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Table of Contents

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Innovative and Encouraging Research and Application of Co-teaching in Rural Settings: An Introduction to Volume 9, Issue 2 of *TPRE*

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Ninety-seven percent of the United States' land mass is considered rural and close to 20 percent of the country's population live in rural spaces (U.S. Census Bureau, 2017). These areas face such challenges as higher poverty coupled with lower budgetary revenue, lower levels of educational attainment, and critical problems in staffing schools (Fishman, 2015; Grooms, 2016; Showalter, Klein, Johnson, & Hartman, 2017). Although these issues are similar to urban areas, rural districts have considerable variability and specific needs that differ from their counterparts in urban settings (Johnson & Zoellner, 2016). Unfortunately, rural schools are often treated by federal and state policy makers like urban schools, with a one-size-fits-all approach to addressing the *problems* rather than from a strength- and challenges-based perspective (Fishman, 2015; Johnson & Howley, 2015).

One major challenge rural schools face is fewer resources, including adequate staffing. Rural education leaders are forced to consider creative and innovative ways to allocate and leverage the limited resources to meet teaching and student learning needs. The reorganization of staff with differentiated roles is one example of how leaders can leverage their resources for greater impact (Henry, 2019; Miles & Ferris, 2015). The articles in this issue demonstrate powerful instances of how co-teaching can and is being used to improve teaching and learning in rural schools.

The Origin and Adaptation of Co-Teaching

Teaching is a collaborative endeavor—not only between teachers and students but also between fellow educators. Collaboration within schools takes many forms and involves a variety of people. One such collaborative practice is co-teaching, which involves the pairing of two or more teachers together in a single classroom to share the responsibilities for planning, instructing, and assessing students (Bacharach, Heck, & Dahlberg, 2010; Murawski, 2003). In a co-teaching setting, both teachers are actively involved and engaged in all aspects of instruction.

In its origin, co-teaching was implemented with general and special education teachers paired together to create a more inclusive classroom (Bauwens & Hourcade, 1991; Beninghof, 2011; Cook & Friend, 1995). Within the field of English as a Second language (ESL), co-teaching has also become a popular model for embedding ESL teachers in the general classroom (Honigsfeld & Dove, 2010; Pappamihiel, 2012). Co-teaching allows for more individualized instruction in the general education setting, increases access to general education curriculum for students with special needs, and decreases the stigma for such students. Teachers benefit from the support and collaboration as they work together to meet the varied needs of their students, while the students benefit from the differentiated instruction and alternative assignments as well as greater teacher attention in the small-group instruction co-teaching makes possible.

Co-teaching has recently been used in teacher preparation and is considered more beneficial than traditional models of student teaching because it takes away the stark dichotomy between the beginning teacher candidate and the experienced classroom teacher (Carambo & Stickney, 2009). Research suggests teacher educators and teacher candidates believe collaborative learning has value, and the implementation of collaborative learning can have positive results (Ruys, Van Keer, &

Aelterman, 2010). Initial studies have also shown co-teaching to positively affect student growth in K-12 classrooms (Bacharach et al., 2010; Carambo & Stickney, 2009). Some benefits of the co-teaching model include increased collaboration skills, decreased student-to-teacher ratio, differentiated instruction for students, and improved classroom management. The aim is that co-teachers consistently perceive they are concurrently teaching, which gives student teachers a more engaged experience than is offered in traditional models.

Overview of the Issue

The articles selected for this issue of *Theory & Practice in Rural Education (TPRE)* explore the use of co-teaching in ways that speak to the reorganization of resources, specifically teachers and staff, to meet the learning needs of all students; the effects of co-teaching on student learning within rural settings; and the adaptation of co-teaching within teacher education to prepare more collaborative novice teachers. This special issue includes articles reporting on encouraging research being done in rural classrooms, a case study of a distance education program's creative use of co-teaching, as well as promising practices of co-teaching in teacher education.

The first article explores the use of co-teaching to disrupt the disengagement of students in rural schools, where teacher shortages and use of traditional teaching methods often contribute to a lack of student engagement. Wendy Whitehair Lochner, Wendy Murawski, and Jamie Daley (2019) used the Instructional Practices Inventory to measure cognitive engagement in nearly 900 observations within solo-taught and co-taught classrooms in grades 5-12 over the course of a year. Data demonstrated co-teaching has the capacity to not only provide better instruction but opportunities for students to participate at higher levels of cognitive engagement. Implications of their work include a responsibility of teacher preparation programs to embed co-teaching competencies within their coursework and school districts to provide professional development focused on co-teaching.

The second article in this issue is a quantitative research study investigating the use of co-teaching between English as a second language (ESL) and general classroom teachers in a secondary school in rural western United States. With over 44% of America's English learners (ELs) living in rural communities, it is essential that rural schools work within their limited human and financial resources to meet the challenges of educating EL students in an equitable manner. Heather Williams and Robert Ditch (2019) report on teacher-student interactions in 20 co-taught classrooms focusing on the quantity and type of exchanges between the teachers and ELs or non-ELs. The authors address issues of equity in access, participation, and learning for EL students and suggest that co-teaching holds promise in promoting learning for English learners.

The issue next addresses promising practices in teacher education where co-teaching is being implemented to improve learning and growth in teacher candidates. The third article in this issue is a case study demonstrating a thought-provoking application of co-teaching in a telepresence-facilitated field placement for a place-bound pre-service teacher without access to a local K-12 setting. Eileen Wertzberger (2019) examines the centrality of co-teaching and co-reflective practices in leveraging the telepresence technology to make the teacher candidate an integral part of a rural third-grade classroom. Data revealed the importance of the co-teaching relationship, the participants' creativity in developing co-instructional strategies that worked for them and the students, and the co-construction of space as they navigated the virtual and physical classroom. Wertzberger offers an in-depth look at possibilities in rural field experiences through technology and co-teaching.

Next, the authors of the fourth article explore the use of co-teaching in higher education to disrupt the academic silos in which teacher educators generally work. Allen Guidry and Christy Howard (2019) offer a reflection on their collaborative experience of co-teaching a secondary social studies methods course and a content area literacy course. Modeling the collaborative practices that they require of their students in their rural field experiences, the authors scaffold teacher candidates' development of collaborative practices and ability to identify and

integrate literacy strategies into their content area. Through careful reflection on their experiences co-teaching over the course of a semester, Guidry and Howard provide a precise blueprint for teacher educators interested in co-teaching.

In the fifth article, Tammy Barron, Holly Pinter, and Kim Winter (2019) share how co-teaching between general education, special education, and pre-service teachers is utilized in one rural middle school to foster student learning, enhance classroom community, and support pre-service teacher development. The significance of having structures and leadership within the school that support the implementation of inclusion through co-teaching is demonstrated, as is the importance of providing opportunities to co-plan. The complex shift from traditional models of student teaching to co-teaching is made visible and lessons around relationship building and prioritization of co-planning are discussed.

As all authors in this issue suggest, co-planning is a crucial element for successful co-teaching; however, little information on *how* to effectively co-plan exists. The final article by Maureen Grady, Charity Cayton, Ronald Preston, and Rose Sinicrope (2019), introduces six strategies to facilitate co-planning grounded in the research base for co-teaching. The multifaceted task of planning for instruction is especially difficult for pre-service and novice teachers. The authors demonstrate how the co-planning strategies allow the novice to take advantage of the expert teacher's knowledge of students, curriculum, and possible lesson misconceptions and pitfalls. The roles of mentor and novice are clearly explained for each strategy and drawbacks or concerns are shared, thus allowing the reader to easily implement co-planning. While the authors emphasize how these strategies are particularly helpful for pre-service teachers in co-teaching placements, they recognize the value of co-planning in other settings.

Final Thoughts

The evolution of co-teaching has seen the power of this teaching practice to first improve access and learning for students with special needs, then to impact the level of support and opportunities provided to EL students, and now to transform teacher preparation. The articles in this issue explore how co-teaching is being used in a variety of rural settings to address the challenges rural educators face, improve student learning, and revamp how pre-service teachers are being prepared. They all speak to the significance of collaboration and strong relationships necessary for effective co-teaching. We likewise find these characteristics an important facet of rural education, where teachers from rural communities are place-conscious, or better understand the context of the community in which their school is situated (Johnson & Zoellner, 2016). The relationships they cultivate with their students and knowledge of the community positions them to provide culturally responsive instruction and academic support. Co-teaching offers a tool to rural educators for fostering relationships and building collaborative skills to better serve their students.

I invite you to travel into the rural schools and classrooms; listen to the experiences of students, pre-service teachers, and teacher educators; and consider the possibilities for co-teaching in rural settings.

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The Effect of Co-teaching on Student Cognitive Engagement

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Delivering special education to students with disabilities requires highly prepared and collaborative teachers, inclusive learning environments, and strategies that promote cognitive engagement, but many students lack access to these necessities. In rural schools teacher shortages and traditional teaching methods may contribute to disengagement. Some rural districts have turned to co-teaching to disrupt this pattern of inequity. Effective co-teaching between two highly prepared teachers in a general education setting offers students the opportunity to be included and may improve engagement for all students. To investigate the relationship between co-teaching and student cognitive engagement, this study observed teachers in eight rural secondary schools in West Virginia to evaluate differences in student cognitive engagement in co-taught versus solo-taught classrooms. Four district personnel were trained on both cognitive engagement strategies and co-teaching approaches and collected observational data. The Instructional Practices Inventory was used during short walk-throughs to measure cognitive engagement during 701 solo-taught and 181 co-taught observations. Observations occurred in 5th- through 12th-grade classes in reading, mathematics, science, and social studies throughout one full school year. Statistical tests compared mean engagement scores across the different models of instruction. Results indicated that students in co-taught classrooms were more cognitively engaged than students in solo-taught classrooms. These results suggest the need for increased professional development for teams to move beyond the one teach, one support model of co-teaching, additional research on cognitive engagement and co-teaching, and teacher preparation programs to include more examples of, and training in, quality co-teaching models.

***Keywords*:** co-teaching, collaborative teaching, cognitive engagement, Instructional Practices Inventory, co-teaching competencies, secondary education, inclusive education

It was a great moment in history when students with disabilities were no longer institutionalized or separated from their peers and community to receive their education. Yet, almost 50 years later we still struggle with how to educate students with disabilities, now that they are predominantly included in general education classes. For the last three decades many states have been using co-teaching, or two teachers in the same classroom, to provide the support needed for students with special needs in these settings. Despite the many best practices and initiatives, a long-standing and pervasive achievement gap between students with disabilities and those without disabilities (Schulte & Stevens, 2015) has existed since data was first collected on student performance. It was highlighted with the No Child Left Behind Act of 2001 and is an indicator scrutinized by its successor, the Every Student Succeeds Act of 2015. Improving state assessment results has become the most sought-after yet unattainable metric to reduce this

achievement gap (Schulte, Stevens, Elliott, Tindal, & Nese, 2016).

Substantial research supports that increased student engagement positively affects student outcomes. In their summary Trowler and Trowler (2010) present significant evidence showcasing the relationship between engagement and outcomes, stating that since the 1984 publication the National Institute of Education's *Involvement in Learning* report, "virtually every report . . . emphasized to varying degrees the important link between student engagement and desired outcomes of college" (Kuh, cited in Trowler & Trowler, 2010, p. 9). Trowler and Trowler emphasize that "the value of engagement is no longer questioned" (p. 9).

State assessments are most typically used to measure student outcomes. Thus, increased student engagement should lead to improved state assessment results. Dowson and McInerney (2001) found that students who were engaged learned more also retained more and enjoyed school more than students who were not engaged; Garwood (2013) highlighted that low levels of student engagement were a predictor of increased school dropout rates. Research by Valentine (2005) suggests students who spend additional time actively engaged in higher-order thinking experiences gain in course work, exam, and state assessment scores. Thus, overall student engagement is clearly a critical component to increase student academic success. Inclusive classes that have students with and without identified disabilities need to have strong engagement strategies in place to ensure all students achieve maximal success.

The National Assessment of Educational Performance (2017) analysis of national achievement scores found that many subgroups are the impetus for poor-performing schools. The inequity of some students not receiving instruction in the same learning environment as that of other students can often be an underlying cause of subpar performance these subgroups. Inequity may be exacerbated in rural environments (Biddle & Azano, 2016; National Rural Education Association, n.d.). Students who receive services in exclusive, pullout environments may not have exposure to a full, robust curriculum, which can result in poor performance relative to students who receive the comprehensive curriculum in a general educational setting (Bakken, 2016; Karin, Ellen, Evelien, Mieke, & Katja, 2012). Can improved co-teaching between special and general education teachers be a way for rural schools to ensure that PK-12 students are more cognitively engaged in their learning and thus increase their academic outcomes?

Review of the Literature

Inclusive Learning Environments

More than 40 years after the implementation of the Education for All Handicapped Children Act of 1975, later called the Individuals With Disabilities Education Improvement Act (2004), students with disabilities are increasingly spending their day in general education classrooms. The percentage of students with mild to severe disabilities who were placed in a general education setting for 80% of their day rose from 62% in 1998 to 80% in 2016 (Snyder, de Brey, & Dillow, 2018). While the least restrictive environment (LRE) component of the law requires that students with disabilities be educated, to the extent possible, with their nondisabled peers, teachers, parents, and administrators continue to struggle with the appropriateness of vaguely defined LRE conditions. Despite that struggle, the number of students taught in the general education classroom continues to rise.

Co-teaching as a Service Delivery Model. Because co-teaching presents a solution to the push for more inclusion and the imperative to provide effective education for students in the LRE, it is now frequently used as the preferred service delivery option (Friend, 2016; Murawski & Bernhardt, 2015). Further, the Council for Exceptional Children (2008) has included co-teaching in its ethics and standards guidelines for special educators. Standard IGC10K4 clearly articulates "co-planning and co-teaching methods to strengthen content acquisition of individuals with learning exceptional learning needs" (p. 39), thereby solidifying the use of co-teaching as a service delivery model.

True Co-teaching Defined. The terminology used for co-teaching is essential. Although *co-*

teaching and *collaboration* are often referenced interchangeably, the models diverge when defining student support and services. Various researchers have developed definitions of co-teaching throughout the years. Lynne Cook and Marilyn Friend (1995) proposed the idea of co-teaching, defining it as "two or more professionals delivering substantive instruction to a diverse, or blended, group of students in a single physical space" (p. 1). Beninghof (2012) defined co-teaching as "a coordinated instructional practice in which two or more educators simultaneously work with a heterogeneous group of students in a general education classroom" (p. 7). While the definition has progressed, with many adaptations, for the purposes of this research we used Murawski's (2003) definition that "co-teaching requires two or more professional educators to *co-plan, co-instruct, and co-assess* a group of students with diverse needs in the same general education classroom" (p. 10, emphasis added).

Co-teaching and Student Outcomes.

The first meta-analysis of co-teaching research found that co-teaching had a "moderate effect (0.40 mean effect size) for influencing outcomes" on students with disabilities (Murawski & Swanson, 2001, p. 258). The authors cautioned, however, that in their review of 89 articles, only 6 met the criteria for review of student achievement, and only 2 of those contained academic outcomes. Khoury (2014) synthesized the quantitative findings to determine if there were positive effects on the academic outcomes for students with disabilities educated in a co-taught classroom. The results of this synthesis were an effect size of g = .281, indicating that "co-teaching did have a significant effect on increasing academic outcome measures of students with disabilities, compared to other instructional settings" (p. 28). Mirza and Iqbal (2014) conducted a study of 118 eighth-grade students in Pakistan. Their results indicated that students in co-taught classrooms outperformed those in non-co-taught classrooms and suggested that growth rates of students in co-taught mathematics classes exceeded those of their peers in solo-taught classes. They concluded that co-teaching "is a better alternative to single teacher teaching in mathematics" (p. 20).

Fontana (2005) added to the research on the effect of co-teaching on students with learning disabilities in the subject areas of math and reading. Students in the co-taught classrooms scored significantly higher than those who were not in co-taught classrooms (Fontana, 2005). Witcher and Feng (2010) studied the effect of co-teaching on fifth-grade math achievement scores, concluding that "co-teaching benefits the students" (p. 24). Tremblay (2013) compared 12 co-taught inclusive classes to a control group of 12 special education classes. Results indicated that the co-taught classes resulted in improved outcomes for reading, writing, and attendance. Taken together, these studies consistently suggest that students with and without disabilities across content areas and settings who are in co-taught settings make significantly greater academic gains than do solo-taught students. Additional rigorous research needs to investigate the effects of co-teaching in rural secondary education settings.

Student Engagement

While student engagement is a broad topic, for the goals of this research we used the definition initially proposed by Christenson et al. (2008), that engagement entails "students' investment in and commitment to learning, belonging and identification at school, and participation in the institutional environment and initiation of activities to achieve an outcome" (p. 42). Baker (2017) wrote that "high levels of engagement are associated with many positive outcomes for K–12 classrooms" (p. 1) and cited other researchers who concluded that students who are highly engaged in their learning show higher achievement on the following: end-of-unit assessments, statewide standardized tests, and final grade point averages. As previously stated, the value of student engagement is no longer debated (Trowler & Trowler, 2010).

Student engagement can be described in many ways. Here we emphasize three types: disengagement (the reciprocal of engagement), active versus passive engagement, and cognitive engagement (Fredericks, Blumenfeld & Paris, 2004). All three play a role in the learning environment. Therefore, scholars distinguish

between the types of engagement to understand the expectations for each.

Disengagement. Student disengagement is often palpable in a classroom. Students exhibit behaviors that are off task and are not involved in learning. Often this may be a precipitating factor for other behaviors. Teachers learn that classroom management is about keeping students engaged to alleviate risk of off-task behaviors.

Active Versus Passive Engagement. A student who is not disengaged must be engaged, but is the engagement considered active or passive? Active engagement is when the student is actively involved in learning. A typical classroom scenario might involve a teacher standing at the front of the classroom as class discussion transitions from one student to the next, with each taking a turn to answer a question. How many students are actively engaged? Only the few who are answering a question.

According to Freeman et al. (2014), active versus passive engagement has a significant impact on student achievement. In their meta-analysis of 225 studies, they compared passive learning and traditional lecturing to active participation. Their results revealed that "average examination scores improved by about six percent in active learning sections, and students in classes with traditional lecturing were 1.5 times more likely to fail than were students in classes with active learning" (p. 8410). Teaching strategies for active learning included group work, problem solving, worksheets or tutorials completed in class, and personal response systems with and without peer support. Further, researchers have reported a direct correlation between cognitive retention and active learning (Bachelor, Vaughn, & Wall, 2012; Van de Bogart, 2009).

Cognitive Engagement. While engagement has many interpretations, cognitive engagement, rooted in Piaget's theory of cognitive development, is more narrowly defined and has been researched for many years. Cognitive engagement involves learning information and developing new meaning with the information. It requires more than simple memorization or skill-building activities. "Indicators of cognitive engagement include asking questions for clarification of ideas, persistence in difficult activities, flexibility in problem-solving, use of learning strategies (e.g., relating new information to existing information), and use of self-regulation to support learning" (Finn & Zimmer, 2012, p. 111). Chaipichit, Jantharajit, and Chookhampaeng (2015) developed a learning management model based on the constructivist theory that further supported critical thinking in secondary students. Valentine and Collins (2009) pointed out that teachers must embrace a pedagogy that includes questions to have students use higher-order thinking skills. Kamil (2003) added that "effective teachers encourage students to engage in higher-order thinking skills by creating lessons that direct students to analyze, evaluate, synthesize, or create" (p. 4). Further, the effective teacher also encourages student-engaged learning by setting the tone of the classroom as one of inclusion, creating an atmosphere conducive to learning (Gauen, 2009).

Impact of Cognitive Engagement

From data collected using the Instructional Practices Inventory (IPI; see Valentine, 2015), Collins and Valentine (2011), using two- and three-level hierarchical linear modeling and structural equation modeling, identified three significant relationships: (a) between the degree to which students were engaged in higher-order/deeper-learning experiences across a school and student achievement scores on high-stakes accountability assessments; (b) between the degree to which students were disengaged from learning during class time throughout the school and the lower student achievement scores on high-stakes accountability assessments; and (c) between schools considered highly successful academically and schools considered unsuccessful academically.

Gauen (2009) used the IPI and collaborative conversations to determine the impact of increasing classroom higher-order thinking engagement on student state achievement scores. Results suggested that as higher-order thinking increased, so did student engagement, and state achievement scores were higher than the previous year for the same grade level. Additional research needs to investigate the variability of student engagement in solo- and co-taught classrooms to determine a

potential promise of co-teaching as a service delivery model for improving student outcomes.

Purpose of the Study

This study determined if co-teaching as an instructional model has a positive effect on the cognitive engagement of all students in the inclusive general education classroom. Murawski and Spencer (2011) espoused that "true co-teaching is when two or more educators in the same classroom are doing *something substantively different and better for students* than what one of them could do alone" (p. 96, emphasis added). Because many education systems look to co-teaching as an appropriate service delivery model for students with individualized education programs (IEPs) who need to be educated in the LRE (Scruggs, Mastropieri, & McDuffie, 2007), it was imperative to ascertain whether this model is effective in increasing the cognitive engagement of students. Therefore, this study sought to answer two research questions in the setting of rural secondary public schools:

- Is there a difference between student engagement levels in solo-taught and co-taught classes?
- To what extent are students disengaged, minimally engaged, or highly engaged in solo-taught and co-taught classes?

Methodology

A quasi-experimental design was used to determine potential effects of co-teaching on student engagement for the selected sample of rural secondary schools. First, purposeful sampling of schools provided participants. Second, highly trained observers conducted random observations of a preplanned number of solo-taught and co-taught classes to represent the general population. The highly reliable and validated IPI instrument (Valentine & Collins, 2009) was used to rate student engagement during classroom observations. Third, data were analyzed using rigorous statistical analyses to ensure internal and external validity.

Instrumentation

The IPI is a classroom walk-through observation tool that identifies six levels of student engagement, with three broad student cognitive engagement categories: student engagement in higher-order skills, student engagement in lower-order thinking skills, and student disengagement (Valentine & Collins, 2009). At the highest level of student engagement, category 6, students are actively engaged in higher-order thinking skills or activities. Category 5 is also characterized by student engagement in higher-order thinking skills or activities, but students might be involved in peer-to-peer conversations during the activities. Categories 4, 3, and 2 are characterized by student engagement in lower-order skills. For example, teacher-directed instruction would be category 4, students who are actively engaged by a teacher who is attentive to the students' needs but not asking higher-order thinking questions is category 3, and a category 2 is coded if the teacher is not attentive to the students' needs but they are still engaged somewhat. Category 1 is coded when students are disengaged (Valentine & Collins, 2009).

Participants

Purposeful sampling procedures were used to recruit eight rural public secondary schools within one school district in the southeastern United States, with grades ranging from 5th through 12th. Schools provided full access to all solo-taught and co-taught classes in the district for one school year. All administrators and teachers received training in the use and purpose of the IPI observation tool to support teachers' self-monitoring of strategies to increase students' cognitive engagement. All classrooms in the district, both solo-taught and co-taught, were considered equally eligible for observations related to student engagement levels. No specific demographic data were collected on teachers or students, to control for possible researcher and participant bias. Because participants did not perceive researchers' observations as evaluative, they were less likely to change their instruction as a consequence of the researcher entering the class to record student engagement.

Classrooms observed were in the four major content areas, English language arts, math, social studies, and science, with time slots selected randomly by school personnel to allow a maximum

number of data collection opportunities and to avoid the influence of schedule factors (such as observing all English classes in the morning). A total of 701 observations of disparate solo-taught classes and 181 co-taught classes were observed using the same walk-through format on cognitive engagement using the IPI. Fewer co-taught classes exist in the district; thus, we considered co-taught classes comprising 20% of the overall observations (181 of 882) a reasonable percentage. Table 1 lists the enrollment at the selected middle and high schools, including the number of students with IEPs/disabilities and those who receive free and reduced meals (FARMs). Student enrollment demographics for both students with disabilities and students receiving FARM were higher than those of rural public schools on average (National Center for Education Statistics, 2019) most rural schools average 12% students with disabilities, versus 19% and 14% in our sample, and only one-third of rural schools have the same percentage of students receiving FARMs (~50% in our sample).

Interrater Reliability

Specific coaches, consultants, and school improvement coordinators were trained in both IPI and the co-teaching core competencies and collected data as part of the school improvement process. Observers consisted of two school consultants and two school improvement coordinators who collected and reviewed the data in all eight schools as part of the district's IPI coding team. These four individuals participated in IPI training workshops and took a reliability assessment, scoring 80% or better. Reliability of scoring procedures for this sample was measured using Cronbach's alpha ($\alpha = 0.92$).

Data Collection

Data were collected over 8 months during the 2018–2019 school year. To determine the level of classroom student engagement and the quality of the student cognitive engagement, observers applied the IPI tool (Collins & Valentine, 2011). The IPI was used to measure engagement during 701 (79.5%) solo-taught and 181 (20.5%) co-taught observations using 5-minute time-sampling intervals.

When coding for engagement, the observer took a mental snapshot of the level of engagement at a specific time and coded it immediately on the IPI. The coding was based on how most students in the class were engaged; for example, if most students were engaged in a higher-order activity and two students were discussing a noneducational event, the code recorded reflected higher-order activity. Observers collected ratings throughout the school year at random times using partial-interval time sampling after 5 minutes of class time had passed. Most observations included three to five IPI ratings per classroom visit. Observers rated engagement on a scale of 1–6 to correspond with the six levels of engagement on the IPI. A mean score for each classroom visit was computed to create the *engagement* variable used for statistical analyses.

Table 1
*Demographics of rural West Virginia secondary schools observed (*n = *8)*

Grade level	Measure	*n*	%
Middle school (*n* = 3)	Observations recorded	287	32.5
	Total enrollment	1,495	
	Students with IEPs	285	19.1
	Students with FARMs	796	53.2
High school (*n* = 5)	Observations recorded	595	67.5
	Total enrollment	2,435	
	Students with IEPs	350	14.4
	Students with FARMs	1,192	48.9

Data Analysis

Each IPI observation was coded as either a solo-taught core content class or a co-taught core content class, with a cognitive engagement rating between 1 and 6. All 882 data points (IPI observations of both solo- and co-taught classes) were entered on one Excel spreadsheet and then cleaned and coded.

To examine differences between student engagement levels in solo-taught and co-taught classes, we used the SPSS statistics tool to run a one-way ANOVA. We used an ANOVA rather than a simple *t* test to account for possible error related to variation in the number of observations from each group (King & Minium, 2008). Because there are more solo-taught classes than co-taught ones, we ensured that 20% of observations were from co-taught classes and 80% were from solo-taught classes. These numbers also mirrored the distribution of students with IEPs in co-taught classes in rural districts (i.e., students with special needs comprised 20% of each co-taught class).

To determine the extent to which students were disengaged, engaged at low levels, and engaged at high levels in solo-taught classes compared to co-taught classes, we used SPSS Crosstabs to determine significant differences between cells. SPSS Crosstabs reports if expected means for each level based on teaching context significantly differ from reported means.

Results

Our first research question addressed the effects of co-teaching versus solo teaching on higher-order thinking skills in rural secondary public schools. Descriptive statistics on the 882 observations indicated that the mean engagement level obtained for solo-taught classes was 3.85 (*SD* = 0.86) and for co-taught classes was 4.48 (*SD* = 4.45). Levene's test for homogeneity of variance was not significant, supporting the assumption of equal variance among groups. Results of the ANOVA (see Table 2) indicated that there was a significant difference between the means of the two groups, $F(1,880) = 64.27$, $p < .001$. Students in co-taught classes exhibited significantly higher levels of engagement than did students in solo-taught classes.

The second research question investigated the difference in levels of engagement by teaching style to more fully describe the teaching contexts. A chi-square was calculated to measure differences among engagement levels in co-taught versus solo-taught classes, revealing a significant interaction, $\chi^2(2) = 117.64$, $p < .001$ The same number of observations were coded as disengagement in both solo-taught and co-taught classes ($n = 3$). Of the observations of classes that demonstrated low-engagement (categories 2-4; n=660), a significantly higher percentage occurred in solo-taught classes ($n = 581$, 88%) compared to co-taught classes ($n = 79$, 12%). In those classes that demonstrated higher engagement on the IPI (categories 5 and 6; n= 216), a similar percentage occurred in solo-taught ($n = 117$, 54.2%) and in co-taught ($n = 99$, 45.8%) classes.

