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Building collaborative special and general education relationships:

A pre-service intervention with course and field components

A dissertation submitted in partial satisfaction of the

requirements for the degree

Doctor of Philosophy in Education

by

Emily K. Evanstein

Committee-in-charge

Professor Rachel Lambert – Co-chair

Professor Amber Moran – Co-chair

Professor Tine Sloan

Professor Andrew Fedders

Professor Mary Brenner

December 2021

The dissertation of Emily K. Evanstein is approved.

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Amber Moran, Committee Co-Chair

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September 2021

Building collaborative special and general education relationships:

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teacher interaction with students.

Characteristics of Positive Collaboration – Identification and training of targeted skills required for positive collaborative interactions and relationships in pre-service and in-service settings.

Positive Parent Participation in IEPs – Measurement of changes in the way teachers illicit parent involvement in IEP meetings before and after targeted training.

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Evanstein, E. & Moran, A. (November 2019) Learning from the Past: Lessons for Today from the History of Special Education Teacher Preparation. Unpublished paper presented at Teacher Education Division of the Council for Exceptional Children National Conference, New Orleans, Louisiana.

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Abstract

Building collaborative special and general education relationships:

A pre-service intervention with course and field components

by

Emily K. Evanstein

Within teacher education programs, the preparation of general and special educators has often been separated due to differences in the skills each is expected to master (Pugach, Blanton, & Boveda, 2014). With the mandate of inclusion in the IDEA (20 U.S.C. § 1412(a)(5)(A)), as well as the increasing implementation of inclusive practices in schools, there has been a desire to shift towards greater integration of general and special education teachers, both in training and in service (Pugach, et al., 2014). This study examines responses to a collaborative project completed by pre-service general and special education elementary teachers. Pre-service teachers took a course together on inclusion and worked cooperatively to implement an intervention and complete progress monitoring for focal students. The course and implementation assignment were designed to support teacher collaboration. Coding data from the pre-service teacher's implementation assignment and reported student outcomes and individual interviews show the positive impact of the collaborative experience on pre-service teachers ability to align interventions with student needs as well as pre-service teachers' satisfaction with collaboration and desire to engage in it in the future.

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"Today, special education teacher preparation has lost focus" (Brownell, Sindelar,

Kiely, & Danielson, 2010, p. 357). Not only are there persistent shortages, but there have

been long-standing disagreements about what constitutes quality special education

teaching and teacher preparation, and about the scope of licensing in special education

(Leko, Brownell, Sindelar, & Kiely, 2015). This has been due in part to the lack of a clear

consensus about how general and special education teacher preparation should be

integrated, and about the broader relationship between special education and diversity

more generally (Blanton, Pugach, & Boveda, 2018; Brownell et al., 2010; Pugach,

Blanton, & Correa, 2011). Additionally, as the field seeks to clarify how it can best solve

these problems, there is limited research on the functioning of programs and their

components, which therefore provides incomplete guidance about how to improve special

education teacher preparation.). All of this has led to a lack of clarity that has hindered

progress and kept special education teacher preparation and the teachers it prepares

separated in ways that has impeded progress in the field and for K-12 students (Leko,

Brownell, Sindelar, & Kiely, 2015).

Collaborative pre-service programs including both special and general education,

though, provide a promising pathway, but the research there is limited and often fails to

articulate the theoretical underpinnings of the changes it hopes to bring about (Brownell,

Griffin, Leko, & Stephens, 2011).

History of Special Education Teacher Preparation

Much of what separates special education from the larger field of teacher

education can be traced to historical trends and divides within and around special

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education. Understanding these foundations as work is done to integrate and collaborate

is important as they impact how special education functions internally and how it

functions in relation to other parts of teacher education.

Youth of the Field

As a field of its own, special education teacher preparation was incorporated into

the larger, existing field of teacher preparation slowly, over many years, but significantly,

as a result of the passage of a number of laws in the 1960s and 70s (Brownell et al., 2010;

Connor, 1976). Historically, it was separated due to the fact that originally, there was no

requirement for students with disabilities to be educated within the public school systems,

so special education teachers were more often trained separately (Brownell et al., 2010).

As a result, special education teacher preparation is somewhat under-developed,

compared to the larger field, especially in the realm of dedicated research and instruction

(Connor, 1976; Sindelar, Brownell, & Billingsley, 2010). It has only one journal fully

dedicated to it, *Teacher Education and Special Education*, which was established in

1977, and this journal is almost 30 years younger than some of those that look at teacher

education more broadly (Sindelar, Brownell, & Billingsley, 2010). This means there has

been considerably less time for a research agenda in the field to develop; a point that is

supported by laments from authors of numerous reviews and studies in the field

(Brownell, Ross, Colón, and McCallum, 2005; Juarez & Purper, 2018; Maheady, Smith,

& Jabot, 2014; Pugach, Blanton, & Boveda, 2014; Sindelar et al, 2010). The field's

relative youth especially in its research agenda has caused difficulty as it must define

itself and what it considers quality while simultaneously trying to integrate and

collaborate with the larger field of teacher education as a whole. It is difficult to articulate best practices for collaboration with others when a group is still working to establish their own internal standards and practices, which has often been the case for special education as seen in the sections that follow.

Conflicts About Educating and Preparing Students and Teachers

Since the passage of the Education for All Handicapped Children Act (EAHCA) (1975) marking an official statement of rights for students with disabilities in public schools, and even before, there have been disagreements about how to best educate students with disabilities and as a result how to prepare their teachers. Early on, special education teachers were prepared to work with children by their specific disabilities, a so-called categorical era (Brownell et al., 2010). This framework for training occurred because early special education embraced a medical model that viewed disability as something with specific symptoms to be treated. This supported the grouping of children with specific disabilities and, as a result, government funding was also provided in a categorical manner (Brownell et al., 2010). Organization of training in this way had a few issues. First, special education teachers were in high demand and this type of categorical training, and as a result licensure, made positions more difficult to fill as there had to be a perfect match between the teacher's categorical preparation and their students' disability diagnoses. Perhaps more importantly, a line of research in the field of special education that incorporated ideas of behavioral psychology showed that teaching by disability category was not necessarily effective (Brownell et al., 2010).

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Because of these findings, in the 70's and 80's, special education teacher preparation changed dramatically in both content and licensure and while this may have helped to alleviate some aspects of the shortage by providing flexibility, it also created a new debate about how to best license special education teachers who were required to work with a broad range of students with disabilities (Brownell et al., 2010). Remnants from this conflict continue today. When it comes to licensure, we want special educators who are flexible – able to educate a range of students across disabilities and ages. Broadening the license, however, means a teacher may have less expertise in any specific disability or age group, or perhaps deeper expertise in one area at the cost of another. These training requirements can cause problems for pre-service collaboration between special and general education as special educators need to acquire capability to teach across broad ranges of disability types and ages, which can leave less overlap in curriculum and time for collaborative work, especially with general education which is also often wary of sacrificing their own breadth and depth (Stayton & McCollum, 2002).

Conflict Between Positivist and Constructivist Views

The licensure conflict within special education gave rise to another conflict, that between positivist and constructivist views of special education teacher preparation, which arose from the embrace and subsequent questioning of behaviorist intervention methods. As mentioned above, the research that suggested a shift from categorical to non-categorical licensing used practices of behavioral psychology and so relied on performing experiments to validate specific practices and incorporating those into teacher training. This is closely aligned with positivism, in that it provides a quantified evidence

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base for interventions. This method was seen by some to remove teacher thought and oversimplify the process of teaching, though. This gave rise to more constructivist ideas of teacher learning; that students construct their own knowledge based on their experiences in the classroom (Brownell et al., 2010). Within special education, practitioners of both methods have taken rigid views at times (Naraian, 2017), which in the field as a whole can be seen as a barrier towards a unified conception of the skills required for expertise in special education teaching. Additionally this conflict puts many special education practitioners at odds with their general education counterparts who have more fully embraced constructivist tenets (Brownell et al., 2005). This makes collaboration between the fields more difficult.

Conflicts About Inclusive Practices

This conflict and separation between special and general education around positivism/constructivism has been compounded by internal conflicts in special education and had led to even more difficulties in collaborating with general education. Over time, more and more students with disabilities are being educated in the general education classroom and this has led to conflicts about how and where these students are best served (Brownell et al., 2010). Since the passage of EAHCA (now IDEA) in 1975, special education teacher preparation has, in theory, although perhaps not always in practice, been attempting to work toward integration with general preparation without making much progress (Pugach, Blanton, & Correa, 2011). While special education specific courses have been developed and, in some cases, are required of all general education pre-service teachers, they are often stand-alone (Pugach et al., 2011). If

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programs have no course on special education, they often work to infuse all courses with

special education material which may result in it being completely absent as non-

specialized instructors attempt to include it. This idea of infusion also suggests the adding

on of special education ideas into already existing general education knowledge rather

than meaningfully integrating the two or collaborating around creation of a shared

curriculum (Pugach et al., 2011). Outside of preparation programs, as students with

disabilities were increasingly included in general education classrooms, special education

researchers and teacher educators were caught up in internal conflict about how inclusion

should work and to what extent it should occur at all. In practice, this removed special

educators from conversations about how to educate teachers together and slowed

progress in working to develop methods to collaborate with general educators who

already had students with disabilities in their classrooms (Pugach et al., 2011).

Problems Integrating Equity Education

Another way in which special education struggled to collaborate with general

education was around the area of diversity. Special education and education for equity,

the latter traditionally seen as part of general education, both dealt with issues associated

with how to integrate their specific content into pre-existing teacher education programs,

and in both cases the result was often a siloed course or a claim of infusion (Blanton et

al., 2018). As these two fields developed, they both focused on aspects of equity and

social justice and there was significant overlap in the students they advocated for, as there

has been ongoing discussion about overrepresentation of student of color in special

education (Blanton et al., 2018). These two sub-fields had an opportunity to bridge with

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each other, collaborate, and create a broader conception of diversity – one that spanned

areas such as race, culture, language, gender, class, and ability – but instead, as each field

aimed to establish itself, they competed separately for resources, which made

collaboration more difficult and disserviced all parties (Blanton et al., 2018). This lack of

alignment is problematic as it keeps special education beliefs, such as advocating for

equity and social justice, which align with equity education, from being seen and

understood as an area for collaboration. General educators are therefore less likely to

consider K-12 students with disabilities as contributors to diversity. This siloing of

special education knowledge prevents the forming of some of the most natural

connections within the field of teacher education in general and contributes to a general

feeling that there is too much to cover and not enough time for it all. It also separates

topics that should be aligned in teacher candidate's minds, preventing them from fully

conceiving of what it means to educate the full range of diverse students.

These historical trends are influential and guide special education teacher

preparation to the place it is in today. They help illuminate why special education teacher

preparation inhabits the space it does in the field of teacher education more broadly and

why it continues to struggle with integrating with and forming collaborative relationships

with general education. Look for them today and you will see they continue to impact the

way we practice special education teacher preparation. Many of these trends are rooted in

the way special education has been internally divided as a field or externally at odds with

the broader field of teacher education. Moving forward, the field of special education

teacher preparation should look for innovative ways to collaborate, internally and

externally, so it can move into a new era of self-definition and meaningful collaboration

that will serve teachers and students alike.

Current State of Special Education Teacher Preparation

Current research in the field has often focused on the components of various

teacher education programs and their specific outcomes as a means of suggesting what

should or should not be required in a special education teacher preparation program. In

addition, research has also focused on the various pathways for entry into the teaching

profession; that is how a person goes about obtaining their credential, examples include

traditional programs, intern programs, and alternative routes. Information on how

teachers are credentialed, however, tells us very little about the contents of programs and

how those programs may actually impact teachers and their K-12 students (Blanton,

McLeskey, & Taylor, 2014; Brownell et al. 2005; Juarez & Purper, 2018). For individual

teacher educators, information about the impact of program content is more applicable to

practice, as they may work in a number of programs utilizing various pathways to

credentialing. When we turn to research on specific program components, which refers to

subparts of a training program such as a course, field experience, or outside of class

experience, among other aspects, it is limited, and much of the work focuses on small

intervention studies, single programs, or single courses or aspects of programs (Brownell

et al., 2005; Sindelar et al., 2010). There are, a number of reviews of these types of

studies, though, that have attempted to bridge the gaps between programs and

researchers, and they inform us about the current state of special education teacher

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preparation and lay a tentative foundation of recommendations for program design and places for collaboration.

Qualities Present in Special Education Teacher Preparation

In 2005, Brownell et al. worked to identify shared qualities among special education teacher preparation programs. Using a qualitative review framework that had previously been used to evaluate high quality general education preparation programs, the researchers analyzed articles about 64 special education teacher preparation programs. Results indicated that over 70% of programs exhibited three qualities: carefully crafted field experiences, collaboration, and program evaluation; over 50% of programs also reported valuing inclusion and cultural diversity. As discussed earlier, conflicts if problems of alignment in these last two areas contributed to a historical lack of collaboration and are therefore areas to consider for future collaborative work. Interestingly, the programs also had a wide range of theoretical underpinnings, with large numbers of programs with either more positivist or more constructivist leanings (Brownell et al., 2005). The broad agreement around quality field experiences, collaboration, program evaluation and to a lesser extent inclusion and diversity suggest that these are integral parts of special education teacher preparation programs that should be thoughtfully included in all programs. Another point in favor of these qualities is that they are mirrored in the high-quality general education programs that were assessed (Brownell et al. 2005), which indicates an opportunity for special education and general education to collaborate around these topics they both value.

Field Experiences

In order to adequately collaborate around any of these values, current information

about pre-service practices and instruction in these areas is needed. The *Handbook of*

Research on Special Education Teacher Preparation (2014) has brought this information

together. In one chapter, it looks at field experiences and instructional pedagogies

(Maheady et al., 2014), one of the identified values of special education teacher

preparation programs from Brownell et al.'s (2005) work. Across programs, fieldwork

varies widely in how it is implemented and to what extent it is aligned with course work.

As the field of teacher education generally has moved toward a more constructivist

framework, focus has shifted from implementing specific skills in fieldwork to trying to

achieve changes in how teachers think about their own beliefs, their students and the

connections between their courses and their work in the field. Research shows these types

of changes are possible but not necessarily predictable in direction or alignment with

action or k-12 student progress (Brownell et al., 2005). Additionally, the research on

fieldwork, in general, tends to focus on small samples and looks only at teacher candidate

changes with less focus on K-12 student changes in response to these candidates'

teaching or interventions. This research, while promising in many cases, is therefore not

yet enough to provide conclusive evidence about how to best implement fieldwork for

special or even general educators, let alone how they may collaborate within and around

field experiences.

Current State of Collaboration Around Inclusive Practices

A second chapter of the Handbook (2014) focuses, at least in part, on two other

qualities from Brownell et al.'s (2005) review of programs: collaboration and inclusive

practices (Pugach et al., 2014). Specifically, the chapter covers these topics as they relate to the joint preparation of special and general educators. At the outset, this review makes a judgment about the measures collaboration studies use – it excludes from consideration studies that measure only attitude changes and instead focuses on changes in practice. In many cases, results of individual studies show growth in the target area for the teacher candidate; however, very few report directly on K-12 student changes. Furthermore, most look at redesigned individual components of programs rather than broadly redesigned programs to improve collaboration, which suggests this has not been widely implemented. This makes the point that although collaboration in teacher education programs is happening, general and special education are still conceived of quite separately. This illustrates the continued separation of the two fields even in areas that both are reported to highly value (Brownell et al., 2005).

Training of Evidence-Based Practices

Juarez and Purper (2018) raise the issue of the lack of research directly considering the impact on K-12 students. Their study examines special education teacher preparation coursework intervention studies and categorizes them by learning outcome levels, with the lowest level being attitude change and the highest being changes in K-12 student outcomes. Studies measuring solely attitude changes were omitted which conveys a similar message as the Handbook (2014), that these type of studies provide insufficient information. Of the studies included, six measured knowledge acquisition, five measured conceptual application of knowledge, three measured applications for classroom settings and only two measured student outcomes. In every learning outcome level, evidence-

based practices for K-12 students, such as content acquisition podcasts, guided notes, and

UDL, among others were taught to pre-service teachers and they improved their own

knowledge in response or were able to implement the skills in theory and/or practice. In

addition to these evidence-based practices, at the application of knowledge and

application for classrooms levels, a number of studies utilized case-study based

instruction to improve candidates' theoretical knowledge and practical implementation.

This review highlights the success of instructing evidence-based practices in special

education teacher preparation. These results are encouraging and provide guidance on

techniques that can be included in special education teacher preparation programs.

High Leverage Practices

In response to the aforementioned research, the CEC and CEEDAR Center have

recently endeavored to provide guidance to the field of special education teacher

preparation with the publication of *High-Leverage Practices in Special Education*

(McLeskey et al., 2017). This guidebook details 22 high-leverage practices across four

general areas identified through research, expert opinion, and focus groups of key

stakeholders in special education teacher preparation, including teacher educators and

special educators. The criteria for being included in the text also focused not only on use

in the field, but also on the ability for these practices to be learned and practiced in

teacher education, an especially important factor for teacher educators. The four

overarching areas identified – collaboration, assessment, social/emotional/behavioral, and

instruction – overlap with identified strengths and needs from the reviews discussed

earlier (Brownell et al. 2005; Juarez & Purper, 2018; Pugach et al, 2014), which validates

these practices. This resource takes an excellent step toward quantifying what it means to

be a quality special education teacher and preparation program and it is notable that

collaboration is among the top priorities. It remains to be seen, however, how preparation

programs will adopt these high-leverage practices and if they will change the way the

field measures and views effective teaching. Taken together, these publications give a

broad idea about where the field stands today. While research on components of special

education teacher preparation has been done, there is much work still to do in

determining how to best instruct future special educators and how to support better

collaboration with pre-service general educators

Statement of the Problem

Research in the field of special education teacher preparation and its integration

with the wider field of teacher education has progressed over the past 50 years since the

passage of IDEA, however there is still much to be uncovered. While studies have looked

into a number of interventions in special education teacher preparation, studies about

collaborative efforts often fail to connect the changes that the intervention aims to

achieve to a coherent theory of learning (Brownell, Griffin, Leko, & Stephens, 2011).

Additionally, while there is some work on collaboration between general and special

education, history shows this to be an area that is still in need of research especially

because these fields continue to be fairly separated today, even on matters where there is

agreement. Looking into how special and general education pre-service teachers can be

educated together -- to address some of these matters -- is essential and must be done in a

way that considers the knowledge teacher educators expect candidates to gain and how

this will impact their actions as teachers and their K-12 students' learning outcomes.

