set of goals that differed from those of general education. Today, special education services align the skills and abilities of students who are perceived to be different than most learners within the existing general education curriculum. (Hitchcock & Stahl, 2003, p. 46)

IDEA 2004 shifted the emphasis from ensuring access and civil rights to increased accountability for student mastery of standards (Shepherd et al., 2016). Currently, all educators are asked to work with a changing student demographic in connection with various professionals while understanding a variety of student and family dynamics and differentiating to meet the needs of all students regardless of circumstances (Shepherd et al., 2016).

According to the National Center for Education Statistics, in the 2019-2020 school year, 14% of all public-school students received services under the Individuals with Disabilities Education Act (IDEA, 2012) (Coe - students with disabilities, 2022a). In 2019, 72% of students identified as having a disability graduated with a regular diploma, compared to 86% of the overall population of students in the same year. When exploring post-school employment

outcomes, 69.5% of people with disabilities ages 25-64 are not in the labor force compared to 18.9% of people without disabilities (Coe - students with disabilities, 2022b). While there have been many advances in special education, several concerns remain, including the over- and under-identification of specific populations of students, delays in identifying and serving students, and other laws and regulations that impose barriers, further complicating the program for many involved. Students who qualify for services "still lag behind their nondisabled peers in educational achievements, are often held to lower expectations, are less likely to take the full academic curriculum in high school, and are more likely to drop out of school" (Aron & Loprest, 2012, p. 97).

The Individuals with Disabilities Education Act (IDEA, 2004) has mandated that students with disabilities have access to the general education classroom in the least restrictive environment to the maximum extent possible. From the perspective of student outcomes, education in the least restrictive environment is further supported by the evidence that opportunities to be included in general education increase the likelihood of students' success after high school in the areas of education, employment, and independent living (Effective practices - ntact: C, n.d.).

Inclusion

Historical Overview

The history of special education "can be told in terms of one steady trend that can be described as progressive inclusion" (Reynolds & Birch, 1977, p. 22, as cited in McLeskey et al., 2010, p. 131). It is mandated that students with disabilities must be educated in the least restrictive environment to the maximum degree that is appropriate for the student (Individuals

with Disabilities Education Improvement Act, 2004). Because of this, students with unique needs are often educated in the general education setting for most of their school days. According to the U.S. Department of Education (2020), the percentage of students receiving special education services who spent 80% or more of their time in general education increased from 59% in the fall of 2009 to 66% in the fall of 2020 (Coe - students with disabilities, 2022a).

In addition to the increase in students spending a greater degree of time in the general education setting, The Supreme Court decision in Endrew F. v. Douglas County School District (2017) resulted in a higher standard of what is identified as an appropriate education for students with disabilities (Endrew F. v. Douglas County School District, 2017). Similarly, accountability mandates have required students with disabilities to participate in accountability tests, leading to a need for greater access to the general curriculum (No Child Left Behind, 2002). These standards will require all professionals working with students receiving special education services to be equipped to provide appropriately ambitious services (Endrew F. v. Douglas County School District, 2017).

As the trajectory builds toward more inclusive practices, it is essential to note that true inclusion is a product of systems of belief. Chief Justice Warren stated in the case of Brown vs. Board of Education, “We conclude that, in the field of public education, the doctrine of ‘separate but equal’ has no place. Separate educational facilities are inherently unequal” (Center, 2001). More recently, the notion that students’ difficulties primarily exist within the child has been challenged with the understanding that children fall behind at school for various reasons, many of which have nothing to do with actual ‘dysfunctions’ within the child (Thomas, 2013). More

concerning are the statistics that minority populations have been overidentified as having learning and behavioral difficulties (Thomas, 2013).

These statistics may illustrate the need to consider practices that support effective inclusion. In doing so, systems stand the possibility of improvement not only for all students with disabilities but also for students in groups who are disproportionately identified and often face layered exclusion. As an example of this layered exclusion, Waitoller and Artiles (2013) reported that students from non-dominant groups have been overrepresented in special education, are more likely to be removed from general education, and are less likely to enroll in higher education programs, which results from the interaction of a variety of factors, requiring the examination of the dismantling of complex barriers.

> Inclusive education is a global movement that emerged as a response to the exclusion of students who were viewed as different (e.g., students with disabilities, students of color, students from lower caste backgrounds, students from low socioeconomic backgrounds) by educational systems; these constructions of difference are highly consequential for they have mediated over time student access and participation in education. (Waitoller & Artiles, 2013, p. 321)

There are significant drawbacks for students when inclusion is not prioritized. “In societies with greater inequality and less inclusion, there is lower achievement at school, and there are more casualties of the school system” (Thomas, 2013, p. 480). Thomas (2013) further asserts that inclusion is not only about disability but also a matter of social justice and identifies the damaging consequences of inequality, stating, “Comparisons on the basis of ability have

forever been at the root of segregation, and it is these comparisons that transmute to the alienation that is sapping of status, identity and self-belief" (Thomas, 2013, p. 481).

Considering the damaging effects that segregation can lead to for individual students and the relationship to success for students with disabilities when included in general education classrooms, it is necessary to continue to support practices that lead to seamless inclusion of all students. Waitoller and Artiles (2013) assert that the inclusive movement should include three elements, one of which is described as access to and the opportunity for participation in quality learning opportunities.

Inclusion may be thought of as something that begins in the classroom, but in contrast, it is a philosophy that begins more globally and systemically. This philosophy includes common attitudes and beliefs of administrators, faculty, and staff that celebrate diversity and value outcomes for each student, developing the persistence and commitment to meeting unique student needs (Carpenter & Dyal, 2007). In addition, an inclusive school environment increases student access to the general curricula to improve success (Fisher & Frey, 2001; Roach et al., 2002 as cited in Carpenter & Dyal, 2007).

Benefits to Inclusion

Current literature outlines several benefits to inclusion. "It is well documented that inclusive education can yield positive outcomes for all of those involved, including the focus students, typical peers, classroom teacher, and school community at large" (Hunt et al., 2003; Soto et al., 2001 as cited in Hunt et al., 2003, p. 315). According to the National Technical Assistance Center on Transition (2022), for students with disabilities, one of the predictors of post-school success in education, employment, and independent living is inclusion in general

education classes (Effective practices - ntact: C, n.d.). Inclusive education benefits students with disabilities in terms of increased social participation, learning and generalization of new skills, and overall quality of the individualized education program. Inclusion has also been noted to improve the educational experience of the entire school community (Hunt et al., 2003). In addition, students with disabilities educated in inclusive settings gain new peer models and social connections (Vaidya & Zaslavsky, 2000). Cosier et al. (2013) reported that for every hour a student with a disability spent in general education, students increased by approximately half a point on reading achievement tests.

Challenges to Inclusion

Several barriers to inclusion exist. Among these are the historical approaches to educating general and special education teachers separately. As a result, general education teachers have only sometimes been supported in creating inclusive educational environments. Furthermore, there is a need for more prepared personnel to support inclusive efforts. Successful and meaningful inclusion also requires time for collaboration between general and special education teachers, which can be limited at times.

Moreover, teacher efficacy has a solid relationship to the acceptance of the general education teacher concerning educating the student with a disability in the general education setting. An analysis of teacher beliefs indicated that 65% of general educators support inclusive education, but only 29.2% feel they have adequate training (Buell et al., 1999). Kirby (2016) reports that many teachers view inclusion as a compromise between social gains and academic growth. Teachers often do not feel confident in teaching students with disabilities. Historically, special education is a deficit-based model that identifies a problem that needs to be fixed within

the individual (Kirby, 2016). This can contribute to the belief that students need to be educated outside of the general education classroom setting.

Waitoller and Artiles (2013) state that in understanding inclusion, we must also understand the concept of exclusion and the overlapping and complex ways students are excluded from educational settings. Exclusion from general education is more likely for students with disabilities from nondominant groups (Waitoller & Artiles, 2013). This increases the complexity of creating an inclusive educational environment as it requires individual responses to meet student needs and universal work on removing complex barriers. Exclusion can also be present based on comparisons. When students feel they cannot succeed, “people will create their own identities, even if the process involves resistance, discomfort, or ‘deviance” (Thomas, 2013, p. 480). Often, rather than comparisons of abilities, it is conditions for learning that require further pursuit of information.

There is an increasing demand to educate students with disabilities in inclusive classroom settings. This rationale is developed based on many factors and approval from legislative, ethical, and empirical domains (Cole et al.,1991; Individuals with Disabilities Education Act,1997; Peck et al., 1990; UNESCO, 1994, as cited in Buell et al., 1999). Unfortunately, there are still several barriers to inclusion that are problematic in the current educational system and delivery models (Ainscow,1997; Barton et al., 1992; Campbell & Fyfe, 1995; Miller & Savage, 1995; Peck et al., 1993; Sindelar, 1995, as cited in Buell et al., 1999). Specifically, in the United States, this concern has been reemphasized in the amendment to the Individuals with Disabilities Act under the section related to personnel development, which mandates that states develop personnel

systems that focus on the preparation of all teachers to work with individuals with disabilities (IDEA,1997 as cited in Buell et al., 1999).

Successful Inclusion

Partnerships between general and special education teachers result in more meaningful education for students with and without disabilities (Buell et al., 1999). Often, teachers are working in isolation from one another. However, to successfully navigate the present complexities, educators often seek additional opportunities for collaboration (Sutton & Shouse, 2016). “Successful inclusion requires collaborative and supportive partnerships between faculty, staff, administration, parents, and the community” (Carpenter & Dyal, 2007, p. 345). Fisher and Frey (2001) report that time spent collaboratively between general and special educators discussing lessons results in improved content and delivery for all students.

Mastropieri and Scruggs (2001) identified seven variables associated with successful inclusion. The first of these variables include administrative support, then support from special education personnel, followed by an accepting positive classroom culture, an appropriate curriculum, effective general education teaching skills, peer assistance, and disability-specific teaching skills. Finally, Buell et al. (1999) reported that successful inclusion is more likely when teachers participate in decisions about students with special needs, especially general education teachers. In addition to training and collaboration, “there is empirical evidence as well to support the construct of efficacy as being critical to teachers' acceptance of special needs students in regular education classrooms” (Buell et al., 1999, p. 145).

Collaboration

High-leverage Practices

In the fall of 2014, the Council for Exceptional Children (CEC) approved a proposal to develop high-leverage practices for special education teachers. This work aimed to identify practices that could assist those providing training to pre-service teachers or providing professional development to current teachers with tools and information regarding effective teaching practices specific to serving students with disabilities. The team identified 22 high-leverage practices organized into four categories: collaboration, assessment, instruction, and social/emotional/behavioral practices (McLeskey et al., 2017). These practices provide a base of professional practices for teacher mastery to provide specially designed instruction (Riccomini et al., 2017).

IDEA, 2004, requires that special educators use scientifically based methods to meet the needs of students with disabilities. The development of high-leverage practices was in support of this requirement. The high-leverage practices described in this publication are broadly developed and complex, providing general statements that at times overlap with each other, in contrast to specific evidence-based practices, which tend to be more narrowly defined. High-leverage practices are described as having a high impact on student learning, are limited in number, and can be taught and applied across all areas of special education (Nelson et al., 2022.).

Specific criteria were set for selecting each high-leverage practice. These criteria specified that each practice must “focus directly on instruction practices, occur with high frequency in teaching in any setting, be research-based and known to foster student engagement

and learning, be broadly applicable and usable in any content area or approach to teaching, and be fundamental to teaching when executed skillfully" (McLesky et al., 2017, p. 10).

Table 1

High-Leverage Practices

Practice Type	**Practice**
Collaboration	1. Collaborate with professionals to increase student success
	2. Organize and facilitate effective meetings with professionals and families
	3. Collaborate with families to support student learning and secure needed services
Assessment	4. Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs
	5. Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs
	6. Use student assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes
Social Emotional Behavioral	7. Establish a consistent, organized, and respectful learning environment
	8. Teachers provide positive and constructive feedback to guide students' learning and behavior (behavior focus)
	9. Teach social behaviors
	10. Conduct functional behavioral assessments to develop individual student behavior support plans
Instruction	11. Identify and prioritize long- and short-term learning goals
	12. Systematically design instruction toward a specific learning goal
	13. Adapt curriculum tasks and materials for specific learning goals
	14. Teach cognitive and metacognitive strategies to support learning and independence
	15. Provide scaffolded supports
	16. Use explicit instruction
	17. Use flexible grouping
	18. Use strategies to promote active student engagement
	19. Use assistive and instructional technologies
	20. Teach students to maintain and generalize new learning across time and settings
	21. Provide intensive instruction
	22. Teachers provide positive and constructive feedback to guide students' learning and behavior (learning focus)

Note: Adapted from "What are High-Leverage Practices for Special Education Teachers, and Why are They Important?" (McLeskey, et al., 2019).

Professional Collaboration

Within the high-leverage practices in the overarching category of collaboration, three practices were identified. The first practice in this category is "Collaborate with professionals to increase student success" (McLeskey et al., 2017, p. 28). This high-leverage practice states the following.

> Collaboration with general education teachers, paraprofessionals, and support staff is necessary to support students' learning toward measurable outcomes and to facilitate students' social and emotional well-being across all school environments and instructional settings (e.g., co-taught). Collaboration with individuals or teams requires the use of effective collaboration behaviors (e.g., sharing ideas, active listening, questioning, planning, problem-solving, negotiating) to develop and adjust instructional or behavioral plans based on student data, and the coordination of expectations, responsibilities, and resources to maximize student learning. (McLeskey et al., 2017, p. 28)

In addition to identifying the importance of professional collaboration in the CEC's High Leverage Practices, several other studies point to the significance of providing opportunities for teachers to engage in effective collaboration. When collaboration is structured and supported, outcomes for students with disabilities improve (Carter et al., 2009). According to Meyer et al. (2020), "studies have shown that teacher collaboration predicts good teaching practice and student achievement" (p. 3). Additional benefits to collaboration include shared responsibilities, more creative lessons and solutions to problems, a better understanding of student needs, and increased student participation. Teachers have self-reported that collaboration has helped them

become better teachers (Rainforth & England, 1997). According to Fisher and Frey (2001), when general and special educators are provided time to meet and discuss lessons, inclusive education results are improved by consistently improved content and instructional delivery for all. Accomplishing this includes sufficient planning time between general and special education teachers (Wallace et al., 2002). As it relates to successful inclusion, collaboration is one strategy that is rooted in evidence. According to Brownell, Yeager, Rennells, and Riley, 1997 as cited in Wallace et al. (2002), "Professional collaboration provides a context for the type of teacher development, curriculum innovation, and site-based decision-making that must occur to include students with disabilities successfully in the general education classroom" (p. 350).

To further understand professional collaboration, "From the perspective of organizational psychology, collaboration in schools is characterized as an activity by a group of teachers: (a) who orient their pedagogical work toward mutual goals, (b) who each retain their own autonomy within the group, and (c) who trust one another" (Gra¨sel et al., 2006; Vangrieken et al., 2015 as cited in Meyer et al., 2020, p. 4). This collaboration can be both formal and informal (Johnson, 2020). However, there has been a separation between general and special education teachers, as these disciplines have been rooted in different theoretical views as well as varied legislative and experiential backgrounds (Robinson & Buly, 2007).

Furthermore, teacher preparation programs may not place an emphasis on collaboration and the communication skills necessary to effectively collaborate, which may lead to new teachers feeling ill-equipped to engage in collaborative practices (O'Shea et al., 1999). Studies have found that 96% of classroom teachers serve students with disabilities, yet only one-third have reported that they received training in collaboration (Fullerton et al., 2011). Additionally,

Da Fonte and Barton-Arwood (2017) report that time to collaborate is one of the frequently reported challenges to successful collaboration.

Role of Leadership in Professional Collaboration

The building leader plays a role in creating contexts for professional collaboration. Meyer et al. (2020) assert the importance of the relationship between the leadership of building principal and teacher collaboration and suggest that leaders must create the conditions, including time and structures for collaboration and culture, for a shared vision, purpose, and goals. Fischer and Frey (2001) suggest that schools wanting to implement inclusive schooling practices ensure that general and special education teachers have access to planning time. Furthermore, they state that "Collaborative activities should be focused on (a) designing each student's instructional program to meet clearly specified outcomes and (b) collecting data and monitoring progress toward these outcomes" (McLeskey et al., 2017, p. 15).

According to Louis et al. (1996), as cited in Lee et al. (2011), considering the need for any restructuring in schools, it is vital to emphasize professional development and create a professional community. Creating this professional community may be enhanced by creating more collaborative structures for teachers within their daily work conditions. "For schools to work around the persistent structural constraints to establish a sincere and thoughtful collaborative culture, they must approach collaboration differently. Collaborative cultures emerge from authentic and relevant problem-solving" (Cochran-Smith, & Lytle, 1999; Hargreaves & Fullan, 2012; McLaughlin & Talbert, 2006, as cited in Sutton & Shouse, 2016, p. 70).

The importance of planning time between general education teachers and special education teachers has been emphasized as a critical element for successful collaboration between teachers (Wallace, et al., 2002). In addition, joint opportunities for professional development and providing time for coordinating and collaborating in the classroom are essential to improving collaboration (Wallace et al., 2002). Rainforth and England (1997) also reported that regular meeting time for general and special education teachers supports collaboration. Often true collaboration exists when individual teachers initiate collaboration with one another during their prep periods or in other contexts such as coteaching (Gomez-Najarro, 2019). Wallace et. al, (2002) found that professional collaboration most often took place through unscheduled meetings. Creating additional opportunities for these natural exchanges may encourage these an increase in collaborative efforts.

Additional practices that improve overall collaboration include explicitly empowering and engaging teachers in school improvement processes, strong relationships between teachers and leaders, providing time to diagnose problems which creates a shared understanding of problems, and teacher-led professional learning (Sutton & Shouse, 2016). Explicitly embedding these practices into improvement work may yield benefits toward effective inclusive learning environments. While there are many structures for collaboration, such as informal interactions, co-teaching and consultation, the success of collaboration depends on time for planning and administrative support (Carter et al., 2009).

Required Collaboration

Specific to serving students with disabilities, several dynamics require group efforts. Beginning with the Education for All Handicapped Children Act of 1975, now IDEA, the

evaluation process and the development and implementation of IEPs has required teaming (King-Sears et al., 2015). Evaluations to meet the criteria for services are completed comprehensively, requiring input from various professionals. Writing individual education plans requires a collaborative and defined team of individuals. Providing service and evaluating progress on goals is often the effort of several professionals.

> When collaborating for inclusion, people become members of a team and assume many team roles. Tasks that had been done more independently, are done more collectively. Student assessment may not be done by the full team together, but the team plans it to be more holistic and authentic. Team members share observations and impressions, develop a consensus about the student's abilities and needs, and write one comprehensive assessment report (rather than many separate, sometimes disparate reports). The team develops an IEP with one set of goals and objectives and develops comprehensive strategies to address student needs. The team plans units and lessons that address the needs of all students, with their diverse learning styles and range of abilities. The team teaches heterogeneous groups of students. And the team works together to solve problems related to collaboration and inclusive education. (Rainforth & England, 1997, p. 87).