Table 2

Engagement in Solo-Taught and Co-taught Classes (One-Way ANOVA)

Comparison	***df***	***MS***	***F***
Between	1	55.92	64.27****
Within	880	0.870	
Total	**881**		

MS = mean square.

** $p < .001$

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Table 3
Frequencies of IPI Coding Level by Teaching Context

Teaching context	Disengaged (category 1)	Low engagement (categories 2–4)	High engagement (categories 5, 6)	Total
Solo-taught	3 (0.01%)	581 (82.3%)	117 (16.7%)	701 (100%)
Co-taught	3 (1.7%)	79 (43.6%)	99 (54.7%)	181 (100%)
Total	**6**	**660**	**216**	**882 (100%)**

On the other hand, the distribution of rates of engagement differed significantly between teaching styles (see Table 3 and Figure 1): most of the co-teaching observations were coded as higher-level cognitive engagement (categories 5 and 6; n=216), while most of solo-teaching observations were coded as low-level cognitive engagement (82.3%; see Figure 1). These findings indicate that the co-taught classes provided greater opportunities for higher-level cognitive engagement than did solo-taught classes. In practice this means that, in a class with two credentialed teachers, more students with and without disabilities were participating (because scores reflected engagement levels of most students), asking and answering questions and actively engaged in their learning, than in a class with one teacher.

Interpretation of Findings and Implications

Our study found that students who were in the co-taught settings with two credentialed teachers were more cognitively engaged at higher levels, as determined by the IPI, than their peers in solo-taught settings. The inclusive classrooms sampled in this study included students with and without disabilities. While this study did not specify the number of students with IEPs in the general education setting, co-taught classes typically have more students with disabilities than do solo-taught

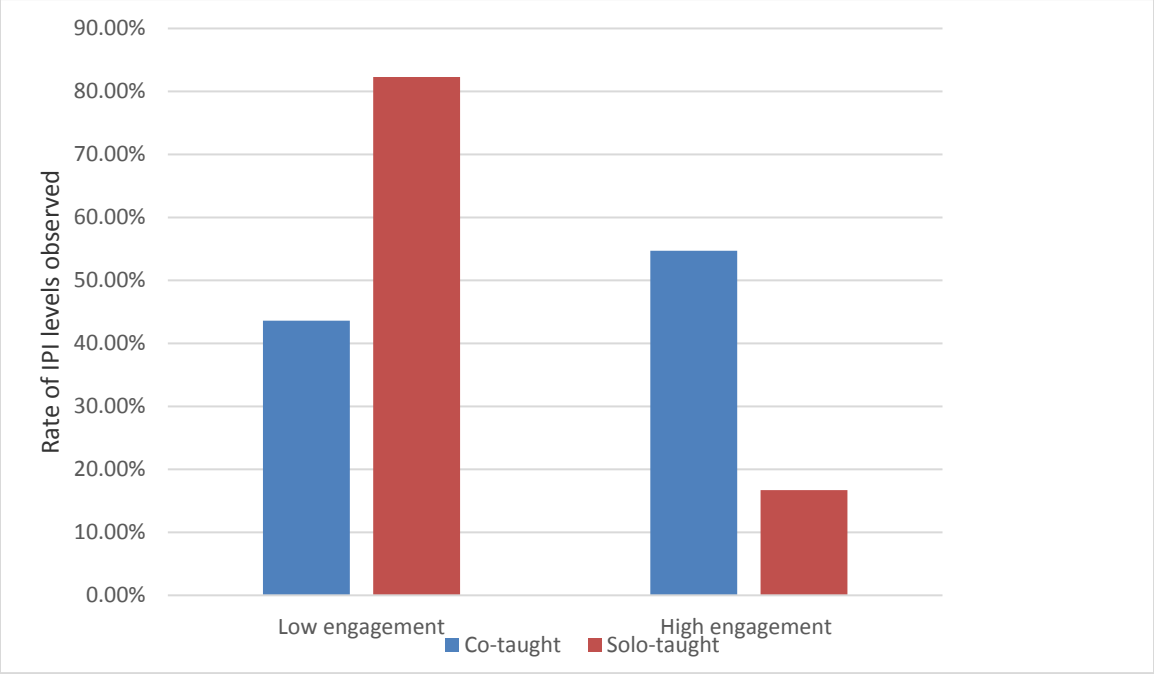

Figure 1. Levels of student engagement in co-taught and solo-taught classrooms

classes. Having a special education teacher in the co-taught classroom makes this more apparent. Thus, having students in the co-taught classes more cognitively engaged than those in the solo-taught classes implies that more students with special needs were able to be engaged by their instructors.

West Virginia state policy allows up to 50% of the students in the co-taught classroom to receive specialized instruction, because a special education co-teacher is present. Conversely, in solo-taught classrooms, the maximum number of students with disabilities in the classroom is 30% (West Virginia Department of Education, 2017, p. 68). This statistic further exemplifies the importance of these results: more students in co-taught settings were engaged at higher levels, including students with disabilities. In the past, the model has been to pull students with disabilities out of general education classes to provide specialized services in separate classrooms. Often these classrooms have been criticized for being watered down and ineffective (Scruggs et al., 2007). Based on our findings, when students receive instruction in the LRE with access to general education content while supported by a co-teacher, they can be more cognitively engaged at higher levels.

While the emphasis of co-teaching is often to view what is best for students with disabilities, this study also has implications for general education students. Families may communicate concern about their children who do not have disabilities being educated with those who do, due to a fear of less rigorous learning environments (Scruggs et al., 2007). The results of this study seem to counter that assertion by illustrating that general education students also benefit from being in a co-taught classroom, where they experience engagement at higher cognitive levels.

The statistical results of the study demonstrate that classes with two credentialed teachers (a special education teacher and a general education teacher) had more students engaged overall than did classes with only one teacher. Because the protocol of the IPI is to give a score based on the majority of the class, more students both with and without disabilities were included in each observation and score. By breaking down the observations into disengaged, low cognitive engagement, and high cognitive engagement, we were also able to determine the level of engagement occurring. Students in the co-taught class not only were more engaged but also engaged with their teachers more actively. Because the literature is replete with researchers bemoaning the fact that co-teachers tend to mainly implement a one teach, one support model of co-instruction (e.g., Brawand & King-Sears, 2017; Murawski & Lochner, 2011), these findings support optimism that whatever co-teachers are doing nonetheless actively engages students in their learning more than does solo teaching.

Limitations of the Study

Most of the counties in West Virginia were already using the IPI and co-teaching as school turnaround strategies. Participants' previous experiences with being observed may have skewed the data, in that all teachers had received IPI training (and co-teaching training for those who were co-teaching), but professional development sessions were not observed or analyzed. It would be helpful in the future to have more demographic information on the individual teachers, as well as on the training they had received.

More demographic data on teachers and students would help future researchers assess in more depth the impact co-teaching has on particular individuals and teams. In this study knowing more about the participants themselves was difficult given that the data were part of an ongoing turnaround strategy in all classes. In addition, researchers could delve deeper into specific actions being taken to engage learners, by whom, and how.

Another potential limitation was the use of multiple observers. In this study four individuals collected data. While all had been trained and received a reliability score of 80% when tested on using the various observation tools, they may have a different lens when completing observations. However, while this may complicate the data, it is actually in alignment with what would occur in schools. It would be unreasonable to think that only one individual would be doing all of the observations at one school; thus, though it adds variability to the results, we determined that the level of variability

was acceptable because this was a natural school environment and not a lab setting.

Recommendations for Action

Extrapolating from results of this study, district leaders, building administrators, instructional coaches, and teachers should consider several specific actions. First, the data validated that co-teaching is an instructional delivery model with the capacity for providing an engaging instructional environment, offering students multiple opportunities to participate in instruction at higher levels of cognitive engagement. Thus, including students with disabilities in the general education classroom increases their opportunity to have access to the general education curriculum in an engaging learning environment. It should be communicated to all stakeholders that inclusive classrooms have the capacity for the necessary rigor for learning, whereby both students with disabilities and their nondisabled peers benefit from the instructional environment. Districts should provide co-taught classrooms as part of the spectrum of service delivery options to meet the ongoing requirements of the LRE. To the extent possible, students with disabilities should be provided instruction in co-taught classrooms with necessary supports.

Second, all avenues of professional preparation, development, and ongoing learning should incorporate co-teaching training. Teacher preparation programs in colleges and universities need to provide teacher preparation courses on co-teaching, along with the core competencies necessary (Murawski & Lochner, 2017). It would be prudent for colleges and universities to embed the co-teaching core competencies in their state professional teaching standards and professional learning standards.

Third, districts should consider providing ongoing professional learning opportunities through multiple avenues. Teachers who work in rural areas are often limited in the teacher preparation programs offered. Specific professional development on topics and strategies related to co-teaching as identified in the competencies could be offered through synchronous or asynchronous classes, webinars, and book studies. Schools can create professional learning communities and communities of practice around co-teaching. Co-teaching teams can be videotaped to share ideas and strategies with other co-teaching teams in a professional collegial spirit. Administrators should collect regular observation data to consistently monitor the quality of co-teaching in district classrooms (Murawski & Lochner, 2017) so that co-teaching may be adequately supported.

Teachers would also benefit from professional development in the importance of student engagement as a result of having, or not having, an engaging learning environment. Based on Valentine's (2009) research, just fifteen more minutes a day in higher-order thinking can generate a 20% gain on students' test scores. The ability of teachers to influence outcomes for students with and without disabilities by providing time in higher order thinking activities is an imperative of the research.

Recommendations for Future Study

Because of the promising results of this study, additional related studies should be conducted. Leaders in the field of special education will benefit most from the ongoing research around co-teaching as it becomes a popular delivery model for student who have IEPs. This is the first study to use the IPI to examine co-teaching, so it is necessary to replicate this study to learn if students in co-taught classes experience high engagement with teams at different grade levels and in different states. Individuals working with students who are English learners may want to replicate the study as well, as co-teaching is a service delivery model increasingly used in that field (Dove & Honigsfeld, 2017).

Additional research questions emerged from this study that should be investigated. Specifically, future research should consider co-teaching quality and the degree to which co-teaching is implemented with fidelity. The current literature suggested the use of the co-teaching core competencies to evaluate the implementation of co-planning, co-instructing, and co-assessing (Murawski & Lochner, 2017). Observing co-teaching teams using the competencies outlined by Murawski and Lochner (2011) may reveal variability in co-teaching quality and may be combined with the IPI rating tool to

consider the relationship between co-teaching quality and student engagement. Addressing these issues in future research may reveal more specific targets for professional development, policy, and practice in rural school districts.

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Co-teaching: Equity for English Learners?

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This study adds to the current understanding of co-teaching in rural school systems, specifically its use to equitably serve the needs of English learners (ELs). The authors investigated one western U.S. rural district's implementation of a co-teaching model where general-classroom teachers shared teaching responsibilities with an English as a second language teacher in a secondary school setting. Research has long shown that traditional pullout models for teaching ELs are less effective because there is often a disconnect between what is happening in the mainstream classroom and in the pullout placement. This quantitative study included observations of 20 co-taught classes during 400 minutes of classroom instruction to measure fidelity to the district's co-teaching model. This article details the extent to which teachers used specific co-teaching strategies and reports on the quantity of teacher-student interactions in general and relative to ELs and non-ELs. Observations revealed that EL students worked primarily with the language specialist, and most of those interactions took place in the context of individualized support. These results have implications regarding equity and opportunity to learn academic content for both EL and non-EL students.

Keywords: co-teaching, English Learners, equity, rural education

Given the rich immigration history in the United States, English learners (ELs) have always been present in U.S. schools. Before the 1974 Supreme Court decision in *Lau v. Nichols*, they were most often simply placed in general education classrooms without linguistic support. The *Lau* decision changed the mandate related to EL students, ruling that the failure of the San Francisco school system to provide English language instruction to approximately 1,800 students of Chinese ancestry who do not speak English, or to provide them with other adequate instructional procedures, denies them a meaningful opportunity to participate in the public educational program and thus violates § 601 of the Civil Rights Act of 1964, which bans discrimination based "on the ground of race, color, or national origin." (*Lau v. Nichols*, 1974, p. 563)

The reauthorizations of the Elementary and Secondary Education Act of 1965 (ESEA) in 2001 and 2015 (Every Student Succeeds Act [ESSA], 2015) continued to emphasize the mandate for schools to ensure equity and access to underserved groups and required schools to meet rigorous college and career readiness standards across content areas for all students. The latest revision of the act, now known as Every Student Succeeds Act (ESSA), created several new requirements for EL equity, most notably in relation to schools. In addition to addressing English proficiency rates under Title III, schools had to include the EL student population in their accountability framework for Title I, resulting in a much broader impact on schools and funding. Under ESSA, schools could not receive a high rating if one of their subgroups is failing across the board—which is often the case with ELs.

Since the *Lau* decision ruled that the immersion approach was illegal, school districts have adopted a variety of models to provide language supports for ELs (Theoharis & O'Toole, 2011). The dominant teaching models for ELs across the nation have involved pullout and sheltered instruction, in which students are separated from the general education classroom to meet with a language specialist (DeFrance Schmidt, 2008). In *Options for English Language Learners*, the American Association of School Administrators (2008) discussed these two approaches. In pullout English as a second language (ESL) programs, ELs are pulled out of mainstream classrooms to receive instruction in English from an ESL teacher. Push-in ESL programs, on the other hand, "push" the ESL teacher into the regular classroom to provide language instruction to designated groups of EL students. In both pullout and push-in models, ESL instruction is intended to develop English language and communication skills. In subjects not supported by the ESL teacher, EL students are fully integrated into mainstream classrooms with little to no support. In sheltered instruction programs, ELs are grouped in EL-only classes for one or several periods per day. The intention is to provide content-area instruction and develop English fluency while "sheltering" ELs from the need to compete with English speakers.

While pullout, push-in, and sheltered approaches support the linguistic needs of ELs, they often separate ELs from their English speaking peers by creating a parallel education separate from the regular educational path of non-EL students. Theoharis and O'Toole (2011) explored using an inclusive philosophy for ELs and suggested that "including ELLs [English language learners] in the general classroom has the potential to provide these learners equitable access to resources, curricula, and services" (p. 653).

This study explores the use of co-teaching, defined as "two or more professionals delivering substantive instruction to a diverse or blended group of students in a single space" (Cook & Friend, 1995, p. 2), to serve the language needs of EL students in several secondary general education classrooms in a rural school district.

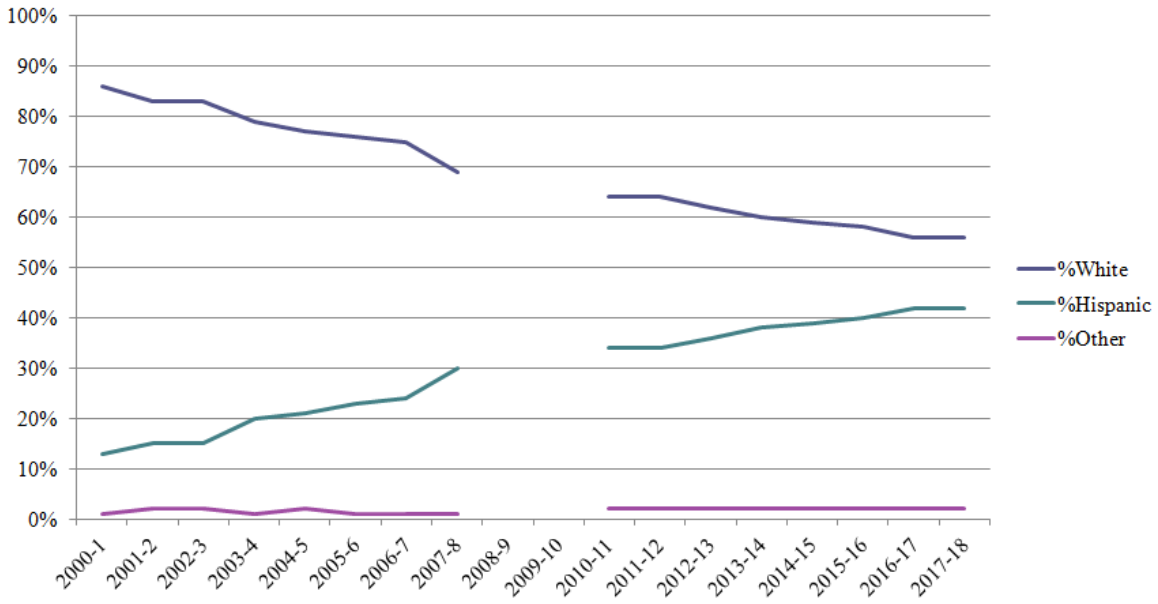

Figure 1. Enrollment trend by ethnicity of study district, 2000–2018. Data from National Center for Education Statistics (2018). Accurate data were not available for 2008–2010 and thus were omitted.

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Local Context

Most official definitions of *rural* are based on data and designations assigned by the U.S. Census Bureau (Ratcliffe, Burd, Holder, & Fields, 2016), including population thresholds, density, land use, and distance. The population density of the school district in this study is eight people per square mile. Although most rural schools have a low number of EL students, over 44% of America's EL students live in rural communities (Cummins, 2001). It can be challenging for rural schools to ensure EL students are not marginalized and have opportunities to reach to high academic standards due to limited financial and human resources.

Because schools in rural settings and communities use a variety of contexts and condition to provide for ELs, our study focused on the implementation of co-teaching strategies as adopted in one rural school district, and the issue of equity for EL students relating to specific teacher-student interactions. In the school district where this study took place, the demographic composition of students had shifted considerably, consistent with much of the United States (National Center for Education Statistics, 2018). In the 2000–2001 school year, approximately 86% of the district's students were White and 13% were Hispanic. In contrast, in the 2017–2018 school year the student body reflected much greater diversity, with 56% of the students White and 42% Hispanic (see Figure 1).

Based on indicators of student achievement, the district consistently scores at or above the state proficiency levels in all areas tested on the state's standardized assessments (Table 1). Despite this, gaps between the district's EL students and non-EL students are significantly larger than those at the state level. Before 2014 all secondary students identified as beginning and intermediate ELs were placed in an ESL classroom for language arts and mathematics classes. The students accessed other content area classes with support from an ESL paraprofessional.

Table 1

State standardized assessment for 2018

	English language arts	**Math**	**Science**
Study district	58.90%	44.71%	61.86%
State	53.69%	43.69%	60.65%

In 2014 the district adopted co-teaching as a practice to address long-standing and pronounced achievement gaps between EL and non-EL students. Since then the implementation of co-teaching has expanded and replaced pullout and sheltered environments for ELs at the secondary level, with the exception of newcomers, who take a newcomer-specific class for a portion of each day. In co-taught classes, ELs are clustered in regular-education classrooms and taught the grade-level curriculum while an English language specialist (SPEC) partners with a content area teacher (CAT) in all aspects of the instructional process.

The purpose of the study was to examine how co-teaching for EL students was being implemented in secondary classrooms located within the school district. In consideration of evolving challenges brought on by federal, state, and local policy demands to improve the academic achievement of EL students, we addressed two main questions:

1. To what extent are the co-teaching practices adopted by the school district being implemented in everyday instruction by co-teachers in secondary classrooms?
2. Do ELs in co-taught classes interact with the general education content teacher to the same degree as their non-EL peers?

Literature Review

We situated our study within the literature regarding co-teaching for ELs and equity to academic content, including opportunity to learn. In support of our analysis, we used co-teaching as a theoretical framework to understand how co-teaching practices were implemented across

secondary schools in one district and how conditions within co-taught classrooms impacted the student-teacher interactions for EL and non-EL students.

Co-teaching for English Learners

Co-teaching, simply stated by Hattie (2008), "is two teachers working in a single space to deliver instruction" (p. 219). The co-teaching model gained popularity in the 1960s and has its roots in special education, where it was used to increase students' access to the general education curriculum through collaboration between a CAT and a SPEC (Burley, 2015). In the absence of co-teaching, EL students are often served in specialized ESL- or EL-only classrooms or resource rooms, based on pullout or sheltered models.

While there are several accepted models describing the various roles that co-teachers assume, this study uses the model advanced by Villa, Thousand, and Nevin (2013):

- Supportive co-teaching: one teacher takes the lead instructional role, and the other rotates among the students to provide support.
- Parallel co-teaching: the co-teachers teach, monitor, or facilitate the learning of different groups of students, usually in the same room at the same time.
- Complementary co-teaching: one co-teacher acts to enhance the instruction provided by the other co-teacher(s).
- Team teaching: co-teachers simultaneously deliver the lessons. Team teaching was further categorized as co-teachers simultaneously delivering the lesson (team-delivery) versus rotating among the students and provided tutorial support (team-supportive).

Adherents of the co-teaching methodology point to several benefits of co-teaching. Because there are two teachers in a classroom, co-teaching lowers the student-teacher ratio and thereby allows greater interaction between students and teachers. It also increases collegiality between teachers and exposes them to a wider range of philosophies, techniques, and methods (Abdallah, 2009). In this study, the teachers all worked for the same school district, which adopted the co-teaching strategies as defined by Villa et al. (2013) as supportive, parallel, complementary, and team teaching. Previous research on co-teaching at the secondary level (Kozik, Cooney, Vinciguerra, Gradel, & Black, 2009; Simmons & Magiera, 2007) suggests the model may be challenging depending on content knowledge of the teachers, insufficient collaboration time, and increased accountability pressures.

A number of factors must be considered if collaboration between SPECs and CATs is to be effective. Villa et al. (2013) identified five essential elements of co-teaching: (a) common, agreed upon goals; (b) a shared belief system; (c) parity between the teachers; (d) distribution of the work of teaching; and (e) use of a cooperative process. Davison (2006) argues that, without clear roles and responsibilities between SPECs and CATs, ESL is often subordinated to the content area, leading to an imbalance between teachers in curriculum authority, responsibility, and opportunities for input. In light of the multiple factors that influence co-teaching partnerships, research indicates that co-teachers must agree on all aspects of the classroom environment, including instructional methodology, classroom discipline, and their respective roles during instruction. To this end, co-planning is imperative for co-teaching to be effective (Abdallah, 2009; Honingfeld & Dove, 2010; Murawski, 2012). According to Honingfeld and Dove (2010),

> Co-planning is undeniably the most important component of the collaborative instructional cycle. Co-teaching does not happen without it, so when teams of teachers enter a classroom without ample preparation, it may at best be described as shared real estate. The success of any true co-teaching practice depends on the success of co-planning. (p. 25)

Equal Access for Academic Content for English Learners

In addressing social justice concerns in educational programs, Frattura and Topinka (2006) found that homogeneously grouping students who are not representative of the norm into separate classrooms is emotionally and socially damaging.

They contend that separate programs marginalize students, are expensive, label children, and are disruptive to the students' academic day by requiring them to leave a class to receive specialized help and often denying them access to academic opportunities. Theoharis and O' Toole (2011) found that separate programming may also create the illusion that ELs' learning needs have been adequately addressed during the time they spend with the SPEC.

Removing students from the subject-area curriculum to provide language instruction requires them to continually sacrifice one area of their education in favor of another and thereby detracts from students' opportunity to learn. Banicky (2000) states that opportunity to learn is a greater consideration than simply ensuring students have access to taught curriculum and includes providing appropriate learning opportunities, resources, school conditions, and teacher quality for all groups of students. Of all school-level factors, opportunity to learn, though difficult to define, has the strongest relationship to student achievement (Marzano, 2001). Research suggests that ELs are more likely than their peers to be taught by teachers who are less qualified, without appropriate teaching credentials, or with little classroom experience (Gándara, Maxwell-Jolly, & Driscoll, 2005; Rumberger & Gándara, 2004).

Many researchers also suggest that moving away from a pullout model and keeping ELs in general education classrooms with linguistic support may reduce the marginalization of EL students and increase their access to curriculum and services (Theoharis & O'Toole, 2011). The term *inclusion* originated in the special education research and literature. The concept of inclusion has recently been more broadly adopted and applied to students in other underserved populations, including ELs. Moving to a co-teaching model typically removes traditional supports for EL students (i.e., pullout instruction by designated ESL teachers, paraprofessional support, and homogeneous grouping with other EL students) and shifts the responsibility for supporting ELs to all teachers instead of primarily relying on designated ESL teachers.

Methods

To address the research questions, we used a quantitative study design (Creswell & Creswell, 2018). This study reports on the observation data and frequencies of co-teaching strategies used in a rural school district and types of interactions (i.e., whether the interaction was public or private). Twenty different co-taught classes, 10 high school and 10 middle school, were observed for a total of 400 minutes. The observations were conducted at one middle school and one high school in the same district, to reduce school-based factors that might cause variation in the implementation. These schools were selected because they contained the largest populations of EL students in the district. Observations were conducted by a single observer over a 6-week period. The observer had previous training in the district's co-teaching model and also as a school administrator.

Table 2 lists the characteristics of the teacher participants. The study included 16 total teachers, 10 CATs and 6 SPECs; because four of the SPECs paired with two different CATs, 10 co-teaching pairs were observed in this study: 5 at the middle school and 5 at the high school. Teachers were recruited to participate in the study if they were part of a co-teaching classroom, and each teacher gave consent to participate in the study. Additionally, 75% of SPECs had a master's degree versus 50% of CATs. Approximately 33% of the SPECs reported having endorsements in the content areas in which they co-taught. SPECs fell at both ends of the experience range, with 50% reporting 2 or fewer years and 50% reporting more than 10 years.

According to this district's model, general education teachers in a variety of subject areas were paired with SPECs to plan and deliver academic content in co-taught classes. The observed content-area classrooms were science, mathematics, and English/language arts. The district provided these teams with 16.5 hours of training distributed between September and March, which emphasized the four co-teaching approaches defined by Villa et al. (2013):

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Table 2
*Professional characteristics of co-teacher pairs as participants (*n = *12)*

Characteristic	Percent
Licensure	
Licensed for content area	62.5
Licensed to teach ESL	75.0
Highest degree obtained	
Bachelor's	50.0
Master's	50.0
Total experience	
<1 year	8.0
1–4 years	25.0
4–10 years	25.0
>10 years	42.0

supportive, parallel, complementary, and team teaching. Our observations were scheduled a month in advance, and data were collected over a 6-week period during January and February. Each co-teaching pair was observed in two different class sections for a total of 20 unique observations. Each observation segment was at least 20 minutes long. A coding procedure and observation protocol were created and tested prior to use in this study.