This study aims to do just that by conceiving of a series of joint activities for special

and general educators including learning about effective collaborative practices for

teachers and applying these skills collaboratively in a naturalistic classroom environment

with attention to K-12 student learning. The primary goal of the study is to understand

how targeted collaborative activities impact teacher candidates, their personal learning,

and the learning of their K-12 students. This addresses the research needs stated above of

being able to explicate a theory of teacher learning and extend data collection to student

learning.

Theoretical Framework

This study uses ideas from sociocultural theory as a way to support intervention

design and analyze outcomes. Sociocultural theory stresses social interaction and

communication with others as central to building understanding (Vygotsky, 1978). It

posits that individuals develop through their participation in social interactions, change as

a result of their involvement in these interactions, and are thereby prepared for future

engagement in similar activities (Rogoff, 1995). Collaboration then is seen as an essential

human practice, critical to individual and collective development. Using sociocultural

theory can help us understand collaboration between teachers as a critical part of the

development of teachers, the development of their ideas, and improved practice.

Leveraging the critical role of collaboration in development, this study included

the opportunity for pre-service teachers to engage in naturalistic collaborative

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experiences in order to develop their ability to engage in these types of relationships

when they transition to their own classrooms. This design is supported by the

foundational belief that engagement in collaborative interactions prepares an individual

for future similar engagement, an idea that is both rooted in sociocultural theory and

supported by the literature on teacher collaboration (Friend & Cook, 2016; Johnson,

2003; O'Shea et al. 1999;).

To best support these collaborative interactions and allow them to serve in a

developmental role that would support future collaboration, we also instructed study

participants in certain skills and practices associated with positive collaboration. This

decision was based on ideas from the literature suggesting that both instruction and

experience support successful collaboration, and that allowing general and special

education teachers to collaborate without guidance could sometimes result in negative

interactions that do not support future collaboration (Marshall and Hermann, 1990;

O'Shea et al., 1999).

Finally, in the analysis of the interview data in this study, I used ideas from

sociocultural theory to help understand and explain how individuals conceived of and

used collaboration tools, constructed and recognized roles for themselves and their

partners, and completed their shared work together.

Chapter 2: Literature Review

In recent years, "policy, politics, and practice" in the field of teacher education have pushed for greater collaboration between special and general education programs (Pugach, Blanton & Correa, 2011, p.183). The increasing emphasis on collaboration can be seen in the research community, for instance in recent articles reviewing collaborative programs (McKenzie, 2009), explaining the history of the practice of collaboration in teacher preparation (Pugach et al., 2011), and providing recommendations for future research in this area (Brownell, Griffin, Leko, & Stephens, 2011). This desire for collaboration to be implemented is matched by research on the positive outcomes of teacher collaboration for K-12 students (Darling-Hammond et al., 2017), and on the qualities that support effective collaboration at the personal level, within interactions, and in instruction (Vangrieken et al., 2015). Given the positive effects of collaboration and knowledge about collaboration supports, along with the policy push, there is a desire for programs to teach collaborative skills to their pre-service general and special education candidates.

The current study aims to address this desire by implementing a collaborative pre-service experience for general and special educators where they gained knowledge about collaborative practices and applied them in naturalistic ways resulting in growth in themselves as educators and in their students' learning. In building a course and experience to achieve this, I first drew from literature on the valuable nature of collaboration in schools and more specifically collaboration between special and general educators. Secondly, I examined integrated special and general education interventions in

pre-service to evaluate what types of activities to include in collaborative programs.

Finally, I looked at literature about the collaboration skills most likely to result in positive

collaboration relationships between general and special educators to inform what skills a

program should consider teaching. The review of this literature led me to the purpose and

research questions for my own study.

Teacher Collaboration

"Collaboration is at the heart of effective schools." (Darling-Hammond et al.,

2017, p. 111). Teachers and researchers have continually highlighted the benefits of

students working together in classrooms (Thousand, Villa, & Nevin, 2002), however

there is also benefit to be gained from the application of these same beliefs to teacher

learning. As an example, Murray (2002) wrote about teachers' implementation of

collaborative learning in their own classrooms by explaining various theoretical

underpinnings of the practices and takes pains to explain how teachers must instruct

students on how to collaborate so that they can more deeply understand the material they

are studying. These same arguments can and should be applied to teacher education, as

we need not confine the benefits of collaboration to children.

This argument is supported by research on collaboration between teachers at

school sites and the impacts it can have on the teachers themselves as well as their

students. An early study on teacher collaboration looked at how teachers interact with one

another throughout the day and how this impacts them and found that this collaboration

may be a way to help teachers feel more connected and have increased job satisfaction

(Zahorik, 1987). Looking more specifically at the impact of collaboration on teachers,

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Kraft and Papay (2014) found an increase in teacher effectiveness for those who worked

in more supportive professional environments compared to those with less support.

Teacher effectiveness will likely naturally impact students, but collaborative school

contexts have also been shown to improve academic outcomes in reading and math for K-

12 aged students (Goddard, Goddard, & Tschannen-Moran, 2007). Teacher collaboration

is clearly a good for schools and results in growth for both teachers and their students.

Special and General Education Teacher Collaboration

Collaboration between general and special educators is promising in that it has the

potential to improve outcomes for students with and without disabilities (Garderen,

Stormont, & Goel, 2012). This supports implementing special/general educator

collaboration both in the field and in teacher education in order to create a culture of

collaboration that teachers will uptake and recreate throughout their careers (Rogers &

Babinski, 2002).

Looking at collaboration between special and general educators requires

discussion of the value of inclusion and access for students with disabilities. Before the

passage of EAHCA (1975), now IDEA, students with disabilities were often denied

access to public school or not provided with appropriate instruction in public schools.

Along with their families they advocated for access to and meaningful participation in

this fundamental aspect of life (Turnbull, Turnbull, Wehmeyer, & Shogren, 2016).

For these reasons, integration in training and classrooms has been a moral

imperative for many teachers and researchers who believe students are best supported

when their teachers have varied expertise in how to help them learn, while they keep as

much access as possible to their peers and community. This desire supports the need for

collaboration specifically between special and general educators as each brings a unique

perspective and skill set, and when working together they can utilize each others

strengths to ensure that material is both pedagogically sound and accessible to the diverse

range of students in classrooms (Volonio & Zigmond, 2007). In order for each to gain

the skills associated with their role, though, the preparation of general and special

educators has often been separated, with little opportunity to gain exposure to one another

(Pugach, Blanton, & Boveda, 2014). While this may help stymie worries within

individual sub-fields of teacher education programs, that some elements of their

individual preparation will be lost when integrating (Stayton & McCollum, 2002), it does

not provide exposure between general and special education pre-service teachers that

could prime them for work together in the future.

Malleable Collaboration Skills

As researchers embark on the planning and implementation of collaborative,

integrated experiences for general and special education candidates deciding what to

instruct and include is essential. A single study has not specifically identified those

collaboration skills that are most influenced by teacher education programs, but a number

of studies have looked at characteristics of existing and integrated teacher collaboration

relationships. A review of the literature on teacher collaboration identified overarching

categories of supportive factors for successful collaboration, three of which I found to

include skills which I felt that if given exposure and instruction around, may change and

grow. These three areas were: personal characteristics, those that are possessed by

individuals; process characteristics, those that are present within collaborative

interactions; and guidance characteristics, those that support the implementation of

collaboration from outside the individual or collaborative pair or group. (Vangrieken et

al., 2015).

In each of these areas I also identified trainable sub-categories (see Figure 1). This

is suggestive of which collaboration skills to include in instruction in order to prepare

effective teachers and creates a framework for organizing and understanding literature on

successful general/special education collaboration.

Using Vangrieken et al.'s (2015) review and the categories there as a starting

point, I analyzed qualitative literature on collaboration, mostly between special and

general educators, to determine which of these sub-categories were most prevalent, and

therefore most essential to collaborative relationships.

Figure 1

Identified Malleable Collaboration Skills with Citations

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┌─────────────────────────────────┐
│     Malleable Collaboration      │
│              Skills              │
└─────────────────────────────────┘
```

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┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐
│     Personal     │   │     Process      │   │     Guidance     │
│  Characteristics │   │  Characteristics │   │  Characteristics │
└──────────────────┘   └──────────────────┘   └──────────────────┘
```

Personal Characteristics

Knowledge of Teaming Process
Gallagher et al. (2008)
Simmons et al. (2018)

Communication Skills
Hudson and Glomb, (1997)
Salend et al. (1997)
Gallagher et al. (2008)
Griffin et al. (2010)
Zagona et al. (2017)

Flexibility
O'shea et al. (1999)
Scruggs et al. (2007),

Willingness to Team
O'shea et al. (1999)
Scruggs et al. (2007)
Friend and Cook (2016)

Prior Experiences in Teaming
O'shea et al (1999)
Johnson (2003)
Friend and Cook (2016)

Process Characteristics

Trust Among Collaborators
Tschannen-Moran (2001)
Johnson (2003)
Mastropieri et al. (2005)
Scruggs et al. (2005)
Scruggs et al. (2007)
Cook and Friend (2010)
Friend and Cook (2016)

Collective Responsibility
Tschannen-Moran (2001)
Mastropieri et al. (2005)
Cook and Friend (2010)
Friend and Cook (2016)

Distributed Leadership
Mastropieri et al. (2005)
Friend and Cook (2016)

Common Goals
O'shea et al. (1999)
Cook and Friend (2010)
Griffin et al. (2010)
Hallam et al. (2014)
Friend and Cook (2016)

Student-Centered Focus
Salend et al. (1997)
Johnson (2003)
Zagona et al. (2017)
Griffin et al. (2010)
Hallam et al. (2014)

Commitment to Academic Achievement
Mastropieri et al. (2005)
Hallam et al. (2014)

Use of Data
Vangrieken et al. (2015)

Guidance Characteristics

Training and Feedback
Walter-Thomas (1997)
Scruggs et al. (2007)
Friend et al. (2010)
Hallam et al. (2014)

Personal Characteristics

Prior Knowledge of Teaming. One of the most basic characteristics is providing

prior knowledge of teaming practices. In a Belgian study, Simons et al. (2018),

implemented a collaborative training for team teaching and collected qualitative data

from participants on perceptions of critical components to their implementation of

collaboration. A researcher-named category entitled 'preparation for new roles' was

mentioned in over half of the references. Upon investigation, it closely matches the

personal characteristic described in Vangrieken et al. (2015) as "knowledge of teaming".

Based on this data, the researchers conclude that candidates will not automatically know

how to collaborate, and must therefore be taught how to embody their role in a

collaborative relationship and understand what that will look like. Similarly, Gallagher et

al. (2008) coded and analyzed journal entries from candidates taking a collaboration

course, and found that 'components of teaming' – a code that was applied when a

candidate referred to implementing an aspect of collaboration taught in class – occurred

in 30.5% of journal entries. This shows that, when learning collaboration, candidates will

often relate back to the knowledge they have of these processes. Candidates may not

come into teacher preparation with the same – or for that matter, any – exposure to what

collaboration in schools looks like, how it might be set up, or what the steps will be to

making it successful. Including instruction on topics related to teaming in pre-service lays

a framework for candidates to relate back to when building and assessing collaborative

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relationships in the field. We can see this is something teachers value (Simons et al., 2018) and engage with (Gallagher et al., 2008) when given this type of training.

Communication Skills. A second personal characteristic that is supportive of collaboration is communication skills. In an article suggesting what to include in an integrated special/general education collaboration course, communication skills tops the list for Hudson and Glomb (1997). They advocate instruction in both verbal skills, such as paraphrasing, summarizing points for a group, and active listening, as well as nonverbal skills, such as being aware of how facial expressions can communicate feelings, and being mindful of cultural differences in communication styles. They consider all of these as prerequisites for the successful implementation of strategies in a collaborative group. These recommendations are backed up by the observation of the value placed on quality communication in successful collaborations. For example, when Salend et al. (1997) asked a collaborative teaching team to keep journals, the participants reported that by expressing their feelings to themselves through journaling, they were better able to express them to each other. This, in turn, led to better teamwork and problem solving when situations arose, illustrating the value of improved communication in teacher collaboration. Underlining this point, in Gallagher et al.'s (2008) evaluation of candidate journal entries written while taking a collaboration course, the second most commonly occurring code was communication skills, which was coded when candidates mentioned the usefulness or occurrence of communication skills in their collaborative interactions. Candidates in this study were also self-reflective about the need for communication skills in collaboration, with one stating: "We must not only focus on what

someone is saying, but we must also let them know we are listening" (Gallagher et al.,

2008 p. 15-16). This is a direct reference to the skill of active listening, which was taught

in the candidate's course and suggested as essential by Hudson and Glomb (1997).

Communication skills are especially important to collaboration because frequent

and effective communication has been identified as a supportive factor to making

collaborative relationships work. Friend et al. (2010) report that in the co-teaching

literature, teachers have identified the importance of effective communication when

building their collaborative relationships. Additionally, in a study looking at preparation

for inclusive classrooms across special and general education teachers in the field,

Zagona et al. (2018) interviewed three teachers and found that one of the skills they all

identified as helping them to be successful and prepared for inclusive education was their

communication skills. Being able to discuss students fluently helped them to clarify goals

and work together. Finally, Griffin et al. (2006) trained special and general education

teacher candidates to collaborate with a coworker in the field and found one of the major

supporting factors of successful collaboration was opportunities to communicate,

especially informally.

Flexibility and Willingness to Team. Two more personal characteristics that

have agreement around them in the literature are flexibility and willingness to team.

O'Shea et al. (1999) gathered data from teacher candidates who were paired to work

collaboratively surrounding assignments for their individual classes. Candidates

participated in focus groups and individual interviews about their collaboration

experiences, and common themes were drawn from across all the candidates. One theme

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that arose was that in order for collaboration to work the candidates needed to be willing

to compromise with one another and have patience, both of which fit within the personal

characteristic of flexibility. A second theme was that both sides of the partnership must

be willing to participate, which aligns with the personal characteristic of willingness to

team. Supporting these points, Scruggs et al. (2007) conducted what they termed a

metasynthesis of 32 qualitative studies on co-teaching, in which they used qualitative

methodologies to identify attributes of successful co-teaching. In the area of

compatibility, they identified the theme of having positive attitudes, and also found that

many studies compared co-teaching relationships to marriage, in that they require

flexibility and compromise. These metasynthesis findings provide extra support for the

necessity of these two personal characteristics. Additionally, in their practitioner book,

Interactions, Friend and Cook (2016) describe what they term emergent characteristics of

collaboration – that is, traits that are prerequisites as well as outcomes of collaboration –

and among them is valuing collaboration, which reiterates the importance of having a

positive attitude and willingness to team. Friend and Cook (2016) suggest that skills such

as these can develop with exposure to collaborative experiences – successful experiences

foster further investment.

Prior Experience in Teaming. This leads directly to the last personal

characteristic I will discuss, prior experience in teaming. It is already clear that Friend

and Cook (2016) believe and recommend exposure to teaming as a support for building

stronger collaborative relationships. This point is reiterated in a study of four Australian

schools that implemented school level collaboration. One of the themes identified as an

advantage of collaboration is teacher learning, which teachers in this study attributed as due to extended time in teams (Johnson, 2003). Teacher preparation provides a controlled time when candidates can gain this exposure. In focus groups conducted by O'Shea et al. (1999) following pre-service candidates' participation in collaborative activities, 67% reported that the experience with collaboration somehow changed their view on collaboration. One candidate is quoted as saying; "I see it from a different (better) perspective now – to actually have experienced it. It is no longer theory that the team approach is essential. Gaining knowledge and insight from others' perspectives is what is needed for success" (O'Shea et al., 1999, p.155). It is important, however, to remember that experiences can be negative as well as positive, and powerful enough to change opinions in either case.

Process Characteristics

Trust Among Collaborators. One of the most commonly referenced process characteristics – and arguably a foundation to meaningfully engaging in many of the other process characteristics – is trust among collaborators. Tschannen-Moran argues this point strongly in her article, aptly entitled "Collaboration and the Need for Trust" (2001). In it she discusses the reciprocal nature of trust and collaboration – it is difficult to have one without the other – and that teachers will likely be unwilling to give up their personal control and collaborate without trust for their collaborators. Her study looks at trust and collaboration in schools as measured by teacher surveys, and finds that where there is more trust between colleagues, there is increased collaboration.

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This idea, that collaboration depends on trust, is reiterated over and over in the literature. Johnson (2003) interviewed teachers collaborating in the field and quotes several participants who share that honesty and trust are key to their ability to ask the questions necessary for quality collaboration, and that in cases where trust is absent, they may be wary of sharing opinions, lest they get hurt. In Mastriopieri et al.'s (2005) case studies of successful co-teaching teams, all exhibited trust and respect for each other, as well as for expertise within their individual fields, a trait which "appeared to facilitate their working relationships" (p.263). In their metasynthesis, Scruggs et al. (2007) also identified trust and respect as a commonly occurring trait in successful co-teaching relationships. Finally, in their article on best practices in collaboration for students with disabilities, Cook and Friend (2010) identify trust and respect as required for collaboration, and in their practitioner book, they identify it as an emergent characteristic (Friend & Cook, 2016). This classification fits well with Tschannen-Moran's (2001) description of trust and collaboration as interdependent, and suggests that a valuable way for preparation programs to improve collaboration skills among candidates is to design activities where they can build trust and respect for one another.

The remaining categories within the area of process characteristics give insight into how pre-service collaborative experiences could be set up. By including instruction about key process characteristics, as well as practice with enacting them, trusting collaborative relationships can be built among candidates, which will serve as models for them as they enter the field.

Collective Responsibility. To begin with is collective responsibility; Tschannen-

Moran (2001) classifies this as sharing of resources, responsibility and, in the end,

rewards from the endeavor. This is not necessarily easy to do, but it allows for efficient

and effective action from a group. Similarly, Friend and Cook (2016) consider shared

accountability one of the core characteristics of collaboration, and recommend that all

parties should participate in decision-making and problem solving and thereby share

responsibility for the success or failure of the group. Additionally, in practice, sharing

responsibility results in more successful collaboration: Mastropieri et al. (2005) observed

that in the successful co-teaching teams they worked with, both members claimed

ownership of all students in the class, not just the students who matched their respective

licensure.