In addition, co-teaching, which takes place when general and special education teachers jointly deliver instruction, is another approach often taken in special education that holds promise and requires significant collaboration (Friend et al., 2010). The success of co-teaching requires collaborative time, effort, and administrative support (Carter et al., 2009). Therefore, professional collaboration is paramount to identifying and serving students with disabilities.

However, general and special education teachers all too often function separately rather than in an integrated fashion (Gomez-Najarro, 2019).

It could be inferred that one of the requirements for successful inclusion is that personnel from general and special education effectively collaborate as team members. The capacity for collaboration is improved when there is support and preparation for both general and special education, allowing them to understand each other's perspectives and backgrounds better (Bassett & Smith,1996; King-Sears,1995; Villa,1996, as cited in Buell et al., 1999).

Training and Professional Development

Universal Design for Learning

Successful inclusion depends on several practices, including dismantling classroom barriers. One way to dismantle barriers is through training and education of professionals. A specific area of training for teachers is in universal design for learning (UDL). "UDL is defined as a scientifically valid framework in both the Higher Education Opportunity Act of 2008 and the Every Student Succeeds Act of 2015; it is recommended by both acts for use in instructional design" (Lowrey et al., 2017, p. 225). Universal design for learning has been identified as beneficial to students with disabilities, making the classroom environment and instruction more accessible to all students and increasing student outcomes (Foxworth et al., 2022). Foxworth et al. (2021) further explain that this framework requires teachers to consider the variability of the learners they serve at the outset of instruction rather than retroactively. It can be used in tandem with other approaches, such as explicit instruction. The universal design framework is intended to enhance the learning of all students, removing barriers, and creating a greater likelihood of

success for students with disabilities in an inclusive setting. It holds promise for students with disabilities in the general education setting (Cawley et al., 2003).

Within any organization, barriers may exist for individuals with varied needs. This is also true in the educational environment. One of the roles of the special education teacher is to work with the team to remove barriers through developing accommodations and modifications (Hitchcock & Stahl, 2003). These are learner specific and require individual processes or procedures. In fact, historically, educators and researchers believed that learning challenges were seen as being within student issues (Thomas, 2013). However, perspectives are changing to acknowledge through brain research that instruction, curriculum, and removing barriers may eliminate some of the learning challenges that once were attributed to the learner (Nelson, 2013). As this shift in perspectives has taken place, examining the educational practices and environments to remove barriers has become more at the forefront when planning for students with disabilities.

The foundation for removing barriers is rooted in the premise of the Americans with Disabilities Act (ADA). When the ADA was passed in 1990, public spaces were changed to improve access. This often meant existing spaces were retrofitted to meet the act's requirements. This included modifications to buildings, ramps, elevators, and doors. Typically, these were adjusted after the fact and on a case-by-case basis (Pisha & Coyne, 2001).

To address this issue, in 1997, architect Ron Mace coined the term universal design “to describe designs that considered, from the beginning, the access needs of the broadest possible range of users” (Pisha & Coyne, 2001, p. 197). In doing so, the purpose was to provide greater

accessibility. If one were to look closely, several examples of this design method can be seen in every public building.

Like the architectural movement, universal design also gained prominence in the 1990s (Rao et al., 2014). As it relates to education and by definition, universal design for learning is a framework that provides a systematic process for including all students and is based on the "inherent and predictable variability in the ways they access and engage in the learning process (Meyer et al., 2014; Meyer & Rose, 1998 as cited in Foxworth et al., 2022, p. 269). This includes making decisions about engaging students, representing information, and inviting students to demonstrate their knowledge (Foxworth et al., 2021). The framework acknowledges learner variability and accounts for this to provide greater access to resources and instruction and better assess learning (Pisha & Coyne, 2001; Rose et al., 2018, as cited in Foxworth et al., 2022). In practice, there are three principles that teachers must incorporate into their planning and delivery: "(a) provide multiple means through which students can engage in the learning process, (b) provide multiple representations of content and skills, and (c) provide multiple avenues through which students can interact and express what they know" (Meyer et al., 2014 as cited in Foxworth et al., 2022, p. 270).

According to CAST, each principle is further expanded upon in a more detailed definition of these three basic principles of UDL. CAST describes that through multiple means of engagement in that "learners differ markedly in the ways in which they can be engaged or motivated to learn. There is not one means of engagement that will be optimal for all learners in all contexts; providing multiple options for engagement is essential" (Udl: The Udl guidelines, 2023, para. 1). CAST describes the principle of multiple means of representation in that "learners

differ in the ways that they perceive and comprehend information that is presented to them. There is not one means of representation that will be optimal for all learners; providing options for representation is essential" (Udl: The Udl guidelines, 2023, para. 1). Finally for multiple means of action and expression, CAST describes that "learners differ in the ways that they can navigate a learning environment and express what they know. There is not one means of action and expression that will be optimal for all learners; providing options for action and expression is essential" (Udl: The Udl guidelines, 2023, para. 1).

The UDL framework comes from a vast body of research. This includes research from educational psychology, neuropsychology, and brain research (Nelson, 2013). By using the framework to design lessons, teachers can meet various needs. Brain research suggests that by creating lessons utilizing the framework, teachers can impact the brain's affective, recognition, and strategic networks (Nelson, 2013). Teachers using UDL are embracing the differences of all learners versus adjusting the learning environment for one learner or a small group of learners (Nelson, 2013).

In implementing universal design for learning, similar to the evolution of architecture, which once retrofit but now designs buildings universally, in education, universal design for learning would require fewer student-specific accommodations as these principles do not target a specific student but rather "consider the variability among all the students, not exclusively the ones with disabilities" (van Munster et al., 2019, p. 370). Teachers who design lessons using UDL acknowledge that the learning environment through design, flexible resources, and limiting barriers can affect student outcomes (Nelson, 2013). "Through intentional planning, educators can address the variability of learners' ability to access and understand information, engage with

content and instruction, and express what they know" (Lowrey et al., 2017, p. 1). To embed this into instructional practices, it could be assumed that teachers would require training specific to this concept.

Training in Legal Requirements

Special education is rooted in a variety of laws. These include both state and federal mandates. Interpreting and understanding these laws and requirements can be challenging for educators. Among these laws, there are substantial requirements around the evaluation, the development of the IEP, and the provision of special education (Markelz et al., 2021). A focus on compliance is also necessary to appropriately implement a student's educational program. The requirements that need to be in place to ensure compliance can be difficult for special education teachers trained in the field and, thus, more difficult for general education teachers who may have little to no training in this area.

Given that students with disabilities are often served in the general education setting, it is important that general education teachers also receive training in legal requirements. Research indicates that both special and general education preservice teachers score low on questions related to IDEA; however, scores improved after training in content specific to IDEA (Markelz et al., 2021). This may indicate that providing additional time for training could improve teachers' understanding of the requirements.

Disability-Specific Professional Development

Opportunities for teachers to learn additional strategies may also improve their effectiveness and confidence when educating students with disabilities. Research documents several instructional strategies that effectively support students with disabilities in varied content

areas (Scruggs & Mastropieri, 2008). Teacher behaviors and practices, specifically those related to addressing behavior challenges, can be explicitly taught and articulated through training (Scruggs & Mastropieri, 2008).

In addition, having opportunities to learn about specific disabilities may increase teachers' capacity to educate students with disabilities effectively. Understanding specific learning disability characteristics can lead to seeking appropriate resources, accommodations, and modifications (Draper, 2022). In addition, teachers who understand and appropriately implement curricular modifications have students with disabilities in the classroom who are more engaged, with fewer behaviors (Lee et al., 2010). Unfortunately, there is evidence that few general education teachers feel prepared to serve students with disabilities in the general education classroom (Buell et al., 1999). While 96% of classroom teachers report teaching students with disabilities, less than half have received training in adaptations (Fullerton et al., 2011). In addition, to successfully instruct students in any setting, teachers must feel empowered to apply any newly learned skills and competencies (Hegarty, 1994).

Utilizing staff that are current professionals in the system may result in relevant professional learning. Schools occasionally call upon outside professionals to provide professional learning around these concepts. Instead of relying on these consultants or district leaders, schools who leverage the expertise of existing staff can be effective in creating relevant professional learning (Sutton & Shouse, 2016). Because effective professional learning has been identified as collaborative and dialogic, utilizing existing staff, focusing on teachers' current practice can be one way to provide professional learning and increased collaboration (Loughland & Ryan, 2022).

Collective Teacher Efficacy

Social Cognitive Theory and Collective Efficacy

Collective teacher efficacy is a school-level variable different from self-efficacy, rooted in social cognitive theory (Lee et al., 2010). Bandura (1997) developed social cognitive theory to explain that the control humans exercise over their lives through their own actions is powerfully influenced by the strength of their efficacy beliefs. This psychological framework has implications for individual or group attitudes and behaviors. “Efficacy affects how people feel, think, act and motivate themselves” (Bandura, 1997, as cited in Lee et al., p. 828). In connection, a major assumption of social cognitive theory is that people can exercise a degree of control in their own lives (Goddard et al., 2000).

This assumption theorizes that when individuals or groups make choices, they exhibit agency (Goddard & Goddard, 2001). Agency refers to intentionally making something happen by an individual or group’s actions (Bandura, 2001). “The core features of agency enable people to play a part in their self-development, adaptation, and self-renewal with changing times” (Bandura, 2001, p. 2). Social cognitive theory extends the concept of individual agency to collective agency, which refers to the shared beliefs and the collective ability to influence a specific result (Bandura, 2001). In addition, social cognitive theory suggests that individuals or groups are more likely to seek activities when they believe they can successfully accomplish those activities (Goddard & Goddard, 2001). Research connected to this concept has found that teachers who have a higher sense of collective efficacy are more likely to be persistent in overcoming obstacles and resilient with failures, leading to more innovative teaching and greater student learning (Loughland & Ryan, 2022).

To make meaning of collective efficacy scores it's important to review not only group level scores but also variability within groups. Collective efficacy scores may be reviewed by obtaining a group-level mean at an individual school to determine the level of collective efficacy present there. While this is important for gaining information about the collective perceptions of the school, it is insufficient for having a deeper understanding of the context and the needs of teachers within the school (McCoach & Colbert, 2010). To further understand this, it is important to also explore the variability of collective efficacy scores within a school, given that teachers within the same school may require different interventions or supports dependent on their individual level of collective efficacy (McCoach & Colbert, 2010).

Sources of Collective Efficacy

According to Goddard et al. (2000), there are four identified sources of collective efficacy in literature: mastery experience, vicarious experience, social persuasion, and affective states. These sources have been defined as essential to both self and collective efficacy.

Mastery experience. Goddard et al. (2004) identify mastery experiences as the most significant source of efficacy. "The perception that a performance has been successful tends to raise efficacy beliefs, contributing to the expectation that performance will be proficient in the future" (Goddard et al., 2004, p. 5). Given this definition, one could infer that the idea of a mastery experience as it relates to serving students with disabilities in an inclusive classroom requires that teachers have an opportunity to first include students with disabilities in the general education setting. It then requires teachers to experience success with the inclusion of students of varying disabilities and degrees. By nature of the varying degrees of need that students bring to the general education classroom, as well as the vast differences between identified disabilities,

one could also infer that general and special education teachers may be more or less likely to have had a mastery experience dependent on the degree to which they have served specific student populations.

Vicarious experience. “A vicarious experience is one in which the skill in question is modeled by someone else. When a model with whom the observer identifies performs well, the efficacy beliefs of the observer are most likely enhanced” (Goddard et al., 2004, p. 5). Similarly, to mastery experiences, to have a vicarious experience, one could assume that a teacher would need to have collaborated with or observed another teacher who has had a mastery experience with specific student populations that can be shared with colleagues. This also requires time and opportunity for staff to share information about their personal experiences of success.

Social persuasion. Social persuasion is described as encouragement or gaining feedback from another professional about teachers' ability to impact students. The strength of persuasion depends on the persuader's perceived expertise, credibility, or trustworthiness (Bandura, 1986, as cited in Goddard et al., 2004). The concept of persuasion would require time for staff to be in meaningful conversation, allowing for this type of feedback and a culture in which teachers see other professionals as credible and trustworthy.

Affective states. According to Goddard et al. (2004), an individual’s level of arousal impacts how that individual perceives their level of competence. Thus, affective states could be attributed to anxiety or excitement as well as an individual's reaction to stress (Goddard et al., 2004). Various factors can lead to a teacher's stress or excitement about a specific topic.

Mastery experiences are the most powerful of the four sources of collective efficacy. Mastery experiences have explained the variation among schools above and beyond

socioeconomic status or proportion of minority population (Goddard & Goddard, 2001). In addition, these perceptions of efficacy influence individuals' behavior and the environment's norms as they provide expectations for success (Goddard & Goddard, 2001). The climate of collective efficacy can also lead group members to normative behaviors, thus pressing teachers to persist in their efforts (Goddard & Goddard, 2001). “In other words, when a school has a collective mastery experience, so too do one or more teachers. Thus, mastery experience is one of the most powerful sources of efficacy-shaping information.” (Bandura, 1997; Pajares, 1997, as cited in Goddard & Goddard, 2001, p. 810). “It has the potential to operate in concert at both the individual and collective levels” (Goddard & Goddard, 2001, p. 810).

In addition to these sources of collective efficacy, in schools PLCs have been found to be an essential component in creating a sense of collective efficacy along with the collection and use of data, collaboration on instructional improvement, and aligning a culture committed to student success (Munoz & Dumas, 2002). Additional research has found several behaviors associated with collective efficacy. These include the in-depth implementation of school improvement plans as well as opportunities for increased teacher leadership and an openness to ideas (Zhou, 2019). For example, researchers have found that “after adjusting for school context, a .41 standard deviation increase in the extent to which teachers reported exerting influence over instructionally relevant school decisions was positively associated with a one standard deviation increase in perceived collective efficacy” (Zhou, 2019, p. 10).

Collective Efficacy in Schools

There are two types of efficacy that are closely related (Goddard & Goddard, 2001). Self-efficacy relates to personal competence and influence over one's belief in their ability to

impact student learning. Collective efficacy refers to group competence and the contextual influence of the group's ability to impact student learning (Zambo & Zambo, 2008).

"In schools, collective efficacy can be understood as a motivational characteristic resulting from teachers' subjective perceptions of their overall level of teaching effectiveness" (Meyer et al., 2020, p. 4). According to Goddard et al. (2015), "The more robust the sense of collective efficacy characterizing the schools in our sample, the greater their levels of student achievement, even after controlling for school and student background characteristics and prior levels of student achievement" (Goddard et al., 2015, p. 525). Teachers' qualities, which include not only self-efficacy but also collective efficacy, as well as their commitment to students, have been shown to affect students' achievement (Bandura, 1997; Goddard et al., 2004; Park, 2005; Thompson et al., & Niska, 2004 as cited in Lee et al., 2011).

Collective efficacy "refers to the expectations of the effectiveness of the school as a whole for the teachers and their collective perceptions and beliefs of organizing and executing teaching practices to make positive educational differences to the students over that of their homes and communities" (Lee et al., 2011, p. 821). Goddard et al. (2004) identify the importance of collective teacher efficacy, reporting that perceived collective efficacy has a solid relationship to attaining goals. This concept emphasizes the collective power of a group of teachers when believing in their ability to do so, to have an influence on student achievement. The perceptions of teachers that, as a whole, they can organize and implement the necessary actions to positively impact students can influence the behaviors of individuals within the environment based on the belief of this likelihood of success (Goddard & Goddard, 2001).

In addition to these concepts, results of previous research confirmed that principals' actions can be a positive predictor of collective efficacy beliefs in schools. This is true when principals take on the role of instructional leader and promote a strong culture of collaboration tied to instructional improvement. These practices have been identified as important in influencing school-level collective efficacy (Goddard et al., 2015). Another way in which administrators can support improved levels of collective efficacy is by assisting teachers in the interpretation of student outcome data. This can help teachers identify the link between what they do and a clear and accurate assessment of particular student outcomes, which can create a direct link to teacher belief in their ability to affect student achievement (McCoach & Colbert, 2010).

Impact of Collective Efficacy on Students

Collective teacher efficacy is a key factor in student achievement. Hattie has identified collective efficacy as the most influential factor (Hoogsteen, 2020). In addition, it was reported that collective teacher efficacy significantly impacts student achievement even more than socioeconomic status (SES), which has often been referenced as an indicator of reduced achievement levels.

> Bandura demonstrated that the effect of perceived collective efficacy on student achievement was stronger than the direct link between SES and student achievement. Similarly, Goddard and his colleagues have shown that even after controlling for students' prior achievement, race/ethnicity, SES, and gender, collective efficacy beliefs have stronger effects on student achievement than student race or SES. (Goddard et al., 2004, p. 7)

Also, “when teachers perceive themselves competent in classroom management it appears that children’s self-efficacy for behavioral regulation and prosocial functioning may be enhanced” (Bandura et al., 2001; Bandura et al., 2003; Skinner & Belmont, 1993, as cited in Gibbs & Powell, 2011, p. 567). In contrast to this finding, “teachers who express little belief in their efficacy are less tolerant of unusual behavior or patterns of learning and are more likely to seek exclusion of ‘problematic’ students from their classroom” (Jordan & Stanovich, 2003; Podell & Soodak, 1993, as cited in Gibbs & Powell, 2011, p. 567).

Relevant research has illustrated outcomes of student learning as it relates to collective teacher efficacy. Previous research in collective efficacy connected a higher degree of collective efficacy to student achievement, stating that “results showed that, in the full multilevel model, 26.6% of the variance in students' mathematics achievement and 19.5% of reading achievement occurred between schools were explained by collective efficacy (Goddard, 2001, as cited in Zhou, 2019, p. 473). In addition, “averaged across content areas, the results suggest that a 1-SD increase in collective efficacy is associated with a gain of about 0.25 SD in terms of the number of students who pass high-stakes assessments in 12th grade” (Goddard et al., 2004, as cited in Zhou, 2019, p. 420).

In considering the success of inclusion, Urton et al. (2014) noted that attitudes and efficacy both play a role for individual teachers and groups, which may be influenced by staff attitudes and the supportive nature of the school environment as it contributes to greater teacher confidence for educating students with disabilities. Urton et al. (2014) also noted that principals’ engagement with staff supports the overall process of school inclusion by establishing common goals and stability, which influence staff attitudes and collective teacher efficacy. Regarding

serving students with disabilities, collective teacher efficacy has a relationship to the acceptance of the general education teacher to educating students with disabilities in the general education setting (Buell et al., 1999). Additionally, staff with a higher sense of collective efficacy set higher expectations and tend toward more student-centered approaches (Hoogsteen, 2020).