Table 3 provides a breakdown of student demographics per class observed. A total of 398 students were observed over the 20 co-taught classes. The average enrollment of the classes was 20 students per class, ranging from 12 to 25 students. Seventeen students (4.3%) were identified as L1 (first-year language learners in their first year in a U.S. school);

Table 3
Student demographics in co-taught classes

Class no.	*n*	L1	LE	L1 + LE	Non-EL	SWD	M	F	State Prof	Avg WIDA score
1	15	0%	47%	47%	53%	29%	35%	65%	38%	4.0
2	23	13%	39%	52%	61%	9%	52%	48%	55%	3.5
3	22	0%	46%	46%	55%	4%	52%	48%	42%	3.9
4	23	17%	35%	52%	65%	4%	64%	36%	47%	3.0
5	14	0%	43%	43%	57%	17%	50%	50%	75%	3.5
6	17	12%	29%	41%	71%	11%	63%	37%	71%	3.0
7	17	0%	41%	41%	59%	18%	59%	41%	56%	4.0
8	19	11%	58%	68%	42%	10%	52%	48%	42%	3.5
9	22	5%	9%	14%	91%	0%	50%	50%	61%	4.1
10	23	0%	13%	13%	87%	17%	58%	42%	65%	2.9
11	15	0%	40%	40%	60%	6%	63%	38%	38%	4.4
12	19	0%	21%	21%	79%	5%	42%	58%	56%	4.3
13	23	0%	30%	30%	70%	29%	54%	46%	55%	4.5
14	19	11%	21%	32%	79%	5%	32%	68%	38%	4.3
15	25	0%	20%	20%	80%	0%	48%	52%	33%	4.1
16	20	0%	30%	30%	70%	10%	50%	50%	39%	3.5
17	25	0%	28%	28%	72%	7%	56%	44%	60%	3.5
18	22	0%	23%	23%	77%	13%	57%	43%	50%	3.9
19	24	4%	17%	21%	83%	0%	75%	25%	64%	3.8
20	22	5%	32%	36%	68%	4%	46%	54%	38%	3.9
High	25	17%	58%	68%	91%	29%	75%	68%	75%	4.5
Median	22	0%	30%	34%	70%	8%	52%	48%	53%	3.9
Low	14	0%	9%	13%	42%	0%	32%	25%	33%	2.9

n = total number of students in the class; L1 =

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125 students (31.4%) were identified as limited English (LE) and spoke a language other than English as part of their history or home environment, which may affect their learning in an English-based environment. LE students also scored less than 5.0 overall on the WIDA ACCESS assessment and less than 4.0 in each of the test's four domains (listening, speaking, reading, writing). The WIDA ACCESS test is an English-language proficiency assessment given to new students in grades 1–12 to help educators identify whether they are ELs. It is a "flexible, on-demand assessment that can be administered at any time during the school year" (Wisconsin Center for Education Research, 2019, para. 1). Once a student met the exit criteria on the WIDA ACCESS (5.0+ overall, 4.0+ in each of the four domains), the school transitioned them to monitoring status. This study did not consider EL students who were currently in monitoring status. percentage of students categorized as first-year language learners in their first year in a U.S. school; LE = percentage of students categorized as limited English; non-EL = percentage of students who were not English learners; SWD = percentage of students with disabilities; M and F = percentage of male and female students; State Prof = percentage of students who scored proficient or higher on the state's standardized achievement test; Avg WIDA = average WIDA score for the class.

Frequency of Co-teaching Approach

To determine the frequencies of various approved co-teaching approaches, we used a partial interval time sampling method (Harrop & Daniels, 1986) to document the presence of observable co-teaching strategies that occurred within a 1-minute interval. A timer was used throughout each observation. Co-teaching strategies were coded on the observation protocol according to the model used by the district (supportive, parallel, complementary, or team co-teaching) as they occurred during the 1-minute interval; therefore, multiple strategies could be coded during the same 1-minute interval. For the purposes of this study, co-teaching was further categorized as team supportive, or team delivery. The role played by the respective teachers was also noted (i.e., supportive, team, or both). The observation instrument collected data on the four specific co-teaching strategies adopted by the district. Instances in which no instruction occurred were not coded.

Teacher-Student Interactions

While identifying which co-teaching strategies teachers used, the observer created a framework to code four different types of teacher-student interactions observed, in which the CAT or SPEC called on a student publicly or interacted personally in an individualized and private manner. All specific interactions with students were recorded, whether they were of an academic nature or not. General questions and comments addressed to the whole class were not recorded unless the teacher called on or responded to an individual student. Interactions between the CAT and SPEC were not recorded, nor were interactions among students.

Data Analysis

The observations yielded 415 total incidents of co-teaching practices and 694 total teacher-student interactions. After completing all classroom observations, we used Excel to record and analyze frequency counts of co-teaching strategies and teacher-student interactions. The total number of incidents in which each co-teaching strategy was observed across all intervals was divided by the total number of intervals (400) to determine percentage of intervals in which the strategy was observed.

To fully consider the overall equity of teacher-student interactions, data were analyzed for the frequency of student-teacher interactions and the extent to which each teacher's interactions with students were public or private. To calculate the frequency of student-teacher interactions, we determined the percentage of teacher interactions with EL students for each class and then calculated the ratio of percent EL interactions to percent EL students in the class. In the resulting scatter plot graphs, the reference lines indicate the percent EL students in the class, and percent interactions reflect higher, equal, or lower frequencies than that percentage. Data were

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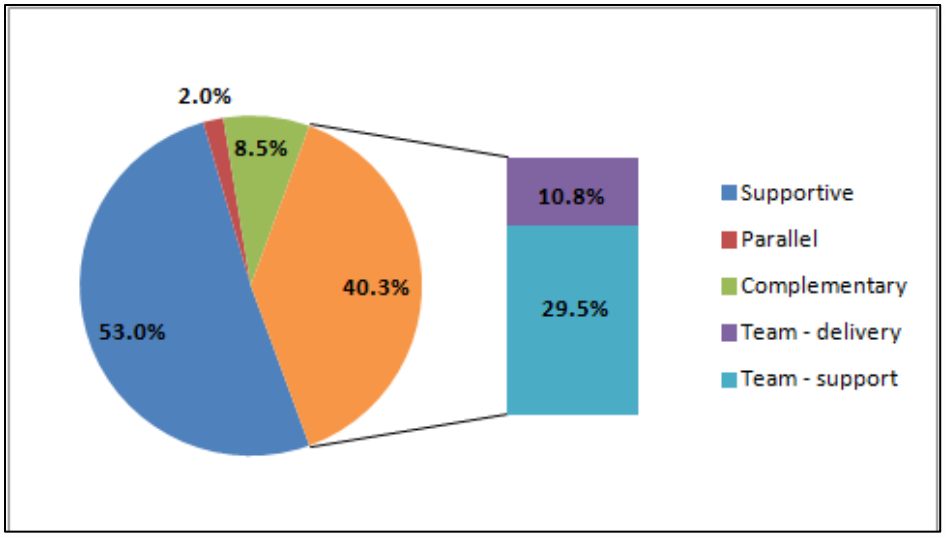

Figure 2. Percentages of intervals in which district-specified co-teaching strategies were observed

further analyzed to determine percentages of both SPEC and CAT interactions with L1, LE, and non-EL students, both publicly or personally.

Findings

Our study aimed to determine (a) the extent to which the co-teaching practices adopted by the school district were being implemented in everyday instruction by co-teachers in secondary classrooms, and (b) whether ELs in co-taught classes interacted with the CAT to the same degree as their non-EL peers.

Frequency of Co-teaching Strategies

The CAT delivered whole-class instruction during 78.2% of the 298 intervals in which whole-class instruction occurred, and during more intervals that involved whole-class instruction than the SPEC in 15 of 20 classes that involved whole class instruction. The SPEC, on the other hand, delivered whole class instruction during 21.8% of the intervals.

Co-teachers emphasized the use of the supportive co-teaching approach in 53% of observed intervals and team co-teaching in 40.3% (see Figure 2). The SPEC assumed the supporting role during 92.5% of the intervals in which the supportive co-teaching strategy was observed (see Figure 3). Given that 80% of the co-teaching pairs were in their first year working together, this is not altogether unexpected—supportive co-teaching is one of the two strategies relied on the most by new co-teaching pairs (Villa et al., 2013). However, with such a high percentage of first-year co-teaching pairs, it was not possible to determine with any validity whether the frequency of particular strategies correlated with pair longevity.

Team co-teaching in the team-delivery form occurred in 10.1% of observed intervals. Co-teaching partners engaged in team-delivery for five or more intervals in only three observations. Team co-teaching in the team-support form, which closely resembles supportive co-teaching, was present in 29.5% of observed intervals and was observed during 75% of observation periods.

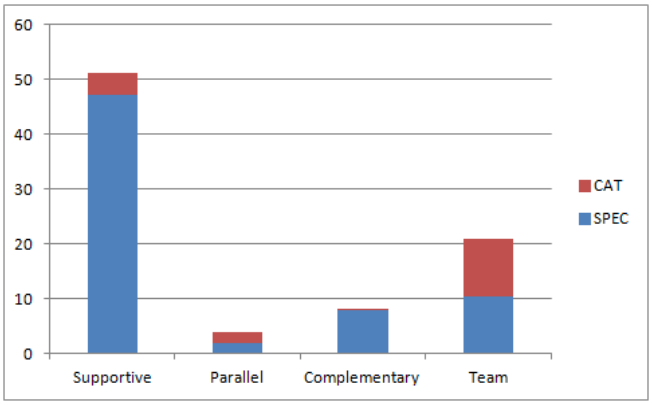

Figure 3. Relative percentages of observed co-teaching strategies by teacher type

Teacher-Student Interactions

Placing EL students in content-area classes with embedded language support is intended to provide them with greater access to the subject matter than they may experience when placed in pullout environments. We examined whether EL students in co-taught, mainstream classes accessed the CAT at the same rate as their non-EL peers.

Frequency of Interactions. Overall, CATs interacted with students more often than did SPECs, with 56.2% of total interactions. However, the frequency of interactions among teachers and student groups varied across classrooms. In 10% of the 20 observed classrooms, frequencies of teacher interactions with EL students were equal to their representation within the class; in 60%, they exceeded the classroom percentage, and in 30% they occurred at a lower rate. Thus, 70% of the observed co-taught classes offered support for EL students at equal or greater frequency than their portion of the class population (see Figure 4).

L1 students comprised 4.3% of the total number of observed students and participated in 3.7% of the total interactions. In terms of the frequency of their interactions with a teacher, this group appeared to receive slightly less opportunity than other student groups. L1 students were served primarily by the SPEC, who was involved in 76.9% of the interactions with L1 students. Interactions between SPECs and L1 students represented 6.6% of the SPECs' total interactions with involved in 76.9% of the interactions with L1 students. Interactions between SPECs and L1 students represented 6.6% of the SPECs' total interactions with students, a higher rate than the L1 students' percentage of the student group. CATs interacted with L1 students only six times in total, representing 1.5% of CATs' total student interactions and 0.9% of the overall number of teacher-student interactions.

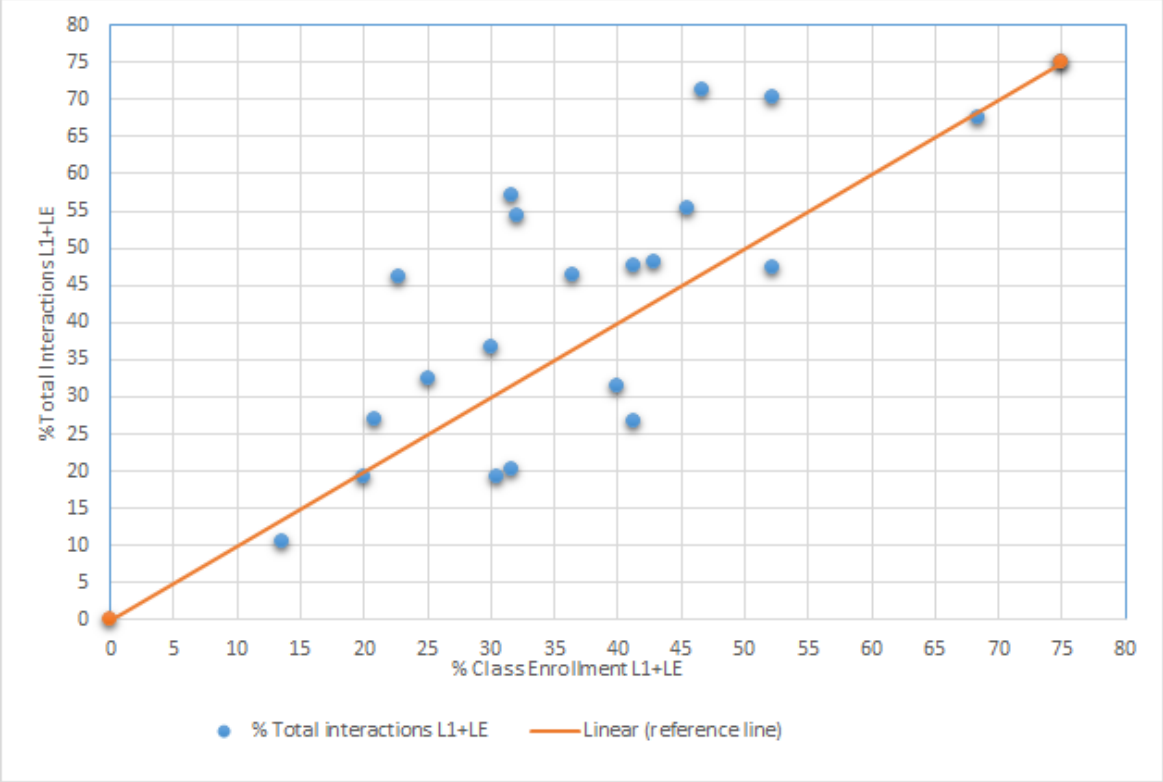

Figure 4. Percent interactions between teachers and EL students by percentage of EL enrollment in the class

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LE students comprised 31.4% of the total number of observed students. Teachers interacted with LE students a total of 254 times, representing 36.6% of teacher-student interactions. Interactions between LE students and CATs accounted for 44.1% of interactions between LE students and a teacher. CATs interacted with LE students during 28.1% of their teacher-student interactions, a lower frequency than the LE students' portion of the student population (34.1%). SPECs' interactions with LE students accounted for 55.9% of the total number of interactions between a teacher and an LE student and 46.7% of SPECs' total interactions with students. Overall, LE students interacted with teachers at a greater frequency than their percentage of the student population, and these interactions occurred mostly between the SPEC and the LE students.

Non-EL students comprised the largest student group in the observed classes. Overall, these students interacted with teachers at a lower frequency than their percentage of the student population, comprising 64.3% of observed students and receiving 59.7% of the total teacher-student interactions. CATs interacted with non-EL students in 69.7% of their total interactions with students, a higher rate than the non-ELs' portion of observed students. Exchanges between the SPECs and non-EL students represented 20.5% of the total number of teacher-student interactions and 46.7% of the SPECs' total communications with students.

Public Versus Personal Interactions. CATs' exchanges with students were more likely to revolve around the teacher calling on or calling out to the student during whole class instruction in a public manner. As Figure 5 shows, CATs publicly connected with students during 57.4% of their total communications, whereas 42.6% of their interactions were more personal, working alongside the student at their desk to provide feedback, to ask or answer an individualized question, or to provide tutorial assistance. SPECs, on the other hand, generally communicated with students in a more personal manner. Of the 304 documented interactions between SPECs and students, 78.3% were personal. This distribution of public versus personal interactions is consistent with the supportive and the team-support co-teaching strategies predominantly used by co-teaching pairs.

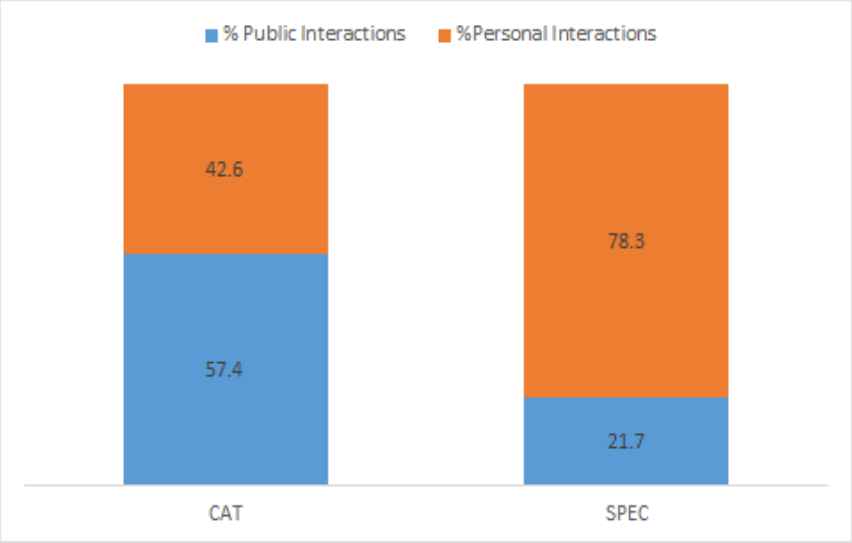

Figure 5. Percentage of public and personal interactions by teacher type

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Teacher interactions with EL students were, in general, more likely to be personal (see Figure 6), comprising 85% of SPECs' interactions with L1 students and four of the six interactions between CATs and L1 students. On the whole, teachers tended to interact with LE students in a personal way, as well. Most interactions between CATs and LE students (55.4%) were personal, and SPECs interacted personally in 85.9% of their interactions with LE students.

Teachers interacted with non-EL students in a more balanced manner overall, with about half of their interactions (51.9%) being public. In comparison, teachers interacted publicly with EL students during 26.8% of their interactions with EL students. CATs interacted publicly during 63.2% of their interactions with non-EL students versus 44.1% of their interactions with EL students. Of SPECs' interactions with students in the non-EL group, 69.7% were personal. Though this overall pattern varied across classes (see Table 4), in general CATs were more likely to engage publicly with non-EL than with EL students.

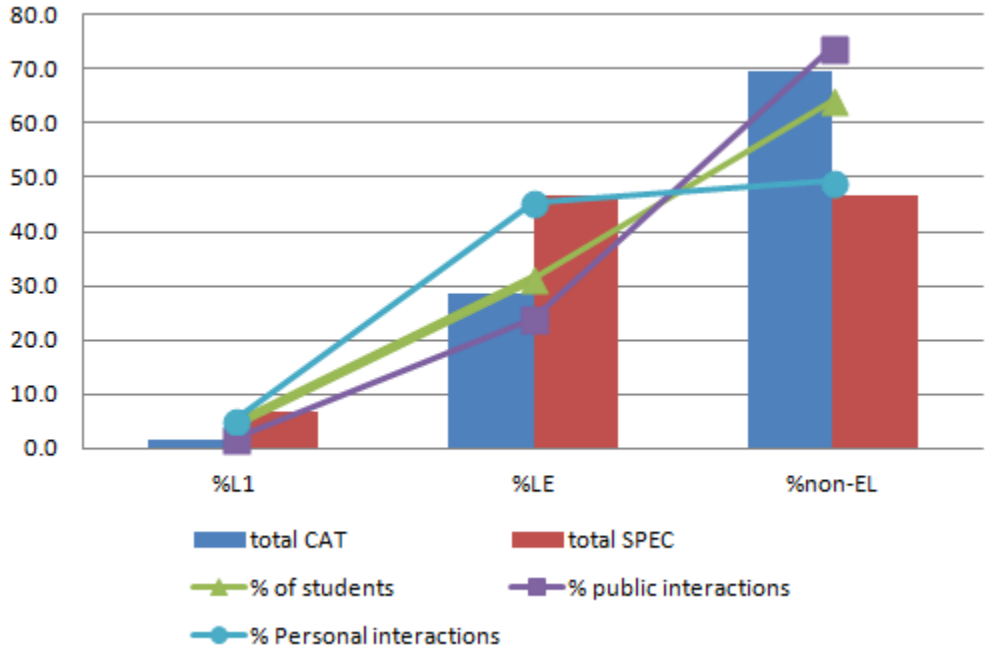

Figure 6. Percentage of teacher interactions by student group

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Table 4

Teacher-student interactions

Class No.	EL students (%)					Non-EL students (%)				
	Class	CAT		SPEC		Class	CAT		SPEC	
		Public	Personal	Public	Personal		Public	Personal	Public	Personal
1	46.7	3.6	28.6	0	39.3	53.3	3.6	17.9	0	7.1
2	52.2	3.7	0	0	66.7	47.6	22.2	0	0	7.4
3	45.5	19.6	7.1	16.1	12.5	54.5	8.9	8.9	12.5	14.3
4	52.2	10.9	16.4	5.5	14.5	47.8	18.2	12.7	7.3	14.5
5	42.9	0	18.5	0	29.6	57.1	0	29.6	14.8	7.4
6	41.2	0	28.6	0	19	58.8	0	38.1	0	14.3
7	41.2	6.7	6.7	6.7	6.7	58.8	0	26.7	20	26.7
8	68.4	8.8	32.4	2.9	23.5	31.6	5.9	8.8	11.8	5.9
9	13.6	8.5	2.1	0	0	86.4	40.4	17	0	31.9
10	25	5.4	5.4	0	21.6	75	24.3	29.7	0	13.5
11	40	15.8	0	0	15.8	60	63.2	5.3	0	0
12	31.6	7.1	14.3	0	35.7	68.4	14.3	14.3	0	14.3
13	30.4	12.9	0	0	6.5	69.6	74.2	0	3.2	3.2
14	31.6	3.7	7.4	0	9.3	68.4	42.6	18.5	1.9	16.7
15	20	5.8	0	3.8	9.6	80	36.5	19.2	7.7	17.3
16	30	2	4.1	2	28.6	70	36.7	10.2	4.1	12.2
17	32	13	6.5	4.3	30.4	68	21.7	19.6	0	4.3
18	22.7	7.7	0	23.1	15.4	77.3	7.7	0	46.2	0
19	20.8	0	11.5	0	15.4	79.2	23.1	0	15.4	34.6
20	36.4	4.7	11.6	2.3	27.9	63.6	14	9.3	7	23.3
Avg.	36.2	7.0	10.1	3.3	21.4	63.8	22.9	14.3	7.6	13.4
High	68.4	19.6	32.4	23.1	66.7	86.4	74.2	38.1	46.2	34.6
Median	34.2	6.25	6.9	0	17.4	65.8	19.95	13.5	3.65	13.9
Low	13.6	0	0	0	0	31.6	0	0	0	0

Discussion

This study explored the extent to which co-teaching approaches defined by the district are being implemented in everyday instruction by co-teachers in secondary schools. The study also examined the extent to which ELs in co-taught classes accessed the general education CAT compared to their non-EL peers.

Co-Teaching Strategies

Across the range of classroom observations, co-teachers limited themselves to two primary co-teaching strategies: supportive co-teaching, present in over half of the observed intervals, and team-supporting co-teaching, in which both teachers rotated among the students and provided individual assistance. In total, co-teachers used one of these two strategies during 82.5% of observed intervals. In the vast majority of these intervals, the SPEC played the supportive role.

One possible explanation for the reliance on supportive and the team-supportive teaching approaches lies in the SPECs' level of expertise. At the secondary level, course content is complex and requires a fairly high level of skill and understanding to teach effectively. Given that SPECs pair with CATs in a variety of subject areas, especially when considered in light of the overall newness of their partnerships, it would be natural for SPECs to play a role. An area for further research is the degree to which the longevity of the partnership allows the SPECs to shift into a more equal role in delivering instruction. This study looked at only a 6-week period; perhaps future studies could longitudinally study how the quality and frequency of teacher-

student interactions change over time in co-teaching settings.

Both supportive and team-supportive co-teaching strategies have a lower planning threshold to successfully implement. Only 30.0% of the individual teachers reported spending more than 2 hours a week planning for co-teaching. Training related to co-planning is a critical next step in this district's implementation journey. The amount of time available in individual co-teachers' schedules is a possible variable and represents a question for further study. The use of time by co-teachers is also a significant question. On the whole, however, based on both the strategies most commonly used by co-teachers and the distribution of student interactions among the co-teachers, this study recommends that schools review the time dedicated to co-planning and provide training and coaching related to effective co-planning.

The longevity of teams is also a critical issue contributing to this pattern. Despite the district's previous experience in implementing co-teaching, most of the teams (80%) at the secondary level were in their first year of co-teaching together, and 56.3% of the individual co-teachers were in their first year of co-teaching. Twenty-five percent of individual co-teachers had previously co-taught with different partners, and only 18.8% had taught more than one year with the same partner. This high turnover rate suggests schools may need to consider how they recruit individual teachers and how they support them after the co-teaching partnership forms.

Teacher-Student Interactions

In describing the ideal of what a co-taught classroom looks like, Villa et al. (2013) explains that "co-teaching is two or more people sharing responsibility for teaching all of the students assigned to a classroom. It involves the distribution of responsibility among people for planning, differentiating instruction, and monitoring progress for a classroom of students" (p. 4). According to this definition, in co-taught classrooms both teachers would share responsibility for all of the learners in the room. Taken as a whole, during the 400 minutes of classroom observation in this study, several notable patterns emerged regarding teacher interactions with EL students. Bearing in mind that there is considerable variation in the quantity and personal/public nature of teacher-student interactions across the classrooms observed, in general EL students were more likely to interact with their teachers at a greater rate than their portion of the student population. This implies that EL students were the beneficiaries of additional support in their co-taught classes.

The source of EL students' support, however, was not equal between SPECs and CATs. Despite individual classroom variations, overall CATs tended to interact with non-EL students at a disproportionately greater rate than with EL students. Additionally, CATs interacted with LE students at a rate less than the LE students' percentage of the student population. Conversely, SPECs' interactions with EL students were disproportionately greater than the ELs' percentage of the student population.

Comparing CATs' and SPECs' interactions with EL and non-EL students is also revealing. Overall, teachers called on EL students to respond in a public manner less frequently than they did their non-EL peers, opting instead to help EL students individually at their desks. The data suggest that EL students had less opportunity to participate in whole-class interactions.

Conclusions and Implications

In most of the classroom observations in this study, teachers relied on a teacher-centered, whole-class instructional model that was dominated by the CAT, while the SPEC rotated and supported students individually. Additionally, EL students interacted primarily with the SPEC in private conversations at their desks, while CATs' interactions focused mainly on non-EL students. To promote access to the CAT and therefore increase the opportunity for EL students to learn, teachers need additional explicit training in a variety of topics: (a) effective co-planning, (b) effective instructional practices for ELs, (c) the CATs' and SPECs' role in supporting all students during the instructional process, and (d) the full range of co-teaching strategies. Furthermore, to promote long-term partnerships, co-teaching pairs need support

related to skills associated with developing co-teaching relationships.

Though more research is needed related to co-teaching, the underlying logic of the model, in which two teachers work within a collaborative partnership, is promising for promoting access to core academic curriculum for ELs. Findings from this study indicate that the current implementation of co-teaching policies related to EL students may need additional development for co-teaching to reach its full potential.

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The Future of Field Experiences in Distance Education: A Case Study of Co-teaching Practices in a Telepresence-Facilitated Field Placement

Eileen Wertzberger, *Kansas State University*

In an attempt to be more culturally responsive to the needs of its students, universities across the country are leveraging technologies to make their campuses more readily available to a broader student audience. Yet, with the proliferation of online teacher preparation programs, difficulties arise in providing preservice teachers with quality field experiences. This case study examines how telepresence robotic technology was used to facilitate a field experience that would otherwise have been prohibitive in a master of arts in teaching program. While a substantial body of literature examines the use of virtual environments and technologies in educating hard-to-reach populations, little research has been done in how telepresence technologies may effectively bridge the access gap for preservice teachers who are place-bound geographically. The findings from this study suggest that, when coupled with the implementation of effective co-teaching practices, telepresence technology can facilitate meaningful field experiences in real time, for place-bound preservice teachers without local K-12 institutions to host their field experiences.

Keywords: co-teaching, field experiences, telepresence technology, rural education, technology in teaching

For rural communities across the United States, distance teacher- preparation programs address some of the chronic challenges facing rural education: the disproportionately high teacher shortages and lack of access to institutions of higher education (Knapczyk, Chapman, Rodes, & Chung, 2001; Latterman & Steffes, 2017). As more universities across the country offer distance teacher preparation programs, many rural school districts are "operat[ing] under a de facto 'grow your own' system in seeking and developing new teacher talent" (Lavalley, 2018, p. 15). Increasingly, distance teacher preparation programs are an instrumental way to recruit and prepare high-quality teachers committed to their communities. Yet, with the proliferation of online teacher preparation programs, difficulties arise in providing preservice teachers with quality field experiences. This case study examines how telepresence robotic technology was used in conjunction with co-teaching to facilitate a field experience that would otherwise have been prohibitive in a master of arts in teaching program.

Literature Review

Distance Education and Accessibility to Teacher Education Programs

Distance education has been an avenue for broadening access to educational opportunities otherwise not possible (Anderson & Simpson, 2012; Anderson & Dron, 2011; Casey, 2008). According to Casey (2008), the first distance education program, "the Pitman Shorthand training program," began in 1852, mailing lessons on "cutting edge stenographic practices" to aspiring secretaries, who would in turn mail their completed lessons to the company to

receive their certifications (p. 46). Since then, distance education has continued to evolve, yet with each generation, "correspondence, broadcast, [or] computer mediated" (Anderson & Simpson, 2012, p. 2), the goal has remained relatively the same: leveraging technological advances in an attempt to bridge the geographic and social barriers keeping some individuals from educational institutions.