Distributed Leadership. Another process characteristic, distributed leadership, is

closely related to collective responsibility, and encourages meaningful engagement

among collaborative partners. Leadership is often strongly connected to the resources that

different parties bring to the table. To this point, in their book, Friend and Cook (2016)

highlight that resources are not always materials but may be time, knowledge, or specific

access, and sharing these strengths efficiently, not necessarily equally, results in the

highest quality collaboration. This means some individuals may take the lead on content,

while, for example, others take the lead on designing activities, and others on integrating

technology. Mastropieri et al. (2005) observed the positive outcomes of this type of

distributed leadership, as well as the difficulties when collaborative partners do not

engage in this way. In one partnership they observed, the special and general educator

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started planning together and each took the lead on areas where they were experts,

deferring to each other's strengths. The result was that students completed the tasks and

understood what was expected of them. Later on, with the same teachers, one took on

fuller leadership, which led to the other feeling undervalued, and to problems arising that

this second teacher felt they could have helped to solve. In a different partnership, the

special and general educators began in the same way as the first but continued sharing

responsibility and in a final partnership, the general education teacher took on a content-

heavy role but fully shared responsibility for the lab portion of the class, so much so that

during labs the teachers' roles were indistinguishable from one another. In these last two

cases, effective sharing of leadership resulting in both parties feeling satisfied and valued

in their roles.

Common Goals and Student-Centeredness. The two process characteristics

discussed so far focus on the role of individuals within a team, while the next two center

around how the team should organize their collective efforts. The first area where there is

agreement in the literature is that collaboration should have a common goal. In

Interactions, Friend and Cook (2016) identify this as one of the required characteristics of

collaboration. They note that the goal need not be overly specific, and that successful

collaboration requires just one common goal to work. This idea is illustrated by Griffen et

al.'s (2006) identification of common goals as a supportive factor to collaboration

between candidates and others at their field sites. Additionally, Hallam et al. (2014)

identify common goals as a defining feature of collaboration in professional learning

communities.

Numerous studies have noted student-centeredness as a contributor to successful

collaboration. By focusing on this particular common goal, one that is likely an

individual focus anyway, educators are able to direct their efforts in a unified and

successful fashion. Griffen et al. (2006) identified common concern for students as

another one of the supportive factors to improved collaboration, and reported that

collaboration was most successful when teachers were focused on student progress. Both

Johnson (2003) and Zagona (2017) reported qualitative data from teachers on the

importance, specifically to their collaborative relationships, of their discussions about

students. Finally, Salend et al. (1999) observed a reciprocal relationship, in which

collaboration between teachers supported student growth and sensitivity towards one

another. This, in turn encouraged more collaboration among the co-teachers, as they

purposefully leveraged these changes in students to create a more inclusive classroom.

When teachers focus on students, their collaboration is improved, and the act of focusing

on students can produce results that support continued collaboration, thus producing more

positive results.

Outlying Characteristics. The final two process characteristics differ from the

previous ones in that there is less consensus that they aid collaboration. The first,

commitment to academic achievement can be seen as another option for a common goal,

and when co-teachers focused their attention on how all the students in their classrooms

could achieve the academic goals of a lesson, it functioned in that way (Masropieri,

2005). However, when the academic focus was forced to align with high-stakes testing,

this presented a barrier to successful collaboration and required teachers to take time

away from valuable skill-building, or to move past topics where students were still

struggling (Mastropieri, 2005).

A final characteristic that was described by Vangrieken et al. (2015), but has little

support in the literature, is use of data. Hallam et al. (2014) continuously stress the

importance of student data collection and analysis within the collaborative work of

professional learning communities, but in all the articles reviewed, this aspect is notably

missing. Many of those studies relied on reports from teachers, so it may be that these

individuals were simply not using a lot data in their work.

Guidance Characteristics

Training and Feedback. Finally, within the last area of guidance characteristics

there was one overarching theme from Vangrieken et al. (2015) that occurred

consistently: the importance of providing training and feedback for teachers as they

collaborate. Studies have continually stressed the importance of training, mostly by

lamenting its absence. Walter-Thomas (1997) did a qualitative analysis of 23 school-

based teams and found one of the main problems with collaboration was that teachers did

not receive any training in collaboration skills and felt they needed training to improve

these skills. In their metasynthesis of co-teaching studies, Scruggs et al. (2007) reported

strikingly similar results: teachers felt under-trained and desired training in areas such as

flexible thinking and communication skills – both personal characteristics discussed in

this paper – to improve their collaboration. Hallam et al. (2014) echoed this trend in

regards to teachers who were required to participate in professional learning

communities. Finally, in regards to co-teaching, Friend et al. (2010) expressed the urgent

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need for collaborative training to support teachers both in pre-service and in-service

settings. These studies span almost two decades, and yet the issue of under-preparation

persists.

Integrated Pre-service Programs

Multiple studies have looked at educating special and general education pre-

service teachers in integrated ways using assorted techniques and with varying levels of

success. The most common form of integration is course based, focusing on a single

integrated course or a series of courses with or without faculty co-teaching (Bain

Lancaster, Zundans & Parkes, 2009; Griffin, Jones, & Kilgore, 2006; King-Sears, 1995;

Murawski, 2002; Nowacek & Blanton, 1996; Pellegrino, Weiss, & Regan, 2015; Peterson

& Beloin, 1998; Sobel, Iceman-Sands, & Basile, 2007; Utley, 2009; Voltz, 2003; Weiss,

Pellegrino, & Brigham, 2017; Weiss, Pellegrino, Regan, & Mann, 2015). This is one of

the simplest ways for a program to integrate and involves the offering of a shared course,

usually on either collaboration skills (Bain et al., 2009; Griffin et al., 2006) or inclusion

(Peterson & Beloin, 1998; Utley, 2009). This ease is evidenced by course integration

being one of the first steps for two programs that were working towards an eventual

merging of programs (Sobel et al., 2007; Utley, 2009).

Single Integrated Courses

In the simplest of cases, one course was reworked, although often without a clear

vision about how the reworking would impact pre-service teacher or K-12 student

learning. Peterson and Beloin (1998), for example, worked together to implement

integrated mainstreaming courses at each of their home universities, one a teaching

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university and the other a research university. Although general and special education

pre-service teachers took the course together, it was not specifically focused on

collaboration skills development. The authors report that they used strategies such as

video modeling and joint work on lesson plans to support student learning. The only data

taken from the pre-service teachers measured their satisfaction and valuing of the course,

which were both quite positive. Bain et al. (2009) presents a similarly integrated course,

though this time focusing on collaboration instead of mainstreaming. This course for

undergraduate pre-service teachers used evidence-based practices heavily in its teaching

of collaboration strategies. The instructor modeled practices such as cooperative learning

(CL), and peer-assisted learning (PAL) in instructing the course and assigned pre-service

teachers to practice these strategies when studying for course quizzes. The results taken

were on mastery of course material and found that, in general, all pre-service teachers

mastered the material, but did better if they studied using CL or PAL. While course

mastery is important, it may not translate to being able to apply or teach using these

collaborative strategies in the field. Both of these studies used components that have been

shown to be favorable to pre-service teachers or support their learning, but the

researchers did not articulate a connection to how the skills they acquire improve their

efficacy.

Integrated Courses with Individual Field Experiences

While still only integrating course work, some studies included an individual field

experience at their student teaching sites. Griffen et al., (2006) reported on a collaborative

skills course titled "Transdisciplinary Teaming" where pre-service teachers who were

completing a 5-year credential and masters degree program learned collaborative skills in

class and applied them in the field with a member of their school community. This

provided pre-service teachers with a naturalistic environment to apply skills from the

course. Another study that used a similar model is King-Sears' (1995) work on an

integrated post-credential program. Since the in-service professionals (teachers and

support providers) enrolled in this program were already working in the field, it made

sense for them to apply their skills in their place of work. All enrollees took a set of core

courses together, but were free to choose individual electives. The data collected

provided both student and school-level outcomes, such as: reports that a student who was

going to be retained was promoted as a result of interventions from a general education

teacher in the program, parent reports of class-wide improvements for their children with

disabilities, and general education teachers self-reporting that they attended more IEPs,

advocated for the addition of scheduled planning time, and collected more progress

monitoring data. This provides support for a implementing a set of core classes rather

than a single course integration. In both studies, the opportunity to apply course skills

through field experiences appears to have added a valuable component.

Multiple Integrated Courses Ahead of Merging Programs

Further highlighting the apparent ease of course integration as a first step, two

programs that were almost fully merged, and that had a complete merger as their stated

ultimate goal, began by taking the integration as far as coursework, stopping short of a

shared field experience. Sobel et al. (2007) studied the merging of a program that

previously had no course overlap at all and only required general education pre-service

teachers to take one three-unit course on special education. In the new merged

curriculum, highlights included all pre-service teachers learning about and completing a

functional behavior assessment and positive behavior support plan, along with

differentiation assignments. Pre-service teachers reported positive attitudes toward equity

and inclusion at the program's end, although without a pre-program score, it is unclear

how much of that measure could be attributed to the intervention. Participants in the

program also reported that they gained a shared respect for one another, and for their jobs

and responsibilities. This is an interesting in that it supports the idea that increased

exposure within programs can encourage mutual understanding and perhaps prime

students for future interactions (Rogers & Babinski, 2002).

A second study with a similar program to this one is Utley (2009), which looked

at two courses within a graduate level year-long program in the process of fully merging.

The courses were focused on exploring diversity in content and pedagogy and required

pre-service teachers to create and implement two to three week units in their individual

field placements. Data were gathered from K-12 student work in this case and showed

that in 14 of 20 cases, students with disabilities made learning growth similar to that of

their peers on teacher made assessments and in only 2 cases did they grow less than their

peers. In the other 4 cases there was either no comparison group or results were not fully

reported. This study is unique in the field of integration research in that it takes a measure

of student growth as a result of the integrated course.

Modeling Co-teaching in Integrated Courses

An additional feature of some integrated coursework is modeling coteaching by the instructors; a few studies looked at integrated courses that took this extra step. In an article that makes recommendations for this practice, Murawski (2002) reports it is an excellent way to model the type of behavior pre-service teachers should be picking up from a collaboration course. Supporting this conception, a review by Voltz (2003) reports that pre-service teachers like co-taught courses and report that it is useful to see co-teaching modeled. However, this review also reports that faculty often have concerns about the practice, as co-teaching courses can be time intensive, and sharing a course is often not supported by university policies on credit hour production.

Two studies used faculty co-teaching in a single integrated course and both compared their findings to a similar course without co-teaching and integration. This helps to identify how these two qualities – integration of special and general education students in a course, and faculty modeling provided by co-teaching such a course – contribute to the results. Nowacek & Blanton (1996) integrated an undergraduate methods course and added instruction on collaborative skills, characteristics of students with disabilities, and accommodation/modification techniques. They measured attitudes and saw no differences between the co-taught group and the control group. They also had participants fill out a concept map and respond to video vignettes involving students with disabilities. While the groups tended to focus on different topics in these activities, the authors concluded the differences did not necessarily denote growth in one group over the other. These results are disappointing, but show that the mere act of integrating a course or co-teaching may not be enough to affect change.

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The second study to use co-teaching in an integrated course took an existing

course on collaboration that was required for special education pre-service teachers and

offered it as a co-taught elective to an integrated group of graduate level special

education and secondary social studies pre-service teachers (Pellegrino et al. 2015; Weiss

et al., 2015; Weiss et al., 2017). The course consisted of individual experiences

connecting with collaborators in the field, as well as joint projects creating a unit plan and

final project. The instructors of this course made their co-teaching part of the instruction

by transparently discussing their decisions with their pre-service teachers. Data collection

for this program was extensive and included a collaboration perception scale, a

qualitative activity where pre-service teachers responded to being told they would be co-

teaching, program development self-study, as well as comparisons using concept maps

between the co-taught course and the course taken by special education pre-service

teachers alone. Results indicated that pre-service teachers' attitudes about collaboration

shifted from fear and anxiety to respect and appreciation for the skill required to make

collaboration work. Additionally, participant responses to co-teaching indicated less

naivety to what is required. When comparing understanding of collaboration as measured

by a rubric scored concept map, those in the co-taught integrated course scored higher

than those in the control group.

These studies on courses, taken together, demonstrate that integrated coursework

has a limited effect on candidates and their students, and there is no clear effect of

modeling via co-teaching. They therefore show that although coursework integration may

be simpler to implement, it does not necessarily yield results for candidates and for their

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students, especially when applied to only a single course. Some interventions therefore

opted instead for integrated field experiences for pre-service teachers.

Isolated Integrated Field Experience

The first study to implement a model like this, Marshall and Hermann (1990), did

so without providing much in the way of guidance or instruction. Graduate level special

and general education pre-service teachers enrolled in fully separate courses and were

given unstructured planning periods to work together on 6 sessions of small group

reading interventions. This resulted in only one of the nine pairs implementing a

cooperative teaching style, seven pairs alternating their instruction, and one pair having

the special education pre-service teacher work one-on-one with one of the students while

the general education pre-service teacher worked with the rest of the small group. To

assess the success of the experience, pre-service teachers were given a questionnaire

about attitudes towards cooperation. Unsurprisingly, there was little change in attitudes,

and the researchers concluded any differences were likely due to personality and not the

intervention as there was no correlation between attitude changes and action taken. This

provides valuable information about how collaborative relationships are built among pre-

service teachers. This study shows that merely providing an opportunity for collaboration

is not enough; teacher educators need to consider how the experience can be structured to

encourage pre-service teachers to explore more integrated forms of classroom

collaboration.

Structured Integrated Field Experience

Richards et al. (2003) looked at a program where special and general educators were enrolled in separate courses, but both were co-taught by a faculty member and a community member. The two courses both addressed collaborative problem solving, and, in addition, the special education pre-service teachers prepared a disability simulation activity for the general education pre-service teachers. Pre-service teachers from both classes were then given collaboration time to plan instruction for a specific student from the general education pre-service teacher's field placement. Leading up to and following the implementation of this plan, both pre-service teachers spent time in the general education pre-service teacher's field placement, both to give them an opportunity to work together and so that the special education pre-service teacher could observe and provide feedback about the focal student.

This study provides a much greater level of instruction and scaffolding for the collaborative process; however, the researchers took very limited data on the program. Baseline data was drawn from pre-service teacher opinions on collaborative teaming at the beginning of the class, which were already overwhelmingly positive. At the end of the program, pre-service teachers completed a researcher-made collaboration importance scale; the only data reported from this instrument was that, based on their responses, all candidates found the experience "high quality" (Richards et al., 2003, p. 248). This study provides tentative support for an idea the researchers raise, namely that field collaboration supported by targeted university activities can support collaboration skills.

Integrated Course and Field Experience

Instead of implementing solely a course or fieldwork experience, some

researchers endeavored to do both together. This type of arrangement required more

coordination than either a course or field experience alone, but studies arranged in this

way produced very positive results,

Project ACCEPT (Achieving Creative and Collaborative Educational Preservice

Teams)(Van Laarhoven et al., 2006; Van Laarhoven et al., 2007), is an example of an

ambitious undertaking of this combination integrated program at the undergraduate level,

and it is especially valuable in that it was compared to a control group who participated in

the traditional offerings of the school within the large teacher education program where it

ran. Participants in the project completed an extra 10-hour joint pre-institute prior to

beginning courses. Within Project ACCEPT, pre-service teachers from special education

and both elementary and secondary general education attended a collaborative teaching

course that focused on accommodating students, using technology, and conducting

functional behavior assessments. They also completed 6 hours of joint fieldwork in an

inclusive classroom, culminating in co-planning and co-teaching a lesson for the class.

Results looked at how well pre-service teachers could implement skills from the course

as well as their attitudes toward inclusion. All program participants showed greater

improvement in skill implementation compared with the control group. On the attitudes

scale, both experimental groups had higher scores than the control group, with an

especially strong effect on general education pre-service teachers. Importantly, general

education pre-service teachers in the program also thought inclusion was more feasible

compared to those in the control group. Moreover, when participants were contacted for

follow-up data two years after the project, responses were overwhelmingly positive, with

91% reporting enrollment was beneficial for them, compared with only 40% the of

control group.

Integrated Course and Field Experience with Co-teaching

Combining integrated coursework and fieldwork, as discussed above, is a

technique for bridging the gap between theory and practice. Another approach with the

same aim is suggested by Whittier and Hewit (1993), who advocated not only for the

existence of integrated courses with field experiences, but also for these courses to be co-

taught in order to serve as a model for candidates, a similar idea to the one articulated by

Murawski (2002). Two studies have examined programs instructed in this way, and both

have looked at the integration between special education and secondary English.

Miller (1991) looked at the implementation of two terms of a co-taught methods

course. Within the course, pre-service teachers worked on a unit of instruction and

implemented it together for a class of adolescent females who were incarcerated at a state

facility. A case study of four pre-service teachers completing the program indicated

improvement in a number of areas, including special education teaching skills, English

teaching skills, behavior management techniques and basic teaching skills. These

outcomes highlight the benefit of an integrated course, as gains in respective areas would

be individually expected of English or special education methods courses, but given

integration, this growth was shared by all participants. The researchers also took

measures of the young women the candidates taught and found that their self-concept

improved (Miller & Carrington, 1989). This is notable but limited, as given the

uniqueness of the classroom situation, results may not generalize to students in other school settings.

McHatton and Daniel (2008) also focused on a methods course in their study of an undergraduate integrated course and field experience with faculty co-teaching. In this study, some course meetings were co-taught and some were not, but pre-service teachers participated in a fully integrated field experience where two general education pre-service teachers were paired with one special education pre-service teacher in an inclusive classroom at a professional development school. Each group practiced co-teaching in their classrooms, although it is not clear how often this occurred. Pre-service teachers were surveyed on their awareness of each other's roles, knowledge of diverse students, and knowledge of content, and all participants improved in all areas. Additionally, open-ended questions about their experiences indicated that special education pre-service teachers found it to be a good learning experience and some English pre-service teachers felt more comfortable with ideas of inclusion. Both groups improved their awareness of the roles within, and complexity of, co-teaching and left with more experience and confidence in meeting the needs of diverse learners. Overall, integrated interventions that pair coursework with a field experience report highly positive results,

Regarding K-12 Student Outcomes

Most all the research covered on integrated courses, fieldwork, or any combination, provide little or weak data on the impacts of these interventions on pre-service teacher actions and K-12 student outcomes. This is not to say that nothing changed for students as a result of these or any of the interventions discussed, only that,

as readers and researchers, we are left to wonder what the student outcomes of all these integrated programs may be. It is important that researchers going forward are mindful of this gap in the literature and take care to try and gather this type of data, or at the least articulate a theory of change for integrated interventions that map out how the collaborative processes implemented impact pre-service teacher learning and student outcomes (Brownell et al., 2010).