Impact of Collective Efficacy on Teachers

According to Goddard et al. (2000), teacher efficacy is specific to the context. Therefore, teachers may feel more efficacious in a particular context or setting. Furthermore, in contrast to an individual's sense of self-efficacy, collective teacher efficacy is attributed to a group and the dynamics of the group members. However, a school staff that included teachers with higher collective efficacy tended to enhance teachers' self-efficacy positively. At the same time, the inverse was also confirmed (Goddard et al., 2004, as cited in Lee et al., 2010). This is important as "Teachers with high collective efficacy tended to pursue those activities in which they had the capacity to succeed, persist more in teaching effort, set reasonable or high working goals and try harder to find ways to solve problems" (Goddard & Goddard, 2001; Ross & Gray, 2006; Schechter & Tschannen-Moran, 2006, as cited in Lee et al., 2010, p. 828).

> Indeed, an individual with modest teacher efficacy might persist more in the face of personal obstacles and setbacks in a school where teachers tend to believe in the group's conjoint capability to educate the students successfully. Conversely, the same individual might experience a decrease in teacher efficacy upon joining a faculty that dwells on past group failures and has little expectation of organizational improvement. (Goddard & Goddard, 2001, p. 810)

In addition to these concepts, teachers benefit when they experience a higher degree of collective efficacy. “Teachers who perceive a strong sense of collective efficacy exhibit a positive attitude toward professional development, higher job satisfaction, and commitment to the teaching profession, less stress or burnout” (Zhou, 2019, p. 71). Bandura (2000) reported that higher perceived collective efficacy leads to increased motivational investment in the undertakings of a group as well as a stronger commitment in the face of setbacks in addition to greater accomplishments in performance.

Considering the impact of opportunities for true collaboration, as well as the current climate and group dynamic, one could connect different areas of individual self-efficacy to the greater collective to create a more comprehensive belief in a group’s ability to affect outcomes.

> People’s shared beliefs in their collective power to produce desired results are a key ingredient of collective agency. A group’s attainments are the product not only of shared knowledge and skills of its different members, but also of the interactive, coordinative, and synergistic dynamics of their transactions. (Bandura, 2000, p. 75)

The concept of efficacy has been used to describe both a belief that an action will lead to an outcome and that one can perform that action successfully (Bandura,1977, as cited in Buell et al., 1999). For instance, a teacher’s belief in their ability to positively impact learning and thus positively affect a student’s life will improve the teacher’s sense of self-efficacy. According to research by Fletcher (1990) as cited n Buell et al., (1999) of 6,173 teachers in 315 schools, efficacy was related to the influence of teachers over school policy and the degree to which teachers were involved in decisions regarding instruction and student groupings (Fletcher, 1990, as cited in Buell et al., 1999).

Teachers' collective efficacy for instructional strategies and student discipline were found to significantly and positively predict teachers' commitment to students. Teachers with high collective efficacy tended to seek out activities that provided a greater likelihood of success, persisted more in the efforts they put forth in teaching, and set reasonable or high working goals, with an increased commitment to finding ways to solve problems (Goddard & Goddard, 2001; Ross & Gray, 2006; Schechter & Tschannen-Moran, 2006, as cited in Lee et al., 2010). Teacher commitment to students, demonstrated by selecting teaching as a continuous career, is essential for developing and encouraging student-centered instruction, improving teacher professionalism and, thus, student learning (Lee et al., 2010).

Summary

As educators and school leaders strive for success and equitable opportunities with improved outcomes for students with disabilities, several practices and concepts are revealed in the literature that may provide insight for improvement. As inclusion has continued to become more prevalent and the number of students with disabilities increases, it is essential to provide general and special education teachers with training and opportunities to collaborate. Current literature supports collaboration and training as two necessary practices for successfully educating students with disabilities. Furthermore, the literature indicates the importance of fostering practices that will improve collective teacher efficacy, given its high impact on student achievement. Exploring teacher perceptions of their collective efficacy for serving students with disabilities and gaining feedback on practices that school leaders can embed into teacher experiences may point to insights about improving in this area.

Chapter 3: Methodology

Background

According to statistics from the Minnesota Department of Education (2022), the number of students identified as having a disability and receiving special education services has been increasing (Data reports and analytics, n.d.). National statistics report reduced outcomes for students with disabilities (Coe - students with disabilities, 2022a). By nature of being identified for services, students are already experiencing a significant discrepancy in specific skills compared to their peers. Increasing numbers of students are receiving services in the general education setting which requires both general and special education teachers to be well-equipped to support students with disabilities.

The concept of self-efficacy encompasses a belief that actions will lead to an outcome and that there is an ability to perform those actions (Bandura, 1977, as cited in Buell et al., 1999). In addition to self-efficacy, literature indicates the concept of collective efficacy holds strong merit for improving student outcomes. Research has indicated that improved perceptions of collective efficacy result in improved student outcomes (Hoogsteen, 2020). It has been demonstrated in research that perceived collective efficacy has a stronger link to student achievement than socioeconomic status (Goddard et al., 2004, p. 7).

Successful and meaningful inclusion requires time for collaboration between general and special education teachers (Carpenter & Dyal, 2007, p. 345). Special education teachers must collaborate with various professionals to ensure student needs are met, and plans are appropriately implemented. Collaboration among professionals is identified as a high-leverage practice in special education, which is referenced as a practice that improves outcomes for

students with disabilities (McLeskey et al., 2015). Research indicates when time for collaboration is provided, structured and supported, outcomes for students with disabilities improve (Carter et al., 2009).

Successfully instructing students in an inclusive setting requires training and support (Buell et al., 1999). Current evidence indicates that few general education teachers feel prepared to serve students with disabilities in the general education classroom (Buell et al., 1999). In addition, both general and special education teachers have demonstrated a need for additional training in legal components of IDEA (Markelz et al., 2021). Additionally, universal design for learning is a framework that leads to a reduction in barriers and improves access to instruction for students with disabilities. Training in these intentional practices may assist teachers in feeling more prepared to serve students in the general education setting.

Requirements to educate students in the least restrictive environment, combined with increased numbers of students and staggering statistics on outcomes, necessitate the continued exploration of recommendations for educators and leaders that will have the greatest likelihood of improving student outcomes. This study will focus on specific opportunities administrators can provide to teachers regarding collaboration and training. It will also focus on collective teacher efficacy. When considering learners with special needs, this study will determine general and special education teachers' sense of collective efficacy when educating students with disabilities, current practices of school leaders as it relates to creating opportunities for collaboration and training, and the relationship between these two concepts. This study aims to provide recommendations to school leaders in determining priorities of practice that teachers report to be most important to increasing their capacity for educating students with disabilities

and that may improve the degree to which educators perceive their collective efficacy for educating students with disabilities.

Statement of Problem and Purpose of the Study

While several research studies exist on the concept of collective teacher efficacy, collaboration, and training, in reviewing the literature, there were limitations found in the research reviewed regarding current perceptions of collective efficacy specific to serving students with disabilities and their relationship to specific experiences with collaboration between general and special education teachers as well as specific opportunities for training and professional development. Although building leadership influences the degree to which opportunities are available for collaboration and training, the literature reviewed did not link these topics to the collective efficacy of staff serving students with disabilities. In addition, none of the studies reviewed identified the opportunities around collaboration and training that administrators provide to teachers when educating students with disabilities.

The study aims to examine general and special education teachers' sense of collective efficacy when educating students with disabilities. It will explore school leaders' practices surrounding collaboration and training in individual buildings, with teachers identifying which practices are most important to increasing their capacity for educating students with disabilities. In addition to gathering this information, this study will seek to ascertain if there is a relationship between the opportunities for teachers to engage in these practices and collective teacher efficacy when educating students with disabilities.

Research Questions

1. What do teachers identify as the most important opportunities that administrators provide to increase teachers' capacity to educate students with disabilities?
2. What training and collaboration practices do teachers have the opportunity to participate in?
3. To what extent is there a relationship between practices teachers participate in and teacher ratings of collective efficacy?

Research Design

Research Design

This quantitative study's conceptual framework is grounded in the understanding that inclusion and collective efficacy result in better student outcomes and the theorization that specific training and collaboration practices may lead to higher collective efficacy scores. The study is grounded in a positivist worldview and uses the survey method with random sampling. Quantitative research begins with a question and then analyzes data that can be numerically quantified (Fallon, 2016). Survey methods are widely used in the social context for quantitative research as they can be widely distributed using random samples (Davies, 2021). This study used convenience sampling by distributing the survey instrument to general and special education teachers in participating buildings, selecting them on the basis of willingness to participate and agreement by the district's special education director.

Sample Group Selection

Convenience sampling was used to identify general and special education teachers for participation in the study. The target population for this study included certified teachers working

in participating K-12 public schools in Minnesota. The researcher reviewed the Minnesota Administrators for Special Education (MASE) membership list, sorting for Special Education Directors and contacting each of these individuals by email. The researcher provided a brief overview of the study and asked for agreement and permission, with the understanding that by agreeing to participate, they would need to distribute the survey to general and special education teachers in the organization they serve. The criteria for selection included:

1. The director is familiar with the researcher, but no responses will be included from teachers who have a current direct working relationship with the researcher.
2. The directors participating in the study must agree to ask their certified teaching staff to consider volunteering to participate in the study.

The rationale for selecting the first criteria is to minimize bias by not having any participants with a current working relationship with the researcher and to gain access to potential willing volunteers, increasing the likelihood of a greater sample size. The rationale for the second criterion was to ensure the director's willingness to share with certified staff because staff participation is critical to the study.

Instrument Development

A survey was developed in which teachers were asked to select the top three practices from a list of twelve that they identify as the most important to increasing their capacity to educate students with disabilities. They were also asked to identify which of these practices they had the opportunity to participate in thus far, during the 2023-2024 school year. Questions regarding activities for collaboration included shared general and special education PLCs, co-teaching, common preparation time, intentional time for consultation between general education

and special education, and time for general and special educators to explore student data. Questions regarding training included shared professional development with general and special education teachers participating simultaneously, training in UDL, training in specific disability characteristics, training in the legal aspects of special education, training related to providing accommodations and modifications, training from related service providers, and training from outside agencies in response to individual student concerns.

The final portion of the survey for teachers consisted of a 21-question six-point Likert-type scale rating their collective efficacy (Goddard et al., 2000). The scale has been widely used to measure collective teacher efficacy (Zhou, 2019). This scale was designed to measure the group-level construct of collective teacher efficacy (Goddard et al., 2000). In the original development of this scale, because efficacy outcomes may differ based on positively and negatively worded phrases, the scale was developed to include both types of statements (Goddard et al., 2000). The survey was tested first by a panel of experts from Ohio State University and a field test of six teachers who provided feedback on the survey. The survey was also piloted with a sample study of 70 teachers. To determine criterion-referenced validity, the researchers examined the relationship between collective teacher efficacy and four predicted criterion variables. Results confirmed the predicted outcomes. The measure also demonstrated high internal reliability (alpha = .96) (Goddard et al., 2000). In examining these outcomes, the validity and reliability of the tool was supported by the results of the pilot study (Goddard et al., 2000).

To ensure the reliability and validity of the instruments, the surveys were field tested by giving them to multiple individuals to be refined before implementation. The survey was given

to nine practicing principals at all grade levels and six doctoral-level cohort members. Feedback was collected for re-wording of survey questions. The survey was also provided to ten teachers in various roles and grade levels. The collective efficacy portion of the survey was not field tested in this process, as the original researchers tested these questions for reliability and validity. The researcher asked the dissertation committee to make additional recommendations, and the survey was submitted to the IRB office for approval. Survey content was then loaded into Qualtrics to prepare for dissemination.

Conducting the Surveys

The researcher emailed all special education directors on the MASE membership list, providing an overview of the study and a permission form with an agreement to participate by sending the survey and description to teachers within the districts they serve. Once signed permission was received from special education directors, building designations were added to Qualtrics. Then the researcher asked special education directors to forward the survey link and a corresponding message to general and special education teachers in the organization they serve. The researcher emailed special education directors a reminder email, asking that they forward a reminder message to their general and special education teachers asking them to complete the survey prior to the closing date.

Analysis of the Data

The first two research questions were analyzed using descriptive statistics. “Descriptive statistics apply only to the members of a sample or population from which data have been collected.” (Urdan, 2010, p. 2). The final research question was analyzed using an Analysis of Variance (ANOVA) and a post-hoc Tukey’s Honestly Significant Difference test to determine

statistically significant differences in collective efficacy scores when having access to particular practices. The purpose of this was to allow the researcher to determine whether opportunities to participate in specific training or collaboration activities are associated with a higher or lower score of collective efficacy. Analysis of data was conducted at the St. Cloud State Office of Statistical Analysis using the Statistical Package for the Social Sciences (SPSS)

By using a survey administered through Qualtrics, data was analyzed to determine the top practices teachers identified as the most important to increasing teacher capacity for educating students with disabilities. Distribution data determines the frequency at which items are selected. Data was also analyzed to determine which activities teachers had the opportunity to participate in, which served as the independent variable. This variable was compared to the dependent variable, the collective efficacy score of staff, to determine if there is a relationship between the opportunity to participate in specific activities and the collective efficacy score of the staff in a building. The scores were obtained by taking the mean after reverse scoring the negatively worded items to analyze the collective efficacy score for each building.

Treatment of the Data

The researcher collected the survey data using Qualtrics. Participants' data remained confidential, but an identifier for each school to compare data at specific sites was included. Individual respondents, buildings, and participants are identifiable in the study findings. All data collected is reported by groups, not by individuals, individual building names, or individual district identifiers. The results of the surveys were loaded into an Excel spreadsheet and analyzed in collaboration with the statistical research center at St. Cloud State University.

Procedures and Timelines

Emails introducing the study were sent to special education directors that provided an overview of the purpose of the study and what it would mean to participate. The researcher asked for a commitment that the survey be forwarded to all general and special education teachers with a corresponding message that indicated voluntary and confidential participation. The email included a permission form for the special education directors to complete. Once permission was received, the Qualtrics survey was updated, loading school names. Surveys were distributed via email, which contained a brief description of the study and a link to the survey. This email was to be forwarded by the director of special education to certified general and special education teachers. Within 10 days of the survey closing, a reminder email was sent to the directors who agreed to participate. The reminder email included a message and the survey link to be forwarded once again to teachers. Data collection began on December 16, 2023, and concluded on January 23, 2024.

Human Subject Approval-Institutional Review Board (IRB)

An application and research protocol were submitted to the Human Subject Approval - Institutional Review Board (IRB). The survey was approved through the IRB before being administered.

Summary

In summary, the goal of this doctoral dissertation was to identify opportunities that administrators can provide to teachers to build their capacity for educating students with disabilities. In addition, this study aimed to identify collective efficacy for serving students with

disabilities and the relationship between opportunities for collaboration and training and collective teacher efficacy.

Chapter 4: Results

Introduction

As school leaders and educators seek improved outcomes for students with disabilities, it is essential to consider practices and perceptions that are known to impact student achievement, access, and support. Inclusion of students with disabilities in the general education setting, has a positive impact on their success after high school (Effective practices - ntact: C, n.d.). Increasing intentional experiences for collaboration and increased opportunities for training leads to increased success for inclusion (Buell et al., 1999; Johnson, 2020). In addition, collective teacher efficacy influences student achievement and positive attitudes toward inclusion are increased with greater levels of collective efficacy (Urton et al., 2014).

School leaders have the opportunity to impact collective efficacy beliefs based on the interactions and experiences created for staff in the school environment (Goddard & Goddard, 2001, Goddard et al., 2015). Exploring teacher ratings of collective efficacy when serving students with disabilities and gaining feedback on opportunities that administrators can incorporate into the professional workday may reveal where schools may improve their practices.

Research Problem

While several research studies exist on the concept of collective teacher efficacy, collaboration, and training, in reviewing the literature, there were limitations found in the research reviewed regarding current perceptions of collective efficacy specific to serving students with disabilities and their relationship to specific experiences with collaboration

between general and special education teachers as well as specific opportunities for training and professional development.

Research Purpose

This study examined general and special education teachers' sense of collective efficacy when educating students with disabilities. It explored school leaders' practices surrounding collaboration and training in individual buildings, with teachers identifying which practices are most important to increasing their capacity for educating students with disabilities. In addition to gathering this information, this study explored if there is a relationship between the opportunities for teachers to engage in these practices and collective teacher efficacy when educating students with disabilities.

Research Methods

This study design was quantitative, and data for this study was collected using a survey instrument provided to general and special education teachers in participating schools in Minnesota. The survey included demographic data regarding teachers' years of experience, roles, grade levels served, and a selection from twelve practices related to collaboration and training that teachers believe are most important to their increased capacity for educating students with disabilities. The survey also asked teachers to identify activities from the same list of twelve practices that they had the opportunity to participate in thus far, during the 2023-2024 school year. The teacher survey also included a six-point Likert-type scale with specific indicators of collective efficacy and asked teachers to answer the questions in relation to educating students with disabilities. The survey asked staff to respond regarding their work with students with disabilities.

Description of the Sample

For this study, 187 Minnesota Special Education Directors were identified for the initial outreach. The ask was that they forward the survey and a description to teachers within the districts they serve. These individuals were identified from the membership database of the Minnesota Administrators for Special Education (MASE). An email was sent to special education directors with a brief description of the study and a permission form in which they could indicate their agreement to share a link to the survey with the teachers in the school districts they serve. Permission was received from twenty-four directors, with the agreement that they would forward the information to teachers in a total of 168 school buildings. Using data from the Minnesota Report Card, 2020 staffing profile (Minnesota report card, n.d.a), it is estimated that 5,715 certified teachers had access to the survey. In total, 996 certified teachers began the survey, first reviewing the implied consent portion of the survey. After reviewing the implied consent, 977 teachers chose to continue with the survey.

Demographic information, including current experience, age, grade level, subject area, district location, and building size, are all reported in Tables 2-7.

Participants were asked to identify their total years of experience as a teacher. This information was gathered at the beginning of the survey. Participants selected the range of years of experience that they currently had. Table 2 identifies the distribution of responses.

Table 2

Frequency Distribution by Current Experience (N = 977)

Current Experience	N	Percentage
0-3 years	94	10.11
4-7 years	134	14.41
8-12 years	164	17.63
13-18 years	172	18.49
19 or more years	366	39.35
Did not answer	47	

The current years of experience most frequently reported by respondents (39.35%, N = 366) was 19 or more years. The sum of participants with 8-12 years of experience and 13-18 years of experience (36.12%, N = 336) represented the second most frequent response.

As part of the demographic information, participants were asked to select their current age. This was included as an optional response at the beginning of the survey. Table 3 reports the responses.

Table 3

Frequency Distribution by Age (N = 977)

Age	N	Percentage
20-25	46	4.95
25-35	218	23.47
36-45	277	29.82
46-55	276	29.71
56 plus	112	12.06
Did not answer	48	

The age most frequently reported by respondents (29.82%, N = 277) was 36-45. The second most frequently reported age by respondents (29.71, N = 276) was 46-55. In sum, the majority of responses were between the ages of 36-55, with 59.53% of responses in this category.

An additional demographic question at the beginning of the survey referred to participants' school level. Survey respondents were asked to select the response that best identifies the grade levels they teach. Table 4 reports these responses.