Indeed, universities across the country are capitalizing on technologies to make their campuses more readily available to a broader student audience. As Gloria Ladson-Billings (2013) notes, the educational experiences of students, and the students themselves, have "change[d] and develop[ed] in remarkable ways" due to the impact of "technology and globalization" (p. 106). While broadband internet access continues to be a challenge globally, the pervasiveness of technology, such as handheld devices, has made it a uniquely powerful mechanism for increasing access to education for students living in remote areas and for decreasing economic disparities globally (Ally, Grimus, & Ebner, 2014; Ally & Samaka, 2013; Inverso, Kobrin, & Hashmi, 2017; Ladson-Billings, 2013). In addition, technologies such as Virtual World and simulators have transformed the power of virtual learning from a one-dimensional transaction between student and teacher to a multidimensional platform that allows for community building and student-centered inquiry, often with the added benefit of reducing the risk of harm to its participants (Dickey, 2011; Johnson & Levine, 2008; Nadolny, Woolfrey, Pierlott, & Kahn, 2013).

Telepresence Technology and the Future of Field Experiences

Integral to teacher preparation programs is the role of field experiences in the overall edification and development of preservice teachers—immersion in authentic teaching environments that require them to learn through direct interaction with students and other professionals. Overwhelmingly, the literature asserts the importance of field experiences in helping preservice teachers develop critical dispositions to their success as future educators, such as merging theoretical frameworks with real-life situations, engaging in reflective practices, thinking creatively to solve problems, and building relationships with an increasingly diverse student body (Kennedy, Cavanaugh & Dawson, 2013; Phillion, Miller, & Lehman, 2005; Simpson, 2006). The relevance of authentic field experiences is no less significant for preservice teachers in distance teacher-preparation programs serving rural communities (Simpson, 2006).

Telepresence technology is unique in its ability to facilitate field-experience opportunities in real time for place-bound preservice teachers without local K-12 institutions to serve as their hosts. Telepresence technology was originally conceptualized as the refinement of "robotic machines" into "new kinds of versatile, remote-controlled mechanical hands" capable of transforming the work force (Minsky, 1980, n.p.). Since then, the concept of telepresence technology has evolved to include other technological mediums that allow for both physical and social presence so that "a copresent person is . . . cognitively and emotionally involved in the same social space" (Schultze & Brooks, 2018, p. 711). Currently, the use of telepresence technology, although still limited in scope, is expanding in the field of education. Most notable, a growing body of research indicates that telepresence technology is effective in increasing accessibility to educational opportunities for homebound or geographically isolated students (Newhart & Olson, 2017), as well as expanding access to educational specialists for both students and teachers seeking professional development (Han, 2012; Kwon, Koo, Kim, & Kwon, 2010; Mitra, 2009).

The use of telepresence technology in teacher preparation programs is still exploratory, as researchers begin to examine the potential impact of its use. Daley and Murphy's (2019) pilot study suggests the use of telepresence technology "did not change [preservice teachers'] perceptions of the value of early field experiences," which primarily consisted of observing the cooperating teacher (CT) in the classroom (p. 68). Further research is needed to gain a more holistic understanding of how telepresence technology should be used in teacher education programs.

In this case study, the telepresence device used was the Double 2 (now in Double 3 production) from Double Robotics, which they note "give[s] you a physical presence at work or school when you can't be there in person" (Double Robotics, Inc., 2019). The device consists of an iPad port in which the driver's face is displayed, and the driver is able to see and communicate in real time with others in a remote space. The iPad port is supported by a Segue base that allows the driver to move around the room. Thus, the telepresence device facilitates physical and communicative presence when the driver is unable to physically share the same space as those of the community—professional, educational, or personal.

Co-teaching and the Student Teaching Experience

Whereas traditional face-to-face field experiences may follow a gradual release model, the telepresence-facilitated field experience in this case study began out of necessity as a collaborative venture—one in which the cooperating teacher (CT) and student teacher (ST) co-constructed the parameters of how they would leverage physical and virtual space to best meet the needs of the classroom. The CT's classroom served as the physical space that housed the telepresence robot; the ST controlled the telepresence robot's movements virtually from her home computer. Consequently, co-teaching practices became an integral part of the CT-ST relationship.

Co-teaching has its origins in special education, where partnering a general education teacher with a special education teacher allowed for greater "inclusive teaching practices [that] have increased the diversity of general education classrooms" (Gately & Gately, 2001, p. 40). Cook and Friend (1995) noted that students benefit by "bringing the strengths of two teachers with different expertise together," notably by "reducing the stigma for students with special needs" (pp. 3–4). In addition, co-teaching has been found to be a factor in increasing academic outcomes for all students (Cook & Friend, 1995; Hang & Rabren, 2009).

Soslau, Gallo-Fox, and Scantlebury (2019) define co-teaching in teacher preparation programs as "a model for learning to teach where teacher candidates and clinical educators work alongside one another and share responsibility for student learning" (p. 265). In this context, co-teaching is more than simply teaching with another teacher—it is the continual, recursive process of co-planning, co-instructing, co-assessing, and co-reflecting that positions both participants as valuable contributors to the classroom environment (Allen, Perl, Goodson, & Sprouse, 2014; Nissim & Naifeld, 2018; Soslau et al., 2019).

Theoretical Framework

Given the multitude of situations that preservice teachers face in their journey to becoming novice teachers, one would assume that the entirety of their experiences is a study in experiential learning; however, as Dewey (1923) notes, "Mere activity does not constitute experience" (p. 163). According to Dewey, "To 'learn from experience' is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence" (p. 164). This definition offers two important premises for understanding experiential learning: it involves recursive action, going "backward and forward" when making connections between action and consequence; and it requires active engagement with their environment in the process of learning. In many respects, teacher development is the art of learning from experience, a craft that requires active engagement, reflection, and awareness as preservice teachers navigate the multifaceted and new interactions that comprise their day.

In keeping with Dewey's concept of learning from experience, experiential learning theory (ELT) offers a unique framework for analyzing how participants engage in experiential learning, notably in their reflective practices that support their co-teaching practices as they adapt to use of the telepresence technology (Kolb, 2015). ELT posits that learning is "best conceived as a process, not in terms of outcomes," in which "concepts are derived from and continuously modified by experiences" (p. 37). In this model, learning is described as a "spiral . . . a recursive cycle of experiencing, reflecting, thinking and acting" (Kolb & Kolb, 2009, p. 297). Moreover, learning is experiential when it "develop[s] the students' personal agency" and

"develop[s] and maintain[s] a community in which students (and staff) share a sense of belonging" as well as "competence . . . in a wide variety of areas" (Carver, 1996, p. 154).

As the first telepresence-facilitated field experience for this university, and with no prior model on which to base this experience, ELT offered a framework for better understanding the unique relational dynamics between the CT and ST via telepresence technology. Specifically, the tenets of ELT illuminated the following aspects of the CT-ST relationship in this field experience: (a) reflective practice for learning (Kolb, 2015; Kolb & Kolb, 2009), (b) engagement with the classroom environment (Dewey, 1923), and (c) sense of belonging (Carver, 1996). What emerged from the case study was the centrality of co-teaching and co-reflective practices in leveraging telepresence technology to make the ST an integral part of the classroom.

Research Rational and Purpose

The Master of Arts in teaching program that serves as the basis for this case study is a prime example of how technology and globalization have spurred innovation to create experiential learning opportunities for preservice teachers while also meeting the needs and demands of an evolving profession. As one of several educational paths to teacher licensure in a Midwestern Division I university, this 12-month online program seeks to recruit and prepare preservice teachers across the country, as well as internationally, for the complexities of an increasingly diverse and evolving world. Central to the success of this program is the way it merges rigorous asynchronous online course work with synchronous field experiences in preservice teachers' respective communities to prepare them for the challenges of the classroom and to foster relationships within their communities.

Yet, as the program continues to grow in geographic scope, difficulties have arisen in providing preservice teachers with quality field experiences. These challenges mirror those of many distance teacher preparation programs, which inevitably have students across a large geographic area, each with its own set of cultural norms and expectations that inform its educational institutions (Simpson, 2006). In the spring of 2019, the university was unable to reach an affiliation agreement with a school district located in another state, which threatened to leave one geographically place-bound ST without viable options for a preservice teaching field placement. Thus, the program implemented telepresence technology to facilitate a field experience that would otherwise have been prohibitive.

While a substantial body of literature examines the use of virtual environments and technologies in educating hard-to-reach populations (Ally et al., 2014; Bartolome, 2009; Compton & Davis, 2010; Inverso et al., 2017; Nadolny et al., 2013; Nepo, 2016; Saunders, Rutkowski, van Genuchten, Vogel, & Orrego, 2011), little research has been done in how telepresence technologies may effectively bridge the access gap for preservice teachers place-bound geographically. Moreover, the specific factors that influence the CT-ST relationship in telepresence-facilitated field experiences need further exploration. Thus, this study examined how the ST and CT engaged in co-teaching and co-reflective practices in context to the telepresence-facilitated ST field experience.

Methodology

Case study methodology was selected for this research "for what it can reveal about a phenomenon, knowledge we would not otherwise have access to" (Merriam, 1998, p. 33). As the first telepresence-facilitated field experience for this university, case study proved to be "emergent and flexible, responsive to the changing conditions" of the placement (p. 8). This flexibility allowed for data collection processes that were responsive to the needs of the CT, ST, and classroom. Additionally, Florio-Ruane and Clark (1990) note that "the case study, unlike the lived experience, can be held still for the purpose of repeated examination from multiple perspectives" (p. 22). Analysis of data collected in this case study—participant reflections, observations, semi-structured interviews—offered nuance and depth in our understanding of the CT-ST co-teaching experience in telepresence-facilitated field placements.

Participants and Their Local Contexts

The Cooperating Teacher. The CT teaches third grade in a Midwestern rural community of just under 4,000 residents. With 19 years of experience, the CT had mentored numerous preservice teachers throughout her career. She also served as the technology touch point for her school, as her classroom was a hub for piloting new technologies. Thus, the CT's classroom was an ideal setting to host the telepresence robot that the ST would use to facilitate her movements and interactions with students and fellow educators.

The Student Teacher. The ST was a nontraditional student from a Southern state, seeking a master of arts in teaching degree. Due to the university and her local district's inability to reach a mutual affiliation agreement, the ST was left with no local options for a field placement. The ST would drive the telepresence robot from her home computer, manipulating its movements around the room as she worked individually with students and delivered whole-class instruction.

Data Collection and Analysis

Throughout the preservice teaching semester, the researcher gathered and analyzed observations and field notes, three semi-structured interviews, and individual e-mail correspondence between the researcher and the participants. Questions asked during the interview were descriptive and generally followed Spradley's (1979) "grand tour" approach (p. 86). The interview questions and the participants' responses encompassed various topics, including (a) descriptions of their routines, lessons, and interactions with students; (b) their frustrations and successes as they engaged with the technology; (c) their co-planning processes; and (d) their ongoing reflections on their teaching partnership and practices.

One of the limitations of the study was that, due to participant time restraints and different time zones, all interviews were conducted together during their joint planning period. While they were able to elaborate on each other's points, having joint interviews also could have hindered their willingness to express differing opinions on the telepresence-facilitated experience. E-mail correspondence, while less formal in nature, was a regular part of the field experience process. This mode of communication offered the CT and ST the opportunity to share immediate frustrations or concerns they may have not expressed in their joint interviews.

All data were analyzed using open coding, which allowed for recurring themes to emerge from the data, and subsequently from the CT's and ST's experiences in refining the telepresence-facilitated ST experience (Strauss & Corbin, 1990). Specifically, the researcher engaged in microanalysis of the data, "a form of coding that is open, detailed, and exploratory" (Corbin & Strauss, 2015, p. 70). This method was chosen because "it is designed to focus on certain pieces of data and to explore their meaning in depth" (p. 70). Microanalysis allowed the researcher to select pieces of relevant data as thematic patterns emerged. The data revealed a reliance on co-teaching practices to create meaningful experiences for themselves and the students.

Findings and Discussion

When the CT first told her third grade class they would have a "robot student teacher," the students were both excited and curious—they asked, What will she look like? Will she have arms? Indeed, the word *robot* conjured images more similar to Rosie the robot maid of *The Jetsons* than the Double 2 telepresence robot that would eventually become an integral part of their classroom. For the ST and CT, the initial questions about a telepresence-facilitated student teaching placement were grounded in the unprecedented nature of such an experience: How would it work? Will it work?

The data collected during the semester illuminates how the CT and ST not only made the placement work but also relied on co-teaching practices that maximized the use of telepresence technology. Analysis of the data revealed three key themes in relation to how the CT and ST worked through and with the telepresence technology to create meaningful experiences for themselves and the students: (a) the co-teaching relationship, (b) co-instructional considerations, and (c) co-construction of space. Their experiences offer important insights for future applications of

telepresence technology in education field experiences.

Co-teaching Relationship

Given that a telepresence-facilitated field experience was a new endeavor for the university's Master of Arts in teaching program, the CT, and the ST, the experience was co-constructed by all parties. Both the CT and ST assumed the role of learners, as they adapted to use telepresence technology as the main vehicle for the ST's presence in the classroom. Moreover, the CT and ST worked collaboratively to build a relationship that would support the ST's professional growth, as well as the academic growth of the students. Carver's (1996) framework for conceptualizing experiential learning offers a foundation for understanding the development of the CT-ST relationship as a learning experience. Specifically, Carver notes that experiential learning results in a "share[d] sense of belonging" as learners develop "personal agency" and "competence, which means learning skills, acquiring knowledge, and attaining the ability to apply what is learned" (p. 10).

Developing a shared sense of belonging was a primary goal for the CT as both the CT and ST encountered challenges, some of which were directly connected to the use of the telepresence technology. The CT's guidance was instrumental in ensuring the ST was included in meaningful ways in the daily activities of the classroom. Initially this meant helping the students understand how interacting with the ST via telepresence would be a different experience from a traditional face-to-face field experience. The CT reflected on speaking to the students about listening to the ST: "I emphasize that they need to listen as she is reading and following along in the story because it may cut in and out. . . . It's training their ear to listen to the technology." While CTs typically would expect their students to listen to the ST, the key to including the ST in a telepresence-facilitated experience is not only to listen to the ST but also to listen to the technology, as glitches in the technology may mean the ST is continuing on with a lesson, unaware the students can no longer see her. Thus, to ensure "a sense of belonging" for the ST, the students and CT had to be attuned to both the ST and the technology that facilitated her presence. Throughout the semester the researcher observed other cases of students' inclusion and engagement with the ST, at the encouragement of the CT: they would tap her screen when it went blank; they would move items out of her way when she was moving from student to student; they would ask her questions about their work and invite her feedback. This, in turn, allowed the ST to continue developing "competencies" in teaching (Carver, 1996, p. 10), despite the challenges the technology presented at times.

In addition to developing a sense of inclusion and belonging, the CT-ST relationship was also strengthened by continual encouragement, even in the face of challenges. One notable challenge entailed the ST's inability to clearly see student work, and her frustrations with feeling like she was getting in the way of the students' learning:

> I can't see what they're working on, so I struggle with feeling like a burden. I don't want to keep asking the kids questions when they are working. So that's the struggle. I think structured is great, when we are working on something in a group.

For the ST, the telepresence-facilitated placement positioned her in the classroom in a completely new way, one in which her interactions with students was significantly altered by her lack of physical presence. Her feeling of being "a burden" coincided with her inability to "see what they're working on" and her dependence on having to ask students to share their work with her.

Yet, in that same interview, the CT offered a different perspective on the dynamics between the ST and the students:

> Whenever you do ask them questions, I don't think it is bothersome and annoying because, honestly, it keeps most of them on track, in general....To continue encouraging you, it hasn't been by any means a distraction for any of the kids. They enjoy it. I was watching them, and they were excited about you asking them about their stories.

The CT's response to the ST's concerns affirmed her presence in the classroom by highlighting a key role she played in the educative

process of the students (the ST was able to offer proximity control and thus "keep . . . them on track"). In addition, the students welcomed her presence because they enjoyed sharing their stories. The CT's response aligns with ELT's second stage of development in experiential learning: reframing, which involves taking "reflective observation" and "examin[ing] assumptions and refram[ing] issues, adopting alternative perspectives that produce a deeper understanding" (Kolb, 2015, p. 58). In this instance, the CT challenged the ST's initial negative self-ideation and offered an affirming perspective on the ST's interactions with students.

Throughout the semester, interactions between the CT and ST aligned with Gately and Gately's (2001) definition of effective interpersonal communication, a communication style that models effective practices whereby co-teachers value each other and their contributions to the classroom environment. During this process, the CT regularly affirmed the ST's presence:

> And they really missed you yesterday. I told them in the morning that you weren't going to call in, and by the end of the day they were asking "why didn't she call in?" I told you, she wasn't calling in! And they were like: "But we missed her! It was really kind of funny! They kept looking over at the Double, like they were waiting for you to come on and start rolling around!"

The CT's casual mention that the students "missed [her] yesterday" indicated respect and appreciation for the ST's presence. While this type of communication style is also important in traditional field experiences, it was particularly integral to building a functional co-teaching relationship in a telepresence-facilitated field experience, in which the lack of physical presence meant the ST had to engage with the classroom in new ways.

Co-instructional Considerations

The lack of physical presence also meant the CT and ST had to be strategic in how they incorporated the ST in delivering instruction. Rather than defaulting to one teach, one observe practices as the primary form of engagement, the CT and ST were intentional in being as actively engaged as possible (Allen et al., 2014; Gately & Gately, 2001). In addition, they had to consider the best ways to fill the ST's pedagogical gaps in content knowledge, as she learned the material and how to best convey it through telepresence. The ST shared how the students responded to the telepresence-facilitated field experience and their co-teaching during the small-group reading-strategy lessons:

> Students have taken to this very well. They say hi. It seems like I've always been here. It hasn't been a huge distraction. The interventions [reading lessons] have been going well. However, I am not able to see students' work. Sometimes we have feedback issues. For me personally, the struggle is that I don't know the rules that the CT knows, and she will chime in, thankfully, because I don't know that stuff. I think that is something that is going to come with the experience of being a teacher.

In this interview excerpt, the ST indicated how the CT would fill pedagogical gaps in knowledge, which the ST attributed to her lack of experience. The CT would offer clarification of content or rephrase content to ensure student learning. During their small-group reading time, the CT and ST continued to refine their practices. They constructed an instructional rhythm in which the CT would pass out manipulatives while the ST would deliver the lesson. The CT would offer follow-up questions to supplement the lesson, as well. More often than not, the CT and ST would engage in the one teach, one assist model of co-teaching, each alternating the lead role as it best suited the lesson and student needs (Allen et al., 2014; Nissim & Naifeld, 2018).

Their instructional rhythm was contingent on continuously reflecting and acting on those reflections, as they built automaticity in their planning and delivery. Tasks that were initially challenging due to navigating the telepresence technology became more intuitive to the CT and ST as the semester progressed. The process of developing automaticity in their teaching practices corresponds with Kolb and Kolb's (2009) experiential learning cycle, in which learners, as part of a "concrete experience," proceed to engage in "reflective observation" from which they derive

"abstract concepts" or meaning that leads to "active experimentation," or action (p. 299). Co-planning presented challenges to the CT and ST that required a degree of trial and error. There was the initial issue of sharing materials and ensuring the ST could access the materials to learn the content and pedagogical expectations. The CT and ST solved this problem by creating a Google Drive folder in which the CT and ST would post the necessary materials for their lessons.

Yet, having access to the materials did not account for the last-minute changes that would often occur as the CT reflected upon their lessons. The CT noted this was harder to do because the ST "wouldn't have the chance to catch up." Critical reflection led to "active experimentation," as they began to incorporate texting into their co-teaching practices to accommodate continuous reflection and shifts in their teaching (Kolb & Kolb, 2009, p. 299). This addition to their in-class communication allowed for immediate changes in the direction of a lesson without causing too much disruption to the classroom setting.

Co-construction of Space

Throughout the ST experience, the CT and ST navigated virtual and physical space to meet the needs of the students. For the CT, navigating these spaces also meant shifting how she positioned herself as a mentor: in addition to addressing the typical concerns in every ST placement, she also had to consider how her teaching practices were being conveyed virtually. When asked how a telepresence-facilitated field experience differed from traditional face-to-face field experiences she had hosted in the past, the CT stated:

> I mean, the physical thing is the difference—not having her here. And more, I felt guilty because I was throwing all of this curriculum at her, and I'm trying to explain it through a screen, but not showing it and sitting down, and going through things together. I said to my husband, "I feel like I am 'on' all day because I want to be able to do what is best for [the ST], so that she can see." And he's like "Aren't you 'on' everyday?" [She laughs] . . . I think of things a little more in depth—she is trying to learn from me, and so I am trying to think of how do I really convey this lesson without her just seeing it.

To "do what [was] best for" the ST, the CT adapted her practices to ensure the ST could "see" her model content development and delivery. Thus, her modeling took into account the ST's virtual space. According to Dewey (1938), the essence of an experience is contingent on "the transaction taking place between an individual and what . . . constitutes his environment" (p. 43). For the CT, creating a meaningful learning experience for the ST meant engaging the physical environment (the classroom) in ways that conveyed meaning through the ST's virtual environment.

The ST also engaged in a "transaction" with "what constitutes [her] environment," namely, her virtual presence in the classroom (Dewey, 1938, p. 43). The ST's ability to virtually manipulate the telepresence robot's movements meant she had a three-dimensional presence in the classroom despite the limited view compared to being physically present. The CT and ST collaborated in making changes to the classroom environment that would prioritize the ST's presence. The CT described one such change they made in addressing this goal:

> The kids really like to be on the floor, but that is one of the things I talked to the kids about, "Like hey, it really is much better for [the ST] to see you and talk to you when you're up on a table, so that she knows you're there—or so she doesn't roll over you." [CT laughs]

While the telepresence robot allowed the ST to engage in meaningful ways in her field experience, there were limitations in how the ST could engage with others. One notable limitation was that she could not zoom in on objects, and she could not angle her range of vision, which made it difficult for her to help students that were sitting on the floor. Therefore, the CT and ST rearranged the layout of the room to increase not only her mobility but also her access to students.

As the CT and ST adapted to the space together, they developed strategies to communicate more effectively with students. For example, during one lesson, the ST was calling on students to

answer questions pertaining to their reading. In a chair next to her, the CT was texting her the names of students that had their hands raised but the ST may not be able to see. This allowed the ST to call on students that were beyond her peripheral vision. This solution resulted from ongoing reflection and action, as they leveraged their technologies to address spatial concerns. The CT's and ST's consideration for each other's space within the classroom aligns with Kolb's (2015) third stage of experiential learning development: reform, "the process whereby action is reformed by reflection and reflection is reformed and informed by action" (pp. 58–59). In this praxis, the CT was communicating to the students that her co-teacher, the ST, was an integral part of their classroom community (Gately & Gately, 2001; Kolb, 2015).

One of the advantages of the telepresence technology was the CT's and ST's ability to expand the educational space for their students by incorporating the ST's physical space into the classroom. Her hometown became a point of conversation for the students, as they compared their community with hers. The ST was also able to include her family in her ST experience, as noted in her written reflection:

> My family and teacher friends were all very interested and curious regarding this experience. It would come up often in conversation regarding how it's being done, etc. My grandfather, who is a Brown University graduate and taught for many years, was very interested. During a spring break trip visiting my grandparents (I was actually in [a different state] . . . and still logged on in [the classroom]) I was able to show my grandfather how the robot works (with the approval from [the CT], of course.) He was fascinated and the students loved meeting him, all saying hello, it was so cute!

In this instance, the telepresence robot facilitated not only the ST's placement but also her ability to share an experience and space with her family and, in turn, an important part of herself with her students. Ultimately, the CT's and ST's manipulation of space reflected their co-teaching relationship, which served as a foundation of the telepresence-facilitated experience—a foundation built on affirming each other's presence through meaningful inclusion.

Conclusion

Studies in the use of technology in educational settings still tend to focus on asynchronous instruction, which, while increasingly allowing for collaboration and experiential learning, is geared toward simulations rather than synchronous, continuous real-time instruction to real students (Bartolome, 2009; Nadolny et al., 2013; Saunders et al., 2011). As this case study illustrates, telepresence technology can broaden access of distance teacher education programs to place-bound individuals without access to local field experiences. Thus, this study adds to the growing body of research that suggests telepresence technology can have a positive impact on the teaching profession by providing educational opportunities that would otherwise be inaccessible and by supplementing regular classroom teaching (Sharkey, 2016).

However, while telepresence technology can extend opportunities, the strength of the experience is contingent on the partnership built between the cooperating teacher and the pre-service teacher—a partnership that must capitalize on their relational strengths to create meaningful learning opportunities for their students. This study highlighted three key components to the co-teaching partnership between the CT and ST: (a) co-teaching relationship, (b) co-instructional practices and considerations, and (c) co-construction of space. The CT's and ST's engagement in these components required continual co-reflexivity—co-reflection followed by informed co-action. For the CT and ST, this cycle was an intrinsic part of their daily problem solving and collaboration.

For rural schools, such as the one that hosted the ST in this study, welcoming an ST from another community via telepresence can offer new insights and opportunities for their students. As the CT in this study noted, this experience was enriching for her students because it allowed them to see that "someone created a tool to help others, . . . and the world is a bigger place." Furthermore, while the use

of telepresence technology to facilitate field experiences is a relatively new phenomenon, the findings of this research may help inform its use in other areas of education, in particular in addressing the steep teacher shortages facing rural communities.

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Mutual Mindsets: The Hassles and Hopes of Co-teaching in Teacher Preparation

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Isolation between academic fields is an unfortunate reality in higher education and teacher education. Whereas current educational reforms invoke a need to collaborate, faculty are often unsure of how to design collaborative experiences. Research argues for the use of co-teaching to engage teacher candidates in beneficial learning experiences where instructors model the collaborative practices desired in those candidates. Additionally, the use of co-teaching in rural settings is shown to address some of the challenges associated with rural teacher preparation. With the hesitancy of many in higher education to engage in co-teaching in teacher preparation, it is crucial that those who do co-teach share the design, implementation, and perceptions of the process with others. This article presents the design, implementation, and reflections of students and teacher preparation faculty: one content methods instructor and one content literacy instructor. The authors present the hassles and hopes of using co-teaching in teacher preparation in rural regions to enhance course content and collaboration among teacher candidates.

***Keywords*:** co-teaching, disciplinary literacy, history education, social studies education, literacy education, collaborative teaching, teacher preparation

Collaboration is an underutilized enterprise in higher education. Teacher preparation within higher education provides an arena of promise for real collaboration, yet collaboration is impeded by the very nature of academic silos. Curriculum changes like the Common Core State Standards (CCSS) have illuminated the need to unite heretofore separately taught elements within teacher preparation (CCSS Initiative, 2010). For instance, within social studies education the *College, Career, and Civic Life (C3) Framework for Social Studies State Standards* (National Council for the Social Studies, 2012) provides a clear example of how the CCSS shed light on the need to unite social studies content with literacy. Teacher candidates (TCs), particularly those in secondary programs, cannot view their content pedagogy in isolation but must see the linkage between their discipline and the important contextual and foundational elements of teaching, such as addressing special needs of students and literacy development. Further, preservice teacher performance assessments such as edTPA have illuminated an increasing need to develop TCs' abilities to teach academic language in all disciplines and enhance students' abilities to read, analyze, and interpret texts in all classrooms. This is especially important at the secondary level, as research shows that literacy practices become more complex as students shift from learning to read to reading to learn new information (Shanahan & Shanahan, 2008). Because of this increased complexity at the secondary level, it is important that teachers and students recognize the significance of the connections between literacy and disciplinary content knowledge. This linkage inherently requires that teacher educators use real, substantive collaboration in their work.

While collaborative courses in teacher education are not new, these courses have historically focused on the work of special education

and general education faculty (Kluth & Straut, 2003; Letterman & Dugan, 2004; Pugach & Blanton, 2009; Vermette, Jones, & Jones, 2010). However, this approach to teaching is relevant across all disciplines, particularly when collaborative teaching benefits students by exposing them to multiple perspectives and different teaching styles (Kluth & Straut, 2003; Letterman & Dugan, 2004; Pugach & Blanton, 2009; Vermette et al., 2010). Further, collaborative teaching benefits instructors by helping them gain new knowledge, strategies, resources, and information from each other (Nevin, Thousand, & Villa, 2009).