Purpose of Study/Research Questions

A review of the literature has shown the positive benefits of teacher collaboration, as well as the barriers to collaboration between special and general educators. In cases where research has been done on special and general education integration in pre-service settings, it has not always identified a systematic theory of change underlying how and why the integration will impact teacher candidate and K-12 student learning. Additionally, from what has been done in pre-service so far, it is apparent that an isolated course is not as impactful as an integrated field experience, or a course and field experience in combination. Turning towards collaboration between special and general educators, there are clear themes and topics of instruction that can be covered in pre-service to help support the implementation of successful collaboration. This therefore lays a basis for a theory of change by explaining how learning about and engaging with these skills can impact teacher candidate and K-12 student growth. Merging these two areas of research - about how to construct an integrated experience and how to instruct collaboration skills – provides a leverage point in pushing research in the area of pre-service special and general educator collaboration forward.

The main goal of this dissertation is to work to bridge these 2 areas and in doing

so add to the literature in both areas. In pre-service integrated programs it aims to provide

clarity around the skills chosen for instruction and the design of a program. It will also

include data on how teacher candidates take up skills, and academic outcomes for their

K-12 students, which is relatively uncommon in the literature. In collaboration skills, it

will provide additional data around which skills are most valuable for collaboration and

how these may be instructed in a pre-service setting. In achieving these outcomes, the

following research questions will be considered:

Question 1 - When pre-service teachers are provided with instruction on specific skills

that support collaboration (communication skills, flexibility, and knowledge of

collaboration process including collective responsibility, setting common goals, and

distributing leadership) and an opportunity for structured collaboration, which

collaboration skills are identified as supportive to their interactions and how are those

skills employed?

Question 2 – When comparing collaboration between general and special education PSTs

who work together versus those general education PSTs who work with other general

education PSTs, how does participation in an integrated inclusion course with a joint field

assignment impact general education pre-service teachers': (1) design and

implementation of the re-teaching of a lesson based on common core state standards? (2)

K-12 students' achievement/growth? (3) social consideration of their collaborators?

Chapter 3: Methods

Overview

This study was conducted over the course of a one-term (ten week) special/general education integrated inclusion course required within a one-year graduate level credential program in California. Participants in the study were general education multiple subject credential students and both mild to moderate and extensive supports needs education specialist credential students.

Intervention/Course Design

The course in which the study took place was originally a course for general education multiple subjects teaching (MST) pre-service teachers to provide them with exposure to special education practices. With the addition of a new credential program in mild/moderate (MM) special education, the course was reconceived and offered to an integrated group of MST and special education pre-service teachers in both the MM and extensive support needs (ESN) categories. This reworking provided an opportunity to implement integrated projects that previously could not be included in the course.

The course had one instructor, who also served as the coordinator for the MM credential program, and no formal teaching assistants. It was taught in two sections of about 20 students each. Both sections were integrated with both general and special education PSTs. Courses met in the afternoon for 3 hours one time per week for 10 weeks. Although I had no formal role in the course, I did take part in instructing portions of the course that had to do with collaboration and the PSTs collaborative project, both individually, as well as co-teaching with the instructor. The PSTs knew I had expertise in

the area of special education and that I was a PhD candidate doing research on this course

since it was being integrated for the first time this year. They were told that they could

ask me questions but they knew I was not their instructor for this course and would not be

grading or evaluating them in relation to this course. I had previously taught a summer

course to the MM PSTs and was serving as one of their student teaching supervisors; I

had met many of the ESN PSTs in passing, but had not met the MST PSTs before the

course began.

In regards to changes made to the course as it was integrated, considering the

positive outcomes associated with collaboration between teachers (Darling-Hammond et

al., 2017; Goddard, Goddard, & Tschannen-Moran, 2007; Kraft & Papay, 2014; Zahorik,

1987), the course added instruction in areas of collaboration that were identified to

provide positive support to collaborative activities. These included the personal

characteristics of communication skills, and providing knowledge about the process of

collaborating.

In addition, instruction about the process of collaborating was specifically tailored

to cover a subset of the process characteristics identified in the literature and included

instruction on (1) how to share collective responsibility, (2) how to set common goals,

and (3) how to distribute leadership.

The course first covered these three areas using specifically designed activities to

model their structure and value in the collaborative process. For distributed leadership,

we used a content scaffold related to making a meal; for common goals we used a

simulation, and to tie those two areas together and add collective responsibility, we used

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a case study. In addition, we provided a graphic about how all of these characteristics are supportive of quality collaboration. We also provided instruction on positive communication skills and gave PSTs a chance to practice the skills through in-class activities. To view a copy of the slides used for these portions of the course and activity plans for instruction, see Appendix A.

Another identified support of collaboration that was also implemented in this reworking, that of training and guidance, was provided by the very nature of a course including explicit instruction surrounding collaboration skills between general and special educators. For a graphical illustration of how these collaboration skills connect with one another, see Figure 2.

Figure 2

Collaboration Skills Instructed in the Course
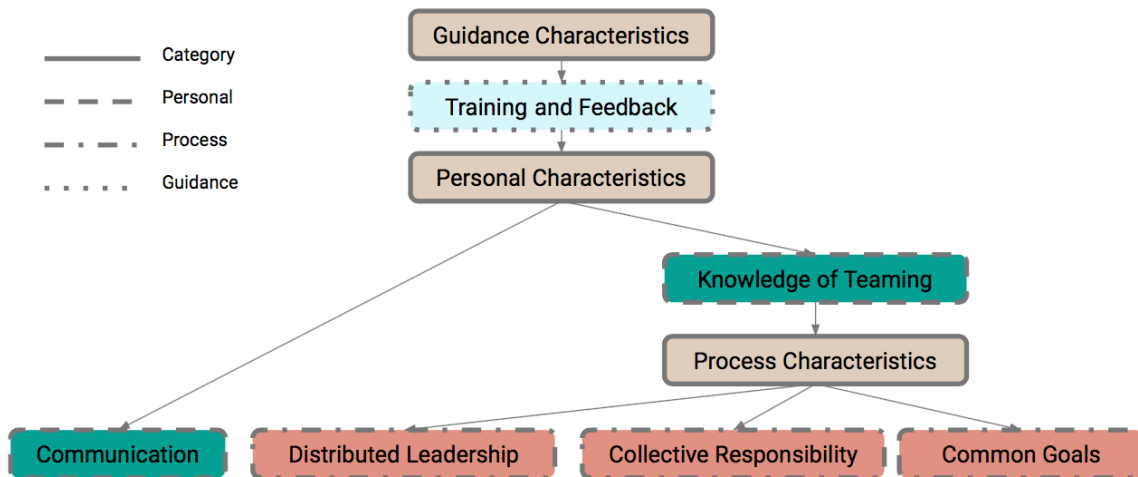
Comparing outcomes of the integrated courses discussed in the literature review, there is evidence that an integrated course alone is not as effective as pairing coursework

with field experiences (Bain et al., 2009; Peterson & Beloin, 1998; Van Laarhoven et al., 2006; Van Laarhoven et al., 2007). For this reason, an existing assignment within the course was modified to provide a naturalistic environment to practice the application of then instructed collaborative skills. Pre-service general educators were matched to work collaboratively with pre-service special educators in as many cases as possible. When this was not possible, pre-service general educators were paired with one another to practice the collaboration skills while they each completed the assignment. Working on an individual assignment but with the support of a colleague may still provide some level of benefit beyond a course alone (Griffen et al., 2006; King-Sears, 1995). All partnerships were given time in class to collaborate as allocated time is a noted support of successful collaboration (Vangrieken et al., 2015).

The collaborative assignment involved the use of progress monitoring, a practice originally developed for use with special education students where instruction is altered in response to an individual student's performance (Fuchs, Deno, & Mirkin, 1984). The practice has been shown to result in academic growth for students and more targeted decision making for their teachers (Fuchs, Deno, & Mirkin, 1984; Stecker & Fuchs, 2000; Stecker, Fuchs, & Fuchs, 2008). In this project, pre-service teachers were asked to identify a student who they felt did not fully grasp a recent lesson, assess the student's mastery of the identified topic, and based on an analysis of their performance, implement a second lesson re-teaching the topic in a way that targets that particular student's needs. Finally, the pre-service teachers assessed the students again to measure growth in response to their progress monitoring intervention. After completing this process, pre-

service teachers were asked to prepare a work product that detailed and reflected on each step they took in the progress monitoring process including identifying student need, choosing an appropriate intervention, taking assessment data on their intervention, and results for their students. A copy of this assignment sheet can be found in the Appendix B.

In cases where general education pre-service teachers were not able to work with a special education colleague, they completed this assignment for one of their own students with input from another general education colleague. In cases where participants were working with a special education colleague, they worked together to design an intervention for a co-identified student from the MST pre-service teacher's class. This set up mirrors a naturalistic relationship between MST and MM/ESN teachers in the field, as one responsibility of a special education teacher is serving as a collaborative resource for other educational stakeholders, including fellow educators (Council for Exceptional Children, 2015).

Participants

All class enrollees in the two sections of the course were offered the opportunity to participate in the study. In total within both sections, 41 PSTs participated, 13 special education PSTs (6 MM and 7 ESN) and 28 general education PSTs. Within the sections of the inclusion course, MM and ESN pre-service teachers were identified and paired with MST pre-service teachers, or MST pre-service teachers were paired up with one another for the collaborative intervention. In cases where teachers were collocated in their student teaching placements, I prioritized pairing them together to enhance ease of

collaboration and most closely mirror naturalistic collaboration within a school site. In cases where pre-service teachers were not collocated, pairings were made based on approximately matching grade level.

To answer research question 1, I analyzed interview data from 12 individual interviews with 6 matched pairs of MM and MST pre-service teachers. Information about these partnerships can be found in Table 1, pseudonyms were used to identify these participants. To answer research question 2, I collected participant work samples from all MST participants (n=28). These participants were working in grades PK-6. Of the students they chose for their progress monitoring projects, 19 were not special education students, 8 had IEPs, and for the final student, IEP status was not known. With the exception of one participant who did a PK math lesson, all participants chose to work on an ELA lesson.

Table 1

Interviewed Special Education/General Education Partnerships

Partnership number	Special Educator (SE)	General Educator (GE)
1	Marie (SE1)	Damian (GE1)
2	Caitlin (SE2)	Maeve (GE2)
3	Haley (SE3)	Penny (GE3)
4	Nate (SE4)	Ben (GE4)
5	Rowan (SE5)	Alice (GE5)

| 6 | Evan (SE6) | Maureen (GE6) |

Theory of Change

Studies of integrated experiences for special and general education pre-service teachers have often failed to articulate a theory of change underlying the intervention and how researchers expect change in teachers to be made (Brownell et al., 2011). For this reason, I have included an explication of the theory of change and teacher learning/effectiveness underlying this study.

To do this I went through five steps articulated by Brownell et al. (2011) beginning with the need to "articulate the knowledge, skills, and dispositions that define effectiveness for beginning inclusion teachers" (p. 236). As illustrated by the literature review, teacher collaboration is a good in itself and its implementation within special and general educator relationships can support student learning. However, when looking more specifically at the supportive skills associated with collaboration, general and special educators may apply these in different ways and therefore require delivery of the information in ways that support their specific roles in a collaborative relationship. From the studies on integrated programs it is also apparent that naturalistic field experiences are supportive of the development of skills of effective teaching.

This leads directly to the next step in which we must "describe the change strategies used to promote such effectiveness" (p.236). In the case of this study, we provided direct instruction in collaboration skills deemed most essential to effective collaborative relationships and we did so within the framework of a specific collaborative

relationship between general and special education pre-service teachers. We also

provided the opportunity to apply the skills in a naturalistic environment with guidance

from instructors. This set-up does not assume that good collaboration skills automatically

transfer to good collaboration. Instead, it provided semi-controlled opportunities to apply

collaboration skills as special and general educators would in their individual classrooms

and school sites.

The third step, which is to "articulate how change strategies are based on theory

or perspectives on teacher learning" (p.236) are for the most part covered by the

extensive research base consulted in designing the intervention and the care given to

choose only collaboration skills and practices that appear to be malleable as well as those

that appeared consistently in the literature. The inclusion of a structured course and

integrated field experience also draws from research on how teachers have benefited from

inclusive courses in the past.

The final 2 steps "document[ing] how collaborative programs promote beginning

teacher effectiveness and describe[ing] how individual and contextual factors might

moderate the influence of either program strategies or more comprehensive programs"

(p.236) will be covered as I outline the data required, how it was collected and analyzed,

and the results and limitations of the study.

Corpus of Data

In looking at the research questions, I considered what type of data was needed.

This section outlines the type of data necessary while the following two sections provide

information on how that data was collected and analyzed to provide information to

respond to the research questions.

To ensure research question 1 was answered, I needed to closely examine pre-

service teachers as they participated in the course as well as gain an understanding of

how effective they were in their collaboration, how they conceived of the information

delivered to them in class, and their experiences working with a partner. I needed to

understand how the collaboration skills taught in the class were learned and applied and

to what extent they were viewed by pre-service teachers as contributing to successful

collaboration. Finally, I needed to understand how the partners viewed each other as

colleagues, and resources. This information came from gathering data about interactions

that took place during the course and during individual collaboration as well as gathering

opinions from pre-service teachers about the ways they collaborated, their preferences,

and what they found useful.

To ensure research question 2 was answered, I needed to have access to the

collaborative classwork of the pre-service teachers as well as work from their K-12

students. This information came from course artifacts.

Data Collection

In order to collect this data, I used a number of methods including field notes,

audio recordings, interviews, and course artifacts.

Data for Research Question 1

Field Notes. Over the course of the study, I attended 8/10 sessions for each

section of the course and I took field notes of experiences that occurred during

instruction, as well as in reaction to my interactions with course participants. Since I held

a position within the program where the intervention was occurring, however was not the

instructor of the course, I was a familiar face to many participants and had reason to

engage with the course outside of research activities. This depth of participation was

necessary as I was trying to understand the perspective of the pre-service teachers and

this can only come from repeated participation in activities over a long period of time

(Emerson, Fretz, & Shaw, 2011). In addition to focusing on what was happening in the

course, I made special note of how interactions were occurring, as I was interested in

collaboration, which is an interactional activity.

While in the field, I made jottings focusing on my initial impressions, what I saw

as significant or unexpected events as well as what appeared to be significant or

unexpected to the participants, how actions were organized as well as the ways they were

changing (Emerson et al., 2011). Since I was not a participant in the course, I had a

chance to take jottings while the course was going on, but at times when I was

participating, I wrote them down as soon as possible after the events I observed.

Following observations, I wrote more complete field notes within 24 hours based on my

jottings as well as 'headnotes' or memories I had from my observations. I also began to

write analytic memos as appropriate that began to connect my observations to one

another (Emerson et al., 2011). Field notes were not coded but were used to inform the

development of the interview protocol and as a support to memo writing.

Audio Recordings. While the partnerships were working together, they were

asked to record themselves at three points. Once at the beginning of their time together,

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partway through, and then near the end of their collaborative assignment. Not only would

it have been time prohibitive to set up times to directly observe each pair, but the

presence of a researcher during their collaborative time may have been disruptive and

influenced the ways they communicated (Johnson, Christensen & Bellamy, 1974). For

this reason, pre-service teachers were asked to record themselves for the researcher. I

listened to all audio-recorded data and took notes as to how the recordings aligned with

my observations from the partners' work together. These audio-recordings were also used

to help guide and check my understanding of what was said in interviews.

Interviews. I had originally planned to conduct 2 interviews over the course of

the study, but due to time constraints, I ended up only conducting one individual

interview with each participant that was working in the MM support needs/general

education pairs for a total of 12 interviews. The interviews were completed in the weeks

following the completion of the course after all assignments had been turned in. Each

interview took about half an hour to an hour to complete depending on the length of

participant responses and if they had any questions for me as the interviewer.

The interviews were conducted individually and employed the use of a modified

stimulated recall interview with components of the critical incidents technique (O'Brien,

1993; Woolsey, 1996). These two types of interview were chosen because they could

elicit information from participants about their personal feelings in response to their

experiences. The specific use of these interview types is discussed below. For a copy of

the protocol for this interview, see Appendix C.

All interview data was transcribed and included in analytic memos written

throughout the analysis phase.

Stimulated Recall. This type of interview is used to understand an individual's

thought processes when they are engaging in certain types of activities (O'Brien, 1993).

It does this by engaging participants to reflect around events and explain their thinking

and processing by asking questions such as: What were you thinking then? (O'Brien,

1993). This process fits well with my research questions because it presents an

opportunity to bring up moments I observed or noted from the audio recordings, course

observations, or interactions with participants and find out more about how participants

conceived of these moments and interactions. In addition to events I observed or noted I

also wanted to leave room for events that were of importance to the participant which led

me to pair stimulated recall with the critical incidents technique.

Critical Incidents Technique. The critical incidents technique involves asking

participants to recall an incident critical to certain aspects of a project or outcome.

Through analyzing these incidents researchers can build an idea of what is critical to that

specific outcome or project (Woolsey, 1996). This technique involves the identification

of a specific aim to be disclosed to participants, in my case: discovering the

characteristics of successful collaborative relationships between pre-service teachers.

After setting the specific aim, I engaged in questioning of the participants to get at the

incidents they found critical to the development of these skills. Some examples of these

types of questions and prompts were asking them to identify a particular time when their

collaboration was going especially well and reflecting on the ways it was working well
and what supported it.

Taken together, these two interview techniques provided the opportunity for
individual participants to reflect on their involvement in the collaborative relationship
and provide data that was helpful to answering my research question about how their
participation in the course impacted their collaborative work and how the instruction of
collaboration skills supported their collaboration and what they found important and
useful.

Data for Research Question 2

Course Artifacts. The analysis of course artifacts was necessary for me to answer
the parts of my research questions that had to do with how participants were able to align
their instruction, and how collaboration impacted student work. Each of these will be
drawn from their own artifact, discussed below.

Progress Monitoring Project. The progress monitoring project was the main
collaborative assignment for the course. It involved pairs of students working as a
collaborative team to assess the learning of one or two target students, plan a reteach
lesson and implement that lesson. The project involved introducing the student(s) and
their work to one another, gathering extra data, planning further interventions and
analyzing assessment data over the course of the term. We built in three periods in class
to reflect together and work on the project collaboratively over the course of the term.
Progress monitoring projects from all MST participants were collected. Data from this
artifact provided information about how well participants were able to plan for and

implement a reteach lesson that aligned with and addressed a student need as well as self-reflection from the participant on how the project went. For a copy of the assignment sheet see the Appendix B.