Table 4

Frequency Distribution of School Level (N = 977)

Grade Level	N	Percentage
Elementary	376	41.73
Middle School	170	18.87
High School	232	25.75
K-12 Education	85	9.43
Alternative Education	38	4.22
Did not answer	76	

The school level most frequently reported by respondents (41.73%, N = 376) was elementary. High school was the second most frequently reported school level (25.75%, N = 232).

Subject area responses were included as part of demographic questions in the survey. Respondents were asked to select the response that best described the subject area in which they teach. Table 5 reports these responses.

Table 5

Frequency Distribution of Subject Area (N = 977)

Subject Area	N	Percentage
Art	13	1.43
Elementary	179	19.65
Math	49	5.38
Music	18	1.98
Other	124	13.61
Physical Education	21	2.31
Reading/Language Arts/English	82	9.0
Science	33	3.62
Social Studies	37	4.06
Special Education	355	38.97
Did not answer	66	

The subject area most frequently reported by respondents (38.97%, N = 455) was special education. The second most frequent response reported (19.65%, N = 179) was elementary education.

In addition, the demographic questions at the end of the survey asked about district Gr within the state of Minnesota. Respondents were asked to identify between Metro, Out-state and Suburban districts. Table 6 reports responses.

Table 6

Frequency Distribution for District Location (N = 977)

District Location	N	Percentage
Metro	53	7.12
Out-State	191	25.67
Suburban	500	67.20
Did not answer	233	

The location most frequently reported by respondents (67.20%, N = 500) was suburban school districts. The second location most frequently reported by respondents (25.67%, N = 191) was Greater Minnesota or Out-State.

Finally, demographic information questions at the end of the survey were included to address building size. Respondents were asked to select the response that describes the size of the building in which they teach. Table 7 reports these responses.

Table 7

Frequency Distribution for Building Size (N = 977)

Building size	N	Percentage
between 150-250	48	6.45
between 250-400	114	15.32
between 400-600	140	18.82
between 600-800	142	19.09
between 800-1000	111	14.92
Less than 150	64	8.60
More than 1000	125	16.80
Did not answer	233	

The building size most frequently reported (19.09%, N = 142) was between 600-800. The second most frequently reported building size (18.82%, N = 140) was between 400-600. In total, buildings between 250-800 (53.23%, N = 396) represented the majority of participant responses.

The remainder of the questions on the survey focused on practices that teachers identify as important to increasing their capacity for educating students with disabilities, as well as questions that represent their collective efficacy when educating students with disabilities.

Research Question 1

The first area of focus in the study gathered information from participants about their perceptions of practices that build their capacity for educating students with disabilities. The first research question being analyzed asks the following.

What do teachers identify as the most important opportunities that administrators provide to increase teachers' capacity to educate students with disabilities?

Quantitative data was collected through a teacher survey. Participants were asked to identify the three practices that they believe to be the most important to increasing their capacity for educating students with disabilities. Table 8 reports the responses.

Table 8

Summary of the Top Selected Choices Teachers Identify as Most Important to Increasing their Capacity for Educating Students with Disabilities (N = 977)

Practice	N	Percentage
Time provided in teachers' schedules for consultation between general and special education teachers	467	47.79
Providing training related to accommodations and modifications	312	31.93
Opportunities for general and special education teachers to engage in co-teaching	265	27.12
Common prep time for general and special education teachers	244	24.97
Shared professional development, including general and special education teachers, simultaneously	233	23.84
Providing training related to specific disability characteristics	182	18.62
Opportunities for general and special education teachers to explore student data together	164	16.78
Professional learning communities in which general and special education teachers are grouped together	147	15.04
Provide training from specific related service providers (occupational therapist, physical therapist, social worker)	78	7.98
Provide training about universal design for learning	60	6.14
Providing training specific to legal aspects of special education	55	5.62
Providing specific training from outside agencies in response to individual student concerns	44	4.50

Of the 977 respondents, 467, or 47.79%, selected the attribute of time provided in teachers' schedules for consultation between general and special education teachers as one of the three most important practices for increasing their capacity for educating students with disabilities. Second to this selection, of the 977 respondents, 312, or 31.93%, selected training related to accommodations or modifications as one of the three most important practices for increasing teachers' capacity for educating students with disabilities. Finally, of the 977 respondents, 265, or 27.12% selected opportunities for general and special education teachers to engage in co-teaching as one of the three most important practices for increasing their capacity for educating students with disabilities. Of the top four most frequent responses, three of them related to collaborative practices, while one related to training. When considering all responses, the four least frequent responses related to practices surrounding training.

When controlling for years of experience, the data was analyzed for differences in responses for teachers with more years of experience compared to teachers with fewer years of experience. Table 9 reports the responses of teachers with 19 or more years of experience. This data represents the largest respondent group.

Table 9

Summary of Top Responses of Teachers with 19 or More Years of Experience Regarding Practices That Teachers Identify as Most Important to Increasing their Capacity for Educating Students with Disabilities (N = 366)

Practice	N	Percentage
Time provided in teachers' schedules for consultation between general and special education teachers	224	61.20
Providing training related to accommodations and modifications	129	35.20
Opportunities for general and special education teachers to engage in co-teaching	116	31.69
Common prep time for general and special education teachers	104	28.41
Shared professional development, including general and special education teachers, simultaneously	102	27.86
Opportunities for general and special education teachers to explore student data together	85	23.22

In comparison to the overall sample, teachers with 19 or more years of experience identified the same attributes as most important to increasing their capacity for educating students with disabilities. While the top three responses were the same, there was some variability in the percentage of teachers who chose each of these top three choices when compared to the overall sample. For example, time provided in teachers' schedules for consultation between general and special education teachers was reported as one of the three most important practices for increasing teachers' capacity for educating students with disabilities by 61.20% of respondents in this group as compared to 47.79% of the overall sample. Providing training related to accommodations and modifications was reported by 35.20% of respondents in this group as compared to 31.93% of the overall sample. Finally, opportunities for general and

special education teachers to engage in co-teaching was reported as one of the three most important practices by 31.69% of the respondents in this group, in comparison to 27.21% of the overall population.

Teachers with fewer years of experience were compared to determine if they identified different areas of priority. A review of the responses from this group was chosen to determine if teachers with the fewest years of experience reported different priorities that would be important to increasing their capacity for educating students with disabilities. Table 10 reports teachers' responses with 0-3 years of experience.

Table 10

Summary of Top Responses for Teachers with 0-3 Years of Experience Regarding Practices that Teachers Identify as Most Important to Increasing Their Capacity for Educating Students with Disabilities (N = 94)

Practice	N	Percentage
Providing training related to accommodations and modifications	43	45.74
Time provided in teachers' schedules for consultation between general and special education teachers	39	41.48
Providing training related to specific disability characteristics	31	32.97
Shared professional development, including general and special education teachers, simultaneously	27	28.72
Opportunities for general and special education teachers to engage in co-teaching	27	28.72
Common prep time for general and special education teachers	25	26.59

Teachers with 0-3 years of experience reported differences from the overall sample and from teachers with 19 years or more experience. Time provided for consultation, providing training related to accommodations and modifications and opportunities for general and special education teachers to engage in co-teaching were the most frequently identified practices by teachers in the overall sample, teachers with 19 or more years of experience. Teachers with 0-3 years of experience reported training in accommodations and modifications as the top response, time provided for consultation between general and special education teachers as their second

most frequent response and training in specific disability characteristics as their third most frequent response. In contrast with teachers with 19 or more years of experience, teachers with three or fewer years reported more interest in training opportunities.

When controlling for subject area, data was analyzed to compare the responses regarding the top practices for increasing the capacity of special education teachers with all other certified teachers. Table 11 reports the data of special educators. Only the top five selected attributes are included in Table 11.

Table 11

Summary of Responses for Special Education Teachers Regarding Practices that Teachers Identify as Most Important to Increasing Their Capacity for Educating Students with Disabilities (N= 355)

Practice	N	Percentage
Time provided in teachers' schedules for consultation between general and special education teachers	199	56.05
Common prep time for general and special education teachers	120	33.80
Providing training related to accommodations and modifications	116	32.67
Opportunities for general and special education teachers to engage in co-teaching	103	29.01
Providing training related to specific disability characteristics	85	23.94

Special educators identified time provided in teachers' schedules for consultation between general and special educators as the most frequent response (56.05%). This is the same as the overall sample. The second most frequent response for special educators was common prep time for general and special education teachers (33.80%). The third most frequent response was providing training related to accommodations and modifications (32.67%). The second and third most frequent responses differed from the overall sample. Training related to accommodations and modifications was the second most frequent response from the overall sample. Opportunities for co-teaching was the third most frequent response for the overall sample.

All other licensed educators were compared to special educators to identify any difference in these two populations. Table 12 reports responses from all other licensed teachers as it relates to practices they identified as most important to increasing their capacity for educating students with disabilities. Only the top five selected attributes are included in Table 12.

Table 12

Summary of Responses from Teachers Licensed in All Areas Other Than Special Education Regarding Practices that Teachers Identify as Most Important to Increasing Their Capacity for Educating Students with Disabilities (N = 575)

Practice	N	Percentage
Time provided in teachers' schedules for consultation between general and special education teachers	312	54.26
Providing training related to accommodations and modifications	229	39.82
Opportunities for general and special education teachers to engage in co-teaching	189	32.86
Common prep-time for general and special education teachers	147	25.56
Providing training related to specific disability characteristics	120	20.86

When compared to special educators, all other licensed educators identified the same five most frequently reported practices. There were some differences in frequency among these five practices when comparing these groups. Both special educators and all other licensed educators identified time provided in teachers' schedules for consultation between general and special educators as the most frequently chosen practice for increasing teacher capacity for educating students with disabilities. Special educators identified common prep time as the second most frequent response, while this was fourth for all other licensed educators. Special educators chose training in accommodations and modifications as the third most frequent response, while all other licensed educators chose this as the second most frequent response.

Overall, the three most frequently reported attributes included time provided in teachers' schedules for consultation between general and special education teachers, training related to accommodations and modifications, and opportunities for general and special education teachers

to co-teach together. When considering teachers with fewer years of experience, specifically with 0-3 years of experience, this group of educators identified training related to specific disability characteristics as one of their top three practices to increase their capacity for educating students with disabilities. This was not selected in the top five choices of the overall sample. Finally, special educators identified common prep time in their top three practices, which was not identified as one of the top three practices of all other educators.

Research Question 2

The second area of focus in the study explored the actual opportunities for training and collaboration that teachers were able to take part in thus far, during the 2023-2024 school year. The research question sought to determine the following:

What training and collaboration practices do teachers have the opportunity to participate in?

A portion of the teacher survey, which asked teachers to identify all the practices related to collaboration that they had access to up until the survey was administered in the 2023-2024 school year, was the source of this quantitative data. Collaborative practices relate to activities in which teachers were engaged in dialogue and activities in pairs or in small groups. Teachers were not limited in the number of responses as they may have had the opportunity to participate in many or few of the practices during the fall of the 2023-2024 school year. Table 13 reports the responses related to collaboration practices.

Table 13

Top Reported Collaboration Practices Teachers had Access to During the 2023-2024 School Year (N = 977)

Practices	N	Percentage
Professional learning communities in which general and special education teachers are grouped together	270	27.63
Opportunities for general and special education teachers to explore student data together	161	16.47
Opportunities for general and special education teachers to engage in co-teaching	151	15.45
Common prep time for general and special education teachers	136	13.92
Time provided in teachers' schedules for consultation between general and special education teachers	124	12.69

Of the 977 respondents, 270, or 27.63%, reported that they had the opportunity to participate in professional learning communities in which general and special educators are grouped together during the fall of the 2023-2024 school year. This was the most frequently identified collaborative practice. Of the remaining collaboration practices, 161 or 16.47% of the 977 respondents reported having access to opportunities to explore student data together. In addition, 151 of the 977 respondents or 15.45%, reported having had opportunities for general and special educators to participate in co-teaching together. Common prep time was reported as an opportunity they had access to by 13.92% of respondents and only 12.69% of respondents reported having an opportunity for consultation between general and special education teachers in their schedule.

As part of the survey, quantitative data was gathered that pertained to training practices. Teachers were asked to identify all the practices related to training that they had access to during the fall of the 2023-2024 school year. Training practices relate to activities in which teachers received some form of professional development in which they were receiving information. Teachers were not limited in the number of responses as they may have had the opportunity to

participate in many or few of the collaboration practices during the fall of the 2023-2024 school year. Table 14 reports the responses related to collaboration practices.

Table 14

Top Reported Training Practices Teachers had Access to During the Fall of the 2023-2024 School Year (N = 977)

Practice	N	Percentage
Shared professional development, including general and special education teachers, simultaneously	545	55.78
Training related to accommodations and modifications	173	17.70
Training about universal design for learning	145	14.84
Training specific to legal aspects of special education	122	12.48
Training from specific related service providers (occupational therapist, physical therapist, social worker)	115	11.77
Training related to specific disability characteristics	97	9.92
Specific training from outside agencies in response to individual student concerns.	78	7.98

Of the 977 respondents, 545, or 55.78%, reported that they had the opportunity to participate in shared professional development, including general and special educators, simultaneously during the fall of the 2023-2024 school year. This was the most frequently identified training practice. Of the remaining training practices, 173 or 17.70% of the 977 respondents reported access to training in accommodations and modifications. In addition, 145 of the 977 respondents or 14.84%, reported training in universal design for learning. Of the 977 respondents, 122 or 12.48%, had access to training specific to legal aspects of special education.

In summary, the top three collaborative practices teachers reported having access to were professional learning communities in which general and special educators are grouped together, opportunities to explore student data together, and co-teaching. The top three training practices teachers reported having access to were shared professional development, training related to accommodations and modifications, and training in universal design for learning. Overall, when looking at all the practices including collaboration and training activities, access to shared

professional development, shared professional learning communities and training related to accommodations and modifications were the most frequent practices educators have had access to during the fall of the 2023-2024 school year.

Research Question 3

The final research question focused on teachers' perceptions of collective efficacy. The participants were asked to complete a collective efficacy scale, considering the questions in relation to staff in their school educating students with disabilities. Then the mean scores were compared with opportunities that participants experienced in during the fall of the 2023-2024 school year. The research question asked the following:

To what extent is there a relationship between practices teachers participate in and teacher ratings of collective efficacy?

Collective efficacy scores were obtained using a 21-item Collective Teacher Efficacy Likert-Type Scale (Goddard et al., 2000). Respondents were provided with statements that reflected group level attributes. They were asked to rate these statements on a six-point scale from strongly disagree to strongly agree. Strongly disagree items were assigned a score of one and strongly agree items were assigned a score of 6. There was no neutral point on this scale. Overall scores were obtained by taking the mean of all items after reverse scoring the negatively worded items. Table 10 reports mean scores by individual buildings. Schools with fewer than 10 respondents identifying their specific school were not included in table 15, therefore 153 schools are not represented in the table below.

Table 15

Schools with the Most Participants Reporting Collective Efficacy Scores (N = 311)

School number	Count	Mean Score
1	34	4.31
2	31	4.16
3	13	4.52
4	15	4.52
5	15	4.16
6	13	4.23
7	26	4.24
8	33	3.97
9	13	3.84
10	24	4.18
11	23	4.23
12	24	4.28
13	14	4.20
14	14	3.39
15	19	4.02

The actual mean collective teacher efficacy scores by building ranged from 2.57 to 5.05 with an overall collective teacher efficacy score of 4.15, when including all responses. When comparing the top 15 schools listed in table 15, all having over 10 respondents, the collective efficacy scores by building ranged from 3.39-4.52. When considering the collective efficacy ratings of strongly disagree to strongly agree, 1.0-2.9 could indicate low collective efficacy as these scores indicate strongly disagree or disagree responses. Scores of 3.0-4.9 could be considered mid-level collective efficacy scores as they represent the statements of somewhat disagree to somewhat agree. Scores of 5.0-6.0 could be considered high collective efficacy as they represent the responses of agree to strongly agree.

Mean collective efficacy scores were compared by the demographic data collected for years of experience to analyze for differences among groups. Table 16 reports the mean collective efficacy score by current years of experience.

Table 16

Mean Collective Efficacy Score by Current Experience

Years of experience	Mean score
0-3	4.15
4-7	4.08
8-12	4.10
13-18	4.09
19 or more	4.21

There were no significant differences in collective efficacy scores based on years of experience, with slightly higher collective efficacy scores reported at 19 or more years of experience. The range of scores in all age groups was 4.08-4.21, with the potential range of scores being 1.0-6.0, with 1.0 indicating low collective efficacy scores and 6.0 indicating high collective efficacy scores.

Scores were also analyzed by age to determine if there were differences among teachers from differing age groups. Table 17 reports the mean collective efficacy scores by age.

Table 17

Mean Collective Efficacy Score by Age

Age	Mean Score
20-25	4.10
25-35	4.11
36-45	4.15
46-55	4.17
55 plus	4.14

There were no significant differences in collective efficacy scores based on age. The range of scores in all age groups was 4.10-4.17, with the potential range of scores being 1.0-6.0, with 1.0 indicating low collective efficacy scores and 6.0 indicating high collective efficacy scores.

Mean scores were also analyzed by school level. Table 18 reports mean collective efficacy scores based on school levels.

Table 18

Mean Collective Efficacy Score by School Level

Grade level	Mean score
Alternative Education	4.10
Elementary	4.26
High School	4.03
K-12	3.97
Middle School	4.13

There were no significant differences in collective efficacy scores based on grade level (with a range of scores between 3.97 and 4.26). Slightly higher scores were reported for elementary teachers (4.26). Higher collective efficacy scores may indicate that teachers may have higher motivational characteristics due to their perceptions of their overall level of teaching effectiveness (Meyer et al., 2020).

Collective efficacy mean scores were analyzed by the demographic response of subject area taught. Table 19 reports the mean collective efficacy scores based on subject areas taught.

Table 19

Mean Collective Efficacy Score by Subject Area

Subject	Mean Score
Physical Education	4.36
Elementary	4.33
Art	4.29
Math	4.22
Science	4.21
Reading/Language Arts/English	4.20
Music	4.10
Social Studies	4.09
Special Education	4.05
Other	4.04

Physical education teachers reported the highest collective efficacy scores, while special education teachers and “other” teachers reported the lowest. The range of scores by subject area was between 4.04 and 4.36. Those with the highest collective efficacy scores indicate the groups' more positive perception of their ability to impact the outcomes of their students (Zambo & Zambo, 2008). Lower collective efficacy scores indicate lower confidence in a group’s ability to impact student achievement.

Collective efficacy scores were compared by the demographic data related to district locations. Table 20 reports the mean collective efficacy score by district location.

Table 20

Mean Collective Efficacy Score by District Location

District	Mean Score
Metro	4.06
Out-state	4.04
Suburban	4.18

Higher collective efficacy scores were reported in suburban districts, indicating slightly higher confidence of the respondents’ ability to impact student outcomes in suburban districts.