Dugan and Letterman (2008) asserted that "co-teaching has been used as a tool for integrating material from different disciplines and remedying problems" (p. 11). Other researchers have argued that co-teaching or collaborative teaching, terms used synonymously and interchangeably in the present study, address many of the problems commonly associated with teacher education (Coffland, Hannemann, & Potter, 1974), take advantage of the strengths of each instructor (Crow & Smith, 2003) and assist with the flow of content (Mielke & Rush, 2016). As Pugach and Blanton (2009) have noted, for collaboration to be successful, the collaborative process must be examined carefully. The present study presents a model used by two teacher education faculty, at a university in a predominantly rural area, to collaboratively teach a social studies content methods course and a content-area literacy course. The research question guiding this study was how co-teaching a combined content methods and content literacy course enhances course content and collaboration among instructors and TCs in rural teacher education settings.

Literature Review

Co-teaching in Rural Education

Rural areas face such educational challenges as access to economic and educational resources (Lamkin, 2006), population loss (Corbett, 2016), and the ability to recruit applicants for school positions because of geographic location and financial limitations (Pijanowski & Brady, 2009). Additionally, rural schools often face higher turnover than nonrural districts (DeAngelis & White, 2011; Ewington et al., 2008). Given these challenges of rural regions, teacher preparation programs can support these areas by preparing teachers to find success within these schools. Research shows that, when teacher preparation programs do not provide TCs with opportunities to engage in rural communities, they often leave unprepared for rural placements (McDonough, Gildersleeve, & Jarsky, 2010) or with no desire to teach in rural settings (White & Kline, 2012). One way to address this concern is to provide opportunities for TCs to engage in practicums in rural settings offering authentic experiences and to understand rural schools and communities (Moffa & McHenry-Sorba, 2018).

Teacher education programs in rural areas often struggle to place TCs due to limited availability of teachers willing to host students (Sinclair, Dawson, & Thistleton-Martin, 2006). Research supports the use of co-teaching in rural settings as a way to address these challenges. Specifically, engaging TCs in a 2:1 co-teaching setting (two TCs and one cooperating teacher) requires fewer cooperating teachers, thus allowing larger numbers of TCs to be placed in rural schools (Tschida, Smith, & Fogarty, 2015). It also provides the opportunity for TCs to build teaching and learning relationships with both their cooperating teacher and a peer throughout the semester. With combined knowledge, the participants engage in planning and implementing lessons to support student learning.

In this study, the co-teaching process and lessons supporting student learning focused on discipline-specific literacy instruction. Wineburg (1991) discusses the importance of discipline specific literacy instruction in social studies, particularly engaging students in literacy processes that allow them to read like historians and interact with texts in discipline-specific ways, such as sourcing, contextualizing, and corroboration. These literacy strategies promote higher-order thinking and challenge students to engage with texts through multiple perspectives. This approach aligns with Lester's (2012) assertions that literacy should help students make connections to places and communities.

Lester (2012) not only discussed the importance of connecting literacy to history, community, culture, and so forth, but also focused on the importance of quality literacy instruction in rural settings, specifically because of the limited resources in these areas, such as public libraries, opportunities for affordable preschool, and options for higher education. In addition, Lester examined how teachers could improve literacy development and success in rural areas. She reflected on her own experiences as a student and as a teacher in rural settings, which helped her consider how best to meet the needs of her classroom students. It is important not only to examine the experiences of in-service teachers in rural settings but also to explore experiences of TCs. In their research on co-teaching in teacher preparation, Tschida et al. (2015) discussed the importance of examining the experiences of TCs in teacher preparation programs in rural regions. Similar to their study, the present study examined the experiences of TCs as they engaged in a co-teaching model as part of their practicum experience and worked to support literacy engagement in content-area courses.

Why Collaboration Is Needed

Academic silos have long existed in higher education (Baldridge, Curtis, Ecker, & Riley, 1986; Jones, 2013). University faculty, especially new faculty, often work in academic isolation (Norrell & Ingoldsby, 1991). Co-teaching in higher education, where two or more instructors collaborate to design and deliver a course together, has gained increasing support in recent years as a model that encourages collaboration and develops effective instructional practice that benefits both students and instructors (Bouck, 2007; Chanmugan & Gerlach, 2013; Cohen & DeLois, 2001; Crow & Smith, 2003, 2005; Gillespie & Israetel, 2008). One benefit of co-teaching has been that reflection between colleagues becomes an open process, with an increased likelihood that new skills will be practiced and refined (Chanmugan & Gerlach, 2013). Another benefit, particularly for co-teaching faculty in teacher education programs, has been that co-teachers can model risk taking and varied responses to questions and issues in a climate that demonstrates the importance of diverse perspectives in instruction (Harris & Harvey, 2000).

The Hassles and Hopes of Collaborative Teaching

More than 40 years ago, Coffland, Hanneman, and Potter (1974) used collaborative teaching to respond to a number of problems witnessed by teacher education programs at that time, which are still present today: redundancy and gaps in teacher education curriculum, a divorce between educational theory and real classroom practice, the impersonal nature of teacher education programs at large institutions, and an ongoing demand for excellence in the field. After team teaching a block of courses that had previously been taught separately, the researchers reported a series of "hassles" and "hopes" for the future of collaborative teaching in teacher education. Some of the primary hassles were (a) inability to come to consensus over some of the core course behavioral outcomes, (b) limited time for planning, (c) inability to reconcile philosophic differences, and (d) not enough time in the term to achieve all of the stipulated goals. Despite these issues, they found their collaborative teaching presented hopes for future implementation: (a) increased personal knowledge of education students, (b) stimulation of their own teaching practice, (c) prevention of overlaps and gaps in the curriculum, (d) flexibility in scheduling, and (e) the sharing of predictive assessment outcomes that informed them of education students' needs as they headed into their full-time internship. Finally, the faculty involved in the study found the collaborative teaching experience changed their behaviors, providing opportunities to discuss the daily problems of college teaching, facilitating the sharing of concerns about individual students, and allowing the faculty participants to observe and learn from their colleagues.

Other research on co-teaching in higher education has yielded more hopes. Wehunt and Weatherford (2014) found that co-teaching a research methods course for graduate students enhanced feelings of respect for both students and co-teaching partners. Moreover, they found that the co-teaching process modeled effective teaching and learning behaviors for their students. They reported the benefits of affirmation and of facilitating think-aloud practices in the co-teaching process.

Mielke and Rush (2016) implemented a collaborative teaching model in a combined literary theory and pedagogy class. The researchers used Nakamura and Csikszentmihalyi's (2001) flow theory and concentrated on the flow of content between co-taught courses. They found the instructors learned to "get out of each other's way" and still "be in the moment" (p. 53). They also found that through the co-taught course they were able to develop and share a mental model for and with students. This enhanced student connection to course material and allowed the instructors to take advantage of their own teaching strengths. The researchers reported improved communication as a result of the collaboration and a growth in their own teaching: "Teaching is a learned activity; even while in the process of teaching the teacher is learning" (p. 51).

Existing literature on co-teaching and content-area literacy showcases a need for collaboration of faculty members across disciplines to meet the academic needs of students. Although some researchers have found no significant increase in student performance and no significant difference in student evaluation of instruction in higher-education co-teaching environments (Wadkins, Miller, & Wozniak, 2006), the theoretical and pragmatic benefits in advancing both student and instructor skill sets and communication suggest much promise in the practice.

Theoretical Framework

The present study is grounded in the premises of Vygotsky's social development theory (1962, 1978). Vygotsky (1978) asserted that an individual's development is a by-product of first interpsychological functions and then intrapsychological functions. Applied to teacher preparation, Vygotsky's assertion that learning is socially constructed would imply that a series of social learning interactions would necessarily precede any individual learning in teacher training. This framework is aligned with the goals and expectations of the co-teaching model for both professors and students. Vygotsky posited that students learn through interactions with peers and are then able to internalize knowledge independently.

The co-taught combined course in this study were designed to enhance opportunities for the instructors to collaboratively design directed and guided interactions, where TCs interacted with two instructors who not only presented content but also modeled the social, collaborative behaviors expected of classroom teachers in the current educational climate. Students were also given the opportunity to co-teach with their peers before moving to a more independent teaching experience. From this theoretical position, reflective and collaborative attitudes and behaviors modeled by instructors (Vygotsky's "more knowledgeable others") would translate into similar attitudes and behaviors among the TCs. This theoretical position aligns with the findings that co-teaching provides opportunities for faculty to model wanted teaching and learning behaviors for students that ultimately contribute to retention of content and development of skills (Harris & Harvey, 2000; Mielke & Rush, 2016; Wehunt & Weatherford, 2014).

Methods

Implementing the Co-teaching Model

The research question guiding the present study was how co-teaching a combined content methods–content literacy course enhances course content and collaboration among instructors and their student TCs in a rural teacher education setting. The investigation involved a literacy instructor and history/social studies education instructor co-teaching a combined content-area literacy course and a history/social studies methods course. The course instructors were also the researchers leading the study, and the identifiers *instructor* and *researcher* will be used interchangeably. The collaborative combined course was taught in an undergraduate program in a rural area at a university in the Southeast. The co-taught course included 18 history/social studies education majors in their junior year in the program. TCs had previously completed an early-experience course and an introductory social studies curriculum and planning course. The TCs were enrolled in the combined course and received instruction on history/social studies curriculum and planning, content and disciplinary literacy strategies and methods, and basic history/social studies teaching

methods. TCs observed teachers, planned lessons, and taught in the field as part of a practicum experience. The goal of the combined course was to help TCs identify and integrate literacy strategies into history/social studies content, encouraging them to be teachers of both literacy and history/social studies, and to work collaboratively to teach more effectively.

Data Collection

Data were collected during the spring semester of the TCs' junior year. Data sources included observation videos of TCs' lessons, data from a student survey conducted at the end of the combined course, and instructors' meeting notes. TCs video recorded their lessons three times throughout the semester and uploaded those videos to a secure site for instructor viewing and analysis. Surveys were conducted using Qualtrics, a password-protected survey interface endorsed by the university, and focused on student perceptions of the co-teaching model. Along with instructor meeting notes and memos, these data sources allowed for a detailed analysis of TC and instructor perceptions of enhanced course content and effectiveness of instruction.

Data Analysis

Observation videos were analyzed chronologically (first recorded, first analyzed) to determine emerging themes in the data. Videos were analyzed using open coding (Saldana, 2016). Qualtrics surveys were analyzed focusing specifically on questions 4–7:

1. What are the benefits of being a student in a co-taught social studies methods–reading course?
2. What are the drawbacks of being a student in a co-taught social studies methods–reading course?
3. What were the benefits of being a partner in a co-teaching practicum experience?
4. What were the drawbacks of being a partner in a co-teaching practicum experience?

Video data were compared with survey data and, initially six potential categories were identified that related to student perceptions of the co-taught combined course:

The importance of the literacy-history connection
Clear connections between literacy and history
Literacy strategy instruction
Increased feedback
Observing multiple perspectives
Increased support systems

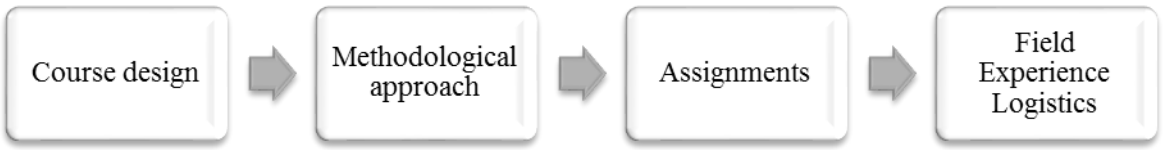

Figure 1. Organizational process for collaborative planning

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After reviewing and color-coding the video and survey data based on these initial themes, these six categories were collapsed into two themes: the opportunity to learn together and the opportunity to link history/social studies and literacy. Instructors discussed and coded memos and meeting notes and identified similar themes emerging from the instructors' reflections: the opportunity to learn together as co-teachers and the opportunity to reflect on practices.

Implementation

Purposeful Planning. The instructors took a purposeful approach to planning and implementing the combined course and worked to establish common goals. Initially, the two faculty members set up meetings to plan. These meetings were designed to address the issues shown in Figure 1 above.

The planning meetings were held in the semester prior to the teaching of the combined course and focused on both content and process, creating assignments that met the needs of both literacy and history/social studies goals and objectives as suggested by Letterman and Dugan (2004). It was imperative the instructors show mutual respect for the ideas presented in the planning phase and set aside time to plan effective instruction centered on course goals. Interestingly, both instructors brought forth the same overarching goal that guided the collaboration: that students clearly and explicitly make the connection between literacy and history. Pugach and Blanton (2009) suggested one of the dimensions of an effective collaboration between faculty members is not only the amount of time spent meeting and planning together but also the effectiveness of this time in terms of what is being accomplished, such as developing assessments, syllabi, and field experiences. It was important the instructors have a purposeful approach to the collaboration process, supported through thoughtful planning.

The first meeting began with the discussion of course goals and a plan for the content of each class session. Additionally, the instructors/ researchers discussed possible program/research evaluation questions aligned with the two main elements of the collaboration: subject-specific content literacy strategies and co-teaching the content literacy-methods combined course. The instructors held a second meeting where they developed a tentative syllabus focusing on major topics for the combined course, and further discussion followed regarding program outcomes and research questions (see Table 1).

In creating the syllabus, the instructors discussed and addressed goals and objectives for each original course as the combined course structure was created. The course goals aimed to assist students in making the connection between history and literacy in their practicum classrooms while embracing the required content and literacy standards, and to demonstrate the importance of collaboration in effective instruction.

Table 1

Major categories for collaborative syllabus construction

Topic	History/social studies	Literacy
Introductions Why content-area literacy? Standards	State social studies standards	Common Core standards for literacy in history/social studies
Planning	Unit and lesson planning	Unit planning with strategies for struggling readers
Planning	Unit and lesson planning	Unit planning with strategies for diverse learners
Source analysis (field experience observations)	Evaluating primary sources	Evaluating primary sources through the reading-writing connection
Deeper reading (field experience 2:1 co-teaching)	Reading like a historian	Examining vocabulary and academic language
Teaching resources (field experience 2:1 co-teaching)	Exploring textbooks	Text variety
Cooperative learning (field experience 1:1 teaching)	Methods for integrating cooperative learning	Using collaborative environments to engage students with texts

The instructors focused on specific content goals and general and specific literacy strategies. During these meetings, they generated a list of needed documents and documentation based on the assignments and experiences developed in the syllabus. For example, the university co-teaching instructors designed an observation tool for use by the practicum TCs to observe their peers and their cooperating teacher. In addition, the instructors created reflective prompts for TCs to reflect on their observations and experiences in the field.

Following these fall planning meetings, the co-teaching instructors contacted the partner school cooperating teachers, who provided feedback and offered revision suggestions on the practicum schedule. The co-teaching instructors then met with school partners at the outset of the spring semester, and all stakeholders scheduled and planned cooperating teacher training and made teacher assignments based on course enrollments and teacher availability. Two weeks before the field experience component of the combined course, an informational and training session was held with the cooperating teachers of the partner school. At this training the co-teaching instructors shared the timeline and protocols for the field experience, addressed any scheduling concerns that had arisen, provided the cooperating teachers with the practicum TC assignments, and delivered a workshop on tips and strategies for facilitating a positive co-teaching relationship between the cooperating teacher and the TCs.

Scaffolded activities and assignments guided the field experience portion of the combined course, with TCs first observing classroom teachers. After initial observations, the field experience was designed for the TCs to schedule planning times with a peer and the classroom teacher to plan and implement co-taught lessons. After two weeks of video-recorded co-taught lessons with a peer and a cooperating teacher (2:1 co-teaching), TCs were required to teach a lesson with their cooperating teacher (1:1 co-teaching). All lessons were video recorded for TC and instructor review/reflection. This design allowed collaboration among classroom teachers and TCs while preparing them for independent teaching at the end of the combined course.

One of the major benefits of this overall course design was the inclusion of the scaffolded field experiences for the TCs. The instructors/ researchers sought to examine how the strategies learned in the co-taught methods-literacy combined course were implemented in the field. Therefore, during the planning phase, the instructors were intentional in developing TC knowledge of standards, lesson planning and diverse learners before students entered the field.

Integrated and Balanced Course Structure. Because this was a combined course, the class met for two entire university class periods. The instructors scheduled both collaborative and independent teachings sessions, depending on the class topic and student needs. The combined course included three major areas of exploration and skill development (see Figure 2). The model carried TCs through a detailed introduction to CCSS and state standards, with close attention to the interrelationship between history/social studies and literacy, which drove TCs' integrated and balanced content and literacy methodological approach in planning their lessons.

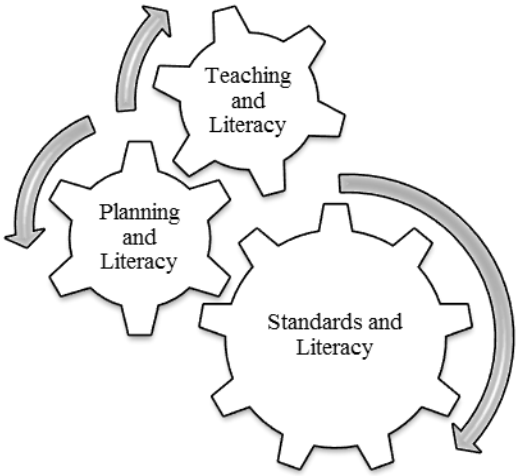

Figure 2. Approach to course design

In the standards and literacy stage during classes 1 and 2, TCs were provided instruction that linked literacy to the state standards. The history/social studies instructor felt it was essential to first develop TCs' awareness of the required state standards in history/social studies. The literacy instructor wanted to show TCs the role of literacy in their content area through the lens of the CCSS for literacy in history/social studies. Therefore, the first class period focused on introducing the combined course and the importance of content-area literacy and exploration of the standards. This class session laid the foundation for the combined course and explicitly discussed why it was being co-taught, the research about literacy integration, and the goals and objectives for the semester. In this class, the instructors articulated beliefs about literacy as a tool for content acquisition and a responsibility for all teachers.

The next four class periods focused on the planning and literacy stage, with the history/social studies instructor teaching components of unit and lesson plans and the literacy instructor teaching and explicitly modeling literacy strategies for unit and lesson planning with a focus on the needs of diverse and struggling readers.

In classes 7–12, during the final teaching and literacy stage, TCs were introduced to their practicum teaching site, in a rural school, and observed history/social studies teachers for a few weeks. This placement in a rural setting was intentionally selected and crucial to combating feelings of lack of preparedness and hesitancy in teaching in a rural setting (McDonough et al., 2010; White & Kline, 2012). While participating in the on-site practicum experience, TCs were also required to complete online literacy and history/social studies modules for the combined course. The online modules, in alignment with CCSS and state standards, focused on evaluating various sources (including primary sources) using learned principles that emphasized the reading-writing connection. After 2 weeks of observation, TCs began their practicum teaching, integrating strategies learned from the co-taught combined course. During the initial two practicum lessons the TCs were asked to co-teach with a peer (2:1). This co-teaching continued the scaffolded approach to the field experience and was necessitated by the lack of available cooperating teachers, an issue common in rural schools (Sinclair et al., 2006).

Throughout their weeks of teaching, the TCs continued to complete online modules focused on vocabulary, using collaborative environments to

engage TCs with texts, and using multiple texts to teach content. Additionally, planning between the instructors continued as they met face-to-face at the practicum site, before class, or communicated through e-mails to discuss TC concerns, observations, future plans, field experiences, and course structure.

In the closing 3 weeks of the semester, TCs engaged in reflection of their practice, debriefing of the experience, and a more general discussion of topics centered on development of a positive and inclusive classroom environment. TCs explored topics related to classroom management, cooperative learning, and rural settings because during the practicum experience they gained first-hand experience and insight into the contextual elements of teaching. TCs had observed classroom management issues and experienced the need to foster collaboration and collective effort.

The structure of the combined course was noteworthy because the instructors created a collaborative experience that exemplified the connections between literacy and history/social studies and provided learning experiences that ensured TCs would be able to identify literacy strategies during their observations and implement literacy strategies while teaching. With this in mind, the combined course was designed with one-third of the semester in face-to-face co-teaching delivery on the university campus, in part to model co-teaching, and the remainder of the time was spent in the high school practicum placement to provide the TCs the opportunity to interact and teach in a rural setting, with the instructors observing TCs. The time spent in face-to-face sessions involved a 4-hour block dedicated to the co-taught combined course.

Reflecting on Practice. The instructors carefully planned assignments to reflect the goals of each content area. Before the practicum experience began, TCs were required to create unit and lesson plans that focused on close reading of texts. TCs worked collaboratively to create writing and vocabulary activities that could be used with primary source documents. In addition, the TCs created tasks geared toward struggling and diverse learners, analyzed primary source documents, and created text sets. These activities (see examples in Table 2) were assigned to help TCs improve the literacy development of the rural students (Lester, 2012).

Reflective assignments were also a component of the combined course. The first day in the practicum experience TCs were required to post to blogs reflecting on their observations of their peers and cooperating teachers at their practicum site, focusing on how literacy was integrated into each history/social studies area lesson. After the first day of observations, TCs were provided with the following prompt to complete on the class blog:

So now you have had the opportunity to see your cooperating teacher in action. What were some strategies you saw used today that supported literacy among students in social studies classrooms? What was evidence you saw that students observably, demonstrably, or measurably "got it" during the lesson? What tool, trick, or tip did you see that you will be certain to use once you start your own teaching? Share your responses below so we can gain from our collective experience.

With this prompt TCs considered how their paired classroom teacher integrated literacy into the social studies classroom and considered strategies they might use in their own classrooms. After their first co-teaching experience, TCs were asked to reflect on their practices with the following prompt:

Share with us something you did today that you felt really worked well in the lesson segment (feel free to look at your video for ideas). What was observable, demonstrable, or measurable evidence that this worked? How do you know it was a successful teaching moment? Share your thoughts on these questions/prompts below.

At the conclusion of the second co-teaching lesson, before TCs embarked on their independent teaching lesson, they were asked to share their reflections via the class blog again:

What lesson(s) have you learned in this 2-week 2:1 co-teaching experience that you will carry with you to your 1:1 teaching in a couple of weeks? Perhaps it's something you will continue to do or something you will never do again. Why is it such a valuable lesson?

Table 2

Sample assignments

Three reading strategies for struggling readers
In this module, you have examined strategies to engage struggling readers. For this assignment, you will choose three strategies from the module that you could use with students in your content area. First, choose a topic of study for your content area; then, choose three strategies from this module that you might use to teach a text on this topic. Discuss why you chose the literacy strategy and a specific example of how this literacy strategy can be used in your history/social studies classroom.
Text set
In our readings and class discussions, we have learned the benefits of using a variety of texts to engage students in learning. For this assignment, with your group you will choose a topic to teach and create a text set you will use to teach this topic. You will choose different texts, including a poem, a picture book, an informational text, a visual image, and a web-based resource. For each text you will include your rationale for choosing the text, how it is connected to the Common Core and history/social studies Essential Standards, and an activity you would use to teach this topic.
Choice board
You have had the opportunity to review many writing strategies and learn ideas to integrate writing into your history/social studies classrooms. Choose a topic you might like to teach (World War II, New Deal, Civil War, etc.). Review what the state standards say about writing. Review what the Common Core standards say about writing (http://www.corestandards.org). With a partner, you will create three writing tasks your students might complete after reading information on this particular topic, in the form of a choice board. Be sure to include the standard addressed in each task. Students are motivated by being given a choice among engaging tasks; however, you will want to ensure that the writing task will showcase knowledge of student learning as well. Be creative and use strategies from your readings and/or create your own writing tasks. Think of activities you might actually use in your classroom! Please refer to the example and checklist.

These prompts ensured that TCs thought reflectively about their practices and provided the opportunity to share their experiences with their peers. The foci of these prompts were literacy, assessment, and general reflection, providing TCs the opportunity to thoughtfully ponder their observations and practices throughout the process.

The final assignment for the combined course asked TCs to consider their future teaching plans and to create a lesson for teaching a specific text. They were also asked to discuss the role literacy would play in the lesson they would create and the rationale for choosing the text and specific literacy strategies. This assignment allowed TCs to reflect on the knowledge gained in the co-taught combined course and create lessons they could use with their students as a result of this reflection process. Instructors graded reflection assignments individually, and both instructors, using the same rubric as a guide, graded major projects. Throughout the combined course, as instructors conducted observations and graded assignments, they discussed students' strengths and weaknesses based on these elements. This discussion influenced the instructional decisions made by instructors as they noted topics that should be revisited or that needed further exploration. Instructor feedback also gave students an opportunity to reflect on their learning and their progress. Not only did TCs have many opportunities to reflect on the dynamics of the co-taught combined course, but instructors were also provided similar reflective opportunities.

Instructors also completed reflections after the semester ended, through written e-mail exchanges and through reflective one-to-one conversations. General prompt themes for those conversations were,

> What worked during this semester? What didn't work during this semester? In what ways might we improve upon the course? What do we need to keep for the course in the future? What did you like about the course delivery? What challenged your thinking and practice by using this course delivery?

Reflective comments were noted individually by the instructors/researchers during conversations and synthesized, which is summarized here.

Results

The research question guiding the present study was how co-teaching a content methods and content literacy combined course enhances course content and collaboration among instructors and TCs in rural teacher education settings. After participating in a co-taught history/social studies content methods and content literacy combined course, data were collected from instructors' reflections and TC exit surveys.

Instructor Reflections

As an exercise in professional development for both instructors, this collaboration was beneficial by providing an opportunity to thoughtfully reflect on their practices. Specifically, it offered an occasion for two instructors to learn from each other while engaging in teaching and reflection and an opportunity to substantively link content (history/social studies) and literacy, and it presented an opening to balance content and content-centered literacy skills and strategies.

Opportunity to Learn Together as Co-teachers. Being able to share ideas, concerns, and revisions with a peer is an invaluable benefit of the co-teaching process. The planning sessions focused on history/social studies and literacy delivery and implementation for preservice TCs. Because one instructor was considered the literacy expert and one instructor the history/social studies education expert, these sessions enhanced learning across the two content areas among the instructors. This was beneficial for the history/social studies education instructor, as collaborative planning and reflective sessions provided insight on previously unknown or little known literacy practices that could later be integrated into other courses within the program. This insight and attention to literacy development across disciplines is especially important for TCs in rural schools (Lester, 2012). The literacy instructor, likewise, benefited from being able to dive deeper into one content area, and the resulting enhanced expertise provided opportunities to share relevant examples with TCs when providing feedback. Both instructors reported they were encouraged to develop new teaching practices as a result of their co-teaching experiences (Chanmugan & Gerlach, 2013). The sessions provided a safe space for sharing ideas, concerns, and perspectives—a key opportunity afforded by the co-teaching model (Harris & Harvey, 2000).

A major requirement for TCs in the history/social studies education program is to be familiar with teaching primary-source documents. While the history/social studies education instructor knew the topics and resources for accessing these documents, the literacy instructor was able to share literacy resources for accessing them. Co-teaching allowed each instructor to see the components valued in history/social studies and literacy and to see how these components could fit together in the context of preparing TCs. This aspect of the collaboration addressed concerns about cohesiveness between content-area disciplines and adequate input from content-area educators (Draper, Broomhead, Jensen, & Nokes, 2012). In addition, the planning sessions provided a space to consider the instructional practices and reflect on implementation.

Opportunity to Reflect on Practice. One of the stated benefits of co-teaching in higher education has been that it fosters open reflection between colleagues (Chanmugan & Gerlach, 2013). This was indeed the case in this co-teaching experience. Both instructors were able to see the effect of their colleague's instruction and practice on their shared students and witness the reaction of the TCs toward

the instructors. For instance, if one colleague provided more immediate feedback to an online assignment or blog post, the other instructor was able to see the effect of that responsiveness on TC performance and behaviors and was able to modify and improve assessment practice based on the reflection of the effective practices of the co-teacher. As noted previously, open reflection on practice is beneficial not only for the students, as they become the beneficiaries of better teaching, but also for the instructors, as they improve their own instructional practice (Bouck, 2007; Chanmugan & Gerlach, 2013; Cohen & DeLois, 2001; Crow & Smith, 2003, 2005; Gillespie & Israetel, 2008).