K-12 Student Work Samples. As part of the progress monitoring project, pre-service teachers were asked to collect student data on the topic covered by the reteach lesson. These data were mostly incomplete but could be used to provide some supporting information about how students responded to the collaborative project.

Analysis Plan

Data will be analyzed in a number of different ways, as discussed below, in order to answer the research questions.

In addressing research question 1, this study used methods consistent with the practices of grounded theory, which suggests engaging in early data analysis in order to form emergent ideas that support further data collection (Charmaz & Belgrave, 2002). In my case, I recognized that my engagement with participants would likely impact their actions and therefore my data, which suggests a constructivist approach, however in some ways this study also employs elements of an objectivist approach in an attempt to illuminate an existing theory behind the development of collaborative relationships and how they can transfer to participant action and student outcomes (Charmaz & Belgrave, 2002).

In addressing research questions 2, this study used methods associated with quantitative content analysis in order to code the data and draw conclusions from the course artifacts (White & Marsh, 2006).

Research Question 1

Field Notes, Audio Recordings and Interviews. In order to analyze the field

notes and audio recordings they were incorporated into analytic memos that informed

further data collection, especially the post-intervention interview.   Each interview

was fully transcribed using a transcription service. Since there were only 12 interviews, I

was able to fully listen to each one and check through for accuracy. Since I was not able

to provide a lot of information to the transcribers, this step was necessary to make sure

subject specific language and acronyms were transcribed correctly and since I performed

the interviews and had existing relationships with the participants, I was also able to

make sure the transcriptions reflected what I felt to be the nature of the interview (Poland,

2002).

After transcription, the interviews were coded using a number of different coding

techniques. Transcripts were coded sentence by sentence, with codes being applied to

single sentences or sometimes to a group of sentences if these sentences related to one

another. When sentences were coded together they were often answering a specific

question I posed. Prior to coding, I developed a number of a priori codes that covered the

application of the collaboration skills taught in the course as well as those identified in

the literature as supportive to collaboration (Saldaña, 2016). Examples of some of these

codes are: communication, distributed leadership and common goal for those covered in

class; trust and valuing teaming for those drawn from the literature. It was my

expectation that the application of these skills would come up either because they were

instructed or because they are known to support teacher collaboration and, for this reason,

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when beginning to code it was important for me to look out for them and examine how and when they occurred.

In addition to these a priori codes, I did a round of open coding using in vivo codes as appropriate (Saldaña, 2016). This helped me to understand the information in the data and prepare for a round of focused coding to follow. Examples of some of these in vivo codes were: personality match, time allotted and shared course.

Once this initial round of coding was completed, I was able to reorganize the codes to connect them to one another. When I did this, I found that some of the in vivo codes were in fact tied to some of the a priori codes in ways I had not initially realized. For example, the shared course and time given in class for collaboration could fall under the heading of guidance and feedback, which was one of my a priori codes. Once I had reorganized and consolidated some codes into themes that addressed the research questions surrounding how participation in the course supported the participants' abilities to work collaboratively and to an extent the social considerations among participants, I engaged in another round of coding to make sure the reorganization of the coding scheme aligned with the quotes that had been coded (Saldaña, 2016).

At this point, based on what was coming out in the coding, I embarked on writing a number of analytic code memos in order to better organize what I was finding. I first wrote a case study of each participant that looked at what they each identified as useful in their collaboration. Based on these memos, I decided I needed to be more specific about the way the participants engaged with and enacted the collaboration practices, so I did a round of coding focused on looking first at what skills they took up and then on how they

enacted them using two new codes: what and take up. I was then able to write analytic

memos for each participant that focused on the ways they took up and used specific

collaboration practices. Comparing these memos to one another, I was able to write

another round of memos that focused on the individual partnerships and compared the

way the individuals conceived of and implements the collaboration practices in their

relationship (Emerson, Fretz, & Shaw, 2011).

As I wrote these memos, some new themes around the way participants spoke

about the practices came out, for example they often referred to expertise and perspective

when discussing distributed leadership. I returned to the interview transcripts and was

able to write a number of new code memos that looked at how participants defined these

ideas and how they used them in their collaborative relationships. Finally, as a result of

the work done through these memos, I compiled a memo consisting of claims in response

to my research question (Emerson, Fretz, & Shaw, 2011).

Throughout this work, I started to consider my role in the intervention and wrote

memos about my own trustworthiness guided by ideas from Shenton (2004) as well as

my own opinions around collaboration. For a copy of the codebook for this data see

Appendix D.

Research Question 2

Course Artifacts. I worked with the instructor of the course to analyze data from

the course artifacts. In order to do this, we first employed quantitative content analysis in

order to derive categorical information. We did so based on the hypothesis that

collaboration across credential areas would result in differences in specific areas related

to planning, instruction, assessment, and participation in the course project. The coding

process is detailed below (White & Marsh, 2006).

Progress Monitoring Project. The deliverable product from the progress

monitoring project was a document that detailed each aspect of the collaborative work the

PSTs engaged in from selection of target student(s) to analysis of outcomes from

reteaching the lesson. I coded these documents with one other coder – again this was the

course instructor - in five areas related to research question 2. Prior to coding, in each

area, coders identified what constituted meeting the requirement in each area by

assigning a 0 (no) or 1 (yes) to each assignment in each area. The five areas were: if the

reteach intervention aligned with the identified student need; if the reteach assessment

aligned with the student need; if the PST observed student growth in the area of the

identified need as a result of the intervention; if the pre-service teacher observed their

own alignment or lack of alignment in their project; and if the project mentioned input

from their collaborator. Coding was not blind but was time delayed and did not begin

until more than 4 months after the completion of the course. Because of this, many of the

partnerships had been forgotten by the coders, notably with the exception of those who

were interviewed as part of Research Question 1.

Alignment was an important concept in this coding as it represented a

fundamental part of the progress monitoring process, that is the ability to identify a

specific area, take data in it and target it for improvement by using a specific intervention

(Fuchs, Deno, & Mirkin, 1984). Alignment was defined here as having the identified

objective address a skill that would support progress in the area of identified student need

and having an assessment of the intervention that was able to provide information on progress related to that skill or area.

Coders read through the entire progress monitoring project document in order to ensure that any mention of these areas were accounted for. Out of 28 total documents, the two coders double-coded 5 of them (18% of the data) to check for inter-rater reliability. Across the five areas for which statistical analyses were conducted, coders had 100% agreement (25 matches out of 25 opportunities). Across all areas, including those for which statistics were not run, coders had over 90% agreement. For a copy of the codebook for this data, see Appendix E.

In addition to coding, ahead of the interview process documents from interviewees were examined in order to provide the interviewer with information about the collaborative work of the interviewee and identify elements of their collaborative relationship to ask about or discuss in the interview.

As part of the progress-monitoring project, pre-service teachers were asked to gather student work on the skill they were focused on re-teaching. The plan was to analyze this for student growth, however there was often not enough student work provided to do this. The student work was looked at in the coding to check for reported growth from participants but was not robust enough to be coded on its own as it was only present in a subset of projects.

In this part of the study there were 15 general education PSTs who worked with other general education PSTs and 13 general education PSTs who worked with special education PSTs. There were enough participants to consider statistical conclusions, so I

ran chi square analyses on the 5 specific codes in the data in order to examine if any of

the differences between the groups had statistical significance.

Chapter 4: Results

Research Question 1

Research Question 1 asked: when pre-service teachers are provided with

instruction around specific practices that support collaboration (communication skills,

flexibility, and knowledge of collaboration process including collective responsibility,

setting common goals, and distributing leadership) and an opportunity for structured

collaboration; which collaboration skills were identified as supportive to their interactions

and how were those skills employed and understood? From interviews conducted with

PSTs after their collaborative experiences, they saw value in and use the skills and

practices taught in the course. In addition, they identified other factors from the literature

that were also supportive to their collaboration, among them prior experience in teaming,

valuing of and openness to teaming, trust, and time allocation. Finally, the majority of

interviewees identified that there was a personality match between themselves and their

partner and stated this was supportive to their collaboration. Interestingly, though, those

who did not identify a personality match did not consider its lack as a hindrance.

Course Topics

Communication. Communication was one of the most cited practices and was

the only topic that was mentioned as supportive by all twelve interview participants.

Within the course, we instructed on different ways to communicate effectively including

listening skills as well as ways of sharing one's own perspective. Participants reported

that communication was supportive to building their collaborative relationships. For

example, when asked what they learned, in their experience, supported a quality

collaborative relationship, Caitlin (SE2) advised, "Definitely communicate a lot", and

Evan (SE6) said, "There's got to be communication."

Many interviewees described the ways they practiced communication, mentioning

aspects that we covered in our instruction, as well as how communication generally

supported their interactions. Rowan (SE5) shared, "When I was able to communicate, and

when, like I said, I was able to understand it and able to respond to it, I felt like that was

great." His partner Alice (GE5) validated his description and said,

> He's very much like offering of information, from the moment I met him, and he's
>
> excited about what he's learning and is willing to share it. So I think that he
>
> brought that to the table. And I'm a good listener. I like to listen to what people
>
> know and process it and stuff like that.

Some described communication as a foundation to growing their collaborative

relationship. Maureen (GE6) illustrated this idea when she said, "I think we are good at

talking to each other about things which helped. So, good at communicating and then...

Yeah. Just, we met a bunch of times to slowly figure out what we were going to do."

Maureen (GE6) viewed skilled communication as a foundational skill that allowed her

and her partner's relationship to progress. Rowan (SE5) also viewed communication as

central but in a more retrospective way. It was not that communication necessarily laid a

foundation, however when looking back he saw it as instrumental to his and his partner's

work together. When asked what supported their collaborative efforts, he shared, "Our

success came back to listening to each other".

Distributed Leadership. Another topic covered in the course, and mentioned as supportive in interviews with eleven of the twelve PSTs interviewed, was the idea that distributing leadership and sharing responsibility with collaborative partners could lead to more successful collaborations. The one participant who did not mention it did not present a counter argument to this claim, it was merely absent from their commentary.

A number of PSTs mentioned this as useful in understanding how collaboration can function and as a tool that helped them to accomplish collaborative work. Towards the first point, Caitlin (SE2) said,

> I think having explicitly like these are things that this teacher can do and these are
>
> things that this teacher can do and actually they can do a lot of the same things.
>
> And having that laid out for me, I think helped me understand what my role was.

Rowan (SE5) similarly described how the course content supported his and AK's understanding of their work together,

> Someone was able to formally in a class define different roles of this is how you
>
> guys would be working together. So [it] created a very cohesive idea of like, we
>
> knew each other's roles. So, it didn't feel like anyone was trying to impose or
>
> resist in that way…

An illustrative example of this concept comes from Penny (GE3) who described her work with Haley (SE3) as follows,

> We made sure both of us commented on each section. So it really wasn't divvying
>
> out the assignment, it was like both of us contributing to each section. There were
>
> some parts that I think I had to do because it was my student… and there were

other portions that she really needed to provide the input on because I didn't know

as much... at the end of the day I think there was a clear understanding, I think,

that we both needed to contribute.

This shows how this partnership simultaneously engaged in distributing leadership based

on their individual resources while both maintaining full responsibility for the

collaborative assignment.

Expertise. Within the concept of distributed leadership, PSTs had a common

understanding that emerged; that distributing leadership was tied to a sense of expertise

based on their own or their partner's skills and experiences and/or the specific role they

each inhabited (general educator vs. special educator). The idea of expertise was included

in course instruction as one of the resources that may be associated with distributing

leadership; it was not, however, explicitly defined or highlighted as more important than

other resources. There are, however, historical definitions of what may constitute

expertise within each of these credential areas (general educators and special educators)

and ideas about how they may best be integrated (McCray, Butler & Bettini, 2014), that

PSTs may have been drawing from in their interactions that informed their opinions. An

example of one of these ideas is that general educators can be thought of as content

experts while special educators can be thought of as intervention experts. As special and

general educators collaborate more frequently, the way they view their own and each

other's expertise will impact their interactions with one another. For this reason,

observing how PSTs from the different credential areas defined and invoked this idea of

expertise was interesting.

Many PSTs saw their expertise stemming from their past experience and current

role. For example, when asked what helped her to engage in the collaborative project,

Caitlin (SE2) focused on her prior experiences and stated, "I think my background of,

'Oh, kids are more engaged when they can be physically involved in more sensory

experience.' I think that was my background speaking where I'm like, 'Oh, this will help

them get engaged more'". This draws from expertise she acquired on her own before

entering the teacher education program. Her partner, Maeve (GE2), saw expertise

deriving from their current roles as special or general education PSTs, she said,

> It's not one person knows more than the other. So I think just having that
>
> expectation kind of set up that neither one is like a know it all and we're both
>
> helping each other. And we both have our expertises also.

Together this partnership illustrates how participants saw that expertise could come both

from prior experiences as well as the current roles they were inhabiting.

Haley (SE3), shows how some participants drew on both of these sources of

expertise in their collaborative work. She said,

> "I was able to think of things that I do in my placement and implement them into
>
> our project, which was good. I also have previous experience working in
>
> kindergarten, first grade, so I was able to fall back on that and think about
>
> things."

Perspective. An extension of the idea that some expertise resides within the

specific role an individual is inhabiting was that some general education PSTs described

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their special education partners as 'seeing' things differently or having a different

perspective or set of eyes.

Alice (GE5) said, "I feel like because he's (Rowan's) learning about behaviors

and just his background in ESC, I think that gives me different perspectives of how to

look at students and think about them." And she said of special educators in general,

including her partner, "they have information and they see things differently. Their eyes

are different in a way." This shows that she noted a distinct difference in the way these

individuals processed situations as a result of their roles as special educators, and that this

could be considered a facet of their expertise.

Another PST, Damian (GE1), also commented on this idea and said of the

supports his partner, Marie (SE1), provided him, "they were already pulled from

somebody who curated them with an eye… rather than having to seek those out

independently and not necessarily have an eye for judgment or access to what kind of

approach would be best…" He saw Marie (SE1) as possessing a certain expertise with

regard to the way she saw the resources that would best support his students.

Finally, Maureen (GE6) said of her partner Evan, "he knew right away how to

modify it or change things… so I think it was nice to get his different perspective and

ideas". This idea of special educators seeing things differently or having a specifically

valuable perspective in regards to their expertise was not covered in the course, but it

emerged from the experiences PSTs had of distributing leadership in their collaborative

projects. While not all participants shared the understanding of expertise as a part of

distributed leadership or perspective as a facet of expertise, there were no explicit counter arguments to these claims.

Common Goal. A third support for collaboration that we covered in the class was having a common goal for collaborative action. All participants who discussed a common goal as supportive to their collaboration referred specifically to student focus as that common goal. This goal was mentioned in the instruction as one option that could be adopted as a useful common ground among parties that may have different opinions. Whenever the idea of student focus as a common goal was brought up by participants, it was always done so in a very broad manner without providing specific details regarding what it meant to be focused on the student.

For example, when asked what supported her collaboration with her partner, Caitlin (SE2) said, "Agreeing that you're going to put the students' needs first and that's what you're both working towards." And "having that common goal versus fighting over who plans which part of the lesson. I feel it makes it easier if you're just focused on the student." Both of these reference student focus broadly as a way to make collaboration run more smoothly. Her partner Maeve (GE2) echoed this same idea and said, "Remember that it's about the kids and you're not fighting over whose idea was better or how they should implement things, but remember to stay focused on the student and how you can both work together to help them".

Another partnership where both parties expressed how a common goal of supporting students was helpful was Nate (SE4) and Ben (GE4). Nate (SE4) shared that "operating under the assumption that each person is trying to do their best for their

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students" made working together easier and Ben (GE4) advised collaborators to "care

about the students because I think it all really comes down to if you care about the

students, then kind of the other kinks will get sorted out". They both found student focus

to support not only their work together but considered it a guiding principle for

collaborative work in general. While some participants did not mention common goals in

their work with their partner, there were no counter examples to this claim expressed in

any interview.

Explanatory Models. When instructing these collaboration skills, we provided a

framework that all the aspects were supportive of quality collaboration. There was

evidence from the interviews, however, that some pre-service teachers valued different

aspects of collaboration and saw them building on one another in unique ways.

Illustrative of this idea, Haley (SE3) described communication as a foundation, which

allowed the distribution of leadership, which led to the ability to have shared

responsibility, she said, "I think just having a clear communication, and I think knowing

whose role is what, I guess, in coming into it, having a plan, having that to-do list,

following through on each other's duties, I guess, is really important".

To illustrate a different organization of the collaboration ideas we presented, Ben

(GE4) expressed that effective communication and work division for him stems from

student focus and understanding student need. When asked about how this works in

practice, he said,

Step one: care about the students because I think it all really comes down to if you

care about the students, then kind of the other kinks will get sorted out. Step two

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is what supports do the kids need in order to help them achieve what they need to

achieve? Then kind of from there it also third, and maybe most crucially, third

and just being able to take time to commit to spending with your peers to work

over things that you need to sort out.

Not all participants constructed a structural relationship between collaboration skills.

While not explicitly a counter argument to this claim, some did not speak about a

structure at all, and others saw the collaboration skills and practices as co-existing with

each other with no apparent structure.

Limitation Claims. The following claims, while not explicitly counterpoints, are

ones that challenge a central design tenet of the study -- that instruction on specific

collaboration skills and practices will support collaboration in the field. They do not rule

out this practice but do suggest limitations associated with it.

Limitations of Instructing Collaboration Topics. Some PSTs expressed

limitations that they perceived around the instruction of collaboration skills. One

partnership in particular commented on this and it is best captured by a quote from

Damian (GE1), he said,

> The communication workshops were, it's hard to describe it, both I feel some of
>
> the most and least useful. There were parts that they would be interesting to note,
>
> but I think with any simulations there is always the problem of how well your
>
> group is participating in good faith, so there is some moments where I was like
>
> that is actually insightful, and then there were others that I was like, this is not like
>
> real life.

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This shows how participants felt some of the instruction around collaboration topics could only approximate the actual experience of working with one another and as a result may not have been perceived as entirely useful.

Limitations of Instructing Individuals with Prior Experience and Opinions. A second limitation is born from the fact that PSTs, as individuals, necessarily have their own understandings of the concepts we instructed on, separate from their experiences in this course and from collaborating with colleagues. At times these understandings and practices were invoked more strongly than what the course taught. Evan (SE6) is the best example of this. While, in describing his actions he spoke about using a number of the skills taught in the course, he rarely explicitly identified these as helpful to his collaborative work; instead he mostly focused on the personality match and friendship he had with his partner and his own ability to build relationships, He said,

> Interpersonal skills for me is huge. Like to be effective as a team. I think we get along… like the interpersonal skills prior to teaching was helpful just to get a, "who is this person?" It would be really hard to just kind of jump in the ring with somebody unexpected, teach something effective.