Collective efficacy scores were compared by building size. Table 21 reports the mean collective efficacy scores by demographic data reported on the building size.

Table 21

Mean Collective Efficacy Score by Building Size

Size	Mean score
between 150-250	3.95
between 250-400	4.12
between 400-600	4.23
between 600-800	4.20
between 800-1000	4.14
less than 150	4.10
more than 1000	4.11

There were slightly higher scores reported in buildings with 400-600 students and lower scores in buildings with 150-250 students. This indicates that respondents from buildings with fewer students had lower staff perceptions about their ability to impact student achievement.

Survey data was collected to determine which collaboration and training activities teachers had access to during the fall of the 2023-2024 school year. Respondents were able to choose all activities that they had the opportunity to participate in. A mean collective efficacy score was determined for all respondents who had the opportunity to participate in each activity during the 2023-2024 school year. Table 22 reports the overall collective teacher efficacy score for each practice that teachers have had access to during the fall of the 2023-2024 school year.

Table 22

Mean Collective Teacher Efficacy Score by Opportunity (N = 2117)

Practice	N	Percentage	Mean score
Common preparation time for general and special education teachers	136	6.42	4.19
Opportunities for general and special education teachers to explore student data together	161	7.61	4.28
Opportunities for general and special educators to engage in co-teaching	151	7.13	4.18
Professional Learning Communities in which general and special education teachers are grouped together	270	12.75	4.17
Shared professional development, including general and special education teachers, simultaneously	575	25.74	4.19
Specific training from outside agencies in response to individual student concerns.	78	3.68	3.99
Time provided in teachers' schedules for consultation between general and special education teachers	124	5.86	4.26
Training about universal design for learning	145	6.85	4.20
Training from specific related service providers (occupational therapist, physical therapist, social worker)	115	543	4.14
Training related to accommodations and modifications	173	8.17	4.18
Training related to specific disability characteristics	97	4.58	4.11
Training specific to legal aspects of special education	122	5.76	4.19
All practices	2117	5.76	4.18

Mean collective teacher efficacy scores by practice ranged from 3.99 to 4.28 with an overall collective teacher efficacy score of 4.18. The activity teachers participated in and reported the highest collective efficacy score was general and special education teachers having time to explore student data together (4.28). The activity teachers participated in and reported the second-highest collective efficacy score was time provided in teachers' schedules for consultation between general and special education teachers (4.26). The activity that teachers participated in and teachers reported the third-highest collective efficacy score was training in universal design for learning (4.20). This indicates that respondents who had the opportunity to participate in these three practices had the highest ratings of collective efficacy, compared to all other practices.

To further analyze this data and determine if there is a relationship between opportunities to participate in a specific activity and collective efficacy scores at a level that is statistically significant, an analysis of variance or ANOVA was completed. This data was analyzed to determine if the average collective efficacy score of an individual varied based on practices they had access to during the fall of the 2023-2024 school year. The ANOVA was chosen as an extension of the t-test because it allows for more than two categories to be tested over a continuous or quantitative variable, allowing the determination of the average difference between means, when comparing more than two means (Urdan, 2010). When running the ANOVA procedure, a p-value less than 0.05, was used as the widely accepted point at which an item is determined to be statistically significant in the social sciences (Urdan, 2010).

Table 23 reports the statistical analysis of the ANOVA procedure, which reports whether there is a statistically significant difference in the collective efficacy scores of teachers who had access to particular training and collaboration activities.

Table 23

ANOVA Procedure, Teacher Opportunities

Source	DF	Sum of Squares	Mean Squares	F Value	Pr > F
Model	11	5.8486328	0.5316939	1.54	0.1096
Error	2105	725.2524385	0.3445380		
Corrected Total	2116	731.1010713			

This ANOVA did not produce a result that indicated there was a statistically significant difference in the mean score of one category compared to all other categories being tested. In reviewing the p-value, this value was greater than 0.5, revealing that there was no statistically significant difference in mean collective efficacy scores of staff when having the opportunity to participate in specific collaboration and training opportunities.

Figure 2 illustrates the distribution of scores for each practice that respondents had the opportunity to participate in. This provides a snapshot of the distribution of the mean collective efficacy score for each practice. Table 24 provides a key, listing each opportunity as it relates to the item number at the bottom of the distribution of scores. While there were not statistically significant differences in collective efficacy scores obtained for each opportunity to participate in collaboration and training practices, this illustration provides further input on the range of scores for each opportunity.

Figure 2

Distribution of Scores

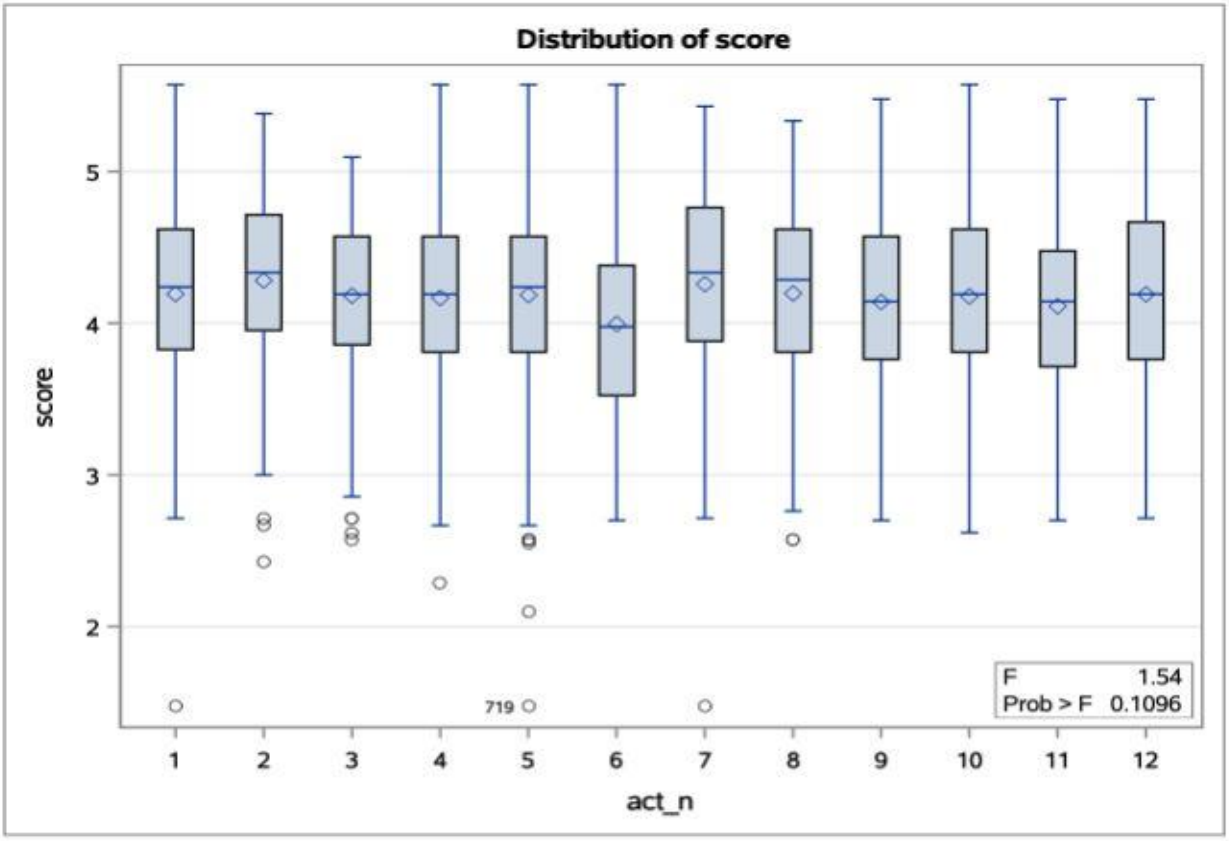


Table 24 identifies the description of item numbers used in the distribution table.

Table 24

Item Key

Item Number	Description of item
1	Common preparation time for general and special education teachers
2	Opportunities for general and special education teachers to explore student data together
3	Opportunities for general and special educators to engage in co-teaching
4	Professional Learning Communities in which general and special education teachers are grouped together
5	Shared professional development, including general and special education teachers, simultaneously
6	Specific training from outside agencies in response to individual student concerns.
7	Time provided in teachers' schedules for consultation between general and special education teachers
8	Training about universal design for learning
9	Training from specific related service providers (occupational therapist, physical therapist, social worker)
10	Training related to accommodations and modifications
11	Training related to specific disability characteristics
12	Training specific to legal aspects of special education

To further explore the results of the ANOVA, a post-hoc test was run using Tukey's Honestly Significant Difference (HSD) test. This test provides a pairwise comparison of items and can inform when two categories are statistically significant from each other. When using this statistical analysis, the researcher is able to take a deeper look at whether or not there is a clear and significant difference in scores when comparing two items. In this statistical analysis, each practice and its corresponding collective efficacy score was compared to every other practice on the list of collaboration and training activities teachers could select on the survey. On this measure, the 0.05 level is considered statistically significant (Urdan, 2010). When reaching the 0.05 significance level, this illustrates a true difference between scores. Table 25 provides information regarding the values used.

Table 25

Tukey's Studentized Range (HSD) Test for Score Values, Teacher Opportunities

Alpha	0.05
Error Degrees of Freedom	2105
Error Mean Square	0.344538
Critical Value of Studentized Range	4.62691

Table 26 provides the comparison of items that were found to be statistically significant in using Tukey's HSD. This data refers to opportunities teachers participated in during the fall of the 2023-2024 school year and collective efficacy scores. Only items that were identified as statistically significant are reported in Table 26. The act_n comparison refers to specific opportunities that respondents participated in during the fall of the 2023-2024 school year. Item 2 in this list of comparisons refers to respondents identifying that they had opportunities for general and special education teachers to explore student data together during the fall of the 2023-2024 school year. Item 6 in this list of comparisons refers to respondents identifying that they have had specific training from outside agencies in response to individual student concerns during the fall of the 2023-2024 school year.

Table 26

Tukey's Studentized Range (HSD) Test for Score, Teacher Opportunities

act_n comparison	Difference between means	Simultaneous 95% confidence limits	
2-6	0.28673	0.02180	0.55166
6-2	-0.28673	-0.55166	-0.02180

This data indicates that there is a statistically significant difference between mean collective teacher efficacy scores when comparing groups of teachers who had access to opportunities to explore student data together (item 2) in comparison to the practice of receiving training from outside agencies in response to individual student concerns (item 6). The mean

collective efficacy scores when general and special education teachers had time to explore student data together was 4.28. The mean collective efficacy score when specific training is provided from outside agencies in response to individual student concerns was 3.99. This indicates a significantly higher collective efficacy score when teachers have opportunities to explore student data together in comparison to the score of teachers who have received specific training provided from outside agencies in response to specific student concerns.

Collective efficacy scores were also compared when considering district locations. Table 27 reports the statistical analysis of the ANOVA procedure for district locations. The value in the rightmost column indicates the p-value. This value determines if there is a statistically significant difference in any of the categories. When indicating a value of less than 0.05, this is considered statistically significant.

Table 27

ANOVA Procedure, District Locations

Source	DF	Sum of Squares	Mean Square	F value	Pr > F
Model	2	2.4862687	1.2431343	3.58	0.0285
Error	737	256.1949873	0.3476187		
Corrected Total	739	258.6812560			

This ANOVA did produce a result that indicated there was a statistically significant difference in the mean score of one category compared to all other categories being tested. To further explore this difference an additional analysis using Tukey's HSD was completed. Table 28 provides the comparison of items that were found to be statistically significant in using Tukey's HSD when considering district location.

Table 28

Tukey's Studentized Range (HSD), District Location

District Comparison	Difference between means	Simultaneous 95% confidence limits		Statistical significance indicated by ***
Suburban- Out-state	0.12225	0.00415	0.24035	***
Suburban-Metro	0.12751	-0.07256	0.32759	
Out-state – Suburban	-0.12225	-0.24035	-0.00415	***
Out-state – Metro	0.00526	-0.20983	0.22036	
Metro-suburban	-0.12751	-0.32759	0.07256	
Metro- Out-state	-0.00526	-0.22036	0.20983	

When completing the ANOVA for district location, the p-value was 0.0285, indicating a statistically significant difference in the mean score of one category when compared to all other categories in this dataset. When completing the posthoc Tukey's HSD test, the data indicated a statistically significant difference between out-state and suburban collective efficacy scores, with lower collective efficacy scores in districts identified as "out-state."

An analysis of collective efficacy scores was completed by the subject area that teachers reported they taught. Table 29 reports the statistical analysis of the ANOVA procedure for the subject area. The value in the rightmost column indicates the p-value. This value determines if there is a statistically significant difference in any of the categories when indicating a value of less than 0.05. Table 29 reports ANOVA results by subject area.

Table 29

ANOVA Procedure by Subject Area

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	10.1659771	1.1295530	3.34	0.0005
Error	740	250.2262078	0.3381435		
Corrected Total	749	260.3921849			

The ANOVA procedure reports a statistically significant difference between categories. Table 30 provides the comparison of subject areas that were found to be statistically significant using Tukey's HSD in order to further explore the true differences between categories. Due to the number of comparisons, only those found to be statistically significant were included in this table.

Table 30

Tukey's Studentized Range (HSD) Test for Score

Subject area	Difference between means	Simultaneous 95% confidence limits	
Elementary-Special Education	0.27493	0.08529	0.46457
Elementary – Other	0.28968	0.04628	0.53309
Special Education – Elementary	-0.27493	-0.46457	-0.08529
Special Education – Other	-0.28968	-0.53309	-0.04628

When completing the ANOVA for subject areas taught, the p-value was 0.0005, indicating a statistically significant difference in the mean score of one category when compared to all other categories in this dataset. When completing the posthoc Tukey's HSD test, the data indicated a statistically significant difference between the collective efficacy scores of elementary teachers and special education teachers, with lower collective efficacy scores identified by special education teachers. Data also indicated a statistically significant difference between the collective efficacy scores of teachers identified as "other" and elementary teachers, with elementary teachers reporting higher collective efficacy scores. This indicates that when

comparing subject areas taught, respondents who are elementary teachers report the highest collective efficacy scores, indicating a more positive perception in their ability to impact student outcomes than special education teachers and teachers identified as “other.”

Summary

Data from 977 teachers was analyzed to determine what teachers identify as the most important practices related to collaboration and training that administrators can offer them to increase their capacity for educating students with disabilities. In addition, 977 teachers reported which of these activities they have had access to during the fall of the 2023-2024 school year. Teachers completing the survey also rated 21 items on a collective teacher efficacy scale. Mean scores from this scale were analyzed in comparison with opportunities for specific activities that administrators offer to teachers related to collaboration and training. Data was also analyzed for differences among several demographic groups.

Data indicated several specific opportunities identified by respondents as practices that would be most beneficial to increasing their capacity for educating students with disabilities. These responses were fairly consistent among groups, with some differences in frequency of responses between special educators and other licensed educators and some differences in responses of teachers with the most years of experience compared to those with the least years of experience. In addition, data indicated opportunities teachers reported having access to during the fall of the 2023-2024 school year. Finally, some differences were found in collective efficacy scores when considering opportunities that teachers have access to, district location, and subject area taught.

Chapter 5 presents the findings of the study, explains the relationships of these findings to the current review of literature, draws conclusions, and offers recommendations.

Chapter 5: Conclusions and Recommendations

Study Problem

While several research studies exist on the concept of collective teacher efficacy, collaboration, and training, a literature review showed limitations in the research reviewed regarding current perceptions of collective efficacy specific to serving students with disabilities and their relationship to specific experiences with collaboration between general and special education teachers as well as specific opportunities for training and professional development.

Study Purpose

This study examined general and special education teachers' sense of collective efficacy when educating students with disabilities. It explored school leaders' practices surrounding collaboration and training in individual buildings, with teachers identifying which practices are most important to increasing their capacity for educating students with disabilities. In addition to gathering this information, this study explored if there is a relationship between the opportunities for teachers to engage in these practices and collective teacher efficacy when educating students with disabilities.

As school leaders and educators strive for improved outcomes for students with disabilities, considering practices and perceptions that are known to impact student achievement, access, and support may assist in this pursuit. Increasing opportunities for collaboration and professional development leads to increased success with inclusion (Buell et al., 1999; Johnson, 2020). In addition, collective teacher efficacy influences student achievement as well as attitudes toward inclusion (Urton et al., 2014).

School leaders have the opportunity to impact collective efficacy beliefs based on the interactions and experiences created for staff in the school environment (Goddard & Goddard, 2001,Goddard et al., 2015) Exploring teacher ratings of collective efficacy when serving students with disabilities and gaining feedback on practices teachers identify as most important to increasing their capacity for educating students with disabilities may reveal insights into where schools may improve their practices.

Research Questions

1. What do teachers identify as the most important opportunities that administrators provide to increase teachers' capacity to educate students with disabilities?
2. What training and collaboration practices do teachers have the opportunity to participate in?
3. To what extent is there a relationship between practices teachers participate in and teacher ratings of collective efficacy?

Data Gathering and Analysis

For this study, 187 Minnesota Special Education Directors were identified for the initial outreach of participants. These Special Education Directors were asked to provide permission to participate in the study and to share a brief description of the study and the survey with teachers in the districts they serve. The Special Education Directors contacted were individuals identified from the membership database of the Minnesota Administrators for Special Education (MASE). An email was sent to these individuals with a brief description of the study and a permission form in which they could indicate their agreement to share a link to the survey with school districts they serve. Permission was received from twenty-four directors, with the agreement to

forward the information to teachers in a total of 168 school buildings. After receiving permission, a teacher survey was updated to include specific school building names to reflect the buildings the director agreed to send the survey link to.

An additional email was sent to directors who provided permission, with another brief overview and the survey link. They were also provided directions regarding a second email they would be sent that they would need to forward to general and special education teachers in their organization. Within ten days of the survey close, a second reminder email was sent asking directors to forward this survey reminder to teachers in their organization.

Using data from the Minnesota Report Card, 2020 staffing profile (Minnesota report card, n.d.b), it is estimated that 5,715 certified teachers had access to the survey. In total, 996 certified teachers began the survey, first reviewing the implied consent portion of the survey. After reviewing the implied consent, 977 teachers chose to continue with the survey.

Qualtrics was used as the tool for survey development and collection of data. An analysis of data was conducted through the St. Cloud State Office of Statistical Analysis using the Statistical Package for the Social Sciences (SPSS). The data collected was analyzed using frequency distributions for demographic variables and research questions 1 and 2. Mean scores were calculated to determine mean collective efficacy scores. Appropriate analysis of variance (ANOVA) was used to determine statistically significant relationships between practices teachers have participated in during the fall of the 2023-2024 school year and collective efficacy scores. Tukey's HSD was used to determine specific differences between activities and identifiers that indicate statistically significant differences between collective efficacy scores. This chapter reports the summary of findings and conclusions that this study has determined. The information

is organized and reported by research questions. Recommendations for further study are also included.