During planning meetings and discussions, instructors had the opportunity to reflect on their pedagogy, as similarly discussed by Chiasson, Yearwood, and Olson (2006). The course instructors often discussed revisions for teaching the combined course in the future, such as using different texts, exploring different strategies, and rearranging the order of topics. In addition, the literacy instructor's reflections included changing her approach during the semester to increase the focus on the academic language of history/social studies. She focused on helping students use vocabulary as a tool in addressing primary sources, teaching specific literacy strategies for accessing texts, and teaching students to address texts as historians. This preparation in disciplinary literacy was crucial not only to the development of the TC skill sets but also in preparing TCs for teaching in rural teaching environments (Moffa & McHenry-Sorber, 2018).

An added benefit of this reflection process was the common language used by the instructors and ultimately by the TCs. One of the areas of focus within the history/social studies education program, due in large part to the influence of edTPA on the program, had been the teaching and use of appropriate academic language (vocabulary, discourse, language functions, and syntax). By providing a bridge between two distinct approaches to academic language development, the history/social studies education-literacy collaboration and co-teaching experience allowed instructors to settle on and TCs to learn a unified and clear approach to academic language. Interestingly, a common academic language vocabulary was negotiated between the two instructors when, through exposure to each other's viewpoints, they realized they used different descriptors and terms. The improved communication between the two instructors enhanced the development of content and skill sets among the TCs (Mielke & Rush, 2016).

Furthermore, the instructors reflected on their satisfaction with communicating a unified message that literacy played a vital role in the study of history/social studies and that history/social studies teachers must make the history-literacy connection. Review of student exit survey data indicated that all 13 respondents noted the connection of history/social studies and literacy.

The history/social studies education instructor also reflected specifically on the democratic process of teaching and how it was modeled for TCs throughout the combined course. Instruction did not occur entirely through lecture but instead focused on class discussions and instructional practices that allowed TCs to be co-creators of their knowledge, to take ownership of their learning and process, and to respond to information collaboratively with peers. The instructors discussed these reflections after reviewing TC teaching videos, which revealed that TCs focused on a facilitative, participatory, and engaging model of learning in their classrooms, an environment they had seen modeled by the instructors in the combined course.

Teacher Candidate Reflections

TCs' reflections fell into categories similar to the instructors' reflections. In the exit survey TCs completed at the end of their course, they discussed the opportunity (a) to learn from each other in the co-teaching process while engaging in teaching and reflection and (b) to link history/social studies and literacy.

Opportunity to Learn Together. In their exit surveys TCs discussed how they valued the opportunity to work with their peers as part of their teaching practicum experience. One TC reflected, "I got to see another style of teaching. I also got support and help from the partner as well as constructive criticism where he was viewing me

teach." Another TC reflected, "You get to learn from your partner's lesson and how they approach information. You can pick out things you like and don't like to fit your own vision of your teaching methods and style." While TCs worked as partners initially, they knew they would have the opportunity to teach a lesson independently and took knowledge gained from their partnerships to plan their independent lessons as well. In their comments, TCs indicated that they valued feedback from their peers and respected the differences in teaching styles. The collaborative reflections of the TCs were evidence to the instructors/researchers that TCs valued the collaborative nature of co-teaching. The reflections also illustrated the importance of collaboration, an element crucial to combating high turnover rates often associated with teaching in rural teaching settings (DeAngelis & White, 2011; Ewington et al., 2008).

Opportunity to Link History/Social Studies and Literacy. One of the goals of the co-taught combined course was to help TCs identify and integrate literacy strategies into their content area of history/social studies as a way to enhance their instructional effectiveness. Evidence from observations, reflections, lesson plans, and video-recorded lessons indicates that this goal was met. Not only did TCs transfer their learned literacy activities into their practicum experiences, but they also reflected on the clear connections they were able to make between literacy and history/social studies. One TC noted through the exit survey,

> Before these courses, I did not acknowledge the connection between literacy skills and history/social studies content. The benefit of combining these courses is that the connection is constantly visible. If one cannot see the connection after this type of course, they are probably not going to make an effective social studies teacher. Literacy skills are crucial to history and social studies understanding. These courses, done in this way, exemplify that fact.

The reflections of TCs showcase that literacy and history/social studies are inextricably linked and should be presented this way in the K-12 classroom. The instructors' approach to co-teaching the combined course helped emphasize this point for TCs. As another TC reflected in the exit survey,

> A benefit of being co-taught is you can mesh and apply skills you learned in both classes to the field such as incorporating literacy skills while delivering content in a way that ensures a student's success in the classroom.

Through this combined course, TCs became more confident in their ability to integrate literacy into their content area in the field. In addition, they were able to see this connection as an integral part of their success.

Discussion

Recommendations for a Co-Teaching Model

Based on data collected during the co-taught combined course as well as experiences creating and implementing it, two major recommendations emerged: allow time for planning, and pair co-teaching faculty that share similar goals and beliefs. In participating in collaborative co-taught courses, there must be time for focused planning; setting aside planning time before the course begins and throughout the duration of the course is imperative. As noted by Coffland et al. (1974), the lack of sufficient planning time can be a hassle for those engaging in collaborative teaching experiences. There must be adequate time to develop a syllabus, discuss course goals and objectives, and formulate the structure of the course.

This planning time is also an opportunity to discuss roles of instructors during class time and resources and materials for classes. For instructors in the present study, it was an opportunity to discuss the organization of the practicum experience for TCs to ensure a positive and enlightening experience within a rural school, as well. Throughout the combined course, the two instructors also met to discuss TC concerns and plan schedules. This planning time was imperative to the success of the courses.

The present collaboration worked efficiently because both instructors were passionate about the importance of literacy as a shared responsibility, specifically teaching TCs the role of literacy in

history/social studies, and both instructors shared a vision for preparing the TCs to succeed in rural schools. Further, the instructors had similar teaching styles and beliefs about how TCs learn best. They worked diligently to share their beliefs and the research supporting disciplinary literacy while modeling how to create tasks and lessons that supported this approach. The allotment of planning time to discuss philosophical positions and anticipated outcomes allowed the two instructors to negotiate any differences in position or expectations, a problem noted by previous researchers in implementing co-teaching models (Coffland et al., 1974). This connection between the instructors was evident throughout the course, as one TC stated in the exit survey: "[The two instructors] had the same mindset. They knew what they wanted out of us and collaborated to get there. It was obvious to the class that they worked together in designing this course and it came out smoothly." This collaboration was evident because the instructors worked to make the co-teaching process seamless and held the same expectations for TC learning and outcomes, avoiding some of the hassles associated with different teaching perspectives. Since in this situation instructors with the same beliefs and goals were paired together, they were able to learn together and effectively reflect on their practices as well as the goals of the program.

The Hopes of the Present Study

As first introduced by Coffland et al. (1974), using co-teaching in teacher preparation has a number of benefits. This study fills a gap in the literature on co-teaching by examining the benefits from across content areas and outside the realm of special education. The findings of the present study paralleled some of the hopes first articulated by Coffland and colleagues more than 40 years ago.

First, TCs were able to see the instructors model the wanted behaviors of collaboration and team building. One TC attested to this, saying, "It was much easier to keep up with both classes because they fed off each other and both were very helpful when it came to being in the field." Second, TCs reported improved communication between the two instructors. One TC stated, "I believe having these classes [combined and] co-taught made doing so much easier because each class was taught with the other's material in mind. Overall I really appreciated the connections between classes." With mutual mindsets, the instructors were able to send a consistent, collaborative message.

Finally, one of the shared goals of the co-taught courses was to help TCs understand the importance of the connection between history/social studies content and literacy in an effort to better support content-area knowledge. All 13 students indeed made the connection between content and literacy, as reflected in their responses to the question, "Based on your experiences in this co-taught social studies methods-reading combined course, what connections do you see between literacy and history/social studies content?" Most students qualified the connection between the two by referring to the connection as "prominent," "important," or "obvious." The instructors engaged in the collaborative co-teaching experience with the intent of embedding the mental model of history/social studies teachers' responsibility to make the content-literacy connection, particularly in a rural school setting, and TC reflections affirmed that connection. As hoped by Coffland et al. (1974), collaborative teaching produced a mechanism for sharing a mental model across content areas, enhancing the effectiveness of instruction.

The Hassles of the Present Study

In reflecting on the co-teaching experience, the instructors realized a few challenges. First and foremost, scheduling could be a barrier to this approach. To expand this model beyond a literacy-history/social studies collaboration, the literacy instructor(s) teaching the literacy course has to be available to collaborate with all instructors teaching content courses, and schedules may not allow for this. In addition to having time to teach with other instructors, the literacy instructor would also have to ensure there was time to plan with each content-area expert as well. As discussed in previous research, having sufficient planning time for a co-taught course can be challenging (Coffland et al., 1974; Letterman & Dugan, 2004). In this present study, to address this challenge the instructors made time to discuss the course at the practicum

school site between observations, before class meetings, and numerous points throughout the semester via e-mail. A successful co-teacher must make a commitment to spend the time planning and reflecting on implementation, which can be overwhelming for faculty members in the midst of other responsibilities.

Additionally, as Coffland et al. (1974) similarly found, there simply was not enough time to achieve all of the desired goals and cover all of the wanted material. Both instructors reported feeling "rushed" to cover topics in order to stay on track, and both instructors indicated that certain topics had to be omitted entirely as a result of a collaborative decision to cover something else. The instructors saw this give-and-take as positive, however, and understood the process as one that would ultimately allow them to fill gaps and avoid overlaps and redundancies.

A final hassle came in the form of a long-standing issue for many teacher education programs in rural areas: having enough teachers willing to host practicum students. Even using 2:1 co-teaching practicum pairings, the instructors had to rely on creative scheduling to ensure each student had a practicum placement with a quality cooperating teacher. Fortunately, using co-teaching in the practicum helped mediate the problem somewhat.

Future Research

The major goals of this collaboration were to help TCs see the importance of literacy in history/social studies, of integrating strategies to meet the content standards, and of working collaboratively to teach more effectively. While these goals were met for the semester, further research is needed in exploring the lasting impacts of this model. For example, following these TCs into their senior year, where they will be somewhat removed from the direct influence of university instructors, will provide more insight into whether these strategies and beliefs are taken into their in-service teaching. Further, as suggested by Kluth and Straut (2003), it is advisable to follow these teachers into the field after graduation to examine their "behaviors, actions and decisions" (p. 238) and determine if and how they continue to focus on literacy in their content area and if they are collaborators as professionals. Other key questions to investigate whether TCs using co-teaching are more resilient in their rural school internship placements and whether TCs who complete practicums in rural settings are more likely to seek employment in rural schools. Finally, while this collaborative model shows promise with other content areas, it would be informative to explore this collaboration with other core curriculum faculty (English, math, and science, etc.).

Conclusion

Isolation between academic fields and disciplines is an unfortunate reality in higher education in general and teacher education specifically (Baldridge et al., 1986; Jones, 2013; Norrell & Inglesby, 1991). With the hesitancy of many in higher education to engage in co-teaching or collaborative teaching in teacher preparation, it is crucial that those who do engage in such experiences share the design, implementation, and evaluation of the process for others (Pugach & Blanton, 2009). The present study sought to share the process and outcomes used by two teacher-preparation faculty, one a content methods instructor and one a content literacy instructor, to co-teach their respective courses in a single combined course in a teacher preparation program that primarily serves rural schools and communities.

Further, teaching and learning are social enterprises, according to the works of Vygotsky (1962, 1978) and other psychologists and researchers. As teacher preparation programs prepare TCs to enter the profession, the modeling that takes place between teacher educators and TCs is a vital component of effective preparation. In a K-12 climate where collaboration among teachers has become imperative, it stands to reason that collaboration would be modeled by teacher educators, particularly those in rural environments, yet faculty in higher education have a historic tendency to isolate. TCs entering the profession have likely not encountered such a collaborative approach to content-area instruction, so it is crucial to model this connection between content and literacy with the hope that TCs will transfer and replicate practices that transcend isolated higher

education environments. The approach taken in this model marries content and literacy through immersing TCs in a co-teaching environment that proved to be beneficial for both the instructors and the TCs.

Despite the existence of hassles that complicate efforts by instructors to collaborate and even co-teach with faculty in symbiotic areas, the hopes of such a model outweigh the challenges. By providing an environment where wanted teaching and learning behaviors can be modeled and replicated, by engaging in a process where faculty can enhance communication and unify expectations, and by creating an environment where both teacher educators and TCs can develop new skill sets by learning in a social learning environment, faculty in higher education can meet the hassles of co-teaching in today's climate collaboratively. This study aspires to inform teacher preparation programs in rural areas on the benefits of collaboration in higher education and in K-12 programs. This collaborative effort brings hope for building stronger relationships with K-12 schools in rural areas and increasing TCs involvement, engagement, and desire to work in those schools.

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Supporting Student and Preservice Teacher Successes Through Co-teaching

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As increasing inclusion in schools has been emphasized with each reauthorization of the Individuals with Disabilities Education Act amendments, the implementation of co-teaching has increased. Co-teaching has emerged as a supportive framework that uses principles of social justice in building inclusive nurturing environments, yielding positive student outcomes in social as well as academic areas of education. The authors explored the use of co-teaching within a laboratory school setting by analyzing experiences between general education faculty and not only special education faculty but also preservice teachers. Research has found that co-teaching to support preservice and early-career teachers is a natural outgrowth of the special education and general education partnerships created in the co-taught classroom when an intern is placed in such a setting. When used with fidelity, co-teaching is an instructional option that plays an integral part in building effective and efficient ways to foster student learning while enhancing classroom community. Co-teaching can be a powerful mechanism that supports sharing of responsibility and accountability for student achievement, as well as social, emotional, and behavioral growth. A child-centered philosophy was perceived as important to both preservice and co-teachers because of the individual factors that guided practice. With strong leadership from school administrators, commitment and flexibility on the part of classroom teachers, and skills of colleagues, preservice teachers report outstanding growth. Co-teaching, carefully implemented, can foster a nurturing classroom culture and support preservice teachers as they apply knowledge and skills in a constant reflective process, which benefits all teachers and students.

Keywords: *co-teaching, teacher preparation, inclusion, special education, general education*

Co-teaching has existed in some form for several decades in both urban and rural school settings as a means of supporting students with disabilities (e.g., Cook & Friend, 1995; Friend, 2019; McLeskey & Waldron, 2011) and has become a relatively common practice to support students with disabilities in other countries around the world (e.g., Chitiyo & Brinda, 2018; Strogilos & Avramidis, 2016). Early work in co-teaching implementation encouraged interdisciplinary instruction and supported integration of content (Warwick, 1971). Throughout the past several decades, legislation has catalyzed larger-scale school reform efforts that include all students, including those with disabilities, and have yielded positive outcomes for all students. Responding to the dual pressures of meeting student needs in special education within the context of more rigorous accountability for all students, educators are seeing the benefits of collaborative inclusive practices now more now than ever.

Although the amount of focus on inclusive practice continues to be determined by state and local rules and regulations, in many schools inclusion has become the preferred practice for educating students with disabilities. Co-teaching gained attention as it became recognized as supporting and engaging students with disabilities in the general-education classroom. As each reauthorization of the Individuals with Disabilities Education Act has emphasized increasing the rate of inclusion in schools, the implementation of co-teaching increased (Bauwens, Hourcade, & Friend, 1989; Friend & Barron, 2018; Friend, Reising, & Cook, 1993). Co-teaching has emerged as a supportive framework that uses principles of social justice in building inclusive and nurturing environments to produce positive student outcomes in social as well as academic areas of education (McLeskey & Waldron, 2011; Smoot, 2004).

Rural schools have worked to create inclusive environments and have shown highly effective practices despite unique challenges. For example, in a rural school examined in a case study by McLeskey, Waldron, and Redd (2014), success of students with disabilities was connected to the many ways the school used resources as efficiently as possible. Administration and faculty of the school shared decision making and exhibited a great deal of flexibility. The team made difficult decisions regarding assignment and reassignment of special education co-teachers through analysis of student data as they worked to put the success of students first. Much can be learned through examining the literature that describes how schools in rural settings allocate resources to implement co-teaching.

It is clear that implementation of co-teaching is often not systemic and that students with disabilities often continue to be served in separate and isolated settings. This practice of pulling students out not only impacts student outcomes but also creates a difficult challenge to institutions who want to expose preservice teachers to highly effective co-teaching models (McLeskey, Landers, Hoppey, & Williamson, 2011). Even so, the co-teaching initiative provided the basis for a paradigm shift in how students with disabilities could be served and, more recently, how preservice teachers can be taught. Through continued exploration and development, co-teaching has been successfully implemented as a means to support preservice teacher candidates and beginning teachers in the induction process (Bacharach, Heck, & Dahlberg, 2010; Roth & Tobin, 2005).

Co-teaching to support preservice and early-career teachers is a natural outgrowth of the special education and general education partnerships created in the co-taught classroom, where an intern is placed with a veteran teacher. It is important to have a deep understanding of the characteristics of co-teaching first as a service delivery model for students with disabilities and then to apply that understanding to the construct of preservice co-teaching to ensure not only that all students' needs are met but also that structures are in place to support preservice teachers' professional development.

The purpose of this article is to explore the defining characteristics of co-teaching as they relate to supporting not only students with disabilities and inclusive practices in a rural school but also the impact on growth of preservice teachers' skills and experience. The settings of both the researchers' university and the laboratory school, in this study, are rural, populated by families who work for a range of entities, including government institutions, small businesses, and local industries. The student population comes from surrounding K-8 schools in the county where mostly traditional models of serving those with disabilities in self-contained classes or resource settings have been employed. The laboratory school, on the other hand, has focused on innovative approaches to instruction with co-teaching as the main service delivery model used to build an inclusive school environment. In the following sections, we describe the use of the foundational models of co-teaching in a rural setting to support preservice teacher preparation and demonstrate how a supportive environment can be created to enhance classroom community for all.

The Co-teaching Model

The defining characteristics of co-teaching are clarified below to ensure fidelity of implementation. Researchers have identified important components necessary for successful co-teaching at the middle

school and high school level, including a focus on co-planning and co-assessing (Murawski & Lochner, 2011). One important analysis across studies of co-teaching is Dieker and Murawski's (2003) identification of three specific domains that can be used to analyze current and future research: content knowledge and delivery, the structure of the co-taught setting, and how diversity is perceived among professionals and students. Many studies have addressed one or more of these three domains. In all settings, research has found that co-teaching requires three essential components: co-planning, co-instructing, and co-assessing (Conderman & Hedin, 2014; Friend & Cook, 2013; Murawski & Lochner, 2011). Based on years of implementation and research, Friend (2019) further describes defining characteristics of co-teaching as traditionally including

- a partnership between a general education classroom teacher and a specialist that supports students with disabilities,
- a sharing of expertise and making different equally valued contributions in the classroom, and
- diverse classrooms where teachers share responsibility and accountability.

Roles and Skills of Co-teachers

The roles and responsibilities of each teacher are key in implementation of the co-teaching model. Partnerships between co-teachers can be difficult to establish, and yet co-teachers are more likely to be able to form strong relationships with students when they clearly respect, trust, and rely on one another. Lack of understanding of roles and responsibilities can occur when co-teacher partners lack understanding of the practice. Role confusion can be problematic because it interferes with true teaming and collaboration, creating barriers to effective implementation.

In a study by Brinkmann and Twiford (2012), 19 teachers from three school districts were interviewed to help determine the skills needed for effective co-teaching related to roles. General educators ranked communication (23% of those interviewed), knowledge of data collection and diagnostic testing (15%), differentiation (15%), and interpersonal skills (13%) as key competencies needed to co-teach effectively. Similarly, special educators ranked communication (26%) and differentiation (13%) as key competencies, but they also included advocacy (19%) as important for special educators to effectively co-teach. Understanding both the similarities and the differences in competencies needed to co-teach helps us recognize the unique roles and responsibilities of each of the co-teaching partners.

Models of Co-teaching Practice

The following section summarizes the six primary models of co-teaching (see Figure 1) and how they are used to build partnerships in the laboratory school, between-general education faculty and not only special education faculty but also preservice teachers. Among the six models of co-teaching practice, three of these models should be used most frequently for maximum benefit to all students and to help develop preservice teachers: station teaching, parallel teaching, and alternative teaching (Friend, 2019).

Station Teaching. This is perhaps one of the most natural models of co-teaching that can be implemented with more than one teacher or preservice teacher in a room. It occurs when students are assigned to groups, either heterogeneously or based on their development of a particular skill or a learning need. Teachers and preservice teachers work with each of the groups, and one group of students may work independently. Students or teachers rotate from group to group, so all students work with both teachers and have a chance to also work independently.

For example, Liam is a sixth grader who has difficulty in math and often becomes distracted during instruction. The co-teachers have noticed Liam is often off task when he is supposed to be working on math problems. They suspect he avoids math because he is behind his classmates in his computational skills. The co-teachers work together to create four groups so that Liam (and several other students experiencing similar difficulties) can work with the two educators in small groups, focusing on word problems, while a third group engages in more challenging problems and a fourth group works independently. This allows the teachers to closely monitor Liam's work and to provide a smaller group

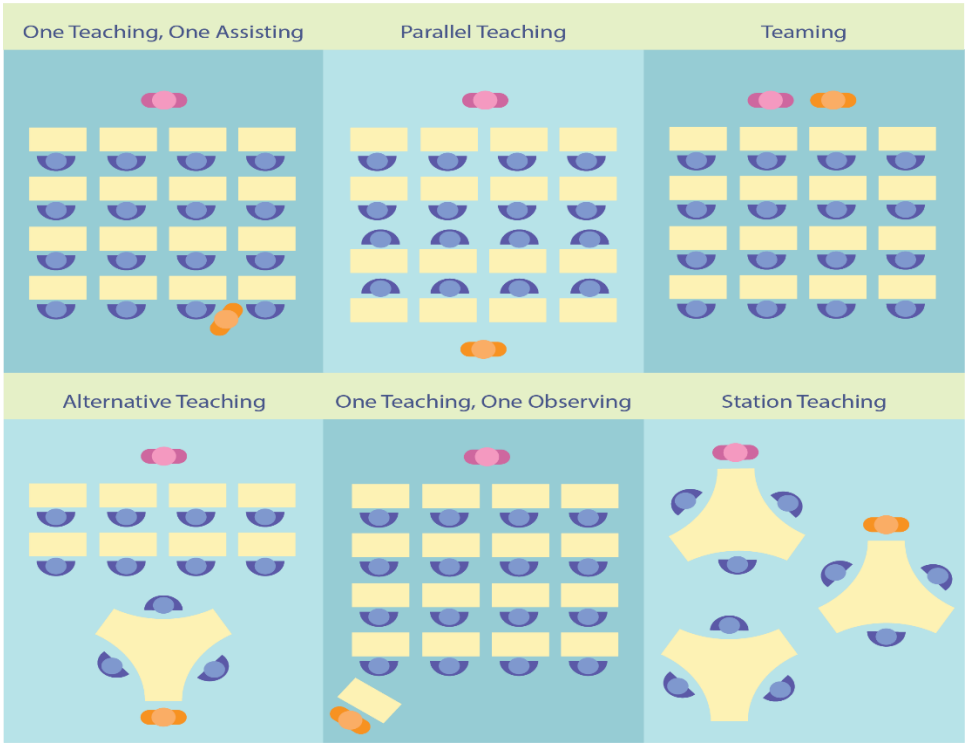

Figure 1. Co-teaching models. Adapted from the design by C. Barron in *Co-teaching: Creating community through teacher partnerships in the classroom* (vol. 1, p. 15), by M. Friend & T. L. Barron, 2018, Frederikshavn, Denmark: Dafolo.

smaller group so that avoidance is more difficult to achieve. As the students rotate the goals of the lesson are adjusted. When Liam moves to the independent station, he and his peers are given work tailored to their academic needs, so Liam is given work he can successfully complete.

Parallel Teaching. This co-teaching model can also be effective for student learning and highly impactful for preservice teachers. Parallel teaching consists of dividing the room of students in half, either heterogeneously or based on other factors such as the need to work on a particular skill or to represent the material in different ways. Each teacher works with half the group, teaching the same lesson while making adjustments based on student needs. Preservice teachers are able to work with either the general education teacher or the special education teacher to deliver instruction, by either further breaking their student group into a smaller instructional units or by providing instruction during part of the parallel teaching while also learning from the instruction delivered by the general education or special education teacher in the moment. The students do not rotate but instead work with only one of the teachers, thus reducing the student-teacher ratio.

For example, Marla is a quiet student who often does not participate in whole-class discussions during reading. The co-teachers find when they divide students into two groups, using parallel teaching, that Marla is much more willing to share her ideas. The preservice teacher works with the teacher who has Marla in small group and is purposeful in using least intrusive prompting (Collins, 2012) during the lesson to engage Marla and all the other students in the group. The

preservice teacher agrees that she is developing a closer relationship with Marla, as well as with other learners, by having more opportunity to listen to them and understand their thinking.

Alternative Teaching. In this frequently utilized model, most students are in one group, but a few students are pulled out in a small group, working with the special education teacher or the general education teacher. Preservice teachers can also take a small group or work with one of the teachers as they work with their group. The small group is formed for a specific purpose, such as re-teaching a concept that a small group of students have not mastered, working on social skills, previewing information to be taught so students with attention disorders are more likely to understand the upcoming lesson, and enrichment for advanced students. Of course, the small group meets when students will not miss critical instruction.

For example, Devon and Kevin both seem to have difficulty working with classmates. The teachers and preservice teacher decide that putting them in a small group with three other students who are good models will provide the opportunity for them to be guided in learning better how to have conversations and collaborate with their peers. This group occurs while other students are reading a story. The preservice teacher works with the general-education teacher to address behavioral concerns while also working on content. This especially helps preservice teachers develop behavior management skills because they can implement behavior strategies on a small scale and determine what methods work best for their students.

Friend (2019) suggests three additional models of co-teaching practice that should be used rarely but can be effective when used for specific purposes: one teaching, one assisting; one teaching, one observing; and teaming. These three models can support not only the learning of all students but also professional growth of preservice teachers.

One Teaching, One Assisting. In this model students are in a single group and teachers have time to interact individually and build rapport with specific students. For example, the co-teachers have noticed many students in the class are having difficulty with independent work following whole-group instruction. Adding to this is Victor, who just joined the class in the middle of the school year. The co-teachers decide the quickest way to help Victor and also assist individual students in their independent work is to implement the one teaching, one assisting approach. The classroom teacher teaches the lesson, while the special education teacher or preservice teacher interacts quietly with Victor and other students by answering their questions and providing instructional scaffolding.

One Teaching, One Observing. This model is recommended only for seldom use and has the greatest potential for overuse, because teachers often fall into this common pattern of teaching. Obviously, the flaw in this model is that one teacher or preservice teacher can easily become a passive partner, and students do not have the benefit of teachers who each share their unique expertise and create an inclusive environment. Friend (2019) cautions against too much dependence on this model and recommends purposeful use of the model as a means of collecting data on individual students or groups of students for relatively brief periods of time to support increased instructional intensity. Scruggs, Mastropieri, and McDuffie (2007) similarly describe the dangers of overuse of this model because it does not utilize the expertise of both teachers—one teacher is focused on content delivery (usually the general educator or preservice teacher), while the other (usually the special educator or preservice teacher) is relegated to the role of observing or helping rather than teaching.

Teaming. Teaming occurs when two teachers jointly deliver instruction to the whole instructional group. For this strategy, students are also in a single group and the teachers share instruction, taking turns giving examples, debating, or demonstrating skills. For example, the class is having difficulty understanding the algebraic concept of balancing equations, so one teacher visually represents this process while another co-teacher also demonstrates solving the problem on the board. One teacher may use a scale with objects representing the equation, showing that in order to balance the equation the same thing must be done to both sides of the equal sign, while the other

teacher guides the students through the steps of solving the equation on the board.