While interpersonal skills are supportive to collaboration, Evan spoke about them in a different way than we taught about them in class. He was not specific about what the skills were or how they supported his interactions. He mostly stated that he was learning a lot about himself and how to interact with others generally as he transitioned from his prior roles to this new one.

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Nate (SE4) also illustrated this point at times as he often defined terms from the course using his own understandings instead of connecting them to the course instruction.

Collaboration Supporters from the Literature

Certain practices came up in the literature as positive supports of collaboration between special and general educators (for a chart of these supports, see figure 1). Below I detail the areas where this study also found evidence of these practices positively supporting collaboration.

Prior Experience in Teaming. Prior experience in teaming was identified in the literature as an influencing factor on current collaboration (Friend and Cook, 2016; Johnson, 2003; O'Shea et al., 1999). In my study, as well, almost all participants (11/12) noted that experience in teaming could support their future teaming or would have supported their current collaboration. Although this was not mentioned by one participant, there were no counter examples to this claim.

Teaming Now Supports Future Teaming. For some participants, mostly general educators (5/6) they saw the current collaborative experience as one that would positively impact future collaborations, serving as a sort of practice or illustrative example on how to collaborate. Maureen (GE6) illustrated this point well when she said of her experience with Evan, "I could learn from his perspective and hopefully figure that out for other times when I'm not collaborating with Evan (SE6) or something".

Penny (GE3) was even more explicit about how she saw the current experience as a support for future experiences. She said,

…it was almost like practicing that. So working with another ESC teacher is like,

'Hey, we can do this.' And it seemed like a practice, doing that in practice. So it

was kind of neat. Maybe that was kind of the whole idea.

She also commented about what she could take with her from the experience, she said, "I

think we got a lot of great tools out of this course, which was how to work with your

colleagues and the types of accommodations to develop."

Damian (GE1)'s comments also support the idea that the current teaming

experience would support engagement in future teaming, he said,

My takeaway is that I would really, we will see once I actually get into the

position that I want, I want to have all of people who work in, both paras and

special educators, being a more integrated part of the process of being aware of

what is going on in the classroom because at least my biggest issue with my

school is that it just feels entirely separate.

Alice (GE5) also commented on how this experience supported her understanding

of enacting collaboration in schools. She said, "I think that that assignment overall was

kind of eye-opening, again, on how to work with our partners or our resources in the

school."

More and Earlier Collaboration is Better. Another way the idea of the value of

prior experience presented itself was the expression by participants, in this case mostly

special educators, that more and earlier collaboration was or would have been helpful to

more successful collaboration (4/6 special educators and 1/6 general educators). This

often presented itself as the desire to have had more projects to work on with their

partners, either before their course collaboration or carrying into the future.

Nate (SE4) illustrated the desire for continuing collaboration, he said,

Maybe if we did like that kind of thing with the same partner like three times

rather than just with one assignment, that way it's more of us, tracking progress

and working with students over a longer period of time. And maybe more

behavior issues come up, maybe there's a lot more progress. So it's much more,

it's much more significant amount of time that we would spend collaborating.

A few participants suggested that having prior collaboration would have

supported their current collaborative projects. Rowan (SE5) said,

So, I think it really came together in terms of the collaboration at the end. It's

almost like I would recommend doing something like an introduction activity

with the person they'd have to do it, so that you kind of get past resistance of

we're in different things.

And Damian (GE1) said, "I think, starting sooner in collaboration of, I wish honestly I

would have given a much better word analysis lesson plan if it had been integrated with

collaboration or scaffolds in mind from the first place".

A few partnerships did have a chance to work together more extensively than just

on this project and they shared that this was helpful to their collaboration. Caitlin (SE2)

said of her partner Maeve (GE2),

We'd already worked together for the WALP (word analysis lesson plan) and so I

already was familiar with her teaching. I think I was the one that reached out to

her. So, we were friends already and that definitely helped.

Time Together. Another precondition to positive collaboration from the literature

that was also identified by a majority of participants (9/12) with no participant expressing

a counterexample was the provision of time for collaboration (Vangrieken et al., 2015).

In this study, participants expressed the benefit of shared time in two ways: attending a

shared course, and being given dedicated collaboration time within that course.

Shared Course. Some participants felt that having a shared course and being able

to learn from one another through being together in class was supportive to their

collaborative endeavors. This came mostly from general education participants (5/6) but

also some special education participants (2/6).

Damian (GE1) appreciated specific questions his special education peers

contributed, he said,

I think just having the ESC candidates in it is good. One thing I have noticed is

that well maybe, perhaps because the realm of experience, they are more willing

to just ask questions like well why would you do that or just the types of questions

they ask are a lot more valuable.

Penny (GE3) enjoyed the way special and general educators could learn about and

from one another. She said,

I liked that actually in just the group setting for the class as a whole because we

kind of got more insight into what I think ESC does as a class. And I like working

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in teams in general… they're getting the MST from us and we're getting ESC

from them. So it was a great collaborative effort, just getting different

perspectives. So I really enjoyed it.

Similar to Penny (GE3), Ben (GE4) also enjoyed being in class with his special education

peers, he said

Just being able to interact with other people that are specifically focused on mild

mod. or focused on ESN, having their perspectives and getting to hear their

comments throughout the quarter has been, I think, really helpful for me … So I

think that was kind of the most helpful thing in the course. It wasn't necessarily

the content, but it was spending time with my peers.

Maureen (GE6) also enjoyed the chance to hear from special education peers and

expressed that it laid a good foundation for working together, she said,

I liked just the fact that the cohorts were mixed and I just think that that is

important. And so getting to hear people from ESC talk about just their lives in

school versus us was helpful just from the very bottom layer of everything.

The special education participants enjoyed the opportunity to share with their

general education colleagues and have a venue to show their expertise. Rowan (SE5)

shared, "I think one putting mild/moderate and ESN with them (MST) really kind of

helped in the sense that... I think a lot of MST saw us as resources that we kind of knew

what we were talking about." And Marie (SE1) added,

I think it was nice to have us in there the whole time to have them talk to us the

whole time. So it wasn't just we came in as a celebrity guest being like, 'Now

we're ready to collaborate.' I think having us all together the whole time was

useful.

Dedicated Collaboration Time. Dedicated collaboration time within the course

context was even more widely cited as a support to collaboration, mentioned by 9 of the

12 participants. Most simply appreciated that they had the chance to work in class and did

not have to find extra time in their busy schedules to get started in the collaborative

project. Maureen (GE6) said, "just also having the time set aside and then we could talk

to you guys for help, too, was nice. Just while we were there". Nate (SE4) said,

> Like, I know we're adults and it wouldn't have been a problem if we just met for
>
> the first time outside of class, but making it so that we didn't have to on the first
>
> time is pretty much a surefire way of making sure that we're both like sort of in
>
> the same mindset at the same time. And, yeah, I guess that, it just allows us,
>
> makes us interact without having to communicate about it and work things out.
>
> And then it just kind of gives us off on a good foot already.

Maeve (GE2) shared, "being allowed that time to talk to each other, designated for us,

was good too. Because if I didn't run into her in the hallway then I wouldn't have gotten a

chance to talk to her at school." And Marie (SE1) said, "I think giving us the time to

actually talk even if it wasn't super specific, that time was definitely necessary". These

quotes illustrate the broad appeal of the in class collaboration time and the ways in which

various participants found it to be of use to them.

Trust. Trust among collaborators was mentioned throughout the literature (Cook

& Friend, 2010; Johnson, 2003; Mastriopieri et al., 2005; Tschannen-Moran, 2001) and

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participants also identified it as a supportive factor, and although only mentioned

specifically by a few participants, there were no counter examples. They rarely used the

word trust –sometimes they used valued– but they often described aspects associated with

trusting and respecting one another and their individual judgment. For example Evan

(SE6) said of Maureen (GE6), "I knew she would have my back if I was up there and

kind of fumbling around and I would have hers." The idea of having another's back is

central to trusting relationships. Evan's partner, Maureen (GE6), also valued trust and

shared she felt that a requirement to successful collaboration was explicitly "to trust each

other".

Both Nate (SE4) and Rowan (SE5) shared that valuing one's partner was

important; Nate (SE4) said broadly that one needs "to just the value the other person" and

Rowan (SE5) shared of his relationship with Alice (GE5), "once we knew each other and

valued each other, it was easier to work on a project".

Finally, Marie (SE1) shared that something that really supported her work with

Damian (GE1) was "the fact that he trusts me even though I'm not really qualified to do,

that is nice. That's how you make better teachers I think". The fact that she felt trust from

her partner appeared to empower her in her role within their collaboration and made her

feel better able to engage in their work together.

Valuing Teaming and Collaboration. A personal trait from the literature that

participants also identified as supporting their collaboration was their own value of

teaming in general or as it relates to schools. This idea was often illustrated by

participants expressing that they enjoyed collaborative activities or saw value in engaging

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in them. Penny (GE3) expressed really enjoying the collaborative experience and related

it directly to her valuing of team experiences, she said,

> I grew up actually playing sports, so I think I kind of naturally am drawn to group
>
> activities and I like people to be a part of the group. And I think I'm naturally a
>
> talker. So when we're in groups I'll be like, 'What do you think?'

Maureen (GE6) also expressed the way she valued the team process, she said, "I was

really excited because I think that the whole idea of co-teaching is really cool and I've

never seen it before."

A few participants expressed how they valued the collaborative process in

general. Rowan (SE5) said, "I am a big fan of collaboration. I think it's something that the

more college has leaned us into it, the more I like it." And Maeve (GE2) said,

> I think it's great any way to collaborate with your colleagues, whether it's if you're
>
> in second grade, all your second grade teams, but also all the teachers that are
>
> working together, and it's just going to help. I think it's going to foster that
>
> relationship.

There were no counter examples to this claim; no one expressed that valuing teaming

made their work together less successful.

Openness and Willingness to Team. Openness towards and willingness to team

was identified in the literature as supporting collaborative endeavors (Friend & Cook,

2016; O'Shea et al., 1999; Scruggs et al., 2007) Participants described this as partners

expressing openness to and understanding of each other and their ideas. Damian (GE1)

shared that what supported his collaboration was

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Just being open and honest of what you can do and then find that sweet spot of

where you are going to find the most benefit to the kids is not getting bogged

down in either the pride you have attached to the lesson.

Similarly to Damian (GE1), Alice (GE5) shared how her openness to Rowan (SE5)

supported their collaboration and her growth, she said,

And what he says, sometimes I'm like, hmm. And I'm starting to take it and look

at either my students or my kids. so I just feel like he's a resource in what he's

learning that we're not necessarily getting…

Taking these ideas of being open and applying them more broadly to

collaboration in general rather than her specific partnership, Penny (GE3) recommended

to, "keep an open mind or something and just kind of look at the opportunities." In this

case too, there were no counter examples to the claim.

Personality Match

Collaborators with Personality Match. A characteristic that was not widely

covered in the literature, but that many participants identified as aiding their collaboration

(4/6 partnerships) was the idea of personality match or friendliness in the relationship. In

partnerships where there was an expressed personality match, the partners reported that it

was a contributor to their successful collaboration. Caitlin (SE2) said of Maeve (GE2),

We were friends already and that definitely helped. I think if I would've been with

someone I didn't know as well, at a different school or somewhere where I didn't

have the same background or relationship, going into it would have been harder

probably.

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Similarly, Haley (SE3) said of Penny (GE3),

I already knew her a little bit and we already had a little bit of a friendship. I feel

like we had a very similar work ethic too… so I thought it was a really good

match being with her.

And Penny (GE3) said of Haley (SE3), "She was great. I mean it was very much a mutual

thing… She was easy to work with. And she's very relaxed and she has a very chill

personality. It was very nice".

A final example of this is Maureen (GE6) and Evan (SE6) who said very similar

things about one another: "I think we get along, me and Maureen (GE6) get along really

well, and it showed as we work together." And "I think that Evan (SE6) and I just get

along, which is a good first step" respectively. There were no counter examples to this

claim; no one expressed a personality match impeding their collaboration.

No Mention of Personality Match. In cases where no personality match was

noted, participants did not express that it was a barrier to collaboration. Instead of

lamenting the fact that they did not feel a personal connection with their partner, they

seemed to instead focus on other areas of overlap that they found. These areas of overlap

often resulted in outcomes that the PSTs saw as meaningful and resulted in collaborations

that they each considered successful. General education participants in these partnerships

also expressed ideas about collaboration and its future application that they drew from

their interactions.

The first partnership without an expressed personality match, Marie (SE1) and

Damian (GE1), found common ground around their frank communication and open

sharing of ideas and resources to support their planning and students. Marie (SE1) said of

Damian (GE1)

> He's very much like, 'Give me all your input.' And I really appreciated that cause
>
> I'd felt like previous, with my first collab and the different class, I was giving
>
> things and it wasn't being taken, but at least even though he didn't take all my
>
> ideas or he just didn't in the moment utilize them. I think that just his attitude of
>
> being like, 'Yeah that sounds like something I could try,' was the best part of it.
>
> Just his attitude about it.

Along a similar vein, Damian (GE1) said of Marie (SE1), "I really appreciated how frank

we could be with each other as a partnership".

> As for how working with Marie influenced his future interactions collaborating

with special education colleagues, Damian said

> My takeaway is that...I want to have all of [the] people who work in, both paras
>
> and special educators, being a more integrated part of the process of being aware
>
> of what is going on in the classroom because at least my biggest issue with my
>
> school is that it just feels entirely separate.

> A second partnership without an expressed personality match, Alice (GE5) and

Rowan, found common ground around their ability to understand one another's context

and role, and their meaningful communication, which they defined as sharing and

listening. When asked what supported their collaboration, Rowan (SE5) said,

> It was more in that we were receptive to each other. I would say that that was our
>
> big thing. When I made something, she listened to it, she was there like, Oh, that

kind of addresses my concern, and I would say that was a big thing for us. It

was... Our success came back to listening to each other, that she seemed very

earnestly interested in my opinion. So, that was great and I was genuinely

interested in order to give her an opinion on what she had to say.

Alice (GE5) mirrored this explanation and said,

He's very much like offering of information, from the moment I met him, and he's

excited about what he's learning and is willing to share it. So I think that he

brought that to the table. And I'm a good listener. I like to listen to what people

know and process it and stuff like that.

Their commitment to communicating with one another, to sharing and listening,

supported their ability to engage with one another despite the lack of an existing and

growing friendship.

They also both expressed value in understanding one another's context, and

shared that that understanding allowed them to work together more effectively. Alice

(GE5) said,

I started to feel more of a collaborative relationship with Rowan (SE5) when he

came to my classroom and he saw the students. And then we were also then

working on the assignment and going back and forth with like, okay, what could

we have done, how would we serve these students better, and stuff like that. So

yeah, that was the moment that I'm like, oh wow, this is what it's really like to

work with a partner in the school. And I can see how a lot of times teachers don't

partner.

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Here, Alice expressed how this contextual understanding supported their teamwork and ability to engage in the work they needed to accomplish for their students. This idea was reiterated by Rowan (SE5) as well when he said of Alice (GE5) 's classroom context, "when I was able to communicate, and when like I said I was able to understand it and able to respond to it, I felt like that was great". For him as well, understanding the context of her classroom allowed him to feel comfortable in the collaborative relationship.

Speaking about the impact of the experience, Alice said, "I think that that assignment overall was kind of eye-opening, again, on how to work with our partners or our resources in the school." Although not applying it to future interactions, her comment illustrates that her work with Rowan was a positive model of engaging in collaboration in schools.

Research Question 2

Research Question 2 asked: How did participation in an integrated inclusion course with a joint field assignment impact general and special education pre-service teachers': (1) design and implementation of the re-teaching of a lesson based on common core state standards? (2) K-12 students' achievement/growth? and (3) ability to view one another as collaborators? In order to answer this question, I ran chi-square analyses of coding of participant work in five areas, three related to lesson design and implementation, 1 related to K-12 students, and 1 related to viewing one another as collaborators. In all analyses, the alpha level was $p < .05$. Null hypotheses for all areas were that there would be no difference between general education PSTs working with

special education PSTs and those working with other general education PSTs. See Table

2 for a compilation of these results.

Table 2

Percentages Associated with Results for Research Question 2

Coding Area	General Education/General Education Pair (n=15)	General Education/Special Education Pair (n=13)	Class Average (n=28)
Learning objective was aligned to student need.	46.7%**	92.3%**	67.9%
Assessment was aligned to learning objective and student need.	53.3%	69.2%	60.7%
PST recognized alignment or lack of alignment	33.3%**	84.6%**	57.1%
Student progress was reported	73.3%	84.6%	78.6%
Collaborator contribution mentioned	20%***	100%***	57.1%

** statistically significant difference in groups on Chi Square analysis at p < .01
*** statistically significant difference in groups on Chi Square analysis at p< .001

Lesson Design and Implementation

Learning Objective Alignment. I hypothesized that general education PSTs who

worked with special education PSTs would be more likely to align their learning

objective to their target student's identified need. The chi-square test of independence

showed that there was a statistically significant association between having a special

education PST partner and aligning learning objective with learning need, X^2 (1, N = 28)

= 6.65, p < .01. In other words, those general education PSTs who worked with special

education PSTs were able to align learning objective with learning need more often than

those who were paired with general education PSTs.

Assessment Alignment. I also examined whether general education PSTs who

worked with special education PSTs would be more likely to align their assessment to

their target student's identified need. In this case, though, the proportion of general

education PSTs who were able to align assessment to student need did not differ based on

who they were partnered with, X^2 (1, N = 28) = 0.74, p = .39. Participants were not more

likely to align assessment with student learning need based on their partnership. Although

the result was not statistically significant, a great proportion of those paired with special

education PSTs were able to align their assessment to their student's learning need.

Recognition of Alignment. In this area, I examined whether general education

PSTs who worked with special education PSTs would be more likely to recognize that

their lesson objectives and assessments were aligned or misaligned than those who

worked with other general education PSTs. There was a statistically significant

relationship between the two variables. Those paired with special education PSTs were

more likely than those paired with general education PSTs to recognize alignment, or

lack thereof, X^2 (1, N = 28) = 7.48, p = .006.