Study Findings, Conclusions, Recommendations

Research Questions 1

1. What do teachers identify as the most important opportunities that administrators provide to increase teachers' capacity to educate students with disabilities?

When asked to identify which practices teachers believe are most important to building their capacity for educating students with disabilities, survey results indicate that the practices most frequently identified by teachers were time provided in teachers' schedules for consultation between general and special education teachers (47.8% of respondents), providing training related to accommodations and modifications (31.9% of respondents), and opportunities for general and special education teachers to engage in co-teaching (27.1% of respondents). Previous research and literature align with these findings. Collaborative practices such as time for consultation between general and special educators and opportunities for co-teaching have been identified as high-leverage practices for educating students with disabilities (McLeskey et al., 2015). In addition, past research has indicated that teachers report that collaboration has assisted them in becoming better teachers (Rainforth & England, 1997).

As the trajectory towards more inclusive settings increases and the array of student needs widens, the complex nature of educating students within inclusive systems has led to educators seeking more opportunities for meaningful collaboration (Sutton & Shouse, 2016). In addition, previous research indicates that successful and meaningful inclusion requires time for collaboration between general and special education teachers (Carpenter & Dyal, 2007).

Furthermore, time has been cited as a necessary component to successful collaboration (Carter et al., 2009). Therefore, it is not surprising that the findings of this study further confirm the interest in time for collaboration as teachers most frequently reported that time for consultation between general and special education teachers within the workday as most important to increasing their capacity for educating students with disabilities. This finding is also consistent with the researcher's experience as a special education director. When speaking with educators, a frequent request is related to time and opportunities for educators to work together.

In addition, the second most frequently reported attribute was training in accommodations and modifications. Previous research indicates teachers who understand and appropriately implement curricular modifications have students with disabilities in the classroom who are more engaged and have fewer behaviors (Lee et al., 2010). Findings of this study reveal that teachers identify training in accommodations and modifications as one of the top three practices for increasing their capacity for educating students with disabilities. However, previous research indicates that while 96% of teachers report that they teach students with disabilities, less than one-half have received training in adaptations to the curriculum (Fullerton et al., 2011). The interest in this training related to accommodations and modifications align with these findings. Also, previous findings of the impact when teachers understand how to implement accommodations and modifications are in alignment with teacher self-reports of this type of training increasing their capacity for educating students with disabilities. It is the experience of the researcher that teachers express interest in better understanding how to determine appropriate accommodations and modifications and how to carry these out in varied educational settings.

When controlling for years of experience in comparison to the overall sample, teachers with 19 or more years of experience identified the same experiences related to collaboration and training when compared to the overall sample. Time provided in teachers' schedules for consultation between general and special education teachers was reported as one of the three most important practices for increasing teachers' capacity for educating students with disabilities by 61.2% of respondents in this group as compared to 47.8% of the overall sample. Providing training related to accommodations and modifications was reported by 35.2% of respondents in this group as compared to 31.9% of the overall sample. Finally, opportunities for general and special education teachers to engage in co-teaching were reported as one of the three most important practices by 31.6% of the respondents in this group, compared to 27.1% of the overall population. When considering this, while the three top choices were the same, a greater percentage of teachers with this experience level chose time for collaboration between general and special education teachers. This may be due to the fact that teachers with more experience have had more opportunities for training and feel more comfortable and confident collaborating with others, thus choosing it at a greater frequency than teachers with fewer years of experience.

In contrast, teachers with 0-3 years of experience reported the different practices from the overall sample and from teachers with 19 years or more experience. Teachers with 0-3 years of experience reported training in accommodations and modifications as the top response, time provided for consultation between general and special education teachers as their second most frequent response and training in specific disability characteristics as their third most frequent response. In contrast with teachers with 19 or more years of experience, teachers with three or fewer years reported more interest in training opportunities. This indicates that respondents who

are newer to the field identify that additional training would be beneficial to increasing their capacity for educating students with disabilities.

Previous research indicates that only 29.2% of teachers report they have received adequate training to serve students with disabilities in the general education classroom (Buell et al., 1999). Consistent with this literature, it is the experience of the researcher that teachers who are newer to the field often request additional training as support for their growth in this area. This may be directly related to the lack of pre-service training that teachers receive prior to working as a practicing teacher. In addition, it is the experience of the researcher that several new teachers, especially in the area of special education are entering the workforce without completing the licensing requirements for which they teach. While this study did not separate for licensure status, it is possible that teachers in this group are working with an out-of-field permission or tier 1 or 2 license, which may lead to their increased interest in more training.

Data were also analyzed for differences in subject areas that teachers reported teaching in. When controlling for the subject area taught, special educators identified time provided in teachers' schedules for consultation between general and special educators as the most frequent response (56%). This is the same as the overall sample. The second most frequent response for special educators was common prep time for general and special education teachers (33.8%). The third most frequent response was providing training related to accommodations and modifications (32.6%). The second and third most frequent responses differed from the overall sample. Training related to accommodations and modifications was the second most frequent response from the overall sample. Opportunities for co-teaching was the third most frequent response for the overall sample. This indicates that special education teachers more frequently

cited common prep time in comparison to co-teaching for building their capacity for educating students with disabilities when compared to the overall sample.

These findings may be due to general education teachers not feeling equipped to educate students with disabilities in the general education setting (Buell et al., 1999). This desire is consistent with the experiences of the researcher. General education teachers have requested additional adult support in the general education setting. General education teachers may view co-teaching as a solution to this request as it may serve to build their capacity and support them in educating students with disabilities. In contrast, teachers in special education often request more collaborative time, such as common prep time, so they can engage in some of the indirect duties that are specific to their role. Teachers have indicated that time for collaboration assists them in becoming better teachers (Rainforth & England, 1997). In addition, common prep time reduces the amount of time teachers work in isolation from one another, which has been an experience that has motivated teachers to seek more time for collaboration (Sutton & Shouse, 2016). It has been the experience of the researcher, that special education teachers have requested scheduling that allows for common prep time, reducing isolated planning experiences.

Overall, when analyzing the entire sample, of the top four most frequent responses, three of them related to collaborative practices, while one related to training. When considering all responses, the four least frequent responses were related to practices surrounding training. Educators often cite time as a challenge in their positions (Da Fonte & Barton-Arwood, 2017). With the demands of the role of the general and special educator, this perception of the shortage on time may be one reason for this finding. When teachers attend training, they are often receiving information that must be applied later. Both attending training and later applying this

information require additional time. However, when collaborating with others in activities such as consultation, exploring data, co-teaching, or common prep time, these activities may ease some of the burden of time as ideas can be exchanged and duties can be shared and distributed. It has been the experience of the researchers, that when professional development is being provided, educators often request time to collaborate with peers as an alternative to learning additional information, stating that time is what is most needed to support their efforts.

Partnerships between general and special education teachers result in more meaningful education for students with and without disabilities (Buell et al., 1999). Educators often seek additional opportunities for collaboration (Sutton & Shouse, 2016). These findings support the concept that educators frequently desire collaboration. Educators who participated in this study identified several collaborative practices as important to increasing their capacity for educating students with disabilities. The Council for Exceptional Children (2015) has identified professional collaboration as one of the high-leverage practices for educating students with disabilities (McLeskey et al., 2015) and educators have self-reported that collaboration has helped them become better teachers (Rainforth & England, 1997).

Findings from this study suggest the specific collaborative practices of creating time in teachers' schedules for consultation between general and special education teachers and offering opportunities for general and special education teachers to engage in co-teaching are practices teachers identify as most important to increasing their capacity for educating students with disabilities. In addition, special educators identify common prep time as one of the practices that they most frequently identify as important to increasing their capacity for educating students with disabilities. Given that general and special educators often work in isolation from each other

(Sutton & Shouse, 2016), this finding is not surprising. Often, teachers report that their collaboration happens through unscheduled meetings (Wallace et al., 2002). They seek these opportunities and notice the benefit that comes from them. Teachers may view dedicated time for consultation, co-teaching or common prep as scheduled opportunities that may allow them planned and embedded collaboration to further support their efforts.

Necessary for the development of inclusive schools, leaders must increase the capacity to assist teachers in developing understandings, skills, and awareness in order to provide quality educational access and outcomes for students (Waitoller & Artiles, 2013). Unfortunately, current research identifies that personnel in general education report they do not feel prepared with training or expertise in serving students with disabilities in inclusive settings (Buell et al., 1999). Training in Universal Design for Learning, and efforts to intentionally include this in teacher practices, maximizes access to content for all learners (Foxworth et al., 2021). Understanding specific disability characteristics can lead to seeking appropriate resources, accommodations, and modifications (Draper, 2022). However, results from this study show that of the practices that respondents could choose from, training in accommodations and modifications was the most frequently chosen practice for increasing capacity related to training. Teachers newer to the field identified training in specific disability characteristics as important as well. Overall, the four items chosen least frequently related to training. When considering all items teachers could select as most important to increasing their capacity for educating students with disabilities, the items related to collaboration were chosen more frequently than practices related to training.

Research Question 2

What training and collaboration practices do teachers have the opportunity to participate in?

When asked to identify which practices teachers have had the opportunity to participate in related to collaboration, of the 977 respondents, 27.6%, reported they had the opportunity to participate in professional learning communities in which general and special educators are grouped together. Of the remaining collaboration practices, 16.4% of the respondents reported having access to opportunities to explore student data together. In addition, 15.4% of respondents reported having had opportunities for general and special educators to participate in co-teaching together. Common prep time was identified as an opportunity by 13.9% of respondents and only 12.6% of respondents reported having an opportunity for consultation between general and special education teachers in their schedule.

This data illustrates a difference between what teachers identify as most important to building their capacity and what they actually have access to. Teachers identified several collaborative practices as most important to increasing their capacity for educating students with disabilities. These attributes included time provided in teachers' schedules for consultation between general and special education teachers, opportunities for general and special education teachers to engage in co-teaching, and common prep time. However, these opportunities have not been widely available to respondents of this survey, with fewer than 17% of respondents reporting that they have had access to each of these opportunities during the fall of the 2023-2024 school year.

Time for collaboration is a high-leverage practice that is necessary to providing special education services and improved outcomes in special education (McLeskey et al., 2015). However, structural constraints exist within schools that can be barriers to creating opportunities for collaboration. Approaching collaboration creatively is required to establish collaborative cultures, emerging from authentic problem-solving (Cochran-Smith, & Lytle, 1999; Hargreaves & Fullan, 2012; McLaughlin & Talbert, 2006, as cited in Sutton & Shouse, 2016). Structural constraints within school systems may have been a contributing factor to the frequency of which teachers identified having access to these collaborative activities. Given that there has been little availability of these practices, this may contribute to the greater desire for access to these practices, as reported in the survey.

When asked to identify practices teachers had the opportunity to participate in related to training, of the 977 respondents, 55.7%, had the opportunity to participate in shared professional development, including general and special educators simultaneously. Of the remaining training practices, 17.7% of respondents reported having access to training in accommodations and modifications. In addition, 14.8%, reported having had training in universal design for learning and 12.4%, had access to training specific to legal aspects of special education. Only 9.9% of respondents had the opportunity to receive training in specific disability characteristics.

This data illustrates a difference between what teachers identify as the most important training opportunities for building their capacity and what training opportunities they actually have access to. Teachers identified training in accommodations and modifications and training in specific disability characteristics as most important in this category. However, only 17.7% of respondents had received training in accommodations and modifications, and only 9.9% had

training in specific disability characteristics. This finding is consistent with previous research in which educators report a lack of preparedness for educating students with disabilities (Buell et al., 1999).

Overall, in the areas of collaboration and training, access to shared professional development, shared professional learning communities, and training related to accommodations and modifications were the most frequent practices educators had access to during the fall of the 2023-2024 school year. While these were the top three areas of access, except for shared professional development, all other opportunities were reported by less than 28% of respondents as opportunities available to them during the fall of the 2023-2024 school year. This indicates that of the list of available activities to choose from, very few teachers had the opportunity to participate in most of the activities. This may be due to time constraints and structures within school schedules, as often within the scope of a school calendar there are limited opportunities for training. In addition, there are logistical challenges to creating intentional time for collaboration between general and special education teachers. However, powerful actions of principals are related to time for collaboration and shared understanding through review of student data and observations (Hoogsteen, 2020). Findings from this study indicate limited opportunities for collaboration between general and special educators. While this can be a challenge to incorporate into the professional workday, seeking to find creative ways to embed collaborative opportunities will be an important concept for school leaders to explore.

Leaders must continue to increase the capacity of teachers in developing skills, and awareness in order to provide quality educational access and outcomes for students with disabilities (Waitoller & Artiles, 2013). Research identifies that personnel in general education

do not feel prepared with training or expertise in serving students with disabilities in inclusive settings (Buell et al., 1999). Findings from this study further support that educators report limited opportunities for training, and it would further build their capacity when provided specific to accommodations and modifications. However, this would be most effective if the opportunities to receive training and support in this area were provided through collaborative opportunities and ongoing, job-embedded professional development in which the expertise of staff in the building is leveraged and ongoing.

Research Question 3

To what extent is there a relationship between practices teachers participate in and teacher ratings of collective efficacy?

Collective efficacy scores were obtained by calculating the mean score when using a 21 item, 6-point Likert-type scale and reverse scoring negatively worded items. When considering the collective efficacy ratings of strongly disagree to strongly agree, 1.0-2.9 could be considered to be indicative of low collective efficacy as these scores indicate strongly disagree or disagree responses. Scores of 3.0-4.9 could be considered mid-level collective efficacy scores as they represent the statements of somewhat disagree to somewhat agree. Scores of 5.0-6.0 could be considered high collective efficacy as they represent the responses of agree to strongly agree. The actual mean collective teacher efficacy scores by building ranged from 2.57 to 5.05, with an overall collective teacher efficacy score of 4.15 when including all responses. When comparing the top 15 responding schools, all having over 10 respondents, the collective efficacy scores by building ranged from 3.39-4.52. This suggests that collective efficacy scores in groups with higher response numbers are falling in the mid-level for collective efficacy.

To make meaning of collective efficacy scores, this study analyzed not only group level scores but also variability within groups. Collective efficacy scores were reviewed by obtaining a group level mean for individual schools to determine the level of collective efficacy present there. While this is important to gaining information about the collective perceptions of the school, it is insufficient for having a deeper understanding of context and the needs of teachers within the school (McCoach & Colbert, 2010). To further analyze this data, scores were compared to determine variability of collective efficacy scores within different demographic groups as well.

When comparing demographic data, there were slightly higher collective efficacy scores reported by staff who had 19 or more years of experience. Mastery experiences are reflected in research as the most significant source of efficacy (Goddard & Goddard, 2001). Teachers with more experience may have had more opportunities to work with students with disabilities, thus increasing the likelihood of having mastery experiences, which would lead them to a greater belief in their ability to affect student outcomes in the future.

In contrast to the efficacy of teachers with more experience, teachers with 0-3 years of experience had the second-highest collective efficacy scores. The four sources of collective efficacy are mastery experiences, vicarious experiences, social persuasion, and affective states (Goddard et al., 2004). While teachers are in their first three years, they are more likely to have the opportunity to be mentored by more experienced teachers. This may provide new teachers an opportunity to hear about and witness mastery experiences, which in turn leads to vicarious experiences. Teachers who are being mentored may be provided with additional encouragement, which can serve as a form of social persuasion (Goddard et al., 2004). In addition, teachers with

fewer years of experience may present with a different affective state which is attributed to varied levels of stress or excitement (Goddard et al., 2004). In addition, collective efficacy statements on the scale typically begin with the phrase, “teachers in this school...” versus an “I” statement. Newer teachers may view the abilities of teachers in the school as more successful relative to their own degree of confidence in their abilities.

Even given these theories, it is still surprising that the newest teachers have the second-highest collective scores. Given that many new teachers may be entering the workforce with out-of-field permissions and tier one and two licenses, possibly having less training and certainly fewer experiences, it is counterintuitive that they would have the second-highest collective efficacy scores.

When comparing grade levels taught, there were also slightly higher collective efficacy scores reported by elementary teachers. When considering the role of an elementary teacher compared to a secondary teacher, elementary teachers spend more time in a given day with the same students. While secondary teachers typically only work with students for one period a day. More time with a student with a disability lends itself to more opportunities to observe and respond to individual student needs and may lead to a greater understanding of the student. In addition, it has been the experience of the researcher that more natural opportunities for collaboration take place when a special education teacher is working with a single elementary teacher. In contrast, secondary special education are working with several content area teachers for one student, which leads to time constraints around collaboration. These elements may lead to a greater sense of success from the perspective of an elementary teacher, thus raising the teacher’s sense of efficacy.

When considering the subject area taught, Physical Education teachers reported the highest collective efficacy scores, while special education teachers and "other" teachers reported the lowest collective efficacy scores. The higher scores of Physical Education teachers could be due to the content and activities they engage students in. Data from the Minnesota Department of Education suggests that some of the highest incidence disabilities include students with learning disabilities or emotional or behavioral disabilities (Data reports and analytics, n.d.). By definition, students identified with learning disabilities may have more difficulty with reading, written language, or math, which is often a limited requirement in a physical education class. Based on experience, many students with emotional or behavioral disabilities may excel in environments in which they have opportunities for movement. Examples such as these may explain the higher efficacy scores of Physical Education teachers as they may observe more success with some students with disabilities in this setting.

When considering the lower scores of special education teachers, there was a statistically significant difference between the scores of elementary content teachers and special education teachers as well, with special education teachers reporting significantly lower collective efficacy scores. This could be attributed to the way that collective efficacy scores are stated, as well as the level of success that teachers observe in their respective roles. Collective efficacy statements begin with phrases such as "teachers in this school..." in contrast to self-efficacy statements, which begin with "I" statements. The level of success that a special educator observes in the collective efforts of staff may be perceived as less effective. This may be due to the special educator's role in measuring student progress specific to the lagging skills of individual students. Whereas a general education teacher may not be interacting with and monitoring these specific

lagging skills within the scope of a larger class and may perceive the team's success with students to be greater than the special educator who is closely monitoring individual progress. In addition, it has been the researcher's experience that special educators often report a need to advocate for students to receive the appropriate support as indicated by a student's IEP. This may further result in them reporting lower scores in response to statements that are worded around the group-level skills of teachers in their school.

When analyzing data for district size, higher collective efficacy scores were reported in suburban districts, indicating greater confidence of staff ability to impact student outcomes in suburban districts. There were slightly higher scores reported in buildings with 400-600 students and slightly lower scores in buildings with 150-250 students. This indicates that teachers who responded to this survey from buildings with fewer students may have lower staff perceptions about their ability to impact student achievement. Smaller schools often have access to fewer resources and reduced staff numbers. This may limit opportunities for collaboration and may also limit access to training and other resources. They may also experience a smaller population of students with disabilities, limiting their opportunities for mastery or vicarious experiences with this population of students, which both would raise levels of collective efficacy if present.