Teaming should be used occasionally because it requires maturity in the co-teaching relationship, in which both teachers are comfortable and fully trust each other. Teaming also limits the amount of interaction with the students because it involves whole-group instruction instead of small groups. Furthermore, pacing can be problematic if teachers do not gauge their individual contributions to the content delivery.

All three of these co-teaching approaches can easily be used in deliberate ways to create an inclusive learning community (Friend & Barron, 2018, 2019) and support preservice teacher preparation (Friend & Barron, 2019).

Context of the Laboratory School

Our laboratory school is designed for academically at-risk middle-grade students (i.e., sixth, seventh, and eighth grades) in a rural area of the Southeast. The project combines master teachers with university faculty and preservice teacher candidates, as well as high school students and staff as additional supports for the students. The model incorporates five key components: (a) employing experienced teachers with advanced degrees; (b) cooperative partnerships among the laboratory school, the university, and the local school system; (c) innovative instructional practices; (d) student growth focused on the whole child; and (e) preservice teacher preparation.

The school vision is to be a learning community where all students are valued and care for themselves and others—one that promotes health and wellness and embraces a commitment to learning through experience in a caring, collaborative, and socially just environment. Recent state legislation required a number of universities to construct these schools in which students must meet certain qualifications to be enrolled: residency in the county, current or previous enrollment in a low-performing school, or not meeting proficiency or growth. Additional criteria beyond end-of-grade testing may be used to determine fit or student identification as not meeting proficiency or growth: poor grades, classification as academically at risk due to adverse childhood experiences, identification as twice-exceptional (e.g., qualification for special education as well as gifted services), achievement motivation, extreme behavioral issues, lack of growth even when proficiency is met, experiences with social-emotional issues, or experiences with familial issues or trauma.

The community from which our students come is unique. In a very rural county in the western region of the state, most students are economically disadvantaged. Major employers include the university, a community college, public schools, a paper mill, a hospital, and a casino in a neighboring Native American community. Because of the unique components of the region, several students come from non-economically disadvantaged families associated with these organizations. Of the current school population, 20% qualify for special education services, well above the national and local average.

The culture of the laboratory school reflects the collaboration with the local university and the high school within which it is located. By accessing resources and personnel at the university, students have access to daily health and physical education; music, arts, and other enrichment activities; clubs and electives; leadership experiences; and mentorship from experts in a variety of academic fields. Some of the university academic programs that support these activities reach beyond our educator preparation program and include parks and recreation management, music, theater and studio arts, engineering, business, and leadership programs. Time is dedicated each day for interests outside of traditional academics. These enrichment activities encourage students to learn more about themselves and others, as well as contribute to the school community. Many departments that serve preservice teachers are involved in the laboratory school, and several include placement of their preservice teachers to complete their intern I and intern II experience. In this article we focus on the experiences of a preservice teacher from the inclusive education degree program and another from the middle-grades degree program. We describe in detail how the traditional models for co-teaching described by Friend (2019) can be used as part of teacher preparation.

In both our middle-grades and inclusive education programs of study at the university, we emphasize the importance of co-teaching. A dedicated class for middle-grades majors analyzes the co-teaching models and places responsibility on the interns to implement co-teaching with their clinical educators during their first internship. The inclusive education interns work toward proficiency in two areas of study, special education and general education, with inclusive education interwoven in all aspects of their coursework. Preservice teachers have historically experienced varying degrees of success with co-teaching in rural, clinical experiences, as many clinical educators in this region are not familiar or comfortable with the co-teaching model and struggle to navigate the roles and implementation. At the laboratory school, where co-teaching is an expectation of all clinical educators, we have been fortunate to experience a more seamless implementation process and therefore a more comprehensive experience for our preservice teachers.

The structures needed for co-teaching implementation are evident in the laboratory school because of not only the leadership teams' understanding of the practice itself but also the style of leadership. The characteristics of the principal's actions, which support effective implementation of inclusion, mirror those found in research. Hoppey and McLeskey (2013) found that school leaders who focus their attention on developing solid relationships with their staff have more success in implementation of inclusion and offer supportive structures. Collins (2012) warned against a narrow focus on the importance of principals and the assumption that powerful, charismatic leaders are all that is required for change. As the studies show, all stakeholders in the school must work together to create lasting change. The implementation of an inclusive program should not be based on one person's identity or beliefs; rather, a paradigm shift among all shareholders is imperative.

The principal at our laboratory school provides a variety of avenues to develop teachers' knowledge for effective implementation, such as training activities on and off campus and use of distributive leadership. Both bottom-up and top-down actions are required for implementation of an initiative like co-teaching (Hoppey & McLeskey, 2014). The principal, who has worked in many rural settings, was able to create an environment that supports such actions. Together the laboratory school principal and university leadership team have been successful in creating a supportive environment where a clear vision of how to support students, preservice teachers, and special and general education teachers in rural settings is apparent.

Reflections on Preservice Teachers' Co-teaching Experiences

To study intern perspectives on the co-teaching process at the laboratory school, we analyzed journal reflections of two preservice teachers: Ashley (pseudonym), a middle school preservice teacher, and Alex (pseudonym), an inclusive education preservice teacher. Two of the authors were field supervisor (T.L.B.) and clinical educator (H.H.P.) of the preservice teachers.

Data include Ashley's written reflections throughout the first semester of the internship, as well as the journal reflection of her clinical educator and feedback of the field supervisor. Ashley's field supervisor commented to the clinical educator,

> From reading her journal entries this semester, it seems to me that you and she have a unique relationship, one very few teacher educators and candidates ever have. My sense of the journal is that it is very nearly a "dialogue journal" in which you two have a conversation that extends your day-to-day conversations. It seems that you are thinking together about ways to address mutual issues. This highly collaborative relationship transcends our usual dialogue with student teachers in which we are coaches and they are novices. You and Ashley are truly collaborating—not equals but not far from it.

The field supervisor also noted that Ashley spoke clearly about the use of co-teaching in the laboratory classroom.

One of Ashley's reflections emphasized how grateful she was for common planning time together with the team every day, and that at least once a week there was additional common planning with

the exceptional children (EC) intervention teacher. This co-planning time gave the team an important opportunity to think collaboratively about the needs of students while treating one another as professionals who were trusted to know content and pedagogy that would best suit students.

As this middle school is set in a rural setting, the students have diverse experiences in terms of the value of education and the resources families can provide to support schooling. Many families in this setting have limited experience with school success; therefore, some students enter the classroom still developing an internal motivation for success in school and often have competing factors that disrupt the focus on school achievement. With the co-teaching model in place, there was extra emphasis on cultivating strong relationships with students and finding ways, often in small-group settings, to motivate these students who were not internally motivated or oriented by the family toward achievement in school. Ashley and her clinical educator spoke specifically of one student in particular who had always hated school. This student remarked that he had a reputation for sleeping in class and wasn't sure he liked it at this school since there was always someone keeping a close eye on him. Alex, the inclusive education preservice teacher, reported to her field supervisor that the same student spoke to her in great detail about his plans to work in the logging industry like other members of his family, and she was able to discuss the need to gain math skills to be successful in what he feels is his destined career. A strong co-teaching model encourages students to stay more consistently engaged in instruction.

In another reflection the field supervisor spoke to the effectiveness of using parallel teaching.

> This week, Ashley, and the EC teacher, and myself each chose a lesson to plan for each grade level, and then we met together in our co-planning time to share the lesson plan and script our goals and implementation plan. This method cut down on the work for all of us outside of the school day and also helped us give more time to the one lesson than we usually are allotted.

The team felt those particular lessons had a greater impact on students, and they attributed that to the depth of time given to co-planning the lessons but without the burnout rate that would occur if one person took on that entire workload herself. Ashley's journals also spoke to strengths of using the parallel teaching model. She enjoyed the confidence boost of co-planning lessons and feeling supported in her planning process paired with the ability to work with a smaller group as she was phasing into her full-time student teaching. This model has strong potential for offering a scaffolded experience for interns as they develop their instructional tool kit and slowly take on more primary responsibilities.

Alex's field supervisor found similar benefits in the reflections written by Alex, in which she shared the rewards and challenges of her experiences as an inclusive education intern. Alex felt all of the staff members had a positive perception of co-teaching and discussed the respect they had from their colleagues, students, and parents. The importance of being flexible with each other, with expectations, and with students was repeatedly mentioned especially since this team co-taught across content areas. Alex expressed how strong trusting relationships helped her feel supported in various situations and the experience of learning how to co-teach from an experienced teacher gave her an "edge compared to her peers," who often learned from nonexamples. A strong relationship was necessary not only with the co-teachers but also with the administrator in order to support the needs of the co-taught classrooms.

Planning emerged as a strong theme is Alex's journal. She expressed a need for co-planning in order for everyone to understand their roles. She learned the complexity of the interrelationship of the general education teacher planning first and the special educator implementing specially designed instruction given the framework of the general education teacher's plan. Co-planning times were based on the master schedule, and all the teachers having input on the master schedule allowed for problem solving as everyone in the school worked to have protected co-planning time. Although this was not always possible because of the changing environment in schools, it was nice to know

everyone was working as hard as they could toward the goal. The fact that teachers desired such time with their co-teachers and preservice teacher sent the message to Alex that the practice of co-teaching was valued. Alex knew she could "trust her administrator to support her in discussions with other faculty and parents," and this "made co-teaching a positive experience."

Alex's field supervisor noted that she was constantly supported and never left alone to manage the classroom, and Alex was able to find her teacher voice and develop in amazing ways. The other teachers noted that they learned strategies from the preservice teacher as well, especially noting her positive demeanor and ability to handle difficult behaviors in ways that they did not always implement. The impact on the greater school community was also felt, and Alex shared that everyone worked "to create a cohesive group" so effective teaching could be practiced in the co-taught classroom. Such mutual trust was evident in the discussions with co-teachers and other preservice teachers as they were comfortable sharing concerns regarding student outcomes or changes in groups, schedules, or instructional methods with each other.

Lessons Learned: Suggestions for Successful Co-teaching

Co-teaching holds tremendous promise for creating a collaborative classroom culture and supporting preservice teacher development, but it is a complex shift from the traditional student-teaching approach, with just a single clinical teacher who gradually releases full responsibility to the preservice teacher. As co-teaching has evolved, those who have implemented it in the context of special education services have experienced both successes and failures (Brinkmann & Twiford, 2012; Friend & Barron, 2018). Often success is achieved through meticulous co-planning and supportive implementation, and failure occurs when the style of interaction is not collaborative. In co-teaching literature, teachers often detail specific ideas for ensuring a positive outcome for students and growth for educators (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010), which can be easily applied in a collaborative and innovative school to support preservice teachers. The lessons learned through one year of implementation of co-teaching relate to the importance of (a) relationship building and (b) prioritizing co-planning in our rural middle school to serve students with disabilities and supporting preservice teachers.

Co-teachers Build Connectedness and Extend It to Students

The potential for co-teaching has just begun to be explored as a means to support preservice teachers. What we know from the field of special education is that the collaboration it nurtures between educators can lead to a welcoming environment for all students but that it is a complex endeavor. The complex nature of co-teaching for middle school educators suggests success depends on many factors, one of which is planning. Shared planning time or use of alternative methods (i.e., electronic planning formats) and professional development aid teachers in forming co-teaching roles and collaborations. For example, in a study by Vannest and Hagan-Burke (2010) co-teachers reported they spent more than half their time allotted for instruction in a supportive role. Time was spent often engaging in remediation activities with students rather than delivering the primary academic instruction. A study by Weiss and Lloyd (2002) found special education teachers did not use their professional knowledge to engage students in co-taught classrooms.

Teachers and preservice teachers can benefit professionally from co-teaching through sharing teaching strategies for new content while embedding specially designed instruction and monitoring students' understanding more effectively (Adams & Cessna, 1993; Giangreco, Baumgart, & Doyle, 1995). Teachers find they often learn new content and strategies from one another (Friend & Cook, 2013; Hohenbrink, Johnston, & Westhoven, 1997; Hughes & Murawski, 2001; Salend et al., 1997). Shared accountability and responsibility in a strong co-teaching partnership creates a supportive environment (Bauwens et al., 1989; Gately & Gately, 2001; Walther-Thomas, 1997). Co-teachers, including preservice teachers, should be careful not to become a passive participant in classes, especially in middle and secondary

education. Power can be balanced by operating in a collaborative manner when working with everyone in the school.

Collaboration is key in the way co-teachers interact. Co-teachers must find effective and efficient ways to manage and blend expertise in a two-teacher classroom, and they are obliged to think about how their teaching can best reach their learners. Using models of co-teaching can help them form partnerships that are essential for co-teaching success and preservice teacher professional growth.

Co-teachers Clarify Roles and Responsibilities

Before a co-teaching program is established, the goals of for the program should be established. For students with special needs, co-teaching may be needed on a regular schedule throughout a school year between the content teacher and the special education teacher. Consider how the preservice teacher works into this relationship. The additional goal of utilizing co-teaching to support preservice teachers should be explored and articulated early in the arrangement. As with any new practice, a clear direction is important.

Co-teachers and preservice teachers must work on boundaries and finding the best ways to collaborate. Classroom teachers are accustomed to working mostly alone; they are master problem solvers, and they often find it challenging to negotiate with a partner in new ways to group and teach students. The power of co-teaching for creating connectedness lies largely in teachers' understanding of their roles. It is critical that co-teachers openly discuss how they will ensure both professionals have an active classroom role rather than the classroom teacher leading all instructional activities while the partner quietly stands at the back of the classroom or engages with individual students. In fact, the literature cites this unfortunate arrangement as one of the major shortcomings of co-teaching (Friend, 2019), but it is a problem that can readily be solved with clear and respectful conversation about the goals of the co-teaching program.

Find Realistic Options for Co-planning

The most common complaint among co-teachers is that they do not have regularly scheduled shared planning time (Friend, 2019). For co-teachers to carefully think about diverse students' needs and plan activities to help them learn and develop other skills, the opportunity to meet face to face is essential. However, realistic solutions for co-planning time must be implemented. For example, some co-teachers have time to plan once every two or three weeks, but they continue their planning conversation electronically, which can directly address the dilemma of shared planning. Especially when co-teaching is a new instructional arrangement, professionals should reserve time to explicitly analyze their practice. In the absence of formal structures, co-teachers need professional development to create expectations of their work and understand roles and responsibilities of their co-teaching practice. Co-teaching and creating teacher expectations based on what they believe is good for students takes time to plan together.

Locke and Latham (2002) make the case that clear and challenging goals are a powerful incentive to high performance, and co-teachers are no different. Performance control is less successful when goals are ambiguous, hard to measure, or do not relate to the needs of the co-taught classroom. Preservice teachers tend to develop goals that revolve around individual student growth as an alternative to using proficiency levels of their class as a whole, but within a co-teaching model they find the general education teacher and special education teacher can help them understand the big picture as they attempt to connect personal effectiveness in the co-teaching classroom to standardized objectives for students.

Co-teachers Experiment With the Six Approaches

The six approaches presented earlier (see Figure 1) are the core of co-teaching practice. Having co-planning time to select the appropriate co-teaching approaches for specific lessons is essential. Educators have found these approaches are just a beginning and can be adapted to best meet the needs of their students. For instance,

when using the alternative teaching approach to support preservice teacher development, the classroom and inclusion teacher might both confer with students (which gives each student the individual attention and builds teacher-student relationships) while the preservice teacher leads the lesson. Or, they might use the station approach to create three groups: each educator works with a group and then the students or teachers switch, giving students individual attention and support. An independent group is eliminated in this modified station teaching approach. Many other variations of the six co-teaching approaches have been used—these approaches serve as models to provide a foundation on which creative co-teachers build their classroom cultures and practices (Friend & Barron, 2019).

Additionally, during co-planning time, preservice teachers and co-teachers should discuss what they have tried that has been successful and what has not worked as planned. They should identify ways their shared work is better reaching students and encouraging their success, and they should draw on their problem-solving skills to address any concerns that arise. In other words, preservice teachers and co-teachers should regularly communicate so they recognize how they are accomplishing their goals and prevent small challenges from becoming serious issues.

Conclusion and Implications

Regardless of the specific application of co-teaching implemented, the extent to which it is carefully designed and planned will largely determine its success. When used with fidelity, co-teaching is an instructional option that plays an integral part in building effective and efficient ways to foster student learning while at the same time enhancing classroom community. It can be a powerful mechanism that supports the sharing of responsibility and accountability for student achievement and social, emotional, and behavior growth. However, this can occur only if co-teachers share expertise, establish parity, and share instruction of all students in the co-taught classroom.

It is noteworthy that the lessons learned through this experience mirror much of the research of highly effective inclusive environments in rural settings. The laboratory school context is unique in some ways, in that it is tasked to develop innovative ways of teaching and supporting preservice teachers, but in other ways there is nothing particularly unusual about this school in the rural setting. What school does not strive to meet the needs of all students and provide high-quality instruction by using resources as efficiently as possible? The characteristic that sets this laboratory school apart is the availability of experts in the field of teacher preparation and inclusion to work closely as part of the leadership team and with teachers, preservice teachers, and the middle-school students on a daily basis.

In this particular case, expectations, professional knowledge, and culture are themes found as co-teachers discussed their shared beliefs, cultural understandings, and professional roles. Teachers prioritized these elements to create structure and operate effectively within the co-teaching classroom. A child-centered philosophy was seen as important to preservice teachers and co-teachers because of the individual nature they felt guided the practice. More often than not, teachers relied on their professional understandings and beliefs about how students learn best to guide their co-teaching work and sought out insight from middle-grades and inclusive education faculty when challenges arose. To mitigate challenges related to teacher knowledge, institutions of higher education should expand co-teaching and collaborative coursework to better prepare teachers, both novice and experienced, to assume their co-teaching roles. From the preservice teachers' perspective, knowledge of the model of co-teaching, a supportive culture, and strong relationships were keys to success.

When experiencing strong leadership from school administrators and university faculty, and with commitment, skills, and flexibility on the part of classroom teachers, preservice teachers reported outstanding growth. Co-teaching, carefully implemented, can foster a nurturing classroom culture among all and support preservice teachers as they apply knowledge and skills in a constant reflective process in which all teachers and students benefit.

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Co-planning Strategies for Mentor Teachers and Interns

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Planning for instruction is a complex and important task, requiring teachers to consider content, lesson objectives, and student learning. Teachers' ability to attend to the complexity of planning differs with experience level, and planning is especially difficult for novices and preservice teachers. The authors examined the potential of co-planning during the internship experience to assist interns in making the transition from mathematics education students to mathematics teachers. The article describes six strategies to facilitate co-planning between mentor teachers and interns and shares implications for these strategies in other teaching contexts and relationships and for current and future research efforts.

Keywords: co-teaching, teacher preparation, co-planning, clinical experiences

Education places justifiable emphasis on student learning and instruction that leads to this learning. Planning is a critical component of teaching, during which "teachers make decisions that ultimately impact students' opportunities to learn" (Superfine, 2008, p. 11). Smith and Stein (2011) state that "good advance planning is the key to effective teaching" (p. 76). Planning is a complex task, involving consideration of such topics as what content to include and emphasize, what instructional tasks will most productively engage students, how to keep the classroom running smoothly, and how to provide equitable opportunities to learn for all students (Fennema & Franke, 1992).

The ability to attend to the complexity of planning differs with experience. Experienced teachers with extensive, well-organized knowledge of both pedagogy and student learning are more flexible and attentive than are novice teachers to the nature of students' learning opportunities as they create and plan instruction (Borko, Livingston, & Shavelson, 1990; Leinhardt & Greeno, 1986; Livingston & Borko, 1989). Interns represent one group of novice teachers that may have particular difficulty in planning instruction that focuses on student learning. The internship (sometimes referred to as student teaching) experience is a time when preservice teachers are transitioning to writing lesson plans focused on actual students rather than focusing on hypothetical students and using the specific lesson plan format required for a course assignment. Interns may find it difficult to adjust to a role where implementation of the lesson plan with a focus on student learning is more important than format. Added to this challenge is the fact that many experienced teachers may not write detailed lesson plans, leaving interns little access to the planning decisions made by their mentor, cooperating, or clinical teachers. Having interns and mentors co-plan lessons has the potential to aid interns in the transition from mathematics education students to mathematics educators. One of our interns spoke to this, saying, "[My mentor teacher] helped me think through planning and what my students needed to know and how I should deliver it."

The six co-planning strategies we describe have potential to support a wide range of teaching partnerships beyond interns and mentors. We believe these strategies could also benefit in-

service teachers (novice and experienced) as they plan across a range of contexts, including professional learning communities, collaborations between regular educators and special educators, and interactions of classroom teachers and instructional coaches.

Literature Review

Lave's (1991) theory of situated learning envisions a way of learning in which new practitioners to a field learn in an apprenticeship model. They work side by side with an experienced mentor, gaining knowledge of the profession and gradually assuming increasing responsibility. Our work with teaching interns is grounded in this understanding of enculturation into the teaching profession. Co-teaching and co-planning are a way of modeling the teaching internship in an apprenticeship model.

Many researchers have emphasized the critical need for co-planning within a co-teaching context (e.g., Howard & Potts, 2009; Magiera, Smith, Zigmond, & Gebauer, 2005). However, the importance of lesson planning, coupled with its complexity and difficulty, leads us to consider the merits of co-planning, regardless of the teaching context. We believe co-planning has potential for improving the planning process, particularly for interns.

There are many challenges to implementing co-planning with mentor teachers and interns. One challenge is the energy and will to work closely with another person. Duchardt, Marlow, Inman, Christensen, and Reeves (1999) note that a cooperative effort such as co-planning "requires people who are sensitive to one another's needs and who are willing to truly cooperate" (p. 188). Another challenge is finding an appropriate environment with few distractions and in which planning sessions can focus solely on planning. Murawski (2012) notes that "too often planning sessions become gripe sessions or share sessions" (p. 9). An environment is needed that helps keep planning in the forefront of the interactions. Perhaps the most difficult challenge is finding the time for co-planning (Friend, Reising, & Cook, 1993; Murawski, 2012; Sileo & van Garderen, 2010). As Murawski (2012) notes, and most teachers would readily second, "Teachers never have enough time to do everything they need to do, and this includes planning for instruction. Having to meet with another teacher to plan is that much more complicated" (p. 8).

Despite the challenges, co-planning seems to have sufficient potential benefits that overcoming its challenges is worthwhile. Teachers working in co-planning environments have more opportunity for collaboration (Badiali & Titus, 2010; Duchardt et al., 1999). The process may increase exchange of ideas and variety of instructional practices being piloted in the classroom. Novice teachers can learn about the planning process, taking advantage of expert knowledge about learners and curriculum materials and benefiting from the veteran teachers' knowledge of lesson pitfalls (Bacharach, Heck, & Dahlberg; 2008, 2010). According to Smith (2005), interns "learn about various aspects of teaching by participating in a community of teachers with guidance from a more experienced mentor" (p. 54). In addition, the expert teacher may also learn through the planning process, as there is increased opportunity for reflection on the plan and its implementation. With these potential benefits to novices and experts, as well as students, it appears worthwhile to consider how co-planning might be enacted in an internship setting.

The existing literature on co-planning provides considerations regarding creating a plan. For example, Bryant and Land (1998) talked about planning for cooperative grouping, vocabulary development, and planning for assessment. Murawski (2012) also provided some general directions for how teachers should work together to co-plan, such as "select an appropriate environment without distractions" (p. 9) and "determine regular roles and responsibilities" (p. 10). Howard and Potts (2009) stated that, "while it seems everyone or mostly everyone agrees that co-planning time is necessary for successful co-teaching, how should this planning time be used? The simple answer is 'to plan for the instruction!'" (p. 3). In this article we propose to move beyond this advice by offering specific strategies for how mentor teachers and interns may work together, defining roles and responsibilities for helping mentors and interns effectively co-plan for instruction.

Development of the Co-planning Strategies

Realizing the need to provide structure for mentors and their interns to co-plan, we sought to identify possible co-planning structures to support the transition from independent to shared planning. Because of the success of the co-teaching strategies (Bacharach et al., 2010; Murawski & Spencer, 2011) in supporting a paradigm shift from traditional student teaching to co-teaching using an apprenticeship model (Lave, 1991), we decided to use the co-teaching strategies as a structure for co-planning strategies.

We began with two of the researchers applying each of the co-teaching strategies (see Table 1) to a co-planning approach. For example, the co-teaching strategy *one teaches, one observes* was applied as *one reflects, one plans*. We defined each co-planning strategy, described how each might facilitate an apprenticeship approach to planning, and noted potential benefits and concerns for each. Next, together we analyzed the initial work and provided examples of each strategy from our combined 50 years of supervision experience in seven states and 20 different school districts. This work was presented to a research action cluster on improving clinical experiences for secondary mathematics teacher candidates. The enthusiastic response to these proposed strategies encouraged us to move forward in creating a professional development program to pilot these co-planning strategies with interns and mentors.

Two of us (M. Grady and C. Cayton) developed the co-planning strategies and provided professional development with them to multiple groups of mentors and interns. Each professional development session provided an opportunity for the community to further delineate the strategy, provide examples, and generate new variations in shared planning.

Table 1

Co-teaching strategies

Strategy	Description
One teaches, one observes	One teacher leads instruction, while the other teacher gathers specific information.
One teaches, one assists	One teacher works with the whole class, while the other teacher assists individual students or groups of students.
Station teaching	Students are divided into three or more small groups to go to stations or centers. Students rotate through multiple stations. Teachers can facilitate individual stations or circulate among all stations.
Parallel teaching	Both teachers take half the class in order to reduce student-teacher ratio. Groups may be engaging with the same or different content in the same or different ways.
Alternative teaching	One teacher works with a large group of students, while the other works with a smaller group providing reteaching, preteaching, or enrichment as needed.
Team teaching	Both teachers are in front of the class, working together to provide instruction.

Adapted from Bacharach et al. (2010) and Murawski and Spencer (2011).

Strategies for Co-planning

The range of experiences during the internship may be described as an iterative cycle that encompasses observing, planning, teaching, assessment, and reflection (see Figure 1). The quality of interactions between intern and mentor is critical not only to optimize relationship building but also to facilitate an intern's ability to plan for and implement instruction that includes high-leverage teaching practices (Ball, Sleep, Boerst, & Bass, 2009) with a focus on student learning. Consider two distinct internship paradigms, one traditional and one incorporating co-teaching. In both, the intern initially observes classroom instruction to become oriented to the norms and expectations of the internship placement; they are each then tasked with planning for instruction. The manner in which they are asked to plan is where the two paradigms diverge.

Traditional Internship Paradigm

In the traditional paradigm, interns are provided a set of course standards, a pacing guide, and possibly their mentor's instructional resources, and they are asked to create a lesson plan independently. Their mentor critiques this lesson plan once it is written. Frequently this lesson plan does not meet the mentor's expectations for quality instruction; interns then scramble to revise the lesson plan based on the mentor's critique. If the lesson plan is still not adequate, the planning and critique process is repeated, and eventually, the lesson plan is approved. However, there may now be insufficient time to reflect on the planning cycle and conceptualize quality instruction. Then the cycle begins again. This paradigm (see Figure 2), by leaving the interns working alone much of the time, may induce unnecessary stress, establish the mentor in an evaluative role, and hinder relationship building between the interns and their mentors. In addition, the mentors may experience stress because they must suspend their role in planning and responsibility for student learning (Ma, 2013).

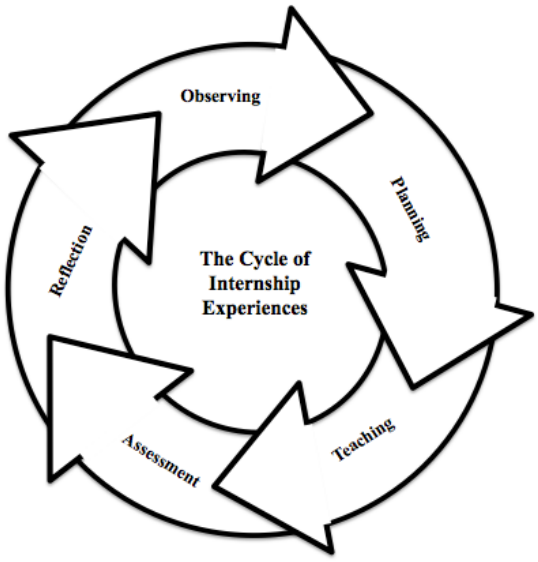

Figure 1. Experiences during internship. Adapted from *Moving beyond "sink or swim": A framework for 2:1 co-teaching in student teaching*, by C. M. Tschida & E. A. Fogarty, April 2016, paper presented at the American Educational Research Association Annual Conference, Washington, DC.