K-12 Student Achievement

In this area, I had hoped to be able to independently evaluate K-12 student pre- and post- test data. This was not possible, however, because many participants did not collect enough data or did not collect data that could be reliably compared. For this reason, I had to rely on participant reports about K-12 student progress and observations of any included student work. I hypothesized that those who worked with special education PSTs would produce more student progress than those who worked with other general education PSTs. The chi-square test of independence, however, showed that there was no statistically significant association between K-12 student progress and being paired with a special education PST, X^2 (1, N = 28) = 0.53, p = .47.

Consideration as a Collaborator

In order to get at the question of if the PSTs viewed one another as collaborators, I looked at if the general education PSTs referred to their partners and their collaborative work in their assignment. In this case, there was a statistically significant relationship between the two variables. Those paired with special education PSTs were more likely than those paired with general education PSTs to include information about their collaboration efforts, X^2 (1, N = 28) = 18.2, p < .001. All those paired with special education PSTs mentioned their collaboration, while only three of those paired with other general education PSTs made mention of their collaboration.

For a comparison of group percentages and class averages, see Table 2.

Chapter 5: Discussion/Conclusion

Going into this study I outlined a theory of change associated with the

intervention I enacted. It posited that by providing instruction in key collaboration skills

and practices, and allowing general and special education PSTs to practice these skills in

naturalistic environments with instructor support as needed, I could provide new teachers

with a successful collaborative experience that they could draw from in future

collaborative work. In order to measure this success, I looked at the results from two

different sets of analyses to answer two research questions. Both provide insight on the

ways the intervention provided valuable experiences for the PSTs and both had their own

limitations. Taken together, they suggest the value of this type of collaborative

intervention and open a pathway for future research in this area.

Research Question 1

Effective Uptake and Application

From the results of the qualitative interviews, I found that the collaboration skills

and practices I identified from the literature for instruction: communication (Gallagher et

al., 2008; Griffin et al., 2010; Hudson and Glomb, 1997; Salend et al., 1997; Zagona et

al., 2017), distributed leadership (Friend and Cook, 2016; Mastropieri et al., 2005),

shared responsibility (Cook and Friend, 2010; Friend and Cook, 2016; Mastropieri et al.,

2005; Tschannan-Moran 2001), and common goals (Cook and Friend, 2010; Friend and

Cook, 2016; Griffin et al., 2010; Hallam et al., 2014; O'shea et al., 1999), were enacted

and found to be useful collaboration supports for both the general education and special

education PSTs. This suggests that while collaboration is an interactional practice, shared

between two or more parties, there may be value in targeted instruction associated with

practices that can support its successful implementation. The literature suggests that

merely placing special and general education PSTs together and telling them to

collaborate is not successful (Marshall and Hermann, 1990), but that when course

enrollees are asked to apply what they learn in individual courses to collaborative

activities, either with one another or with others in the field, they report positive

outcomes (Griffen et al., 2006; King-Sears, 1995). This finding adds some specificity to

what a course instructor might consider including as content to support their students'

engagement in positive collaborative relationships. It also supports the idea that

instruction around collaboration skills and practices may be an effective tool to encourage

successful collaboration and that the identified facets of successful collaboration in the

literature are a valuable source from which to draw inspiration for course topics.

Literature Based Skills/Practices

Another result from the qualitative interviews was that, although we were only

able to instruct in a subset of collaboration skills, study participants independently

identified many collaboration supports that are also present in the literature. This finding

was expected, of course, however is important nonetheless as it represents a way this

study can add to the existing literature about practices that support teacher collaboration.

Specifically, in addition to the instructed collaboration skills/practices discussed above

that were mentioned at high rates by participants, they also identified the following as

supportive to their collaborative work: time provisions, trust between partners, valuing

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teaming/collaboration and openness to teaming/collaboration. Within our course we did provide dedicated time for collaboration but while the rest of these were not chosen for discrete instruction in our course, mostly because they seemed less malleable, they may indicate areas of instruction around traits to look for in potential collaborators, for example asking: who do I trust? Or does that person seem open to collaboration? In order to help teachers pursue successful collaborative experiences.

Value of Personality Match

From the interviews in this study, personality match with partners was identified as important to successful collaborative relationships. I have found this topic is not often mentioned in the literature (In their review of teacher collaboration Vangrieken et al. (2015) found one mention in a dissertation), but perhaps this is because it seems obvious. I have personally heard many accounts from teachers, across education settings from preschool to post secondary, that being friendly with and getting along with those one collaborates with is important to collaboration success. If all the partnerships I studied had felt this personality match then I may have also concluded this was highly important, but they did not. Two partnerships did not express a personality match with each other, but they nevertheless reported that their collaboration was successful. In these cases the partnerships were more focused on other collaboration supports and developed them more fully in their work together.

Balancing Instruction with Experience

Going into this study, I expected there would be instructional trade-offs and some difficulty with design given my desire to instruct around collaboration, which is an

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interactional activity. When designing instruction and simulations, I took care to consider

what exactly I wanted participants to understand from an activity and support them in

engaging and reflecting on their experience to that end. I also tried not to include too

much instruction and was careful to balance it with time for participants to engage with

each other around their own work, which allowed them to actually *do* collaboration. In

general, I think this approach was successful in balancing participants' opportunities to

learn about and enact collaborative practices in meaningful ways that can support their

successful future engagement in collaborative practices. In spite of the difficulties that

can emerge in balancing instruction with experience, I recommend this mixed approach

as a pathway for engaging with collaboration in pre-service settings.

Research Question 2

Benefits of Partnering

This study asked about the impact of working in special education/general

education pairs on PSTs' abilities to plan and implement interventions. I found that this

partnering resulted in better aligned instruction and a better ability of PSTs to self-

evaluate their own alignment skills. In addition, the project resulted in individuals

beginning to see each other as collaborators and partners in work in the classroom as

evidenced by the inclusion of information about the ways they collaborated in their

written assignments. When thinking about this outcome compared to those who also

collaborated but not across credentials, it suggests that the conditions of the cross-

collaboration resulted in better results for the PSTs and potentially their students. There is

evidence in the literature that a naturalistic field application is correlated with perception

of positive collaboration and collaboration outcomes (Griffin et al., 2006; King-Sears, 1995), and this study also had that element. It is possible that since collaborative activity often happens between special and general educators in the field, it made these course collaborations between cross credential PSTs more successful; more data would be needed to fully support that point, though.

Limitation to Study Design

Two of the areas in which we coded progress monitoring project data came back without statistical significance and I believe some of this is a result of limitations within the design and implementation of the intervention.

The first surrounds the difficulty PSTs had in aligning assessment with instruction and students' needs. This intervention took place in the Fall term of a one year program, when PSTs were just beginning their student teaching experiences. They had very little experience with teaching in general at this point and had not yet received all their pedagogical instruction that may have contributed to the difficulty they had in understanding what constituted assessment as the topic of assessment in general had not yet been fully covered.

The second limitation, lack of reliable student work, ties into this in some ways. It is also a pervasive problem in the field of special education teacher education research in general. The issue was that because PSTs struggled to use appropriate assessments, they were often not assessing what they actually taught or not using assessments that could be reliably compared with one another to show growth. While I attempted to have a student work component, I ended up having to rely on PST's personal reports about student

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growth, which are not necessarily a reliable measure and ultimately meant that this study

was not able to link positive collaboration directly to student work, an area of need in the

field (Juarez & Purper, 2018; Pugach et al., 2014).

Intervention as a Whole

Looking at the results of the intervention as a whole across all the analyses, a few

ideas emerge around how preservice collaboration works between general and special

educators.

Value of Cross Collaboration

This intervention was conceived based on the idea that collaboration is a general

good for teachers and their students (Darling-Hammond et al., 2017; Garderen, Stormont,

& Goel, 2012; Thousand, Villa, & Nevin, 2002), but what makes some collaborative

experiences better than others? The results of my intervention suggest that collaboration

across differences is perhaps more successful or meaningful than collaboration with

partners similar to oneself. This idea is not necessarily new, in education as well as other

fields. Hospitals have found that collaboration between nurses and doctors improves

patient care (Martin, Ummenhofer, Manser & Spirig, 2010), and schools have found that

teams with heterogeneity in gender and function are more supportive and effective than

ones that are more homogeneous in that regard (Drach-Zahavy and Somech, 2002).

What is more unique here, is the types of difference this study looks at and how those

influenced the results. In this study, collaboration across credential areas as well as

collaboration across personality differences resulted in partnerships that positively

impacted the participants themselves and/or their students.

Collaboration Across General and Special Education. The data from research question 2 shows that collaborating across preservice credential areas led to greater success in planning and reflection as well as a difference in how the pre-service general educator saw the collaborative work. This ties in exactly to the idea that heterogeneity of function can lead to more effective collaboration (Drach-Zahavy and Somech, 2002).

In addition, although the interview data has no comparison group of individuals who did not engage in cross- collaboration, their reports corroborated these ideas as they spoke about the value of their partner's perspective as well as the impact the experience had on their view of collaboration with others who inhabit the functional role of their partner.

Taken together, these results indicate that the intervention may have not only changed the way the PSTs viewed one another but also how they view and interact with their students. Illustrative of this point, Maureen (GE6) says,

> I learned how to kind of look at things a little bit differently because he (Evan) was so thorough from his end. I feel like now I've been trying a lot harder to make sure that everyone's covered in the class because I realized that was something that I wasn't doing as well as I could have just from seeing how well he attacked the lesson in a good way.

Collaboration Across Personality. A second area of difference that PSTs collaborated across was personality. Although not too widely reported in the literature (In their review of teacher collaboration, Vangrieken et al. (2015) found one mention of it in a dissertation), Personality match in teams is often anecdotally reported as helpful to their

collaborative functioning. In fact, studies often compare collaborative relationships to marriages (Scruggs et al, 2007), and while romantic couples may have personality differences, I think it would be somewhat rare to find happy couples who do not at least consider each other friends. In my study, I did find that those partnerships who expressed friendliness with one another felt this contributed to the success of their collaborative work; however I also found that collaboration felt just as effective and impactful to participants when it occurred across personality differences.

The personality differences allowed or perhaps required individuals to engage with one another on deeper levels in order to find common ground related more directly to their work together, rather than their mutual liking for one another or similarity in styles. These PSTs who were in partnerships where they did not express a personality match talked about specific qualities their partners brought to their interactions -- an eye for evaluating resources, good listening skills, openness to suggestions -- and how these contributed to their work together, their students, and their future collaborative interactions. Recognizing these qualities in one another led the partnerships to express that they valued one another and make comments that suggested they saw value in the role that person inhabited as well, which in my opinion could lead them to be likely to engage with others who inhabit similar roles in the future.

The way individuals in these partnerships were able to work with each other suggests that perhaps personality match is not as essential to collaboration as we may think -- that it can be useful but is not essential -- and that collaboration across personality may provide benefits similar to collaboration across other areas of difference.

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Serving as a Prior Experience

Another intention of this intervention was that it could serve as a formative prior experience for participants in the act of collaboration across credential areas so that they may seek out others in their respective roles for future collaboration and have the skills for collaborative work as they enter the field. Prior experience was a strong facilitator of collaboration in many studies but could be either positive or negative (Friend and Cook, 2016; Johnson, 2003; O'Shea et al., 1999)

Based on results from both research questions, this collaborative experience was successful in serving as a positive collaborative experience that participants could build upon in the future. It is my belief that this had to do with allowing participants space to enact collaboration topics as well as the opportunity to collaboratively enact planning and reflecting skills in naturalistic ways, which provided practice in preparation for future experiences. This point is best illustrated by Penny (GE3), who said of working collaboratively with her special education partner she felt like, "Hey, we can do this." And it seemed like a practice, doing that in practice. So it was kind of neat. Maybe that was kind of the whole idea."

Limitations

There were a number of limitations present in the design and implementation of this study that may threaten the validity and applicability of the findings; they are discussed below.

Non-Random Partnerships

As stated in the methods, partnerships were not assigned in a completely random manner. PSTs who were collocated at a school site were paired with one another when possible, and when that was not possible there was some effort made to pair with a partner at a closeby school or working with a similar grade level. While it is not clear in what way this would impact the results, it is possible that it did since these assignments were not random. There may have been certain qualities of those at the same school that supported their collaboration or of those who were in similar situations. Teacher collaboration happens within schools and between people who teach similar age students, though, so while the assignments were not purely random, they did have elements associated with the types of collaborative relationships that are common in the field.

Small Program

The teacher education program in which the study was conducted is small compared to many in the state. This poses two different limitations. First, there were a limited number of participants, especially when looking at research question 2, having more participants would have provided more robust results for the statistical analysis. Second, since the program is so small, results from the study may not be applicable and procedures may not be replicable in other larger programs.

Post-baccalaureate Program

Along a similar line to the limitation above, the program in which the study was conducted was a post-baccalaureate graduate credential/master's degree program. This type of program may attract a certain type of student who engages in collaboration in

certain ways. In addition, any results from the program may not be applicable to an undergraduate or mixed program.

Instructional Topics

We based the selection of collaboration topics for this study on those found in the literature, however we cannot be sure that our instruction on these topics actually transferred into the PSTs' collaborative activities. Additionally, it is possible that the topics instructed would have come up as supports even if we did not cover them in class.

Coding Validity

The codes used in the quantitative content analysis were developed and defined by the research team based on our experiences as teachers and instructors however it is possible that the codes do not in fact capture exactly what we consider them to and that this could change the results or render them less meaningful.

Student Work

Although this study made an effort to collect student work that would reflect how the collaborative activities impacted K-12 students, this work was not reliable and could not be used to establish any concrete conclusions. Instead, in order to address student progress we had to rely upon self-reports from PSTs which may or may not be reliable measures of the growth of students since they can be based on a variety of factors including qualitative and quantitative data, observation, opinion, intuition and emotion.

Relationships with Participants

I conducted all the interviews as well as collected data in a course where I served as a de facto teaching assistant in many ways. This allowed me to collect data easily but

it also meant that I had very close relationships with the study participants, especially

some of the special educators for whom I was also a supervisor of student teaching and

instructor. This closeness may have impacted the way the PSTs interacted with me and

what information they shared during their interviews.

Future Directions

Overall, this intervention can be considered successful. It served as an effective,

successful experience for PSTs in building collaborative relationships and also

strengthened their planning and reflection skills. There is, however, much room for

improvement in design and implementation of the intervention, as well as more research

to be done along this line.

Considerations for Future Implementation

Based on the results of this intervention, if a study of this nature were to be

repeated, consideration should be given to providing PSTs with more explicit instruction

on how to give pre- and post- tests in order to measure growth from an intervention. In

addition, allowing partnerships to work together for more assignments with one another

over longer periods of time may prove beneficial to the development of their

understanding of collaboration and their ability to engage in collaborative activities.

In looking more broadly at what type of research can be done within this area it

will be important to continue to develop experiences and instruction for pre-service and

in-service teachers that support relationships across general and special education. This

may look like targeted instruction and exposure to the use of collaboration practices as

well as structured engagement in naturalistic collaboration experiences with support from

instructors or mentors. In addition, it will continue to be important to consider student

outcomes and try to find artifacts that can reliably measure how K-12 students respond to

teacher collaboration.

Finally, a major limitation of this study is that it only looks at how the PSTs

responded to their in class collaborative assignment. It did not have a mechanism for

collecting any information on how the experience actually impacted their future

collaborative experiences or willingness to engage in these types of relationships. Moving

forward it will be important to follow up with PSTs in the field to find out how they are

collaborating with colleagues, and how their pre-service experiences may have impacted

their current collaborative efforts. It may also be worthwhile to develop a more

quantitative tool to try and measure collaboration tendencies, practices, and results for

use in any future pre-service, in-service, or longitudinal study.

Personal Conclusions

The design, implementation, and analysis of the results of this intervention have

validated my original ideas about teacher collaboration and provided me with questions

to study for years to come. My work on this study has been a first step in my commitment

to providing opportunities for collaboration at the pre-service level and taught me the

importance of self-study when the focus of one's work is teaching.

Many of my initial inclinations on this topic were gathered from personal

experiences or shared anecdotes from the field; I am excited to add this new perspective

as I move forward in my career. Teaching can be an isolating activity, but I believe

collaboration makes it better for everyone, teachers and students alike, and I look forward

to continuing to build and research support for that idea as I work to educate future

teachers.

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Appendices

Appendix A

**Distributed
Leadership Content
Scaffold**

1

Imagine that you are going to cook dinner
together with a friend.

What questions do you think might arise?
What challenges might you face in the process?

2

What is collaboration?

3

Interpersonal collaboration is a style for direct
interaction between at least two co-equal parties
voluntarily engaging in shared decision making
as they work towards a common goal.

4

Distributed Leadership

Division of roles within a collaboration based
on what an individual can contribute.

5

Back to Food

What kind of roles were there in making dinner?
What were the different ways an individual can
contribute?

6

In schools, what kind of roles are there for working with students?

What are the different ways an individual can contribute?

7

Common Goal
Simulation

8

Activity: Planning a Grade Level Schedule

- School starts at 8:30 am
- Recess is from 10:00 - 10:25
- Lunch is from 12:00 - 12:45
- School gets out at 2:45

Within the day you must have:

- 2 hours of ELA instruction (including ELD)
- 1.5 hours of math instruction
- 30 minutes of writing
- 1 hour for science or social studies

9

Common/Mutual Goals

Common/Mutual Goals support successful collaborative interactions:

- Articulating a specific goal helps collaborators understand what they are working on and why.
- People with common goals do not necessarily need to agree on how the goal should be achieved.
- The common goal can be large or small.

10

Distributed
Leadership/Common Goal
Case Study

Connection to Shared
Responsibility

11

Collaboration Scenario

- What are the teacher's individual goals right now? What could they have as a common goal?

12

119

Based on the common goal you identified for these 2 teachers, how might they distribute leadership to accomplish the goal? Consider their individual strengths and availability. What do they need to do? Who would take on which role? Are there roles they would share?

General Education Teacher	Special Education Teacher	Shared

13

Collective Responsibility

Sharing responsibility for participation, decision making and problem solving.

I'm sure glad the hole isn't in our end...
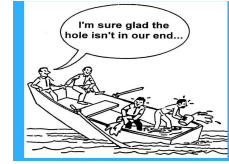
Sharing accountability for the outcomes.

14

Questions

- What might it look like for these teachers to share responsibility for their work with Miguel?
  It is important to note that both individual plans and collaborative plans sometimes fail.
- What if their plans do not work out?
- If they are sharing responsibility, how will they react?

15

Graphic Connecting
Distributed
Leadership, Shared
Responsibility, and
Common Goals

16

Distributed Leadership

Collective Responsibility

Successful Collaboration

Shared/Mutual Goals

17

Positive
Communication
Slides

18

Positive Communication - Non-verbal
———

Includes gestures, facial expressions, physical proximity, posture etc. We are often unaware of our non-verbal cues and messages.