A comparison was completed to determine if there was a difference in collective efficacy scores of educators who had access to specific activities. A mean collective efficacy score was determined for all respondents who had the opportunity to participate in each identified collaboration and training activity during the fall of the 2023-2024 school year. Mean collective teacher efficacy scores by practice ranged from 3.99 to 4.28 with an overall collective teacher efficacy score of 4.18. The activity with the highest collective efficacy score (4.28) was the

practice of general and special education teachers having time to explore student data together. The activity with the second-highest collective efficacy score (4.26) was time provided in teachers' schedules for consultation between general and special education teachers. This is consistent with one of the earlier findings in this study in which educators identified this practice as one of the top three items reported as important to building their capacity for educating students with disabilities. This is also consistent with the literature reviewed, noting that opportunities for collaboration lead to more successful education for students with disabilities (McLeskey et al., 2015). Teachers have reported that collaborative activities improve their success with students (Rainforth & England, 1997) and they seek additional collaborative activities (Sutton & Shouse, 2016), which data from this study further confirm. In addition, it has been the experience of the researcher that teachers continue to request and seek opportunities for collaboration and will offer to spend time outside of the typical workday to do so, due to the value they place on this experience.

The activity with the third-highest collective efficacy score (4.20) was training in Universal Design for Learning. This indicator of efficacy is in contrast to what teachers identified as important to increasing their capacity for educating students with disabilities. When completing the portion of the survey asking teachers to identify the top three most important practices, only 2.68% of educators reported Universal Design for Learning as most important. This finding suggests that while teachers do not frequently report this as important to building their capacity, those teachers who have had access to this training reported higher collective efficacy than teachers who had access to many of the other practices noted in the survey. This may be attributed to the respondents' understanding of the concept of universal design for

learning. If a respondent had not had previous training in this concept, they may not have had enough awareness of what it references to choose it as important to increasing their capacity.

The collective efficacy data was further analyzed to determine if there is a relationship between opportunities to participate in a specific activity and collective efficacy scores at a level that is statistically significant. When comparing variables, opportunities for general and special education teachers to explore student data resulted in a higher collective efficacy score than having training from outside agencies in response to individual student concerns at a statistically significant level. Relying on outside consultants for training has been found to be less effective than leveraging the expertise of staff who are already present in the system as they may better understand relevant issues (Sutton & Shouse, 2016). This may contribute to the lower score with training from outside agencies. In addition, bringing in a trainer from an outside agency may only provide singular training sessions. Previous research has indicated collective efficacy may be inhibited with a short-term approach to professional learning in contrast to ongoing professional development (Loughland & Ryan, 2022). When considering the opportunity to explore student data, Fisher and Frey (2001) report that focusing on data and progress monitoring leads to more successful inclusion. In summary, data indicated that there is a statistically significant difference between mean collective teacher efficacy scores when comparing groups of teachers who had access to these two different practices.

Of additional note, when comparing district locations to each other there were differences found. Data indicated a statistically significant difference between Greater Minnesota or out-state and suburban collective efficacy scores, with lower collective efficacy scores in districts identified as “out-state.” This could be due to resources available in different areas of the state,

including access to outside providers and staff who are licensed in special education. Finding licensed staff is a challenge across the state and is often reported by special education directors as more difficult in Greater Minnesota. This may lead to a lower collective efficacy score when compared to teachers who work in schools with additional resources.

When considering collective efficacy, the highest collective efficacy scores indicate a groups' more positive perception of their ability to impact the outcomes of their students (Zambo & Zambo, 2008). Lower collective efficacy scores indicate lower confidence in a group's ability to impact student achievement. Higher collective efficacy scores may indicate that teachers may have higher motivational characteristics due to their perceptions of their overall level of teaching effectiveness (Meyer et al., 2020).

Collective efficacy in schools is grounded in the expectations of the school faculty as a whole and their perceptions of their ability to engage in intentional practices that make a positive difference on student outcomes (Lee et al., 2010). Goddard et al. (2004) identify the importance of collective teacher efficacy, reporting that perceived collective efficacy has a solid relationship to attaining goals. In addition, previous research has identified collective efficacy as having a positive and significant influence on student achievement (Hattie, 2023). Additionally, staff with a higher sense of collective efficacy set higher expectations and tend toward more student-centered approaches (Hoogsteen, 2020) Finally, "Teachers who perceive a strong sense of collective efficacy exhibit a positive attitude toward professional development, higher job satisfaction, and commitment to the teaching profession, less stress or burnout" (Zhou, 2019, p. 71). Findings of this study indicate most overall collective efficacy scores are reported in the mid-level which is a range of 3.0-4.9. Of the schools with greater than ten participants, the

highest collective efficacy score was 4.52. When considering all individual participants, the range of scores was wide with the lowest score being 1.47 and the highest score being 5.57.

This study indicated that having more experience may lead to a higher collective efficacy score. In addition, having opportunities to explore data collaboratively, having time provided in general and special education teachers' schedules for consultation, and providing training in universal design for learning may lead to increased collective efficacy scores.

Limitations of the Study

Roberts and Hyatt define limitations as, “particular features of your study that you know may negatively affect the results or your ability to generalize the findings” (Roberts & Hyatt, 2018, p. 154). Limitations factors that are out of the control of the researcher require consideration as they may negatively impact the outcome. The following are the limitations for this study:

- Over 5,000 eligible teachers could have responded to the survey. Only 977 responded, which resulted in fewer responses in some schools. This impacted the ability to obtain collective efficacy scores that reflect the entire staff.
- Respondents had the opportunity to elect not to answer some questions, and some responses were incomplete, reducing the number of collective efficacy scores since scores can only be obtained by responding to all 21 items.
- The method by which administrators shared the survey link and whether they provided incentives or implied expectations cannot be assured. It was noted that one participant shared with the researcher that the administration presented study participation as a requirement. However, this was mitigated by the implied consent

that was embedded at the beginning of the survey, in which staff could simply choose not to continue with the survey after reading this consent.

Recommendations

Recommendations for the Field

Based on research findings and conclusions drawn from survey data, the following recommendations are offered to the field regarding practices administrators can implement to increase teacher capacity for educating students with disabilities and potentially improve collective efficacy ratings.

1. Administrators should offer opportunities for collaboration between general and special education teachers as part of the professional workday by providing time for consultation between general and special education teachers.
2. Administrators should consider opportunities for general and special education teachers to engage in co-teaching.
3. Administrators should create intentional opportunities for general and special education teachers to explore student data together.
4. Administrators should provide opportunities for general and special education teachers to receive training specific to accommodations and modifications.
5. Administrators should provide training in universal design for learning and the CEC's high-leverage practices (HLPs).
6. Administrators should consider the most effective ways to deliver training on accommodations and modifications, universal design for learning, and the HLPs. It is more effective to leverage staff expertise, offer collaborative opportunities to engage

with the content, and provide ongoing opportunities to embed this new learning in practices.

Recommendations for Further Study

Based on the research findings and the conclusions drawn from the data, the following recommendations are offered as potential areas of further research:

1. A study should be conducted comparing elementary and special educators' self-efficacy in educating students with disabilities and comparing this to collective efficacy scores for each group. Collective efficacy scales provide group-level items, while self-efficacy scales provide individual-level items of efficacy.
2. A study should be conducted on a single-building basis to gather teachers' perceptions about collective efficacy and collect these scores.
3. A study should be conducted gathering additional information about how much time teachers spend engaging in specific activities and comparing this to single building collective efficacy scores.
4. Further study of the experiences of greater Minnesota (out-state) and suburban districts may provide insights into differences in collective efficacy scores for these populations.

Summary

The purpose of this study was to examine general and special education teachers' sense of collective efficacy when educating students with disabilities. The study also explored school leaders' practices of creating opportunities for collaboration and training in individual buildings and the practices that teachers identified as most important to building their capacity for

educating students with disabilities. The study sought to determine if there was a relationship between the practices teachers had opportunities to participate in and collective teacher efficacy scores when educating students with disabilities.

Findings from the study identify that opportunities for consultation between general and special education teachers during the workday, opportunities for co-teaching, and training in accommodations and modifications are identified as the most frequent responses regarded as important to building teachers' capacity for educating students with disabilities. In addition, opportunities for general and special education teachers to explore student data together, time provided in teachers' schedules for consultation between general and special education teachers, and training in universal design for learning may lead to higher collective efficacy scores. This study reveals that continued efforts to increase these specific opportunities for collaboration and training may be well received by teachers who identify these opportunities as important to building their capacity for educating students with disabilities.

References

8710.5400- MN rules part. (m.d.). Office of the Revisor of Statutes. https://www.revisor.mn.gov/rules/8710.5400/

Aron, L., & Loprest, P. (2012). Disability and the education system. *The Future of Children*, *22*(1), 97–122. https://doi.org/10.1353/foc.2012.0007

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, *9*(3), 75–78. https://doi.org/10.1111/1467-8721.00064

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*(1), 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Buell, M. J., Hallam, R., Gamel-Mccormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development and Education*, *46*(2), 143–156. https://doi.org/10.1080/103491299100597

Carpenter, L. B., & Dyal, A. (2007). Secondary inclusion: Strategies for implementing the consultative teacher model. *Education*, *127*(3), 344–350.

Carter, N., Prater, M., Jackson, A., & Marchant, M. (2009). Educators' perceptions of collaborative planning processes for students with disabilities. *Preventing School Failure: Alternative Education for Children and Youth*, *54*(1), 60–70. https://doi.org/10.3200/psfl.54.1.60-70

Cawley, J. F., Foley, T. E., & Miller, J. (2003). Science and students with mild disabilities. *Intervention in School and Clinic*, *38*(3), 160–171. https://doi.org/10.1177/10534512030380030501

Center, N. (2001, November 6). *Brown v. board of education, 347 u.s. 483 (1954) (ussc+)*. https://nationalcenter.org/ncppr/2001/11/06/brown-v-board-of-education-347-u-s-483-1954-ussc/

Coe - students with disabilities. (2022a). https://nces.ed.gov/programs/coe/indicator/cgg

Coe - students with disabilities. (2022b). https://nces.ed.gov/programs/coe/indicator/cgg

Cosier, M., Causton-Theoharis, J., & Theoharis, G. (2013). Does access matter? Time in general education and achievement for students with disabilities. *Remedial and Special Education*, *34*(6), 323–332. https://doi.org/10.1177/0741932513485448

Da Fonte, M., & Barton-Arwood, S. M. (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

Data reports and analytics. (n.d.). https://public.education.mn.gov/MDEAnalytics/DataTopic.jsp?TOPICID=9

Davies, C. (2021). *Quick guide to quantitative research in the social sciences*. University of Wales Trinity St. David.

Draper, E. A. (2022). Supporting students with specific learning disabilities: Strategies for the general music classroom. *Journal of General Music Education*, *36*(1), 47–49. https://doi.org/10.1177/27527646221115153

Effective practices - ntact:C. (n.d.). NTACT:C. https://transitionta.org/topics/effective-practices/*8710.5400 - mn rules part*. (n.d.). https://www.revisor.mn.gov/rules/8710.5400/

Endrew F. v. Douglas County School District, 137 S. Ct. U.S. 988 (2017).

Fallon, M. (2016). Successfully writing about quantitative research (or anything). In *Writing up quantitative research in the social and behavioral sciences* (pp. 29–57). SensePublishers. https://doi.org/10.1007/978-94-6300-609-5_3

Fisher, D., & Frey, N. (2001). Access to the core curriculum. *Remedial and Special Education*, *22*(3), 148–157. https://doi.org/10.1177/074193250102200303

Foxworth, L. L., Hashey, A. I., Dexter, C., Rasnitsyn, S., & Beck, R. (2021). Approaching explicit instruction within a universal design for learning framework. *Teaching Exceptional Children*, *54*(4), 268–275. https://doi.org/10.1177/00400599211010190

Friend, M., Cook, L., Hurley-Chamberlain, D., & Shamberger, C. (2010). Co-teaching: An illustration of the complexity of collaboration in special education. *Journal of Educational and Psychological Consultation*, *20*(1), 9–27. https://doi.org/10.1080/10474410903535380

Fullerton, A., Ruben, B. J., McBride, S., & Bert, S. (2011). Evaluation of a merged secondary and special education program. *Teacher Education Quarterly*, *38*(2), 45–60. http://www.jstor.org/stable/23479692

Gibbs, S., & Powell, B. (2011). Teacher efficacy and pupil behaviour: The structure of teachers' individual and collective beliefs and their relationship with numbers of pupils excluded from school. *British Journal of Educational Psychology*, *82*(4), 564–584. https://doi.org/10.1111/j.2044-8279.2011.02046.x

Goddard, R. D., & Goddard, Y. L. (2001). A multilevel analysis of the relationship between teacher and collective efficacy in urban schools. *Teaching and Teacher Education*, *17*(7), 807–818. https://doi.org/10.1016/s0742-051x(01)00032-4

Goddard, R., Goddard, Y., Sook Kim, E., & Miller, R. (2015). A theoretical and empirical analysis of the roles of instructional leadership, teacher collaboration, and collective efficacy beliefs in support of student learning. *American Journal of Education*, *121*(4), 501–530. https://doi.org/10.1086/681925

Goddard, R. D., Hoy, W. K., & Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, *37*(2), 479–507. https://doi.org/10.3102/00028312037002479

Goddard, R. D., Hoy, W. K., & Hoy, A. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher*, *33*(3), 3–13. https://doi.org/10.3102/0013189x033003003

Gomez-Najarro, J. (2019). An empty seat at the table: Examining general and special education teacher collaboration in response to intervention. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *43*(2), 109–126. https://doi.org/10.1177/0888406419850894

Harvey, M. W., Yssel, N., Bauserman, A. D., & Merbler, J. B. (2008). Preservice teacher preparation for inclusion. *Remedial and Special Education*, *31*(1), 24–33. https://doi.org/10.1177/0741932508324397

Hattie effect size list - 256 influences related to achievement. (n.d.). Visible Learning. https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/

Hattie, J. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). Routledge.

Hattie, J. (2023). *Visible learning, the sequel* (1st ed.). Abingdon, Oxon; New York, NY: Routledge.

Hegarty, S. (1994). Integration and the teacher. In I. M. Abbring, S. Hagerty, C. J. Meijer, & S. J. Pijl (Eds.). *New perspectives in special education*: *A six county study of integration.* Routledge.

Hitchcock, C., & Stahl, S. (2003). Assistive technology, universal design, universal design for learning: Improved learning opportunities. *Journal of Special Education Technology, 18*(4), 45–52. https://doi.org/10.1177/016264340301800404

Hoogsteen, T. J. (2020). Collective efficacy: Toward a new narrative of its development and role in achievement. *Palgrave Communications, 6*(1). https://doi.org/10.1057/s41599-019-0381-z

Hunt, P., Soto, G., Maier, J., & Doering, K. (2003). Collaborative teaming to support students at risk and students with severe disabilities in general education classrooms. *Exceptional Children, 69*(3), 315–332. https://doi.org/10.1177/001440290306900304

Individuals with Disabilities Education Act, 34 C.F.R. § 300 (2012).

Individuals with Disabilities Education Improvement Act, 20 U.S.C. § 1400 (2004).

Iris. (n.d.). https://iris.peabody.vanderbilt.edu/module/inc/cresource/q1/p01/

Izzo, M. (2012). Universal design for learning: Enhancing achievement of students with disabilities. *Procedia Computer Science, 14*, 343–350. https://doi.org/10.1016/j.procs.2012.10.039

Johnson, A. (2020). *An examination of the general education teacher responsibilities, collaboration practices, and professional development needs to educate students with disabilities in the general education classroom* (74) [Doctoral dissertation, St. Cloud State University]. Culminating Projects in Education Administration and Leadership. https://repository.stcloudstate.edu/edad_etds/74

King-Sears, M. E., Dunaway, M., Janney, R., Snell, M. E., Renberg, J., Hamberger, R., … & Dunaway, M. (2015). *Collaborative teaming*. Brookes Publishing. http://ebookcentral.proquest.com/lib/stcloud-ebooks/detail.action?docID=2007416

Kirby, M. (2016). Implicit assumptions in special education policy: Promoting full inclusion for students with learning disabilities. *Child & Youth Care Forum*, *46*(2), 175–191. https://doi.org/10.1007/s10566-016-9382-x

Lee, J., Zhang, Z., & Yin, H. (2011). A multilevel analysis of the impact of a professional learning community, faculty trust in colleagues and collective efficacy on teacher commitment to students. *Teaching and Teacher Education*, *27*(5), 820–830. https://doi.org/10.1016/j.tate.2011.01.006

Lee, S.-H., Wehmeyer, M. L., Soukup, J. H., & Palmer, S. B. (2010). Impact of curriculum modifications on access to the general education curriculum for students with disabilities. *Exceptional Children*, *76*(2), 213–233. https://doi.org/10.1177/001440291007600205

Lipscomb, S., Haimson, J., Liu, A., Burghardt, J., Johnson, D. R., & Thurlow, M. L. (2012). Preparing for life after high school: The characteristics and experiences of youth in special education. Findings from the national longitudinal transition study. *National Longitudinal Transition Study*, *1*.

Loughland, T., & Nguyen, H. (2020). Using teacher collective efficacy as a conceptual framework for teacher professional learning–a case study. *Australian Journal of Education*, *64*(2), 147–160. https://doi.org/10.1177/0004944120908968

Loughland, T., & Ryan, M. (2022). Beyond the measures: the antecedents of teacher collective efficacy in professional learning. *Professional Development in Education*, *48*(2), 348–352. https://doi.org/10.1080/19415257.2020.1711801

Lowrey, K., Hollingshead, A., Howery, K., & Bishop, J. B. (2017). More than one way: Stories of UDL and inclusive classrooms. *Research and Practice for Persons with Severe Disabilities*, *42*(4), 225–242. https://doi.org/10.1177/1540796917711668

Markelz, A. M., Nagro, S. A., Szocik, K., Monnin, K., Gerry, M., Macedonia, A., & Mason, A. (2021). The nature and extent of special education law in teacher preparation. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *45*(3), 185–203. https://doi.org/10.1177/08884064211046248

Mastropieri, M. A., & Scruggs, T. E. (2001). Promoting inclusion in secondary classrooms. *Learning Disability Quarterly*, *24*(4), 265–274. https://doi.org/10.2307/1511115

McCoach, D., & Colbert, R. D. (2010). Factors underlying the collective teacher efficacy scale and their mediating role in the effect of socioeconomic status on academic achievement at the school level. *Measurement and Evaluation in Counseling and Development*, *43*(1), 31–47. https://doi.org/10.1177/0748175610362368

McLeskey, J., Barringer, M.-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., … & Ziegler, D. (2015). *High leverage practices in special education*. CEC. https://doi.org/10.1007/s10643-009-0336-x

McLeskey, J., Barringer, M., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., … & Ziegler, D. (2017). *High leverage practices in special education*. Council for Exceptional Children & CEEDAR Center.