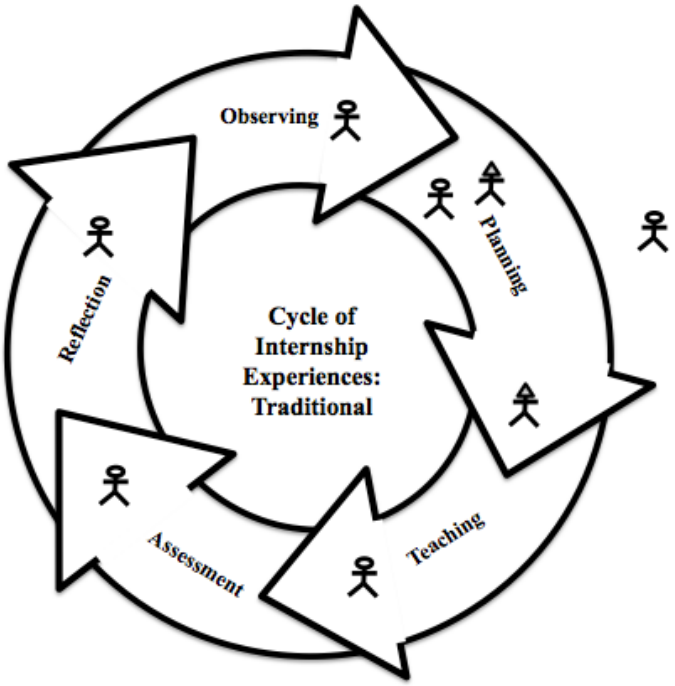

Figure 2. Traditional internship paradigm. Adapted from *Moving beyond "sink or swim": A framework for 2:1 co-teaching in student teaching*, by C. M. Tschida & E. A. Fogarty, April 2016, paper presented at the American Educational Research Association Annual Conference, Washington, DC

Co-teaching Internship Paradigm

In the co-teaching paradigm, in contrast, interns go through the same observation period, but rather than being sent off to plan in isolation, they and their mentor plan together, each bringing their individual knowledge and skill to the planning process. Planning decisions are made with the goal of optimizing student learning, instructional strategies (including co-teaching strategies) are selected appropriately, and together interns and their mentor reflect on instruction and the effect on student learning (see Figure 3). This planning and reflection process continues and evolves, providing interns with supportive opportunities to learn about the planning process and allowing them to assume increasingly more authority for planning and instruction. In contrast to the traditional paradigm, stress for interns is reduced, their mentor is seen as a partner, and positive professional rapport is established. Also, their mentor maintains an active role in planning and responsibility for student learning.

Research suggests co-planning is a critical component for successful co-teaching (Bryant & Land, 1998; Davis, Dieker, Pearl, & Kirkpatrick, 2012; Murawski, 2012). However, very little advice has been provided about how to co-plan effectively. We therefore propose six strategies to guide the co-planning process between an intern and mentor.

Co-planning Strategies

Our work is grounded in the research base for co-teaching (Bacharach et al., 2010; Murawski & Spencer, 2011). Preservice teacher preparation at our institution incorporates six co-teaching strategies adapted from these research studies (see Table 1). These strategies are embedded throughout practicum courses and a year-long internship for our preservice high school math teachers.

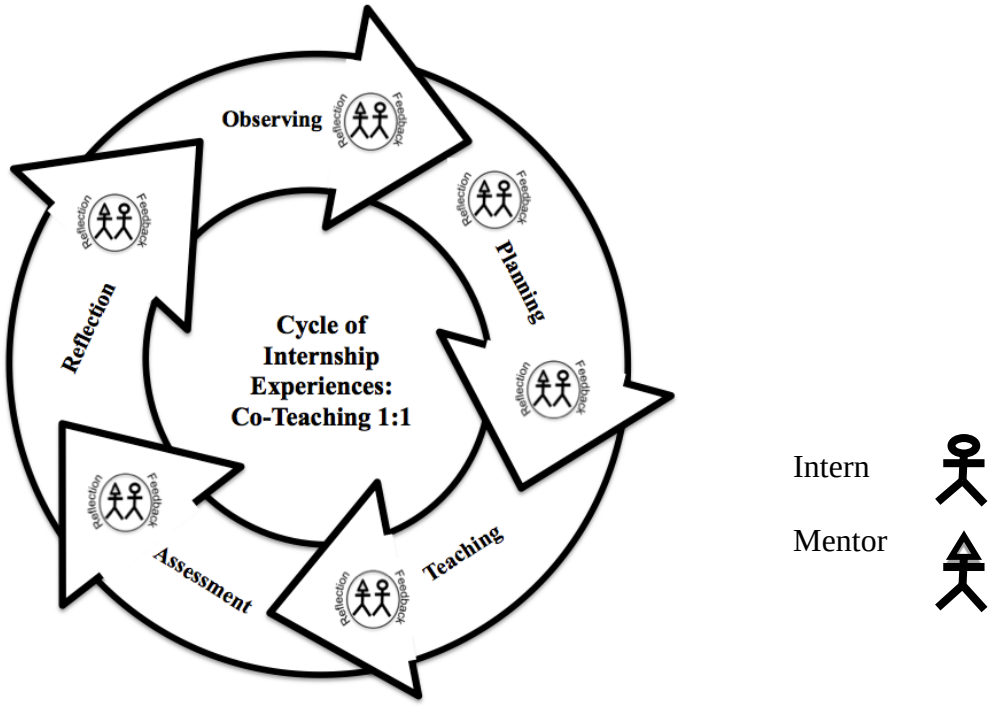

Figure 3. Co-teaching/co-planning internship paradigm. Adapted from *Moving beyond "sink or swim": A framework for 2:1 co-teaching in student teaching*, by C. M. Tschida & E. A. Fogarty, April 2016, paper presented at American Educational Research Association Annual Conference, Washington, DC.

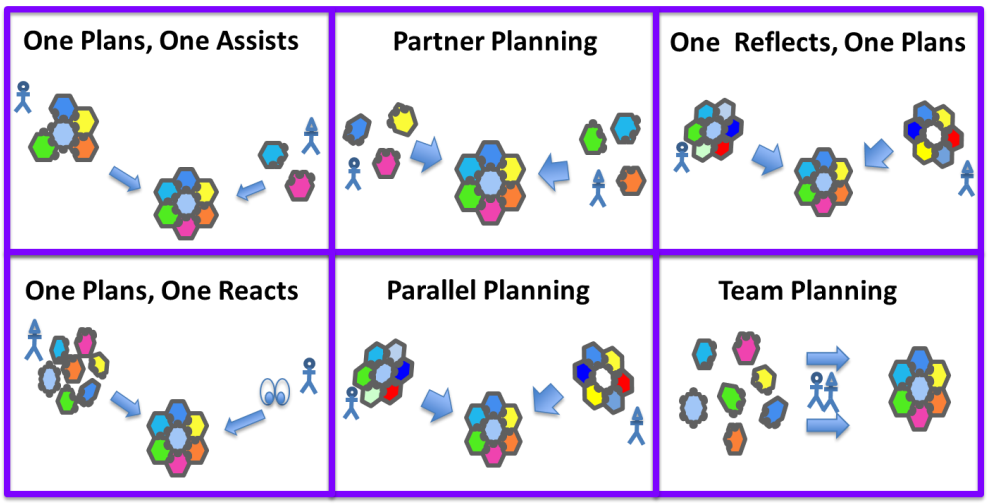

Figure 4. Co-planning Strategies

Feedback from interns and mentor teachers indicated that, while they found the co-teaching strategies beneficial, they felt further support was needed to incorporate co-planning effectively. The strategies shown in Figure 4 represent our efforts to define six co-planning strategies that complement and support co-teaching practices, to address an identified need and to improve the co-teaching internship experience. Below we discuss each of the strategies and provide suggestions for implementation.

One Plans, One Assists. With this co-planning strategy, one teacher has primary responsibility for the lesson while the other contributes discrete pieces to help fill in the plan. The co-teachers then work jointly to finalize the lesson plan. This strategy provides an opportunity for interns to contribute resources that may be new to the clinical teacher and produce better instructional materials (e.g., a more polished PowerPoint presentation). With this strategy not only do interns have the opportunity to see how a good lesson may be improved, but also the mentor and intern build rapport while negotiating the final plan jointly.

One concern is that, if the initial planning is done separately, individual components of the lesson may not mesh well. In this case, interns and their mentor will need to communicate and compromise on how to bring the pieces together. Initially mentors may provide major direction for the lesson plan, but the roles should reverse as internships progress. One example of this strategy would be for the mentor to develop the core of the lesson, while the intern finds a hands-on activity to help develop conceptual understanding, brings some higher-order questions from the literature to the planning session, or finds a video of a real world application. The pair would then build the lesson from these instructional components.

Partner Planning. This co-teaching strategy is similar to *one plans, one assists* because each co-teacher takes responsibility for different portions of the lesson plan, bringing these pieces together to finalize the plan collaboratively. The distinction lies in the level of responsibility for each co-teacher. In the *one plans, one assists* strategy, one teacher is responsible for most of the lesson, with the other contributing a smaller portion. In *partner planning* the distribution of labor is equal. Both strategies require that a lesson be visualized as components, where initial planning can be done independently. This is a very efficient strategy due to the initial division of responsibilities.

Again, one concern is that the pieces of the lesson may not mesh well, and co-teachers need to negotiate and compromise to pull the pieces together into a well-developed lesson plan. An example of this strategy is having one teacher develop a hands-on task on volume of cones versus cylinders, while the other teacher develops a presentation of the derivation of the formulas. Each of these elements could then be blended into one lesson that builds procedural fluency from conceptual understanding.

One Reflects, One Plans. In this strategy mentors think aloud about the main parts of the lesson and interns write the plan. We acknowledge that it may be a challenging task for mentors to think aloud—it is more than simply talking aloud, it involves articulating what may be automatic, requiring mentors to ask, “How do I know how to plan?” Initially, mentors may think aloud about the main points of a lesson and interns write the lesson plan, confident that it is at least a reasonable fit for the content and students. We caution against excessive use of this strategy over time to avoid interns becoming too reliant on their mentor, hindering the development of their lesson-planning skills.

This strategy also has the potential for discrepancies to arise between what mentors speak aloud and what interns hear. It is important to have interns summarize key ideas and components of the lesson before finalizing the plan after the co-planning session. One advantage of this strategy is the transparency of the planning process for interns. One example of *one reflects, one plans* would be the mentor reflecting on a task to motivate a lesson on geometric transformations. The discussion may include discussion of potential resources for the intern such as helpful technologies and sources of useful examples.

Parallel Planning. With this strategy, each member of the co-teaching team develops an entire

lesson plan for a given topic, and then they bring these lessons together for discussion and integration into one plan. This approach provides an opportunity for teachers to learn from one another by comparing and contrasting activities, examples, and points of emphasis from each of their lesson plans. However, the duplication of work may make this strategy less efficient. Also, teachers may become heavily invested in their own plans, making collaboration more difficult. An example of this strategy is co-teachers each developing a lesson on using scale drawings. One teacher might create a lesson to enlarge drawings, while the other focuses on scales on maps to plan a trip. The two teachers then create a lesson that incorporates the best parts of each plan.

One Plans, One Reacts. For this co-planning strategy, one co-teacher plans a lesson independently and the other co-teacher makes suggestions for improvement. This type of planning/feedback is perhaps the approach most used in traditional mentor-intern settings. This strategy provides an opportunity for good feedback and discussion of lesson plan elements, primarily for interns from their mentor teacher.

With this strategy, interns' initial approach may not fit their mentor's expectations, and feedback is provided after the fact rather than in real time. Because of these drawbacks, we do not recommend this strategy for the early phase of the internship. Another concern is that interns may begin to feel like an assistant, which can be addressed by intentionally reversing roles, where mentors provide lesson plans for interns to reflect on and critique. For example, the mentor may prepare a lesson on solving systems of equations and the intern provides feedback on the set of examples chosen.

Team Planning. In this strategy both teachers actively plan at the same time and in the same space, with no clear distinction of who takes leadership. At any given time either teacher may take the lead in

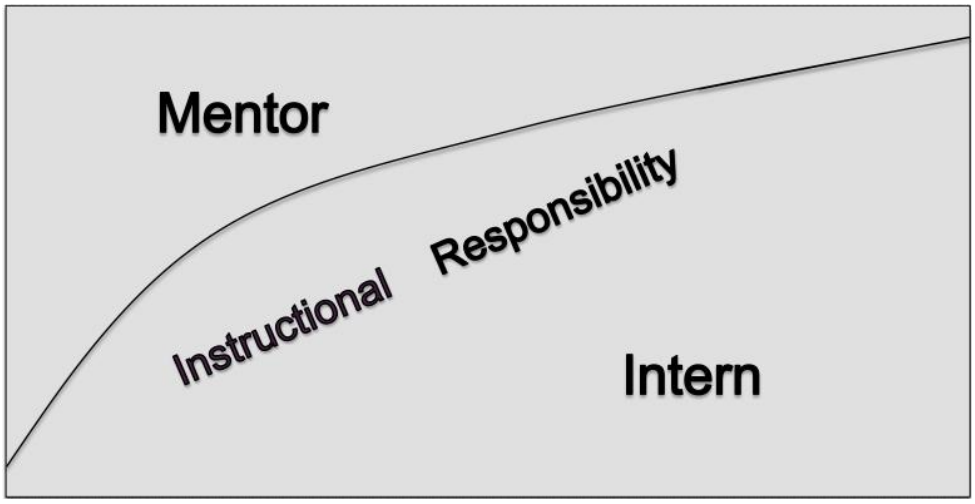

Figure 5. Instructional responsibilities for co-teaching internships. From *How co-planning and co-teaching influences mentor teachers during student teaching*, by P. Brosnan, M. Jaede, E. Brownstein, and S. Stroot, April 7, 2014, paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

suggesting tasks, questions, flow of the lesson, and so on. The plan is written in real time, collaboratively. The resulting lesson plan may be better than a plan done independently by either teacher. In this strategy, co-planning may be more efficient because feedback and collaboration happen in real time. However, one co-teacher, likely the intern, may be less prepared to contribute than the other. This is particularly true if this strategy is used early in the internship experience. In addition, successful implementation of this strategy requires a very high level of trust and communication.

An example of *team planning* would be co-teachers coming together to plan a lesson on exponents. Each would come in with lesson ideas and notes on the goals for the lesson. The co-teachers would discuss likely student difficulties, a possible sequence of tasks, and strategies for keeping the cognitive demand of the lesson at a high level.

Implementing the Co-teaching Strategies

The co-planning strategies presented above are not hierarchical, nor do specific co-planning strategies relate to a particular co-teaching strategy. Rather, the focus is on choosing a co-planning strategy that best supports the development of interns and facilitates student learning. In a co-teaching internship, the instructional responsibilities for interns and their mentor change over time. As Figure 5 indicates, mentors initially assume more instructional responsibility, guiding interns as they gradually increase their level of responsibility. Although interns eventually take on the majority of instructional responsibilities, within a co-teaching paradigm their mentor remains an active, participating teacher, sharing instructional responsibility throughout the internship experience.

Based on this model for instructional responsibility, the co-planning strategies might be utilized in the order presented in Figure 4. This would allow interns to gradually increase their responsibility in planning for instruction. We envision mentors implementing the *one plans, one assists* strategy by assigning specific instructional tasks to interns. For example, the intern might initially be responsible for finding and implementing a warm-up/bell-ringer activity and going over the homework, while the mentor focuses on new content with the students. The *one plans, one assists* strategy provides a transition for increasing interns' level of responsibility to approximately 50%, indicative of *partner planning*. Once interns have assumed more than 50% of the planning for instructional responsibilities, the use of *one reflects, one plans* (with the mentor reflecting) would be a logical next step to support interns in writing a complete lesson plan.

The critical component with each of these co-planning strategies is that mentors' expectations and processes of planning for student learning are made explicit for the intern. Subsequently, interns and their mentor could work on *parallel planning* to negotiate an optimal plan for student learning that incorporates the best ideas from each of their individual plans. This process allows interns to gain the expertise and efficiency in planning that allows them to transition to *one plans, one reacts*, where interns plan with minimal guidance from their mentor, who provides constructive feedback on the resulting plan. The ultimate goal may be for interns and their mentor to transition to *team planning*, where they co-plan in real time as colleagues.

This suggested order has no specific time frame for how long each strategy should be implemented before transitioning to another. Also once a strategy has been used it can be implemented again later in the internship. Ideally, interns and their mentor will use a variety of strategies throughout the internship. Our main point is that co-planning strategies need to be implemented in a way that scaffolds interns' progressive development for planning instruction that supports student learning effectively. We also feel it is important for earlier strategies to be used again, with the roles for interns and their mentor reversed. For example, *one plans, one assists* may be used toward the end of the internship when the intern carries out most of the instructional responsibilities, and the mentor assists by planning for small portions of the lesson.

Discussion

Effective planning is a necessary and complex activity when designing instruction focused on student learning. In-service teachers along a continuum of experience must address planning on

a daily basis. During coursework, preservice teachers usually compose lesson plans that adhere to specific formats for hypothetical students; however, planning instruction designed for implementation with actual students presents a new set of challenges during their internship. Co-planning has the potential to address many of these special challenges. Rather than a model in which interns are expected to create plans on their own for their mentor to critique, many of the co-planning strategies outlined here envision ways mentor teachers can scaffold interns' learning about planning and instruction. By taking increasing amounts of responsibility for lessons while being supported by mentor teachers, interns can likely make a more successful transition from student to teacher.

Implications

In addition to the potential benefits for interns and mentor teachers, these strategies may help teachers in other settings where they work and plan together. These strategies could be used with preservice teachers as part of methods courses prior to their internship experience. Learning to co-plan with their peers would provide opportunities not only to learn about the strategies but also to enact them, receiving feedback on the potential effectiveness of their lesson plans prior to their internship. This experience might also empower them to be more proactive in co-planning with their mentor teacher during their internship.

These strategies also play a crucial role in supporting internship experiences involving co-teaching. As advocated by others (e.g., Howard & Potts, 2009; Magiera et al., 2005), the need for quality co-planning is especially critical when mentors and interns are working in a co-teaching model. Two or more teachers can productively share instruction in a single classroom only when both actively participate in planning that instruction. The co-planning strategies outlined here provide models for that shared planning. No co-planning strategy is necessarily connected with a particular co-teaching strategy; rather, the content of the lesson and the relative strengths and needs of the teachers involved in the planning should dictate which co-planning strategy is used for planning any given lesson.

As critical as co-planning is in a co-teaching setting, it is just as important in other internship models. Interns need support for learning to plan, and mentors and interns need to plan together to best support student learning. These co-planning strategies should be helpful to any mentor-intern pair as they work to find ways to plan together and to transition interns into roles of ever-greater responsibility for student learning.

When considering in-service teachers, these strategies provide ideas for a range of experience levels and teaching contexts. Consider the application of these strategies to support novice teachers as they enter the classroom. Since quality planning is likely to be with a challenge for beginning and struggling teachers, these co-planning strategies may provide a model for more experienced teachers to mentor novice and struggling teachers in planning instruction focused on student learning, as well as planning interactions between instructional coaches and teachers. Their potential also extends to professional-learning-community settings (Ochanji & Diana, 2011) in which teachers plan together for lessons to be implemented in their separate classrooms. Another application may be to assist subject-area teachers and special education teachers to share the workload of planning lessons beneficial for all students in a classroom. These strategies may also provide a way for teachers not accustomed to planning together to use co-planning to breathe new life into their instruction by planning with other teachers within their school or district or even across different school districts. Although the order and duration of implementation would likely vary in these contexts, strategies can help define roles and expectations in the planning process. Overall, there is a need for more sharing of ideas and improved planning for instruction. The co-planning strategies presented here provide some guidance on how to further this sharing.

Current and Future Research

While the need for co-planning in internship settings and beyond is widely acknowledged (Bryant & Land, 1998; Davis et al., 2012; Murawski,

2012), little guidance is available on strategies to productively engage in co-planning. In this article we have adapted the strategies from the co-teaching literature (Bacharach et al., 2010; Murawski & Spencer, 2011) to provide possible strategies for how two teachers might interact as they plan lessons together. While our research regarding these strategies is only beginning, early survey evidence suggests they provide some answers to the challenges faced by interns as they learn to plan. When asked to discuss the benefits and challenges of their co-planning experiences, recent graduates reported:

> Intern 1: Co-planning was fun, I felt like I was able to share the "burden" of thinking up lessons for my students to do, and creating tests with teachers that teach the same courses I did.
>
> Intern 2: I felt more prepared and comfortable in the classroom.
>
> Intern 3: It was helpful to have a professional to look over and critique my lesson plans. They helped me to think about my students, time, what they knew, and what they needed to work on when planning.
>
> Intern 4: [I was] more comfortable in my plans with co-planning; knowing someone will catch things I miss.

Similar to previous research (Friend et al., 1993; Murawski, 2012; Sileo & van Garderen, 2010), the greatest challenge reported dealt with finding adequate time to co-plan effectively.

Our current research efforts focus on the use of these strategies within 1:1 co-teaching in high school mathematics classrooms in rural, high-needs school districts. Our mentor teachers and interns have been trained in both the co-teaching and co-planning strategies, and we are collecting data to analyze their perceptions and use of these strategies. Data sources include surveys from mentor teachers and interns (administered before, during, and after the internship), interns' weekly journals, and classroom observations (four per mentor-intern pair) conducted throughout the semester-long internship.

While our research addresses only a 1:1 co-teaching model, we hypothesize these strategies will be helpful in other internship models or other settings in which two teachers seek to teach or to plan together for more effective instruction. As our data collection and analysis progresses, we hope to find evidence that informs our hypotheses and helps us refine our models. We are also working with universities across the United States to collect data from a variety of rural and nonrural settings, which will help us analyze how co-planning may vary across cultural, demographic, and geographic contexts. For the present, our goal is to present these co-planning strategies to a broader audience of teacher educators to begin a dialog surrounding a clear and present need for co-planning among mentor teachers and interns.

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Editorial Board for Volume 9, Number 2

Call for Proposals and Submission Guidelines

Theory & Practice in Rural Education

Dr. Laura Levi Altstaedter, Executive Editor

East Carolina University

The editors of the *Theory & Practice in Rural Education* would like to invite authors to submit manuscripts for the spring 2020 issue. *Theory & Practice in Rural Education* is a peer-reviewed journal published electronically twice per year, spring and fall. We are predominantly interested in manuscripts related to promising and effective educational practices in rural schools, educator preparation for rural P-16 institutions, and issues related to distinct rural populations. We invite several categories of articles and/or multimedia creations, including those with an international focus: practice-based; educational innovations; and partnerships for education. The four sections featured in the journal are research-based articles; practice-focused articles, digital creations, and book/media reviews.

We will be accepting manuscript submissions for the spring 2020 issue between September 1, 2019 and December 15, 2019 (midnight EST) at http://tpre.ecu.edu. The call for a themed issue will be announced in October.

All proposals will be subject to double blind peer review.

Author guidelines may be found online and includes descriptions of the sections of the journal. We are currently accepting manuscripts written in English or Spanish. All manuscripts should follow APA guidelines, be saved as a .doc or .docx file, formatted to fit 8½ by 11-inch paper, and double spaced. Manuscripts should be between 5000 and 7500 words, not including figures, captions, or references. Book reviews should be between 750 and 1500 words, excluding references.

In addition, the journal is accepting submission of digital projects. Please see details at the website.

Dr. Kristen Cuthrell, Director

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Theory & Practice in Rural Education (TPRE)

Call for Special Issue on Rural Gifted Learners

Guest Editor: Angela M Novak, Ph.D. (East Carolina University)

Gifted Rural Learners: Exploring Power, Place and Privilege with a focus on Promising Practices

In order to teach, we must know our students: cognitively, affectively, and culturally. One factor in cultural identity is geography: how does area influence who you are (Gollnick & Chinn, 2013)? This is strongly evident in rural gifted settings. Themes emerge in the study of gifted rural learners, stemming from what Richards and Stambaugh describe as the essence of rural (2015): sense of place, value of tradition, role of family, role of religion, and commercialism and definitions of success. The pull of home can conflict with the push of opportunity, as the rural setting may provide challenges to education and access for gifted learners.

Intersectionality

Challenges to rural gifted learners increase exponentially when gifted and rural is combined with a third descriptor. Donna Ford describes finding gifted rural Black and Hispanic students like "finding a needle in a haystack" (2015, p. 71). This could be traced to what was once considered a politically correct way of describing students- low-income Black students labeled urban, and low-income White students termed rural (Ford, 2015). Rural, however, does not equate with low-income as you view the rolling hills of Kentucky horse farms, nor does urban fit the perception of economically depressed, under the shade of highrises on the Upper East Side of New York, or in the neighbohoods of Tribeca. Thus as the topic of gifted and rural is researched, an ideal approach even as we consider themes and understandings across gifted rural populations, is to consider the intersectionality of gifted, rural, and "X". Teaching Tolerance defines intersectionality as "the social, economic and political ways in which identity-based systems of oppression and privilege connect, overlap and influence one another" (Bell, 2015, p. 38). Ford recommends approaching gifted rural education through a multicultural focus: culturally responsive teaching, with components of philosophy, learning environment, curriculum, instruction, and assessment (2015). This is not to say that poverty is not a challenge to rural areas; 70% of counties that are considered high child poverty counties are rural, a disproportionality considering 63% of counties are rural. An even higher percentage- 77%- of persistent child poverty counties, marked by at least four decades of high child poverty, are rural counties (Mattingly & Shaefer, 2015). It is important, however, to recognize that the rural context is not homogenous, and that rural education can be viewed through a dynamic lens, recognizing the strength in the concepts of place, family, belonging, and tradition.

Power, Place, Privilege, and Promising Practices

The purpose of this themed issue of *Theory and Practice in Rural Education* is to explore the ideas of power, place, privilege, and promising practices, as they relate to gifted learners in rural settings. Research and theoretical articles are invited, as well as practioner focused articles and digital project submissions. TPRE also accepts submissions in Spanish. Please see the author guidelines (linked below) for full details.

This issue explores the complexities, dynamic practices, and challenges facing rural schools and universities as they design, implement, and evaluate gifted programming. Articles might address issues such as:

- identification,
- social justice and gifted education in rural settings
- gifted service models in rural settings,
- the role of place in gifted curriculum,
- training and support for gifted and classroom teachers in cultural responsiveness, gifted pedagogy, and specific rural teaching strategies,
- importance of relationship building between gifted specialists and classroom teachers,

- fidelity of implementation of gifted programming or curriculum models,
- the use of local norms in the gifted identification process in rural settings,
- effectiveness of mentoring, coaching, co-teaching, or other gifted specialist roles in rural schools
- intersectionality of rural schools, poverty, and culturally, linguistically or ethnically diverse (CLED) students and their underrepresentation in gifted programs

Those interested in being considered for this special issue should submit a full manuscript to the TPRE system (http://tpre.ecu.edu) **by Februrary 28, 2020**. Questions about possible topics or ideas should be sent to Angela Novak (novaka17@ecu.edu)**.** All submissions will go through the TPRE process of double-blind review by experts in the field.

TPRE Author Guidelines: http://tpre.ecu.edu/index.php/tpre/about/submissions#authorGuidelines

Estimated Timeline

- Manuscripts Due:
  - February 28, 2020
  - accepted on a rolling basis up until the close date
- Double Blind Review Process:
  - Approximately 2 month turnaround (March/April)
- Articles selected for Revise/Resubmit or Minor Edits:
  - Revise/Resubmit Deadline: 45 days from receipt of feedback (May/June)
- Second (limited) Double Blind Peer Review Process from resubmissions:
  - Approximately 1 month turnaround (July)
- Final selection of articles selected for Minor Edits:
  - Deadline: one month from receipt of feedback (August)
- Expected Publication Date: October 2020

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