- Have your nonverbal cues ever been misread, or maybe too easily read? What was the outcome?

19

Physical Attending
———

In all cases, cultural difference may dictate how you want to use the following physical attending skills
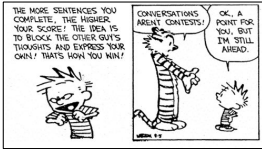
- Eye Contact - some cultures embrace eye contact, while others find it disrespectful or flirtatious.
- Physical spacing - it is good to position yourself in physical space to best interact with family members.
- Facial Expression - varied, animated, smiling on occasion. Not too stiff
- Gestures - make sure gestures you use universally send the message you want.

20

(Active) Listening
———

Listening with genuine undivided attention is difficult and takes practice. It is easy to hear but harder to listen. You can try the LAFF/CRY method (next slide).

21

LAFF/CRY Listening
———

What does it mean to do each of these things and how do they help your listening?

Things to do:
Listen, empathize, and communicate respect
Ask questions
Focus on the issues
Find a first step

Don't:
Criticize people
React hastily
Yakety yak yak

22

LAFF/CRY Practice
———

Think of an issue you have had, related to work or not and describe it to your partner. Their job is to use the LAFF/CRY method to practice listening. Take note of how it feels to be in each role as we will debrief after.

23

Positive Communication - Verbal
———

1. Furthering responses
   a. Minimal encouragers - then what?, I see, mm-hm, nods etc.
   b. Verbal following - using words from the speaker to encourage them to continue. Ex: what has made you **upset**? So you're feeling **worried** about that?

24

Positive Communication - Verbal
---

2. Paraphrasing - restating the points in your own word. You can begin by sharing you are checking your understanding. Paraphrasing can provide a space to reframe negativity.

25

Positive Communication - Verbal
---

3. Responding to Affect involves perceiving underlying feelings and communicating understanding of those feelings by stating them. This communicates you understand and also checks on the speaker's feelings. Ex: It seems like you are feeling worried about his progress.

26

Positive Communication - Verbal

Questioning

- Closed-ended questions get specific answers and are used sparingly
- Open-ended questions can get at more complex ideas and can be structured (what have you tried at home?) to get specific information or more unstructured (How are you feeling?) allowing the speaker to take them where they want to go.
- Be wary of why questions and using words that make assumptions in questions.

27

How can we edit these questions to minimize misunderstanding and offense?

- When are the difficult times of the day?
- What are you most worried about for your child?
- Why is she always late to school?
- Does she have a place at home to do her school work?

28

Positive Communication - Verbal
---

5. Summarizing - like paraphrase but longer. May recap a whole conversation or lay out a plan in full so all parties are aware.

29

Verbal Communication

With a new partner, discuss the same issue or another issue, use the listening skills but also the verbal communication skills. Again take note of how it feels to be in each role as we will debrief after!

30

Cards for Common Goal Simulation:

We should all do the same thing at the same time as a grade level.	We should take a break for meditation after recess and lunchtime.
We should do math early because I like teaching it in the morning.	We should teach ELA first because that is what the rest of the school does.
We should have science and social studies time during math and ELA so students can make connections.	We should design the schedule that we feel best supports our own and our students' success.
We should design the schedule that we feel best supports our own and our students' success.	We should design the schedule that we feel best supports our own and our students' success.

We should design the schedule that we feel best supports our own and our students' success.	We should design the schedule that we feel best supports our own and our students' success.

Activity Script/Description

At the beginning of the year, you and your grade level team are asked to meet and come up with daily schedules for your classrooms. The grade level will also be working together and collaborating on the content for the year.

Your school has a daily schedule as follows:
- School starts at 8:30 am
- Recess is from 10:00 - 10:25
- Lunch is from 12:00 - 12:45
- School gets out at 2:45

Your school has also given you the following guidance on instruction.
Within the day you must have:
- 2 hours of ELA instruction (including ELD)
- 1.5 hours of math instruction
- 30 minutes of writing
- 1 hour for science or social studies

As a team you will work together to try and create a schedule. You should keep in mind the guidelines from the school as well as your own personal scheduling preference.

After working for about 3-5 minutes these questions may be asked:
- What did you notice about working as a part of this team?
- What made it easy?
- What made it challenging?

Begin a second round this time, consider your personal scheduling goal as well as a classroom goal (second card).

After working 3-5 minutes these questions may be asked:
- How was the second conversation different from the first?
- Did your relation to your personal goal change? If so, how?

124

Introduce idea of having a common or mutual goal in collaborative interactions. Draw attention to the second round having a mutual goal and therefore providing more area for overlap and allowing participants to use a common language and thought processes. Provide some information on common goal logistics.

- Articulating a specific goal helps participants understand what they are working on and why
- People with common goals do not need to agree on how the goal should be achieved
- The common goal can be large or small

Distributed Leadership Case Study

A 3[rd]grader, Miguel, has an IEP and is diagnosed with a specific learning disability. He spends 1 hour per day in the special education classroom receiving instruction in reading and an instructional aide comes to see him for 30 minutes a day during Math. He is able to read well at the first grade level.

The general education teacher is really grateful for the work that Miguel does in the special education classroom. They have noticed his reading has improved but he is still far below grade level. They want to include Miguel in class when he is present but they don't feel like they have time to make him personalized material and they don't really know what he is working on. Since he can't access the work of the general class they usually have him work on his own or read picture books during class work time. They wish the special education teacher would provide them with some modified work for Miguel so he could be more included.

The special education teacher works hard with Miguel in their classroom and sees him making progress in reading. They think Miguel could access a lot within the general education classroom with some accommodations. When they observe Miguel in the classroom, though, they see he is usually reading a book instead of working on what the rest of the class is doing. While this is good reading practice for Miguel, they worry he is missing out on grade level work he could access. They wish the general education teacher would make more of an effort to include him.

Questions

These 2 teachers are in a situation where they could collaborate to help Miguel. What are their individual goals right now? What could they have as a common goal?

Last week we talked about distributed leadership (making dinner example) and the idea that different individuals could participate in a collaborative activity by taking the lead in different areas. Based on the common goal you identified for these 2 teachers, how might they distribute leadership to accomplish the goal?

Consider their individual strengths and availability. What do they need to do?
Who would take on which role? Are there roles they would share?

Ideas of Responses:

What do they need to do? - I could see a common goal for the two of them being including Miguel more fully in instruction. Any of the following ideas could be brought up to help support this goal, I have divided them between gen ed and special ed but they would likely all come up in a brainstorm.
They could come up with ideas such as:
for the gen ed teacher - finding a peer (or group) to help support inclusion, provide information about upcoming lessons so that accommodations/modifications can be suggested, implementing accommodations and modifications in the classroom, keeping data on how well Miguel is able to engage.
For the special ed teacher - providing information on how to support peer mentorship, brainstorming accommodations and modifications and providing support to implement them (this could be by providing materials or guidance, and observing or participating at first to help transition), communicating with gen ed about what they do in the special education classroom and how they see that transferring/connecting to gen ed, connecting IEP goals to general curriculum

Follow Up Questions:
Once people are collaborating around a common goal and have each taken a role in leadership based on their individual strengths and availability, it is important for each member to also share responsibility.

What might it look like for these teachers to share responsibility for their work with Miguel?

It is important to note that both individual plans and collaborative plans sometimes fail. What if their plans do not work out? If they are sharing responsibility, how will they react?

Appendix B

Progress Monitoring Project
The Progress Monitoring Project is designed to give teacher candidates a more in-depth understanding of assessment, analysis of student work, and intervention. The project will consist of detailed information regarding a student that is having difficulty academically. The following components should be submitted in the final project. (Approximate length: 3 pages with attached materials.)

Academic Progress Monitoring Project		
MST	MM	ESN
1. **Teach**-Description of how the academic topic of interest is taught in your classroom (whole class, rotation, small group, etc.) • What was the lesson or sequence of lessons that addressed this academic area? • What are the standards/objective addressed? • What type of instruction occurred? • Describe your formative or summative assessment? 2. **Analysis of Student Learning** - Describe students performance in relationship to standard or objective. In where and what aspects did students succeed/fall short? Note patterns of learning across whole class. From this initial analysis identify 1 student who is having academic difficulty. Collect	ESC- Read through the description of how the academic topic of interest is taught in the classroom and reflect on student performance in relationship to standard or objective. Where and in what aspects did students succeed/fall short? Note patterns of learning across whole class. From this initial analysis identify 1 student who is having academic difficulty.	ESC- Read through the description of how the academic topic of interest is taught in the classroom and reflect on student performance in relationship to standard or objective. Where and in what aspects did students succeed/fall short? Note patterns of learning across whole class. From this initial analysis identify 1 student who is having academic difficulty.

additional work samples for identified student.		

In Collaboration During Class
Analyze the focus student's work samples (provide 3 work samples). ** Explain
      how the learner's struggles relates to the standard/objective.
Develop plan to collect additional work samples and information.
      ex. Assessment data to corroborate your ideas of why student is struggling,
      task analysis of prerequisite skills, targeted area for peer observation.
What is needed and who will collect what?

Collect additional work samples and information.	Collect additional work samples and information. This includes observation plan indicating what academic areas you want to further investigate and why? (Observation is optional but strongly encouraged.)	Collect additional work samples and information. This includes observation plan indicating what academic areas you want to further investigate and why? (Observation is optional.)

Reflection on work samples. Cite specific evidence from the work samples to explain approximations, partial understandings or misunderstandings in relationship to the standard/objective.

3. **In Collaboration During Class**
   Develop an intervention to address standard or objective for target student.
- Write a learning objective based on analysis of student learning to provide the focus student with an additional learning opportunity
- What are the procedures for your instructional plan?
- How will you assess progress?

- Describe how this instruction is different from the initial instruction.
- How will this intervention help clarify, allow for practice or allow development in learning towards objective.

What is needed and who will do what? (Developing materials, script, task analysis.)

Implement Intervention and describe outcome (video if possible to share with partner).	Follow up with partner and watch intervention video if possible. Provide a reflection.	Follow up with partner and watch intervention video if possible. Provide a reflection.

4. **In Collaboration During Class- Re-Assess & Evaluate**
- Describe student's performance with intervention..
- Evaluate the effectiveness of the additional learning opportunity using work samples from the intervention (video recording, written work, student responses).
- Discuss next steps and procedures for implementing next steps. Who would be responsible for what?

Appendix C

Interview Guide

- What has working together been like so far?
  o Can you tell me about a particularly memorable moment in your work together so far?
  o If they mention it has been going well – what are some moments that illustrate your work together? What was difficult? How did you address those situations?
  o If they mention it has been difficult – what are some moments that illustrate that difficulty? How did you address it? What has been going well?
- What skills have you used in your work together that you feel have been helpful?
- What advice would you give to teachers who want to work together like you are?
- What did you learn from the experience?

Appendix D

Research Question 1 Codebook

Code	Definition	Example
A Priori Codes		
Communication	Explicit mention of communication skills or description of communicating within the collaborative partnership.	*"So yeah, just good communication skills. He's very open to giving me anything I wanted about the students, any information"*
Experience in Teaming	Mention or description of the experience in teaming, either this experience in the class or a prior one. special attention to it supporting an opinion of teaming.	*"I think it was really helpful. Yeah. I think it was really helpful to, I guess, bounce ideas off of someone, especially who's like in a different grade, but kind of close. I did enjoy going to see him teach"*
Flexibility	Descriptions of 'going with the flow' or changing or being willing to change in response to others and/or environmental changes.	*"I would pause and then be like okay let me think this through and then I kind of take it into consideration and I think it would end up being an exercise of well have I thought in my original approach through or was it just because I enjoyed the idea or this is what came to me first easily in lesson design."*
knowledge of teaming - information about how to work in teams		
collective responsibility	Descriptions of having shared responsibility, use of the word 'we' in regards to how projects and tasks were taken on, explicit	*"Every time we met in class, it was like we came up with a plan every time. It was like, 'Okay, this week, we're going to do this...'"*

	mention of sharing.	
distributed leadership	Dividing up of duties based on expertise and valuing of this division and expertise	*"I think she played a big role in actually getting the data, because we brainstormed together in class what we wanted to collect...and we talked about that and then I didn't really have a way of accessing all of that. And so she just went and got it all, and then reported back to me."*
Setting Common Goals	Description of setting common goals for the group - see sub code student focus, goals are often in response to student need.	*"Definitely communicate a lot. Agreeing that you're going to put the students' needs first and that's what you're both working towards. And having that common goal versus fighting over who plans which part of the lesson. I feel it makes it easier if you're just focused on the student and then you each have your area of expertise and it's just very clear, which I don't know if that happens in reality. I think just overly communicate and focus on the student. These sound pretty self explanatory."*
Common Goal of Student Focus	Mention of partnership's shared focus on student achievement, need, growth etc.	

Training and Feedback - Description of the training and feedback provided in the course.

Assignment	Mention of the assignment supporting collaboration	*"I think that that assignment overall was kind of eye-opening, again, on how to work with our partners or our resources in the school. I'm not sure about the rest of ... I think the assignment overall was what was really ... That's what my take away from the class probably was."*
Shared Course	Mention of being in the shared course supporting collaboration or ideas about collaboration.	*"But I think it was nice to have us in there the whole time to have them talk to us the whole time. So it wasn't just we came in as a celebrity guest being like, "Now we're ready to collaborate." I think having us all together the whole time was useful. Even if we knew a lot of what was being said already."*
Time Allotted	Mention of having time in class supporting collaboration.	*"Oh, well, given the time, I mean that was set up that we could have time to collaborate together inside class, not outside of class."*
Collaboration Skills from the Literature		
Commitment to Academic Achievement	Mention of shared commitment to academic achievement supporting collaboration.	No examples found
Honesty	Mention of honesty supporting collaboration	*"I think just his ability to communicate everything that he was feeling was super helpful. He wasn't shadowing anything. Everything was pretty out*

		in the open about like, 'This is what I think and why.' So that was great. "
openness/understanding	Mention of openness, open mindedness, a desire to understand one another, to support collaboration.	*"I think just being open and honest of what you can do and then find that sweet spot of where you are going to find the most benefit to the kids is not getting bogged down in either the pride you have attached to the lesson, or think you can go to the other side of thinking of an idea that will not be able to be reached with the lesson that you have on hand "*
Trust	Explicit mention of trusting a partner and that supporting collaboration or the description of elements of trust supporting collaboration, for example: I know they had my back, I felt comfortable with them, could fall back on them etc.	*"So the fact that he trusts me even though I'm not really qualified to do that is nice. That's how you make better teachers I think. And then I don't think he ever said anything like, 'Oh I don't think that'll work.' But at least he justified it. Not just like, 'Nah, I don't want to do that.'"*
Use of Data	Mention of use of data supporting collaboration.	*"I think you should always bring data to a situation that you want to change. If you see something and you're like, 'Oh I know this might work or I've never done that work,' at least provide data or observation on it and come to them and be like, 'I see this and we*

		can change it.' Or at least show them it's not the expected result that you want. So it's not your personal feelings on it. It's data."
Valuing Teaming	Expression of valuing teaming as a way of interacting, solving problems, engaging, within or outside of schools.	*"So I would say that I am a big fan of collaboration. I think it's something that the more college has leaned us into it, the more I like it."*
Willingness to Team	Expression of desire to engage in teaming, wanting to partner and explore the relationship.	*"And I just feel Damian was really into, he'd come in the room, he'd sit next to me, cause he knew we were collaborating."*
Memo Codes - additional codes aiding in analytic memos		
Take Up	Evidence of instructed collaboration skills being taken up	*"I think in the beginning of the class too, she maybe had said something about how we're all working in this together and it's not one person knows more than the other. So I think just having that expectation kind of set up that neither one is like a know it all and we're both helping each other. And we both have our expertises also."*
What	Information that supports illustrating in what ways candidates have defined and enacted collaboration	*"We worked really hard on it and I thought that it was really nice that we both wanted to put that much time into it, even though it was only going to be an hour in front of the kids. And I feel like for the most*

		part it wasn't awkward when we were actually teaching together.''

Appendix E

Research Question 2 Codebook

Variable Name	Format	Description	Variable Labels	Example of 'Yes' Code ('No' code is often the absence of something that would be coded as yes)
LOALIGN	Numeric Width=1 Decimal=0	Does the Learning objective identified align with an identified student need?	0 no 1 yes	"In talking to my colleagues about Valerie's learning, we decided that her biggest struggle was using one-to-one correspondence correctly. She is unable to count in a way that allows her to tag each item with the correct number associated to its place while counting. In relation to the standard of this lesson series, Valerie is not able to 'say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.'"
ASALIGN	Numeric Width=1 Decimal=0	Does the assessment align with the identified learning objective?	0 no 1 yes	"I had them fill out the exit card independently. Again, I read aloud the sentences to them and they drew a line that matched the sentence with the underlined word to the definition of the word. They both performed this task with 100% accuracy for all four examples and highlighted the part of the sentence that provided the context clue for them. This part proved to me that it wasn't essential for them to identify which exact type of context clue they were

				using (synonym/antonym/explanation/example) to be able to appropriately use context clues to define the meaning of an unknown word, like in my initial lesson. They also self-reflected on their progress towards the learning target: I can use context clues to help me determine the meaning of an unknown word."
STPROG	Numeric Width=1 Decimal=0	Did the pre-service teacher express that the student made progress?	0 no 1 yes - data 2 yes - anecdotal	"The target student performed well using manipulatives and drawings to show work, but not written so data is not shown on the student's work after re-teach. Luckily, the [teacher] candidate took a video of the reteach and we found that the student was performing well and even helping his peers."
ALIGN	Numeric Width=1 Decimal=0	Did the pre-service teacher recognize the alignment or misalignment within their assignment?	0 no 1 yes	"In general I feel as though this intervention was only somewhat effective at best… For the next step of implementation, I would provide instruction on how to circle an indicator and underline evidence. This asserts to me that [student A] needs more direct instruction and visuals. This instruction should also be done with more time than what he is usually provided with. The next activity that I would do with these students would be one that focuses more on naming strategies."

COLLAB	Numeric Width=1 Decimal=0	Did the pre-service teacher note any recommendations by a collaborator?	0 no 1 yes - special educator 2 - yes – other/ undefined	"KM [special educator] made several adaptations to the lesson to better include all learners." "Both of us discussed our students that we wanted to focus on for the progress monitoring assignment...We both felt that since her reading level was so low, she was really going to struggle to re-learn the diphthongs…"