McLeskey, J., Billingsley, B., Brownell, M. T., Maheady, L., & Lewis, T. J. (2019). What are high-leverage practices for special education teachers and why are they important? *Remedial and Special Education, 40*(6), 331–337. https://doi.org/10.1177/0741932518773477

McLeskey, J., Landers, E., Williamson, P., & Hoppey, D. (2010). Are we moving toward educating students with disabilities in less restrictive settings? *The Journal of Special Education, 46*(3), 131–140. https://doi.org/10.1177/0022466910376670

Meyer, A., Richter, D., & Hartung-Beck, V. (2020). The relationship between principal leadership and teacher collaboration: Investigating the mediating effect of teachers' collective efficacy. *Educational Management Administration & Leadership, 50*(4), 593–612. https://doi.org/10.1177/1741143220945698

Minnesota report card. (n.d.a). Minnesota Department of Education. https://rc.education.mn.gov/#mySchool/p--3

Minnesota report card. (n.d.b.). Minnesota Report Card. https://rc.education.mn.gov/#mySchool/p--3

Munoz, M., & Dumas, C. (2002, January 19). *ECIS | A partnership approach: empowering collective efficacy through data, collaboration, and alignment*. https://schoolworldmedia.com/2022/05/02/a-partnership-approach-empowering-collective-efficacy-through-data-collaboration-and-alignment/

National Center for Educational Statistics (NCES). (2019). *IPEDS data feedback report*. https://www.downstate.edu/education-training/student-services/institutional-research/_documents/ipedsdfr/ipedsdfr2019_196255.pdf

Nelson, G., Cook, S. C., Zarate, K., Powell, S. R., Maggin, D. M., Drake, K. R., … & Espinas, D. R. (2022). A systematic review of meta-analyses in special education: exploring the evidence base for high-leverage practices. *Remedial and Special Education*, *43*(5), 344–358.

Nelson, L. L. (2013). *Design and deliver: Planning and teaching using universal design for learning* (1st ed.). Brookes Publishing.

No Child Left Behind, Pub. L. No. 107-110, 115 Stat. 1425 (2002).

O'Shea, D. J., Williams, L., & Sattler, R. O. (1999). Collaboration across special education and general education: Preservice teachers' views. *Journal of Teacher Education*, *50*(2), 147–157. https://doi.org/10.1177/002248719905000208

Petersen, K., & Gencel, C. (2013). *Worldviews, research, methods, and their relationship to validity in empirical software engineering research*. 2013 Joint Conference of the 23rd International Workshop on Software Measurement. https://www.diva-portal.org/smash/get/diva2:834169/FULLTEXT01.pdf

Pisha, B., & Coyne, C. (2001). Smart from the start: The promise of universal design for learning. *Remedial and Special Education*, *22*(4), 197–203.

Rainforth, B., & England, J. (1997). Collaborations for inclusion. *Education and Treatment of Children*, *20*(1), 85–104. https://www.jstor.org/stable/42940553

Rao, K., Ok, M., & Bryant, B. R. (2014). A review of research on universal design educational models. *Remedial and Special Education*, *35*(3), 153–166. https://doi.org/10.1177/0741932513518980

Riccomini, P. J., Morano, S., & Hughes, C. A. (2017). Big ideas in special education: Specially designed instruction, high-leverage practices, explicit instruction, and intensive instruction. *Teaching Exceptional Children*, *50*(1), 20–27. https://doi.org/10.1177/0040059917724412

Roberts, C., & Hyatt, L. (2018). *The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation (updated)* (3rd ed.; Revised ed.). Corwin.

Robinson, L., & Buly, M. R. (2007). Breaking the language barrier: Promoting collaboration between general and special educators. *Teacher Education Quarterly*, *34*(3), 83–94. http://www.jstor.org/stable/23478995

Ryndak, D., Ward, T., Alper, S., Storch, J. F., & Montgomery, J. W. (2010). Long-term outcomes of services in inclusive and self-contained settings for siblings with comparable significant disabilities. *Education and Training in Autism and Developmental Disabilities*, *45*(1), 38–53.

Scruggs, T. E., & Mastropieri, M. A. (2008). *Personnel preparation*. Emerald Group Publishing, Limited.

Sec. 122a.40 MN statutes. (n.d.). https://www.revisor. mn.gov/statutes/cite/122A.40

Shepherd, K. G., Fowler, S., McCormick, J., Wilson, C. L., & Morgan, D. (2016). The search for role clarity. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *39*(2), 83–97. https://doi.org/10.1177/0888406416637904

Sider, S., Maich, K., & Morvan, J. (2017). School principals and students with special education needs: Leading inclusive schools. *Canadian Journal of Education*, *40*(2), 1–31.

Special Education, 34 C.F.R. § 300.39 (2006). https://www.ecfr.gov/current/title-34/subtitle-B/chapter-III/part-300/subpart-A/subject-group-ECFR0ec59c730ac278e/section-300.39

Special Education, 34 C.F.R. § 300.114 (2006). https://www.ecfr.gov/current/title-34/subtitle-B/chapter-III/part-300/subpart-B/subject-group-ECFRce691c806652b84/section-300.114

Sutton, P. S., & Shouse, A. W. (2016). Building a culture of collaboration in schools. *Phi Delta Kappan*, *97*(7), 69–73. https://doi.org/10.1177/0031721716641653

Thomas, G. (2013). A review of thinking and research about inclusive education policy, with suggestions for a new kind of inclusive thinking. *British Educational Research Journal*, *39*(3), 473–490. https://doi.org/10.1080/01411926.2011.652070

Udl: The Udl guidelines. (2023). https://udlguidelines.cast.org/

Urdan, T. C. (2010). *Statistics in plain English* (3rd ed.). Routledge.

Urton, K., Wilburt, J., & Hennemann, T. (2014). Attitudes towards inclusion and self-efficacy of principals and teachers. *Learning Disabilities--A Contemporary Journal*, *12*(2), 151–168.

Vaidya, S. R., & Zaslavsky, H. N. (2000). Teacher education reform effort for inclusion classrooms: Knowledge versus pedagogy. *Education (Chula Vista)*, *121*(1), 145.

van Munster, M. A., Lieberman, L. J., & Grenier, M. A. (2019). Universal design for learning and differentiated instruction in physical education. *Adapted Physical Activity Quarterly*, *36*(3), 359–377. https://doi.org/10.1123/apaq.2018-0145

Waitoller, F. R., & Artiles, A. J. (2013). A decade of professional development research for inclusive education. *Review of Educational Research*, *83*(3), 319–356. https://doi.org/10.3102/0034654313483905

Wallace, T., Anderson, A. R., & Bartholomay, T. (2002). Collaboration: An element associated with the success of four inclusive high schools. *Journal of Educational and Psychological Consultation*, *13*(4), 349–381. https://doi.org/10.1207/s1532768xjepc1304_05

Zambo, R., & Zambo, D. (2008). The impact of professional development in mathematics on teachers' individual and collective efficacy: The stigma of underperforming. *Teacher Education Quarterly (Claremont, Calif.)*, *35*(1), 159–168.

Zhou, Y. (2019). Collective teacher efficacy: An introduction to its theoretical constructs, impact, and formation. *International Dialogues on Education Journal*, *6*(2). https://doi.org/10.53308/ide.v6i2.60

Appendix A

Survey on Principal Practices and Their Relationship to Collective Teacher Efficacy When Educating Students with Disabilities

Survey on Principal Practices & Collective Teacher Efficacy

Survey on Principal Practices and Their Relationship to Collective Teacher Efficacy When Educating Students with Disabilities

Background & Purpose
Current data suggests a need to explore practices that will lead to improved outcomes for students with disabilities. Collective teacher efficacy is one key factor for improved student achievement. Currently, Hattie has identified collective efficacy as having the highest impact on student achievement, with a 1.57 effect size (Hoogsteen, 2020). Principal practices also have an impact on student achievement. Principals have "significant indirect leadership effects on student achievement through their influence on teachers' self-efficacy, commitments, and beliefs" (Ross & Gray, 2006, as cited in Sider et al., 2017).

This survey will gather information about practices related to collaboration and training that teachers identify as most important to increasing teachers' capacity to educate students with disabilities. This survey will also measure the degree of collective teacher efficacy in select Minnesota schools when educating students with disabilities.

Procedure You will be asked to identify practices that you believe are the most important to increasing teacher capacity for educating students with disabilities. You will also be asked to select practices that you have had access to during this school year.
The survey will take ***approximately 10 minutes to complete***.

You are invited to participate in this study to help assess what principal practices are most important to increasing teachers' capacity for educating students with disabilities while also measuring collective teacher efficacy when educating students with disabilities. You were selected as a participant in this study because you are a teacher in a school that was recommended by your district's Director of Special Education for participation in this study.

Background information and purpose
If you decide to participate, you will be asked to complete the online survey, which is anonymous, so no one will be able to identify an individual's specific form. It is important that as many people as possible complete this survey so that an accurate assessment can determine what principal practices are considered most important to increasing teachers' capacity to educate students with disabilities and their possible relationship to collective teacher efficacy

Appendix A (continued)

Risks
There are no foreseeable risks with participation in this study.

Benefits
The questions on this survey were developed to determine what teachers identify as the most important collaboration and training practices to improve teachers' capacity to educate students with disabilities. Data indicates a need to strive for improved outcomes for students with disabilities. It is the hope that the results of this survey will help determine focus areas that will increase teacher capacity and lead to a greater sense of collective teacher efficacy when educating students with disabilities.

Confidentiality
All surveys will be completed anonymously. Survey data will be examined in a group format with no identifiers tied to specific individual responses. Your information will remain confidential.

Research Results
If you are interested in learning the results of the survey, please contact the Doctoral Studies Center for Educational Administration and Leadership at St. Cloud State University, Education Building, 720 Fourth Avenue South, St. Cloud, Minnesota, 56301-4498, 320-308-0121.

Contact Information
If you have additional questions, please contact the researcher at 612-716-4792 or amy.ernst@stcloudstate.edu or the advisor, Dr. John Eller, at jfeller@stcloudstate.edu.

Participation & Consent
Participation is voluntary.
Your decision about participation will not affect your current or future relations with your district or St. Cloud State University.
If you decide to complete the survey and there are any questions you are uncomfortable answering, do not answer them.

Please remember ***your responses are anonymous***.
They are designed to assess principal practices and their relationship to collective teacher efficacy.

If you decide to participate in this study, you can withdraw anytime.
Your participation in this study indicates that you are at least 18 years of age and consent to participate.

Appendix A (continued)

consent
Continue to survey?

- ○ No
- ○ Yes

Skip To: End of Survey If Continue to survey? = No

---

age Please select your age:

- ○ 20-25
- ○ 25-35
- ○ 36-45
- ○ 46-55
- ○ 56 plus

---

current_experience Please select the response that best describes your total experience as a teacher:

- ○ 0-3 years
- ○ 4-7 years
- ○ 8-12 years
- ○ 13-18 years
- ○ 19 or more years

Appendix A (Continued)

grade_level Please select the response that best describes the grade levels you teach.

- ○ Elementary
- ○ Middle School
- ○ High School
- ○ Alternative Education
- ○ K-12

---

subject_area Please select the response that best describes the subject area you teach

- ○ Elementary
- ○ Reading/Language Arts/English
- ○ Science
- ○ Social Studies
- ○ Math
- ○ Special Education
- ○ Music
- ○ Art
- ○ Physical Education
- ○ Other

Appendix A (continued)

principal_practices

Below is a list of practices that principals use related to collaboration and training. Please select the THREE practices that you believe are the most important to increasing your capacity for educating students with disabilities.

- ☐ Shared professional development, including general and special education teachers, simultaneously
- ☐ Opportunities for general and special educators to engage in co-teaching
- ☐ Common preparation time for general and special education teachers
- ☐ Professional Learning Communities in which general and special education teachers are grouped together
- ☐ Time provided in teachers' schedules for consultation between general and special education teachers
- ☐ Opportunities for general and special education teachers to explore student data together
- ☐ Providing training about universal design for learning
- ☐ Providing training related to specific disability characteristics
- ☐ Providing training related to accommodations and modifications
- ☐ Providing training specific to legal aspects of special education
- ☐ Providing training from specific related service providers (occupational therapist, physical therapist, social worker)
- ☐ Providing specific training from outside agencies in response to individual student concerns.

Appendix A (continued)

activities Please select all activities that you have had the opportunity to participate in during the 2023-2024 school year.

- ☐ Shared professional development, including general and special education teachers, simultaneously
- ☐ Opportunities for general and special educators to engage in co-teaching
- ☐ Common preparation time for general and special education teachers
- ☐ Professional Learning Communities in which general and special education teachers are grouped together
- ☐ Time provided in teachers' schedules for consultation between general and special education teachers
- ☐ Opportunities for general and special education teachers to explore student data together
- ☐ Training about universal design for learning
- ☐ Training related to specific disability characteristics
- ☐ Training related to accommodations and modifications
- ☐ Training specific to legal aspects of special education
- ☐ Training from specific related service providers (occupational therapist, physical therapist, social worker)
- ☐ Specific training from outside agencies in response to individual student concerns.

Appendix A (continued)

teacher_sentiment The following questions are taken from a scale created by Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Please answer the following questions in relation to staff in your school educating students with disabilities from strongly disagree to strongly agree.

Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. American educational research journal, 37(2), 479-507

Appendix A (continued)

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Teachers in this school have what it takes to get the children to learn.	○	○	○	○	○	○
Teachers in this school are able to get through to difficult students.	○	○	○	○	○	○
If a child doesn't learn something the first time, teachers will try another way	○	○	○	○	○	○
Teachers here are confident they will be able to motivate their students.	○	○	○	○	○	○
Teachers in this school really believe every child can learn.	○	○	○	○	○	○
If a child doesn't want to learn, teachers here give up.	○	○	○	○	○	○
Teachers here need more training to know how to	○	○	○	○	○	○

Appendix A (continued)

deal with these students.						
Teachers in this school think there are some students that no one can reach.	○	○	○	○	○	○
Teachers here don't have the skills needed to produce meaningful student learning.	○	○	○	○	○	○
Teachers here fail to reach some students because of poor teaching methods.	○	○	○	○	○	○
These students come to school ready to learn.	○	○	○	○	○	○
Homelife provides so many advantages the students here are bound to learn.	○	○	○	○	○	○
The lack of instructional materials and supplies makes teaching very difficult.	○	○	○	○	○	○
Students here just aren't	○	○	○	○	○	○

Appendix A (continued)

motivated to learn.						
The quality of school facilities here really facilitates the teaching and learning process.	○	○	○	○	○	○
The opportunities in this community help ensure that these students will learn.	○	○	○	○	○	○
Teachers here are well-prepared to teach the subjects they are assigned to teach.	○	○	○	○	○	○
Teachers in this school are skilled in various methods of teaching.	○	○	○	○	○	○
Learning is more difficult at this school because students are worried about their safety.	○	○	○	○	○	○
Drug and alcohol abuse in the community make learning	○	○	○	○	○	○

Appendix A (continued)

difficult for students here.						
Teachers in this school do not have the skills to deal with student disciplinary problems.	○	○	○	○	○	○

Appendix A (continued)

school From the dropdown menu, please choose the school you currently work at.

---

district Please select the district that best describes where you work.

- ○ Metro
- ○ Suburban
- ○ Out-state

---

building_size Please select the response that best describes the size of the building where you currently teach.

- ○ Less than 150
- ○ between 150-250
- ○ between 250-400
- ○ between 400-600
- ○ between 600-800
- ○ Between 800-1000
- ○ More than 1000

Appendix B

Email to Directors

I am Amy Ernst, a practicing Director of Special Services and a doctoral candidate in the Educational Administration and Leadership program at St. Cloud State University. I am contacting you to see if you would be willing to participate in a research study by forwarding a survey to general and special education teachers in your organization. For my research, I am examining practices that general and special education teachers identify as most important to building their capacity for educating students with disabilities and the relationship of these practices to collective teacher efficacy when educating students with disabilities.

Current data suggests a need to pursue improved outcomes for students with disabilities. Collective teacher efficacy is an area of interest because of its impact on student achievement. Teachers participating in this study would complete a survey created around the practices principals use related to collaboration and training. Teachers would be asked to identify which practices are most important to increasing their capacity to educate students with disabilities. They will also be asked to identify which practices they have the opportunity to participate in. Finally, this survey will ask teachers to complete a series of questions that will measure the collective efficacy of teachers in a building when educating students with disabilities.

I am passionate about the topic of this study. I am eager to analyze the findings to identify areas of focus that principals can employ that may increase teacher capacity and collective teacher efficacy when educating students with disabilities. I would love to share more about this study with you. If you want to learn more about this study, you can contact me at 612-716-4792, or my university e-mail is amy.ernst@stcloudstate.edu.

Appendix B (continued)

If you are willing to participate by forwarding a survey to your staff, please return the attached permission form to me. Once permission is received, I will forward the survey to you to be shared with teachers in your organization. Thank you for your time and consideration.

Sincerely,

Amy Ernst
Doctoral Candidate
St. Cloud State University

Appendix C

Email to Directors after Agreement to Participate

First email:

Thank you for agreeing to participate in the doctoral study examining principal practices and their relationship to collective teacher efficacy when educating students with disabilities. This study will inform future leadership practices surrounding factors that may require additional time and consideration and may lead to an improved sense of collective efficacy when educating students with disabilities. Please share the survey, which can be found at this link. A second email will be sent to you to forward to general and special education teachers in your organization.

Second email:

Thank you for agreeing to forward this message to teachers in your organization.

I am Amy Ernst, a practicing Director of Special Services and a doctoral candidate in the Educational Administration and Leadership program at St. Cloud State University. I am currently conducting research about principal practices and their relationship to collective teacher efficacy when educating students with disabilities. I am very passionate about this topic and eager to analyze the findings. The hope and intent would be that we can learn what teachers find most important to improving their capacity for educating students with disabilities and their ratings of collective efficacy when educating students with disabilities. Your participation will be important to inform leadership practices that may require additional time and consideration. By completing the survey, which can be found at this link, you will contribute to this important work. Your participation will be anonymous and confidential. The survey should take 10 minutes and will be available through January 23rd, 2024.

Thank you for your consideration,

Amy Ernst

Appendix C (continued)

Reminder Email

Please forward the following reminder email to general and special education teachers in your organization.

Thank you for considering participation in the study examining principal practices and their relationship to collective teacher efficacy when educating students with disabilities. As a reminder, this survey is available at this link until **January 23rd, 2024.** Your participation will be incredibly valuable to informing leadership practices. I appreciate your time.

Appendix D

Permission Form

I, _____, give my permission for the study regarding Principal Practices and Their Relationship to Collective Teacher Efficacy When Educating Students with Disabilities to be conducted in the following districts (please list all districts you intend to forward the survey to).

_____

_____

By agreeing to participate in this study, I understand that the teachers who work within the district(s) I identified will be asked to voluntarily complete a survey regarding Principal Practices and Collective Teacher Efficacy. I understand that all data will be confidential and that the data will be reported in group format so that no individual teacher can be identified. I understand that I can withdraw consent to participate at any time.

I understand the protocol for this study and give permission to participate in it.

_____

Director of Special Education Date